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Determinants of Board Monitoring Effectiveness in Anglo Countries in West Africa: An Empirical Investigation

Ebenezer Agyemang Badu Department of Business Administration, Presbyterian University College, Ghana

K. O. Appiah Department of Accounting and Finance, KNUST Business School, Kwame Nkrumah University of Science and Technology, Ghana

Abstract: This paper provides an empirical investigation into the factors influencing board monitoring function effectiveness in Anglo Countries in West Africa using Generalized Methods of Moment and other estimation techniques. Introducing new dimension and proxies for key board attributes ignored in prior studies, we find that board skills, independence and size play a dominant role in improving board monitoring effectiveness in these countries. However, no evidence was found for board gender diversity affecting board monitoring effectiveness. Consistent with prior studies board skills and independence by far have the strongest impact on board monitoring function effectiveness.

Keywords: Board monitirng; Agency theory; Board composion; AAnglo; Determinants.

1. Introduction

Corporate boards are regarded as one of the most important corporate governance mechanism involve in monitoring managers to reduce the agency conflict created as a result of separation of ownership and management. The role of directors, in recent times, has received significant attention by researchers following many corporate scandals that have been hitting the business environment since the past decade. For instance, corporate boards are partly responsible for various financial crisis and fraud resulting in billions of dollars losses to global economy (Adams and Ferreira, 2009; Brickley *et al.*, 2003) and threatened the survival of the financial markets and economics (Claessens *et al.*, 2010). Considering the role of board failure in Eron and Worldcom cases, it is evident that there is a link between board characteristics and firms performance outcomes. Boards are charged with the responsibilities of hiring and firing managers, determining managers' compensation, and approving important decisions (Grinstein and Tolkowsky, 2004). Boards also perform advisory role on proposed strategies and monitor the progress of major decisions of managers (Boone *et al.*, 2007; Coles *et al.*, 2008; Linck *et al.*, 2008).

Despite the significance of board monitoring function in improving the corporate governance system, no single consensus has emerged on what factors influence effective board monitoring function. Moreover, recent evidence from governance studies and for that matter, corporate boards have centered on board effectiveness (Brown *et al.*, 2011; Larcker *et al.*, 2007; Roberts, 2012) However, findings have been inconclusive and fragmented (see Bhagat and Black (2000)). This is due to lack of well developed theory on the complex and multi- dimensional nature of corporate governance (Larcker *et al.*, 2007), examination of board characteristics from an ex-post perspective and considering one or two attributes at a time resulting in difficulty in establishing whether the presence or absence of one or more attributes will substantially affect board effectiveness.

Another interesting limitation of extant literature is the assumption that there are key attributes that make board functions effective. It is worth arguing that board performs several functions such as monitoring, service and resource. Therefore effective board is expected to perform well in adequate proportions in all these functions. Though boards do not treat these functions as mutually exclusive, and possible overlap in attributes is implied 'all attributes fit all function' model as seen in prior studies prevent adequate representation of board specific function attributes on corporate board and prevents a holistic understanding of board effectiveness. Reasoning from this perspective, though it is an empirical question, we do not expect attributes that make board monitoring function effective will be the same as resource and service functions. Therefore the importance of establishing the determinants of board monitoring function effectiveness cannot be overemphasized. Though monitoring is not the only function of corporate board, the monitoring function is clearly a vital one for boards to play and more salient following the wake of recent corporate scandals and legislation.

The aim of this paper is to address some of these concerns in extant literature. We employ System Generalized Method of Moment and logistic regression to estimate key determinants of board monitoring effectiveness and augment our model with board skills and board gender diversity which have been ignored by similar previous studies

(see Bilimoria (2000); Ramirez (2003); Sellers (2007)), though their importance in improving board monitoring and diversifying boards is implied. (see Andres (2008); Finegold *et al.* (2007); Dalton *et al.* (1999); Kiel and Nicholson (2003); Bilimoria (2000)). Generally, board attributes considered in this study are those relevant to board monitoring function.

Moreover, existing studies concentrates on developed markets in Asia, America and Europe with well developed governance and financial structures and findings may not be valid in other countries in Africa. Few once in Africa have been country specific not providing holistic model for improving corporate governance and development of stock market in Anglo counties in West Africa. The case of these countries is an interesting one. Stock market capitalization and number of listed firms in these countries are small and laws and regulations to protect shareholders relatively ineffective. It is therefore tempting for one to conclude that the absence of monitoring mechanism to resolve agency conflict has affected investor's confidence and might have played a role in the underdevelopment of stock market in these countries.

