FIRMS' FINANCIAL AND CORPORATE GOVERNANCE CHARACTERISTICS ASSOCIATION WITH EARNING MANAGEMENT PRACTICES: A META-ANALYSIS APPROACH

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ABSTRACT

This paper aims to investigate the association between firm's corporate governance and financial attributes (namely, board of directors' size, board of directors' independence, chief executive officer (CEO) duality, ownership structure, audit type, firm's size, firm's return and leverage) with earnings management practices. The study applies a comprehensive meta-analysis of the findings of 25 journal articles published between 2003 and 2013. The analysis permits this research to accumulate and assimilate the results of previous literature, and their generalization to a wider range of settings. The results showed that all corporate governance and financial characteristics variables have a significant association with earnings management practices.

Keywords: meta-analysis, earnings management, corporate governance, financial characteristics.

JEL Classification: M41, M42

1. INTRODUCTION

In the modern day business environment, many corporations are faced with a considerable number of issues and challenges. Among others, these include the risk of future losses, volatility of company's share price and the concern of being overly regulated, particularly for large corporations. These challenges resulted in the emergence of earnings management (EM). One of EM practices is income smoothing which consists of reducing income fluctuations in order to smoothen out the income level. Income smoothing portrays a more stable company, affects share price and may be used to cover possible loss in the future. Large corporations could also use EM to decrease their reported income, consequently paying less tax and becoming less profitably visible. Hence, EM may be used by large corporations to reduce political cost in order not to face more regulation.

Therefore, based on the above, EM is basically the manipulation of earnings. Frequently, EM practices are in favour of managers. This is because potentially smoothening out the income flow and portraying a stable company infers that management is managing the company well, thus providing job security for the managers. Furthermore, it allows managers to receive performance-equivalent bonuses. Thus, more formally, EM "occurs when managers use judgment in financial reporting and in structuring transactions to alter financial report to either mislead some stakeholders about the underlying economic performance of the company or influence contractual outcomes that depend on reported accounting numbers" (Healy & Wahlen 1999, p. 368).

Since EM practices distort financial reporting figures and may mislead users of financial statements, alleviating EM, particularly minimizing discretionary accruals, is

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considered one of the main indicators of the quality of financial reporting. By deterring EM practices, financial statements are more reliable, informative, and accurate; especially, when managers' profit maximization ambitions and financially opportunistic behaviour are well restricted by effective monitoring through good corporate governance mechanisms as well as firms' financial attributes (e.g. leverage ratio, return, and company's size). In view of the fact that maintaining the reliability and accuracy of the financial statements is vital, in the last few decades, there has been a growing interest amongst researchers to study different factors that might be able to reduce EM practices in various countries. These efforts to potentially alleviate EM practices seem to be more of a concern after the financial scandals (e.g. Enron) and the global financial crisis.

In reviewing the literature, prior studies have provided insights into the effect of a number of factors on EM practices across different countries. However, the findings of these studies have been mixed (e.g. Alves 2011; Lo et al., 2010; Prencipe & Bar-Yosef 2011; Hassan & Ahmad 2012; Chaharsoughi & AbdulRahman 2013). Therefore, in order to better understand the factors that reduce EM practices and possibly untangle the mixed findings, the current study attempts to review EM practices and their determinants using a meta-analysis technique.

The meta-analysis technique is formally defined as a "statistical analysis of a large collection of results from individual studies for the purpose of accumulating and integrating the findings" (Glass 1976, p. 3). This technique allows summarizing the findings of most previous studies in this area and provides precise and comprehensive results, which enhances the generalizability of the findings across settings. Furthermore, it extends prior meta-analysis studies by including recent studies and combining corporate governance attributes and firms' financial performance characteristics as determinants of EM. More importantly, this study updates the specifications of meta-analysis by having sub-groupings of "before crisis" and "after crisis". By having such a categorization, this study contributes not only by investigating and accumulating the factors that reduce EM practices but also analyses them under differing economic conditions, i.e. before and after the financial crisis, in order to determine their consistency.

The remainder of the paper is organized as follows: Section two discusses the literature in this area. Section three presents and explains the methodology applied in the study. Section four discusses the main results, and section five concludes with the major findings, limitations and implications of the findings, and makes recommendations for further studies in this area.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Corporate governance

The concept of agency theory has documented that there is a conflict of interest between principles and agents. Consequently, corporate governance (CG) was instigated to govern the corporation as a monitoring mechanism in order to restrict the opportunistic behaviour by managers. In this regard, CG has several elements, including board of directors, audit committee, internal auditing, etc. Prior studies have used different measures of CG effectiveness. These measures include board size, board independence, audit committee independence, and ownership concentration. Accordingly, several empirical studies have used different CG measures to examine its effectiveness, for instance, Mohd. Saleh and Mohd. Iskandar (2007) as well as Nelson and Devi (2013) have used audit committee, Park and Shin (2004) and Liu and Lu (2007) used board of directors, while Alves (2011) and Lo et al. (2010) used mixed

measures, and Siregar and Utama (2008) used a combination of board of directors, audit committee and ownership concentration.

Among the abovementioned CG elements, most commonly used are board of directors (board size, board independence, and CEO duality), ownership concentration, and auditor type. Hence, the current study focuses on these three aspects. With respect to board size, prior studies have presented contradicting results. For instance, Chen, Firth, Gao and Rui (2006), Siregar and Utama (2008), Gulzar and Wang (2011), and Mohd, Saleh, Mohd. Iskandar and Rahmat (2005) found no significant impact of board size on EM. On the other hand, Chaharsoughi and AbdulRahman (2013) and Alves (2008) discovered that board size has a significant negative impact on EM, while Swastika (2013) revealed a significant positive impact of board size on EM. It is worth noting that the measurement for board size was the same in the above studies, which is the total number of board members.

The previous studies also found different results for board independence. Gulzar and Wang (2011), Park and Shin (2004), Mohd. Saleh et al. (2005), Chaharsoughi and AbdulRahman (2013) and Nelson and Devi (2010) did not find a significant association between board independence and EM, while the results presented by Klein (2002), Xie, Davidson and Dadalt (2003), Cornett, McNutt and Tehranian (2009), Chen et al. (2006), Liu and Lu (2007), Alves (2008), and González and García-Meca (2013) indicated that board independence has a negative effect on EM. The above studies also used the same measurement of board independence, which is the percentage of outside directors on the board.