The major contribution of this paper is to develop and test through various estimation test conceptual model of the key board attributes that are critical for board monitoring effectiveness. Our conceptual framework considers attributes from accounting and finance literature and other attributes from other discipline focus are intentional excluded. We find that board skills, independence and size play a dominant role in improving board monitoring effectiveness in these countries. However, no evidence was found for board gender diversity affecting board monitoring effectiveness.

The rest of this paper proceeds as follows. Section 2 discuses the theories and other empirical studies as well as development of hypothesis. Methodology is captured in section 3 and section 4 reports on empirical results. Section 5 concludes the paper.

2. Theoretical Framework, Related Studies and Hypotheses

2.1. Agency Theory and Board Monitoring Function

Baysinger and Hoskisson (1990) believe that managers seek personal interest at the expense of shareholders. Agency theorist therefore advocates for effective control mechanism to realign the interest of managers and mitigate agency conflict (Eisenhardt, 1989). Agency theorist proposes several mechanisms to reduce manager's moral hazards and reduce agency problem. Some of these mechanisms include incentives, and strong managers' monitoring mechanisms (Combs *et al.*, 2007; Jensen and Meckling, 1976). These duties first fall on the board and therefore for the board to effectively perform these duties, the composition, structure, process and characteristic are very crucial. For this reason the scope of the study is limited to board of director's attributes. More importantly, we propose that for boards monitoring function to be effective; the composition of the board is essential.

2.2. Board Composition and Board Monitoring Effectiveness

In this section we present how board composition improves board monitoring function. The discussions are limited to board size, board independence, board gender diversity and board skills.

2.2.1. Board Size: Large or Small

Fairly recent literature on board effectiveness has centered on the size of the board (Eisenberg *et al.*, 1998; Jensen, 1993; Yermack, 1996). Board size is a critical component of a well composed board and can affect the effectiveness of board monitoring and control function. Board size depicts the ability of the board to resist the control exercise by managers (Eisenberg *et al.*, 1998). This is expected to reduce the level of agency conflict and to improve performance. A lot of studies exist on the role of the size of the board in relation to aspects of the organization. Boone *et al.* (2007) find that board size and independence increase as firms grow and diversify the board over time. Previous studies have investigated the impact of board size on setting managers compensation and enhancing the firm's value. Board size is expected to play a key role in terms of the quality of the board in terms of supervision and monitoring the management of the company and thus affecting the quality of the internal control (Jensen, 1993; Lipton and Lorsch, 1992). Studies such as observe a non-monotonic relationship in estimating the optimal number of directors. Related studies have tried to approximate the optimal board size. Jensen (1993) for instance, suggests that the optimal board size is between seven and eight members.

Studies on board size argue that smaller boards are more effective because directors enjoy better communications and interactions among themselves. (Ozkan, 2011; Yermack, 1996). Yermack (1996) observe that small boards of directors are more effective, and that companies with small board size achieve higher market value. Yermack (1996) further supports this assertion by establishing direct relationship between the value of the firm and board size. Fischer and Pollock (2004) obtain evidence to support the effectiveness of smaller boards in monitoring CEO, resulting in reduced coordination and free-rider problems (Yermack (1996) ; Chancharat *et al.* (2012)).

Contrary, the effectiveness of smaller board size, other studies assume that larger boards are supposed to provide their firms with better monitoring as they generally have more time and experience than smaller boards. Klein (2002) support this proposition indicating that board monitoring is directly associated with larger boards as a result of their ability to share work load over a greater number of directors. Large volumes of literature supported by much empirical evidence; find that larger boards are strongly related to lower levels of earnings management (Bedard *et al.*, 2004; Peasnell *et al.*, 2006; Xie *et al.*, 2003).

In sum, evidence on the relationship between board size and board monitoring effectiveness is mixed and inconclusive. However, small board size is easily manipulated by senior managers from managers' perspective. Following this, the ability of the board to monitor and control managers becomes ineffective thereby increasing the level of agency problem. In the context of board monitoring and agency theory, board size depicts the level of board control over management (Pearce and Zahra, 1991). Larger boards have experience, time to monitor managers (Klein, 2002). Therefore effective board monitoring is associated with larger board. Accordingly,

H1: There is a positive relationship between the board size and board monitoring function effectiveness.

2.2.2. Board Independence

Board independence explains the presence and participation of outside directors without any substantial business relationship with the focal firm, also known as independent directors on the corporate board. It is therefore recommended that the presence of independent directors on the board ensures board to be independent from the management, as it clearly separates the management and control tasks. In addition, independent directors can solve disagreements among the internal managers or between the internal managers and residual claimants. Boards made up independent directors will provide a counter balance to prevent insiders take advantage of their position and sacrifice the shareholders' wealth.

Baysinger and Hoskisson (1990) report that firms with more independent board members realize higher return on equity. Several other researchers have also reported a positive relationship between independent director representation and firm performance (Pearce and Zahra, 1992; Rosenstein and Wyatt, 1990). Independent directors are desirable because of their breadth of knowledge and experience, as well as their independence from corporate management (see Farinha (2003)). Ghosh *et al.* (2006) argue that the viability of the board might be enhanced by the inclusion of outside directors and the separation between the roles of chairman and CEO.

Dependent directors on the other hand, has also been found to have better knowledge about the company and the industry where the company operates, therefore their experience can impact positively on the performance of the firm (Baysinger and Hoskisson, 1990; Bhagat and Black, 1998). Rosenstein and Wyatt (1997) show that an addition of insider director to an outsider-dominated board improves shareholder wealth. There is also an intermediate position taken by some authors (see Hermalin and Weisbach (1991)) but do not find any conclusive evidence.

In conclusion, empirical evidence regarding the relationship between board independence and board monitoring function is mixed. However, in Ghana and Nigeria the issue of independent directors on the board is comprehensively addressed by their corporate governance Codes. This therefore places the issue of independent directors as an important issue. In Ghana, for instance, the Code clearly recommends that seventy- five percent of the board should be made up of outside directors. Consistent with Pfeffer and Salancik (1978) perspective, the code suggest that independent directors offer expertise, control to enhance the board monitoring function and reduce agency conflict. Agency theory recommends that independent directors monitor the CEO's agenda to protect shareholders rights (Fama and Jensen, 1983). It is expected that independent outsider dominated boards will positively affect the effectiveness of board control Johnson *et al.* (1996). Accordingly, we hypothesized that:

H2. There is a positive relationship between board independence and board monitoring function effectiveness.

2.2.3. Board Gender Diversity: Female or Male dominated?

Major board reforms, especially that of Europe recommends that certain proportion of the board be made up of females. In UK, the government requires a minimum of a quarter of the board to be made up of female directors (see Sealy and Vinnicombe (2012)). Consistent with this other countries such as Norway and Spain laws require 40 per cent of the board be made up of women on all corporate boards (Adams and Ferreira, 2009; Rose, 2007). This shows the importance of female representation on corporate board. Boards are responsible for monitoring which may include: representing shareholders, monitoring proper use of corporate wealth, reacting to takeover threats and employing, remunerating and monitoring top management work (Finkelstein and Hambrick, 1996). Accordingly, Fondas (2000) argues that the presence of women on boards assist the board to perform its strategic function because their experience is often aligned with company needs. Additional practical evidence supporting the presence of female qualified directors is presented by Burke (2000). He observes that in general there are currently limited directors and there are increasing rates of CEOs rejecting invitations to join boards. Men currently serving on boards do not have the time to take on additional responsibilities. Fairly recent study from Carter and Wagner (2011) provide evidence that gender diversity has direct impact on corporate performance because of its ability to improve the audit function of the board. To Hillman and Dalziel (2003) the additional expertise and experience brought to the board by female members enhance the board ability to exercise their monitoring role effectively. The characteristics that women exhibits on corporate boards may also provide an enhanced oversight of manager's activities, because of the increased heterogeneity as females are appointed as directors.

Notwithstanding the above benefit of presence of female directors, critics observe that women representation on board can potentially affect performance negatively. For instance, Adams and Ferreira (2009) observe a negative relationship between proportion of women on the board and Tobin's Q. In a similar study Carter and Wagner (2011) find no evidence to support any relationship between the board gender diversity and different measures of performance.

From the extant literature, the relationship between board gender diversity and performance differs. This can be partly due to the operation definition and measurement of performance. However, the relationships suggest that

women serve on boards to show the present generation of stakeholders (Sealy and Vinnicombe, 2012). In sum, evidence of the relationship between board gender diversity and board monitoring effectiveness is distinctively lacking.

This study posits that considering female representation on board in the context of board monitoring function and agency conflict, this may offer a link between gender diversity and firm performance. Despite deliberate effort made in Europe to include women on corporate board, this is not the case in Anglo countries in West Africa. In Ghana, for instance, the Code of best practices states that, the board appointment should be fair and transparent. It is expected that male dominated boards will have a positive relationship with effective board and accordingly reduce agency conflict. Therefore,

H3. The presence of female directors on firm boards is negatively related to board monitoring function effectiveness.

2.2.4. Board Skill: Financial Expertise

As part of the monitoring process, boards are expected to provide quality financial information by ensuring that they monitor the financial reporting process. To be able to perform such crucial function, the board is expected to possess accounting and financial knowledge, skills and competence. Lanfranconi and Robertson (2002) observe that lack of knowledge on the part of the board cause the collapse of Enron and WorldCom. Empirical evidence suggest that one key determinant of board monitoring of financial statement process is the financial expertise. For instance, Agrawal and Chadha (2005) observe the importance of having accounting knowledgeable outside directors on the firm board. There are different dimension of financial expertise such as financial executives, finance and accounting professors and bank executives. The study find that the bank official appointed as director on the board benefit the creditors but not the shareholders.