With regard to CEO duality, Chen et al. (2006) Liu and Lu (2007) and Gonzalez and Garcia-Meca (2013) found no significant impact of CEO duality on EM. On the contrary, the findings of Gulzar and Wang (2011), Cornett et al. (2009), Xie et al. (2003) and Mohd, Saleh et al. (2005) show that CEO duality has a positive impact on EM, while Abed et al. (2012) found that CEO duality has a negative impact on EM. These studies used a similar proxy for CEO duality in the form of a dummy variable taking the value of 1 if the chairman and CEO positions are held by the same person and 0 otherwise.

In terms of ownership concentration, Bauwhede, Willekens and Gaeremynk (2003) and Chaharsoughi and AbdulRahman (2013) did not find a significant association between ownership concentration and EM. However, Gulzar and Wang (2011) found that ownership concentration has a significant positive effect on EM, while Abed et al. (2012), Mohd. Saleh et al. (2005), and Liu and Lu (2007) found that ownership concentration has a negative impact on EM. Most of the studies used ownership concentration by shareholders (Charfeddine et al., 2013; Gonzalez & Garcia-Meca 2013), while a few studies used only institutional ownership concentration (Prencipe & Bar-Yosef 2011; Hassan & Ahmad 2012).

Prior studies also found contradicting results for auditor type. For example, Abdullah and Mohd.Naser (2004), Banderlipe (2009), Marra, Mazzola and Prencipe (2011) and Gonzalez and Garcia-Meca (2013) found no significant effect of auditor type on restricting EM. However, Kim and Yi (2006) found a significant positive association, while Swastika (2013) found a significant negative relationship. It is noteworthy that these prior studies used the same measure for auditor type, which took a value of 1 if the audit firm was a Big-4 and 0 otherwise. Based on the above discussion, we propose the following hypotheses in an alternate form:

H1a: *board size is significantly associated with EM practices*

H1b: *board independence is significantly associated with EM practices*

H1c: *CEO duality is significantly associated with EM practices*

H1d: *ownership concentration is significantly associated with EM practices*

H1e: *audit type is significantly associated with EM practices*

2.2. Firm characteristics

Regarding firm size, Hassan and Ahmad (2012), Bekiris and Doukakis (2011), Abed, Al-Attar and Suwaidan (2012), and Kim and Yi (2006) found no significant impact of firm size on EM. On the other hand, Leventis and Dimitropoulos (2012) and Cornett et al. (2009) found that firm size has a negative impact on EM, while Swastika (2013), Gonzalez and Garcia-Meca (2013), Nelson and Devi (2010), Chaharsoughi and Abdul Rahman (2013), Charfeddine et al. (2013), and Kim and Yoon (2008) found that firm size has a significant positive impact on EM. It should be noted that these studies used two different measures of firm size namely total assets (Bauwhede et al., 2003; Kim & Yoon 2008) and total equities (Alves 2011; Chen et al., 2006).

With respect to leverage, Abed et al. (2012) and Charfeddine et al. (2013) did not find a significant relationship between leverage and EM. In contrast, Gonzalez and Garcia-Meca (2013), Leventis and Dimitropoulos (2012), Nelson and Devi (2010), Bekiris and Doukakis (2011), and Kim and Yi (2006) found that leverage has a significant positive effect on EM, while Kim and Yoon (2008) found that leverage has a significant negative effect on EM. Three proxies of leverage were used by these studies; liabilities to total assets ratio (Chi et al., 2010; Chen et al., 2011), debt to total assets ratio (Kang & Kim 2012), and debt to equity ratio (Leventis & Dimitropoulos 2012).

Regarding return, Bekiris and Doukakis' (2011) findings showed no significant impact of return on EM. On the other hand, González and García-Meca (2013) and Nelson and Devi (2013) found a significant positive effect of return on EM, while the results of Kim and Yi (2006) and Charfeddine et al. (2013) indicated a significant negative impact of return on EM. These studies used three different types of return, namely return on assets (ROA) (Chi et al., 2010), return on investment (ROI) (Banderlipe 2009) and annual stock return (Chen et al., 2006). Based on the aforementioned discussion the following hypotheses are proposed:

H2a: *firm's size is significantly associated with EM practices*

H2b: *firm's leverage is significantly associated with EM practices*

H2c: *firm's profitability is significantly associated with EM practices*

3. META-ANALYSIS TECHNIQUE

This study conducts a meta-analysis of the determinants of EM practices. Prior studies stated that meta-analysis uses advanced statistical techniques in order to accumulate the findings of several researches to have a comprehensive view of the relationship amongst the variables concerned. According to Khlif and Souissi (2010), meta-analysis techniques help to precise and simplify the varying findings of different empirical studies. Although Lin and Hwang's (2010) study also uses a meta-analysis technique, they do not take into consideration the economic conditions of the period before the crisis and after the crisis. Moreover, their findings on the association of corporate governance variables and EM differ from the current study possibly due to differences in terms of sample size, sample period, country categorization, measurement of variables, and different proxies used for EM. Thus, meta-analysis will enable the association and calculation of all

these different influencing factors on the results of those literatures (García-Meca & Sánchez Ballesta 2009; Lin & Hwang 2010). Moreover, prior studies used different methodologies in conducting the meta-analysis technique; for example, Lin and Hwang (2010) used combined Stouffer test to examine the effect of audit quality on EM, while, García-Meca and Sánchez Ballesta (2009) used effect size (r) to compute the effect of different corporate governance attribute on EM. This study follows a similar methodology of meta-analysis used in Hunter, Schmidt and Jackson (1982), Ahmed and Courtis (1999) and Khlif and Souissi (2010).

Previous literatures that conducted the meta-analysis method utilized effect size (r). The effect size is used to compute the level of the relationship between the dependent variable and the specific independent variable. In this research, individual effect size is computed for every single study. In calculating effect size, different procedures are utilized depending on different statistics disclosed in different studies. In this study's sample, one of the papers used z statistics (Gonzalez & Garcia-Meca 2013). The formula used in order to transform the (z) results into r statistics is: $r = z/\sqrt{n}$ (Ahmed & Courtis 1999; Khlif & Souissi 2010), while the other papers referred to in this study used t statistics. Therefore, the formula used in order to transform t statistics into r is:

$$r = \sqrt{\frac{t^2}{(t^2 + df)}} \qquad (1)$$

Where df is the degree of freedom.

Once r is calculated, the next stage is to calculate the mean correlation ($\bar{r}$) (Hunter et al., 1982). The mean correlation ($\bar{r}$) is computed as follows:

$$\bar{r} = \frac{\sum(N_i\, r_i)}{\sum N_i} \qquad (2)$$

Where, N_i is the sample size for study i and r_i is the Pearson correlation coefficient for study i.

The third step according to Hunter et al. (1982) is to calculate the observed variance (s_r^2) and the estimate of sampling error variance (s_e^2). The formula for calculating s_r^2 is as follows:

$$s_r^2 = \frac{\sum[N_i\,(r_i - \bar{r})^2]}{\sum N_i} \qquad (3)$$

The formula for computing s_e^2 is as follows:

$$s_e^2 = \frac{(1 - \bar{r}^2)^2\, K}{\sum N_i} \qquad (4)$$

Where K is the number of individual studies utilized in the analysis.

The fifth step is to compute the unbiased estimate of population variance (s_p^2). The equation is shown as follows:

$$s_p^2 = s_r^2 - s_e^2 \qquad (5)$$

In this paper, the estimates of mean population $\bar{r}$ and the standard deviation s_p are used to formulate a 95% confidence interval as follows:

$$[\bar{r} - s_p(1.96), \bar{r} + s_p(1.96)] \qquad (6)$$

The sixth step is to calculate X^2 as suggested by Hunter et al. (1982) in order to examine the model's statistical validity. The formula is as follows:

$$X_{k-1}^2 = K\frac{s_r^2}{s_e^2} = \frac{N s_r^2}{(1 - \bar{r}^2)^2} \qquad (7)$$

4. METHODOLOGY AND DATA SOURCE

In the prior meta-analysis studies like Ahmed and Courtis (1999), Garcia-Meca and Sanchez-Ballesta (2009) and Lin and Hwang (2010) a subgrouping of the studies has been conducted according to the nature of the country (such as developed, developing and underdeveloped), measurement of independent variables (such as firm size,

firm's return, different measures of corporate governance, and others), nature of disclosure (such as voluntary and mandatory) and dependent variables (such as different measures and proxies used for EM). This subgrouping has been performed in order to escape the over influence of a distinct study in the meta-analysis (Khlif & Souissi, 2010). In addition, subgrouping helps in reducing heterogeneity.

financial crises' effects on firms' different practices it is expected that the crisis may have an impact on firms' EM practices. Thus, this study sub categorizes the studies to those before and after the crises, depending on the sample period of the included studies. The studies that used a sample during the global financial crisis have been excluded from this sub-categorization due to lack of a sufficient number of studies to be included in the

Table 4.1. List of excluded studies (no applicable data)

No.	Study	Journal
1	Abdullah and Mohd-Nasir (2004)	IIUM Journal of Economics and Management
2	Park and Shin (2004)	Journal of Corporate Finance
3	Peasnell, Pope and Young (2005)	Journal of Business Finance & Accounting
4	Abdul Rahman and Mohamed Ali (2006)	Managerial Auditing Journal
5	Liu and Lu (2007)	Journal of Corporate Finance
6	Mohd. Saleh and Mohd. Iskandar (2007)	Asian Review of Accounting
7	Hashim and Devi (2008)	Asian Journal of Business and Accounting
8	Sarkar, Sarkar and Sen (2008)	Journal of Accounting, Auditing & Finance
9	Siregar and Utama (2008)	The International Journal of Accounting
10	Charoenwon and Jiraporn (2009)	Journal of Multi National Financial Management
11	Lo, Wong and Firth (2010)	Journal of Corporate Finance
12	Iqbal and Strong (2010)	International Journal of Managerial
13	Haw, Ho and Li (2011)	Contemporary Accounting Research
14	Huang, Chan, Chang, and Wong (2012)	Emerging Markets Finance & Trade
15	Hazarika, Karpoff and Nahata (2012)	Journal of Financial Economics
16	Datta, Iskandar-Datta and Singh (2013)	Journal of Banking & Finance
17	Abaoub, Homrani and Ben Gamra (2013)	Journal of Business Studies Quarterly
18	Voeller, Bremert and Zein (2013)	Auditing and Corporate Governance
19	Almeida-Santos, Dani, Machado and Krespi (2013)	Management Research: The Journal of the Iberoamerican Academy of Management
20	Chiu, Teoh and Tian (2013)	The Accounting Review
21	Roudaki (2013)	Journal of Accounting – Business & Management
22	Stockmans, Lybaert and Voordeckers (2013)	Journal of Family Business Strategy
23	Sun and Liu (2013)	Managerial Auditing Journal
24	Tangjitprom (2013)	International Journal of Economics and Finance

Thus, this research firstly subcategorizes the literatures depending on country's development level (developed counties and developing countries). The second subgrouping is established on the nature of the independent variable measurement. Thus, the subgroup of size variable comprises two categories -total assets and others. For return, two subgroups were created and they are Return on Assets (ROA) and others. For leverage, three sub-categories were formed; total debt to total assets, total investments to total assets, and total debt to total equity. Regarding corporate governance variables, this study did not sub categorize them, since most of the studies included in this research utilized the same measurement. Lastly, due to

analysis. Variables such as CEO duality and auditor type have not been included in the before and after financial crisis sub grouping due to lack of studies that were available after the crisis. The initial sample contained 51 studies and later 26 studies had to be excluded due to the unavailable data to compute r. Consequently, the final sample of the study comprises 25 published papers on the determinants of EM practices from 2002 to 2013 on the basis of the availability of the literature, which represents 50 per cent of the initial sample. The studies that were not included are presented in Table 4.1. The papers included in the sample and their characteristics are presented in Table 1 and Table 2 in the Appendix.

5. EMPIRICAL FINDINGS

The empirical results from the meta-analysis for each independent variable are shown in Table 5.1. The findings from the x^2 values indicate that board of directors' size, board of directors' independence, CEO duality, ownership structure, auditor's type, company size, firm's return and leverage are at 5% significance level in determining EM practices. The results show that all the explanatory variables included in the study have a significant impact on the EM practices. Thus, the results of this study support all the proposed hypotheses.

board of directors size significantly influences EM practices ($\bar{r}$ equals to 0.066), with a 95% confidence interval of -0.577 to 0.709. Similar results were also identified in the segmentation of developed and developing countries, with $\bar{r}$ equals 0.120 and 0.058, respectively and with confidence intervals of -0.425 to 0.666 and -0.602 to 0.719, respectively. Similar results were also found for the segmentation of studies before and after the global financial crisis with $\bar{r}$ equals to 0.057 and 0.070, respectively, and with 95% confidence interval of -0.613 to 0.726 and -0.554 to 0.694, respectively. This is compatible with most of the previous empirical studies including Chaharsoughi and AbdulRahman (2013) and Alves (2008).

Table 5.1. The results of meta-analysis for each independent variable

Variable	Sample	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	$x^2{}_{k-1}$
B-Size	5261	16	0.0657	0.1106	0.003	0.108	0.027	-0.577 to 0.709	586.76*
B-Independence	6271	17	0.060	0.116	0.003	0.113	0.023	-0.601 to 0.721	734.01*
CEO Duality	3658	11	0.078	0.020	0.003	0.017	0.146	-0.181 to 0.337	75.59*
Ownership	5924	14	0.071	0.020	0.002	0.018	0.114	-0.193 to 0.335	122.60*
Audit Type	3484	11	0.144	0.050	0.003	0.047	0.146	-0.282 to 0.570	182.70*
Company Size	8635	24	0.157	0.057	0.003	0.054	0.047	-0.299 to 0.613	515.29*
Return	6477	16	0.225	0.0319	0.002	0.030	0.070	-0.112 to 0.563	229.11*
Leverage	8482	20	0.115	0.016	0.002	0.014	0.143	-0.114 to 0.345	139.79*

**significant at 5%.*

More specifically, return seems to be the most influential factor, followed by the company size, then auditor type, while the independence of board of directors is the least influential among the selected variables. A more specific discussion on this aspect is provided in the following sub-sections. Moreover, the observed variance values indicate that the findings of the previous studies are mostly homogenous and proportionally corroborative.

5.1. Board size

The findings of the overall meta-analysis sample presented in Table 5.2 show that the

This implies that the more members form the board of directors the less likely EM manipulation may occur. Furthermore, it implies that the number of members on the board of directors influences the EM practices both before and after the crisis similarly.

Table 5.2. The results of meta-analysis for board size

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General Meta-Analysis	5261	16	0.066	0.111	0.003	0.108	0.027	-0.577 to 0.709	586.76*
Developed and Developing Countries									
Developed countries	887	5	0.120	0.083	0.005	0.077	0.066	-0.425 to 0.666	75.77*
Developing countries	4374	11	0.058	0.116	0.002	0.114	0.022	-0.602 to 0.719	511.58*
Before and After the Financial Crisis									
Before the crisis	3568	8	0.057	0.119	0.002	0.117	0.019	-0.613 to 0.726	427.48*
After the crisis	528	3	0.070	0.107	0.006	0.101	0.053	-0.554 to 0.694	57.01*

**significant at 5%.*

5.2. Board independence

The overall results of meta-analysis for board independence presented in Table 5.3 show that board independence is significantly associated with EM practices ($\bar{r}$ equals to 0.060) with confidence interval of -0.600 to 0.721. With respect to developed and developing sub-grouping, the results show a significant impact for sub-groups, whereby $\bar{r}$ equals 0.126 and 0.031, respectively, with 95% confidence intervals of -0.405 to 0.657 and -0.678 to 0.741, respectively, for developed and developing countries.

Table 5.3. The results of meta-analysis for board independence

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General-Meta-Analysis	6271	17	0.060	0.116	0.003	0.114	0.023	-0.600 to 0.721	734.01*
Developed and Developing Countries									
Developed countries	1916	7	0.126	0.077	0.004	0.073	0.046	-0.405 to 0.657	152.40*
Developing countries	4355	10	0.031	0.133	0.002	0.131	0.017	-0.678 to 0.741	582.23*
Before and After the Financial Crisis									
Before the crisis	3568	8	0.066	0.110	0.002	0.108	0.020	-0.579 to 0.711	397.68*
After the crisis	528	3	0.029	0.134	0.006	0.128	0.042	-0.673 to 0.731	70.81*

**significant at 5%.*

Similarly, the findings show significant impact of board independence for both before and after the crisis studies, with $\bar{r}$ equaling 0.066 and 0.029 respectively and with confidence intervals from -0.579 to 0.711 and from -0.673 to 0.731 respectively. This implies that the more independent the board is, the more efficient it will be in hindering EM in specific companies.

Overall, these findings are compatible with those of Lin and Hwang (2010) who also conducted an extensive meta-analysis study and found that board independence has significant influence on EM practices. This is also supported by previous empirical studies such as Alves (2008) and Gonzalez and Garcia-Meca (2013). Nevertheless, this contradicts a number of other studies e.g. Nelson and Devi (2010). This could be mainly due to the period covered in the latter study, which was marked by the occurrence of the global financial crisis.

5.3. CEO duality

The overall result of meta-analysis on CEO duality presented in Table 5.4, shows that CEO duality is significantly associated with EM practices ($\bar{r}$ equals to 0.078) with 95% confidence interval of -0.181 to 0.337. With respect to developed and developing sub-grouping, the results show significant impact for both sub-groups, whereby $\bar{r}$ equals 0.113 and 0.067, respectively, with 95% confidence intervals of -0.081 to 0.307 and -0.201 to 0.336, respectively for developed and developing countries. It is noteworthy that the sub-grouping for the financial crisis has not been conducted due to the insufficiency of the number of studies. This problem is similar to a number of previous empirical studies, such as Gonzalez and Garcia-Meca (2013) and Liu and Lu (2007).

In line with agency theory, the separation between CEO and chairman positions enhances the quality of financial reporting, which will subsequently restrict the opportunistic behaviour by the CEO. This process will fail in cases where the same person holds both positions.

Table 5.4. The results of meta-analysis for CEO duality

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General Meta-Analysis	3658	11	0.078	0.020	0.003	0.017	0.146	-0.181 to 0.337	75.59*
Developed and Developing Countries									
Developed countries	853	4	0.113	0.014	0.005	0.010	0.318	-0.081 to 0.307	12.58*
Developing countries	2805	7	0.067	0.022	0.004	0.019	0.159	-0.201 to 0.336	62.98*

**significant at 5%.*

5.4. Ownership structure

With regard to the overall sample, the results show that ownership is significantly associated with EM ($\bar{r}$ = 0.071), with 95% confidence interval of -0.193 to 0.335. In addition, the computed chi-square statistics shows the significance of ownership (22.36 <x^2 = 122.60 at 0.05). The results obtained from the sub-grouping of ownership to developed and developing countries are presented in Table 5.5. The results indicate that ownership is significant in case of developed ($\bar{r}$ = 0.106; confidence interval: -0.114 to 0.326; 11.07 <x^2 = 28.58) and developing countries ($\bar{r}$ = 0.050; confidence interval: -0.280 to 0.379; 14.07 <x^2 = 126.64). This is compatible with the findings of Abed et al. (2012), Mohd. Saleh et al. (2005), and Liu and Lu (2007), as well as the findings of Lin and Hwang (2010).

In addition, with regard to the sub-grouping of ownership according to the pre and post crisis, the results indicated that only ownership before-crisis plays a significant role in restricting EM ($\bar{r}$ = 0.054; confidence interval: -0.259 to 0.367; 12.592 <x^2 = 112.73). Thus, ownership after crisis showed insignificant result. This indicates that the financial crisis may have resulted in more vigilance and brought about a more regulatory environment hence making ownership structure irrelevant to EM practices. It implies that the more concentrated ownership structure is (e.g. family business), the less EM practice and efficiency is achieved. Specifically, the concentrated ownership reduces the need of monitoring managerial behaviour.

Table 5.5. The results of meta-analysis for ownership structure

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General Meta-Analysis	5924	14	0.071	0.020	0.002	0.018	0.114	-0.193 to 0.335	122.60*
Developed and Developing Countries									
Developed countries	1750	6	0.106	0.016	0.003	0.013	0.210	-0.114 to 0.326	28.58*
Developing countries	4174	8	0.050	0.030	0.002	0.028	0.063	-0.280 to 0.379	126.64*
Before and After the Financial Crisis									
Before the crisis	4128	7	0.054	0.027	0.002	0.025	0.062	-0.259 to 0.367	112.73*
After the crisis	139	2	0.320	0.014	0.012	0.003	0.803	0.215 to 0.424	2.491

**significant at 5%.*

5.5. Auditor type

The findings of meta-analysis on the overall sample presented in Table 5.6 show that auditor type is significantly associated with EM ($\bar{r}$ = 0.144), with 95% confidence interval of -0.282 to 0.570. In addition, the computed chi-square statistics shows the significance of size (18.307 <x^2 = 182.70 at 0.05). The findings of sub-grouping by developed and developing countries also proved to be significant in case of developed ($\bar{r}$ = 0.086; confidence interval: -0.149 to 0.321; 9.488 <x^2 = 24.74) and developing countries ($\bar{r}$ = 0.181; confidence interval: -0.330 to 0.692; 11.070 <x^2 = 161.17).

It is noteworthy that the analysis segmenting the studies of pre and post crisis was not conducted due to the insufficiency of the corresponding studies.

These findings are similar to the findings by Swastika (2013) and Kim and Yi (2006), and also in the meta-analysis study by Lin and Hwang (2010). This implies that big auditing firms (6-8) have more resources to mitigate EM practices than other firms do.

5.6. Company size

The overall meta-analysis results of company size presented in Table 5.7 show that company size is significantly associated with

Table 5.6. The results of meta-analysis for auditor type

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General Meta-Analysis	3484	11	0.144	0.050	0.003	0.047	0.146	-0.282 to 0.570	182.70*
Developed and Developing Countries									
Developed countries	1348	5	0.086	0.018	0.004	0.014	0.202	-0.149 to 0.321	24.74*
Developing countries	2136	6	0.181	0.071	0.003	0.068	0.037	-0.330 to 0.692	161.17*

**significant at 5%.*

EM ($\bar{r}$ = 0.157), with 95% confidence interval of -0.299 to 0.613. The results obtained from the sub-grouping of company size to developed and developing countries indicate that company size is significant in the case of both developed ($\bar{r}$ = 0.131; confidence interval: -0.044 to 0.307; 18.307 <x^2 = 31.25) and developing countries ($\bar{r}$ = 0.143; confidence interval: -0.384 to 0.670; 21.026 <x^2 = 479.06). This is similar to the findings by Leventis and Dimitropoulos (2012) and Cornett et al. (2009).

In addition, the results of sub-grouping according to the measurement by total assets indicate significant relationship with EM practices ($\bar{r}$ = 0.157; confidence interval: -0.340 to 0.653; 30.144 <x^2 = 502.40 ($\bar{r}$ = 0.158; confidence interval: -0.091 to 0.429; 7.815 <x^2 = 12.84).

the crisis ($\bar{r}$ = 0.169; confidence interval: -0.091 to 0.429; 9.488 <x^2 = 16.35).

This implies that larger companies possess more resources, which leads to applying different monitoring mechanisms for company's performance and reporting. Thus, company size leads to less EM practices.

5.7. Return

The results of meta-analysis of the overall sample presented in Table 5.8 indicate that returns of a firm are a significant determinant of EM ($\bar{r}$ = 0.225), with 95% confidence interval of -0.112 to 0.563. Moreover, chi-square statistics results point out the significance of return (24.996 <x^2 = 229.11 at 0.05). In terms of sub-grouping, it was found that return is a significant determinant for EM in both developed and developing countries

Table 5.7. The results of meta-analysis for company size

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General Meta-Analysis	8635	24	0.157	0.057	0.003	0.054	0.047	-0.299 to 0.613	515.29*
Developed and Developing Countries									
Developed countries	2447	11	0.131	0.012	0.004	0.008	0.352	-0.044 to 0.307	31.25*
Developing countries	6188	13	0.143	0.074	0.002	0.072	0.027	-0.384 to 0.670	479.06*
Measurement of Company's Size									
Total Assets	7149	20	0.157	0.067	0.003	0.064	0.040	-0.340 to 0.653	502.40*
Total Sales	1486	4	0.158	0.008	0.003	0.006	0.312	0.011 to 0.305	12.84*
Before and After the Financial Crisis									
Before the crisis	5013	10	0.091	0.014	0.002	0.012	0.143	-0.121 to 0.304	69.69*
After the crisis	608	5	0.169	0.025	0.008	0.018	0.306	-0.091 to 0.429	16.35*

**significant at 5%.*

Furthermore, with regard to the sub-grouping of company size according to before and after the crisis, the results indicated that company size is significantly associated with EM before the crisis ($\bar{r}$ = 0.091; confidence interval: -0.121 to 0.304; 16.919 <x^2 = 69.69), and after

($\bar{r}$ = 0.145 and $\bar{r}$ = 0.304; confidence interval: -0.091 to 0.382 and-0.106 to 0.713; 12.592 <x^2 = 31.54 and 15.507 <x^2 = 266.53 respectively). This is similar to the findings by Gonzalez and Garcia-Meca (2013) and Nelson and Devi (2010).

Regarding the measurement of return by sub-grouping, it was found that the EM level has a significant association only with ROA ($\bar{r}$ = 0.281; confidence interval: -0.110 to 0.672; chi-square 21.026 <x^2= 289.94). Finally, the findings of meta-analysis categorisation with respect to the global financial crisis show that only return was significantly associated with EM practices before the financial crisis ($\bar{r}$ = 0.322), with 95% confidence interval of -0.129 to 0.772 and chi-square of 14.067 <x^2 = 300.99 at 0.05.

This relation implies that the higher firm's return ratio is, the more likely EM is practiced. This can be explained by the fact that managers usually practice income smoothing. Furthermore, this can also be attributed to the political cost theory, whereby in the case of high return, the company is required to pay more tax to the government, which is usually undesired by managers and CEOs alike.

leverage is significantly associated with EM practices ($\bar{r}$ = 0.115), with 95% confidence interval of -0.114 to 0.345. Additionally, the chi-square statistics demonstrate the significance of leverage (30.144 <x^2 = 139.79 at 0.05).

The results of the sub-grouping of developed and developing countries were also similar to the general meta-analysis results, whereby leverage was significant for both developed and developing countries ($\bar{r}$ = 0.134 and $\bar{r}$ = 0.108, respectively; confidence interval -0.021 to 0.288 and 0.137 to 0.433, respectively; chi-square 30.144 <x^2 = 26.02 and 30.144 <x^2 = 99.20 at 0.05, respectively). This is compatible with earlier studies, such as Leventis and Dimitropoulos (2012) Nelson and Devi (2010), and Bekiris and Doukakis (2011).

With respect to the sub-grouping measurement for leverage, the findings show that both debt to assets and investments to

Table 5.8. The results of meta-analysis for company's return

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General Meta-Analysis	6477	16	0.225	0.0319	0.0022	0.0296	0.0698	-0.112 to 0.563	229.11*
Developed and Developing Countries									
Developed countries	1616	7	0.145	0.019	0.004	0.015	0.222	-0.091 to 0.382	31.54*
Developing countries	4861	9	0.304	0.045	0.002	0.044	0.034	-0.106 to 0.713	266.53*
Measurement of Company's return									
ROA	5898	13	0.281	0.042	0.002	0.040	0.045	-0.110 to 0.672	289.49*
Others	579	3	0.096	0.009	0.005	0.004	0.565	-0.027 to 0.218	5.30
Before and After the Financial Crisis									
Before the crisis	4433	8	0.322	0.055	0.002	0.053	0.033	-0.129 to 0.772	300.99*
After the crisis	469	3	0.148	0.005	0.010	-0.005	2.084	0.148 to 0.148	2.40

**significant at 5%.*

5.8. Leverage

The results of the meta-analysis general sample, shown in Table 5.9 revealed that

assets measurements are significantly associated with the level of EM practices ($\bar{r}$ = 0.078 and $\bar{r}$ = 0.285, respectively; confidence interval -0.126 to 0.281 and 0.137 to 0.433,

respectively; chi-square 30.144 <x^2 = 88.03 and 30.144 <x^2 = 17.01 at 0.05, respectively). In contrast, the results were not significant for debt to equity measure (5.991>x^2 = 1.69 at 0.05). Finally, the results for before and after financial crisis sub-grouping were significant in both periods ($\bar{r}$ = 0.105 and $\bar{r}$ = 0.115, respectively; confidence interval -0.151 to 0.360 and -0.135 to 0.366, respectively; chi-square 16.919 <x^2 = 102.24 and 5.991 <x^2 = 10.88 at 0.05, respectively).

This is in line with the current practice of modern corporate financial management, whereby most of the corporations rely mostly on external financing. As such, the management of these corporations tends to practice more EM in order to service their debt, and hence create greater chances for them to acquire external sources of funds.

showed that all the regressors included in the study had significant influence on EM for both developed and developing countries. However, taking the financial crisis into account, the findings showed that return and ownership do not have a significant influence on EM after the crisis.

These findings could be useful and of interest to practitioners, stakeholders, policy makers, regulators and researchers. Specifically, the findings of this study lead to a quasi-consensus of the determinants of EM practices across countries, which can be initially generalized to a number of settings. Furthermore, it reduces the effects of mixed results and their ambiguity across countries based on different measurements. Moreover, it provides future researchers with the insights into the areas that should be emphasized.

Table 5.9. The results of meta-analysis for leverage

Variable	Sample Size	Study (K)	Mean Correlation ($\bar{r}$)	Observed Variance (s_r^2)	Estimated Error Variance (s_e^2)	Residual Variance ($s_p^2 = s_r^2 - s_e^2$)	Percentage Explained ($\frac{s_r^2}{s_e^2}$)	95% Confidence Interval	x^2_{k-1}
General Meta-Analysis	8482	20	0.115	0.016	0.002	0.014	0.143	-0.114 to 0.345	139.79*
Developed and Developing Countries									
Developed countries	2478	10	0.134	0.010	0.004	0.006	0.384	-0.021 to 0.288	26.02*
Developing countries	6004	10	0.108	0.016	0.002	0.015	0.101	-0.1289 to 0.344	99.20*
Measurement of Leverage									
Debt to assets	7149	10	0.078	0.012	0.001	0.011	0.114	-0.126 to 0.281	88.03*
Investment to assets	1486	7	0.285	0.010	0.004	0.006	0.411	0.137 to 0.433	17.01*
Debt to equity	451	3	2.507	0.105	0.186	-0.081	1.777	2.507 to 2.507	1.69
Before and After the Financial Crisis									
Before the crisis	5300	10	0.105	0.019	0.002	0.017	0.098	-0.151 to 0.360	102.24*
After the crisis	469	3	0.115	0.023	0.006	0.016	0.276	-0.135 to 0.366	10.88*

**significant at 5%, # when error variance is higher than the observed variance, a zero residual variance value is utilized for confidence interval determination.*

6. DISCUSSIONS AND CONCLUSION

The main purpose of the study was to comprehensively review the studies on EM practices and their determinants. The findings

In addition, practitioners and stakeholders could benefit from these results by taking into consideration different monitoring mechanisms for decision making purposes. Finally, the findings may assist policy makers and regulators in overcoming the issues

emerging due to EM practices, which persist even after the latest global financial crisis.

Even though the current study has brought about certain contributions, it still suffers from a number of limitations which could be improved in future studies. Firstly, the study has included a limited number of corporate governance attributes. Thus future studies are recommended to consider more corporate governance attributes such as audit committee, internal auditing, etc. Secondly, some variables can be measured by different proxies, such as ownership concentration and return. Hence, future studies are recommended to consider all these measurements for more comprehensive results. Thirdly, a limited number of studies have been included in the study, since many prior studies were excluded due to non-availability of data. Thus in future, as more studies are conducted on corporate governance variables and their impact on EM and the literature grows along with the measures used in meta-analysis, future studies would have more data in order to refine the findings of this study. Finally, this study uses meta-analysis based on Hunter et al. (1982) but ignored the Stouffer combined metal-analysis test as applied by Lin and Huang (2010). Hence, future studies are recommended to apply both methods to compare or confirm the findings from both methods.

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Appendix

Table 1. Descriptions of EM determinants studies used in meta-analysis

Study	Country	Sample Size	Reporting Year	Effect Size (Person's R Coefficient)									Source of Information
				Board Size	Board Independence	CEO Duality	Ownership	Audit Type	Company Size	Return	Cash Flow	Leverage	
Klein (2002)	USA	692	1991-1993	-	0.1182	-	0.1074		0.06605	-	-	0.1618	Table 4, pp. 384-385 / Table 6, pp. 389-390
Bauwhede, Willekens, and Gaeremynck (2003)	Belgium	136	1991-1997	-	-	-	-	0.3407	0.21757	-	0.22873	0.12636	Table 1, p. 10
Xie, Davidson and Dadalt (2003)	USA	282	1992, 94, 96	0.1208	0.0322	0.0477	-	-	0.02386	-	-	-	Table 2, p. 303
Mohd-Saleh, Mohd. Iskandar and Rahmat (2005)	Malaysia	561	2001	0.0212	0.0178	0.0793	-	-	0.13717	0.44941	-	0.09665	Table 2, p. 90
Chen, Firth, Gao and Rui (2006)	USA	338	1999-2003	0.0038	0.1179	0.0771	0.0207	0.0163		0.05981	-	0.0158	Table 5, p. 444
Kim and Yoon (2008)	South Korea	635	2004-2005	-	-	-	0.0839	-	0.12192	0.07331	-	0.11231	Table 4, p. 53
Kim and YI (2008)	South Korea	1684	1992-2000	-	-	-	-	0.5586	0.89175	0.18465	-	0.10465	Table 5, p. 448
Cornett, McNutt and Tehranian (2009)	USA	100	1998	0.2699	0.3560	0.2610	0.2271	-	0.31394	0.01608	-	0.23964	Table 3, p. 21
Banderlipe (2009)	Philippines	114	2005-2006	0.03507	0.0255	0.0714	0.3019	0.0150	0.16434	0.26201	-	0.06085	Appendix B, p. 27
Chi, Lisic and Pevzner (2011)	USA	925	2001-2008	-	0.0718	-	0.1668	0.0169	0.24041	0.0875	0.05665	0.2309	Table 4, p.327
Marra,Mazzola and Prencipe (2011)	Italy	222	2005	0.09774	0.1477	0.0818	-	0.0911	0.26043	0.12612	0.19655	0.14574	Table 1, p. 214

Table 1. Continued

Study	Country	Sample Size	Reporting Year	Effect Size (Person's R Coefficient)									Source of Information
				Board Size	Board Independence	CEO Duality	Ownership	Audit Type	Company Size	Return	Cash Flow	Leverage	
Bekiris and Doukakis (2011)	Greece, Italy and Spain	55	2008	-	-	-	-	-	0.03441	0.16064		0.35806	Table 1, p. 445
Prencipe and Bar-Yosef (2011)	Italy	249	2003-2004	0.03833	0.1916	0.1548	0.0378	-	0.07711	0.45314	0.16003	0.12624	Table 2, pp. 214-215
Gulzar and Wang (2011)	China	1009	2002-2006	0.0428	0.0157	0.0914	0.1132	-	0.03337	0.5068	0.07872	0.01071	Table 1, pp. 141-142
Alves (2011)	Portugal	34	2002-2007	0.42058	0.2998	-	0.4488	-	0.51365	-	-	0.29719	Table III, p. 153
Chen, Chen, Lobo and Wang (2011)	China	833	2001-2004	-	-	-	0.0243	0.0107	0.15548	-	0.03603	0.14912	Table 5, p. 912
Abed, Al-Attar and Suwaidan (2012)	Jordan	329	2006-2009	0.10797	0.0435	0.0209	-	-	0.02087	-	-	0.05519	Table 7, p. 225
Leventis and Dimitropoulos (2012)	USA	315	2003-2008	-	-	-	-	0.1210	0.09438	0.10772	-	0.00339	Table III, p.171
Kim and Kang (2012)	Korea	(377,362 ,365) sample 1104	2005-2007	0.0658	0.0640	-	0.0024	-	0.00181	0.38134	-	0.19378	Table 4, p. 43
Hassan and Ahmed (2012)	Australia	25	2008-2010	-	-	-	0.4019	-	0.04486	-	-	-	Table 4, p. 222

Table 1. Continued

Study	Country	Sample Size	Reporting Year	Effect Size (Person's R Coefficient)									Source of Information
				Board Size	Board Independence	CEO Duality	Ownership	Audit Type	Company Size	Return	Cash Flow	Leverage	
Chaharsoughi and Abdul Rahman (2013)	Iran	114	2008-2010	0.14893	0.0958	-	-	-	0.49073	-	-	-	Table 3, p. 795
Swastika (2013)	Indonesia	51	2005-2007	0.53177	0.1607	-	-	0.2796	0.28494	-	-	-	Table 3, p. 81
Charfeddine, Riahi and Omri (2013)	Tunisia	19	2003-2009	0.10478	-	0.3750	0.0295	0.2747	0.66454	0.38113	-	-	Table 3, p. 44
Gonzalez and Garcia-Meca (2013)	Argentina, Brazil, Chile, and Mexico	435	2006-2009	0.05706	-0.0858	0.0101	-0.0652	-0.0604	-0.0659	0.11747	-	0.11363	Table 4, p. (not mentioned)
Nelson and Devi (2013)	Malaysia	300	2008	0.05278	0.0047	-	-	-	0.08328	0.10257	-	0.09145	Table VII, p. 344

Table 2. The measurement of the determinants used in the meta-analysis

Study	Name Of Journal	Bd. Size	Bd. Indep.	CEO Du.	Ownership	Audit Type	Co. Size	Return	Leverage
Klein (2002)	Journal of Accounting and Economics	-	Percentage of outside directors on the board	-	Percentage of common equity owned by the CEO	-	Natural log of the book value of assets	-	Long-term debt divided by last year's assets
Bauwhede, Willekens, and Gaeremynck (2003)	The International Journal of Accounting	-	-	-	-	1 if the firm is audited by a Big 6 auditor, and 0 otherwise	Natural Logarithm of total assets	-	Ratio of debt over equity
Xie, Davidson and Dadalt (2003)	Journal of Corporate Finance	Number of board directors	Percentage of outside directors on the board	Value 1 when there is CEO duality and as 0 otherwise	-	-	Logarithm market value equity	-	-
Mohd-Saleh, Mohd. Iskandar and Rahmat (2005)	Jurnal Pengurusan	Number of board directors	External members to total board members	Value 1 when there is CEO duality and as 0 otherwise	-	-	Logarithm of total assets	Return on total assets	Log 10 of the debt to total assets ratio
Chen, Firth, Gao and Rui (2006)	Managerial Auditing Journal	Number of board directors	Proportion of outside (or non-executive) directors on the board	A dummy variable taking the value 1 if the chairman and CEO positions are held by the same person and as 0 otherwise	Percentage of shares held by the largest stockholder	A dummy variable coded 1 if the auditor is one of the 10 biggest auditors by market share	-	Annual stock return	Debt to total assets
Kim and Yoon (2008)	Malaysian Accounting Review	-	-	-	Proportion of aggregate shares owned by the controlling shareholders and other entities and individuals controlled by the controlling shareholders	-	Natural Logarithm of total assets	-	Ratio of total liabilities to total assets
Kim and YI (2008)	Contemporary Accounting Research	-	-	-	-	1 for Big 6 clients and 0 otherwise	Natural Logarithm of the book value of total assets	Earnings before extraordinary items by lagged total assets	Ratio of total debts to lagged total assets

Table 2. Continued

Study	Name Of Journal	Bd. Size	Bd. Indep.	CEO Du.	Ownership	Audit Type	Co. Size	Return	Leverage
Cornett, McNutt and Tehranian (2009)	Journal of Corporate Finance	Number of board directors	Percentage of directors who are insiders	A dummy variable equal to 0 if the CEO is also the chairman of the board and 1 otherwise	-	-	Year-end book value of assets	-	-
Banderlipe (2009)	DLSU Business & Economics Review	Number of board directors	Percentage of independent directors	1 if there is a split between the Chairman and CEO and as 0 otherwise	-	1 if firm *i* is audited by a Big 4 accounting firm, 0 if otherwise	Logarithm of total assets	Return on assets (ROA)	Ratio of total liabilities to total assets
Chi, Lisic and Pevzner (2011)	Accounting Horizons		Percentage of independent directors on the board		Percentage of ownership held by the ultimate shareholder	1 for Top 8 client firms, 0 for non–Top 8 client firms	Natural Logarithm of market value of equity measured at the beginning of the year	Return on assets (ROA)	Total liabilities divided by total assets
Marra, Mazzola and Prencipe (2011)	The International Journal of Accounting								
Bekiris et al. (2011)	Managerial and Decision Economics	-	-	-	-	-	Natural Logarithm of total assets	Return on assets computed as net income in year t divided by total assets	Total debt in year t divided by total assets
Prencipe and Bar-Yosef (2011)	Journal of Accounting Auditing and Finance	Number of board directors	Percentage of independent members on the board of directors	CEO different from the chairman of the board 1, otherwise 0	-	Institutional investors with ownership of at least 5 per cent of the capital 1, otherwise 0	Natural Logarithm of total assets	Operating income divided by lagged total assets	Ratio of financial liabilities to total assets
Gulzar and Wang (2011)	International Journal of Accounting and Financial Reporting	Number of board directors	Number of independent non-executive directors/total no of board members	1 if the roles of chairman and CEO are combined and 0 otherwise	Combined number of 10 significant shareholders/total no of ordinary shares	-	Logarithm of total assets	EBIT/total assets	Total debt/total assets

Table 2. Continued

Study	Name Of Journal	Bd. Size	Bd. Indep.	CEO Du.	Ownership	Audit Type	Co. Size	Return	Leverage
Alves (2011)	Journal of Financial Reporting & Accounting	Number of board directors	Ratio between the number of non-executive directors and the total number of board members	-	Proportion of stocks owned by shareholders who own at least 2 per cent of the common stock	-	Logarithm of market value of equity	-	Ratio between the book value of all liabilities and total assets
Chen, Chen, Lobo and Wang (2011)	Contemporary Accounting Research	-	-	-	Percentage of ownership held by the ultimate shareholder	1 for Top 8 client firms, 0 for non–Top 8 client firms	Logarithm of market value of equity	-	Total liabilities divided by total assets
Abed, Al-Attar and Suwaidan (2012)	International Business Research	Number of board directors	Number of independent non-executive directors to the total number of board members	0 if the firm is separated between the role of CEO and Chairman, and 1 otherwise	-	-	Logarithm of total assets	-	Total debt to total assets
Leventis and Dimitropoulos (2012)	Journal of Applied Accounting Research	-	-	-	-	1 if the bank is audited by Big-4 audit firms	Natural Logarithm of total assets	Earnings before extraordinary items and taxes deflated by lagged total assets	Ratio of total debt to common equity
Kim and Kang (2012)	Journal of Business Economics and Management	Number of board directors	External directors/Total board members	-	Large shareholder's ownership	-	Natural Logarithm of total assets	ROA (Earnings before tax/ Total Assets)	Total Debt/Total Assets
Hassan and Ahmed (2012)	American International Journal of Contemporary Research	-	-	-	Institutional shareholding	-	Natural Logarithm of total asset	-	-
Chaharsoughi and Abdul Rahman (2013)	Journal of Modern Accounting and Auditing	Number of board directors	Ratio of independent non-executive directors to the total number of directors on the board of directors	-	-	-	Natural Logarithm of total assets	-	-

Table 2. Continued

Study	Name Of Journal	Bd. Size	Bd. Indep.	CEO Du.	Ownership	Audit Type	Co. Size	Return	Leverage
Swastika (2013)	Journal of Family Business Strategy	Number of board directors	Number of independent commission	-	-	1 if audited by KAP Big 4; 0 otherwise	Natural Logarithm of total assets	-	-
Charfeddine, Riahi and Omri (2013)	The IUP Journal of Corporate Governance	Number of board directors	-	1 if the CEO is the chairman of the board, 0 otherwise	Percentage of common shares owned by the top three shareholders	-	Logarithm of total assets	Stock market returns of company (Variation in stock price of company)	Debt-to-equity ratio
Gonzalez and Garcia-Meca (2013)	Journal of Business Ethics	Number of board directors	Independent directors/total directors	1 if there is duality of roles between the chairman and CEO of the companies and, 0 otherwise	Percentage of common shares owned by the top three shareholders	1 if company *i* is audited at year *t* by a Big 4 auditor, 0 otherwise	Natural Logarithm of total assets	Ratio of the relation between the result before special items, interest and taxes of year t and the total net assets at the beginning of year	Quotient resulting from gross debt to total assets
Nelson and Devi (2013)	Journal of Corporate Governance	Number of board directors	Proportion of independent directors to size board	-	-	-	Total assets in natural Logarithm	Earnings before interest and taxes divided by total assets	Ratio of total liability to total assets at the beginning of the year