In sum, the empirical evidence reveals that directors serving on corporate board must have financial expertise. Absence of this may affect the ability to monitor management, and hence increase the level of agency conflict.

In Ghana and Nigeria the Corporate governance codes address the issue of financial knowledge on the board. The codes recommend that the information such as the age, qualification and experience of those to be appointed be made available to shareholders. The codes recommend audit committee and remuneration committees of the board. Inferring from Agrawal and Chadha (2005), the codes stipulate that the audit committee should be composed of at least three directors of which majority should be NED. The members should be with people with background in accounts, finance, and basic law in the area in which the firm operates. The expectation is that board with finance and accounting will improve the financial reporting process and improve monitoring function of the board. Accordingly,

H4. Board with financial expertise is positively related to board monitoring function.

3. Data and Methodology

3.1. Data Set

The study seeks to examine the determinants of board monitoring effectiveness. The target population for the study includes all companies listed on the stock markets of Anglo countries in West Africa Ghana. West African sub region is selected for this study because stock markets in these countries are less developed as compared to southern and Eastern Africa. In the Anglo countries in West Africa, only Ghana and Nigeria Stock Exchanges are active in terms of number of companies listed, market capitalization and corporate governance codes making it appropriate for the study. Listed companies are chosen because ownership and management are separated demonstrating pure agency relationship hence high tendency of agency conflict.

In all 224 companies were listed in these two stock markets as at 2013. Consistent with prior studies (see Ahmed and Duellman (2007)) financial, insurance and mining firms are excluded from the sample as well as those that have gone through mergers and acquisitions. Financial, mining and insurance companies are highly regulated hence high tendency for low agency conflict.

The time horizon for the study is 2008- 2014. The reason for the selection of this period is in two folds. First, this is to ensure adequate data is available for the study and there is uniformity of corporate governance practices. Second, this is to ensure that the results are current and remain relevant. Therefore after deletion of outliers, a sample of 137 was obtained resulting in 959 firm-year observations. Information on the variables is obtained from the Nigeria and Ghana Stock Exchange libraries where annual reports submitted by the selected companies are kept. Those that are not reported in the annual reports particularly frequency of board meetings are obtained from the companies directly.

3.2. Measurement of Variables

The objective of this section is to describe how the variables (dependent, independent and control variables) are measured. It also justifies why these proxies are seen to be appropriate measurement of the various variables.

In relation to board monitoring function effectiveness, various measures have been widely used in literature. These include existence of audit committee (Collier and Gregory, 1999; Pincus *et al.*, 1989), frequency of board meeting and CEO performance evaluation. To overcome potential measurement error leading to attenuation bias, we

follow Boone *et al.* (2007), adopt multiple proxies for board monitoring function namely, the frequency of board meeting (FBM) and the existence of audit committee (ACE) as opposed to one dimensional measurement and proxies as used in prior studies. We in turn justify their usage and define each of them.

Agency theory and consistent with other empirical studies such as (see also Conger *et al.* (1998)) hold that boards that meet regularly are more likely to perform their monitoring function effectively. Empirically testing this assertion, Vafeas (1999) find evidence to believe that following years of higher frequency of board meeting, firm's performance tends to improve. Consistent with Fich and Slezak (2008) measurement, frequency of board meeting is measured by the number of formal meetings (excluding telephone meetings) held by the entity in a financial year.

Existence of audit committee is measured as a binary variable which is coded as 1 if the firm has an audit committee otherwise 0. The effectiveness of the board's monitoring function also depends on structure and organization of the board. Board's works are normally delegated to standing committees reporting directly to the main board (Klein, 1998). The board committee responsible for financial reporting process and important in board monitoring function is the audit committee, if one exists. The audit committee has the responsibility of the production of financial statement and oversight responsibility over external audit.

To test hypothesis one the variable of interest is board size (BSIZ). This is measured as the number of board members. This measure is well established in literature (see Yermack (1996); Certo *et al.* (2001); Coles *et al.* (2008). Though the contribution of board size to improving board monitoring function remains inconclusive, there is greater evidence that large board size are more effective to perform their control roles (Zahra and Pearce, 1989) and, in this way, positively related to board monitoring function. To check and control for the presence and significance of non- linearity in the relationship between board size and board monitoring function, we also include square of board size ($BSIZE^2$) in the model.

To test hypothesis the two, main variable of interest is board independence. This study defines board independence as proportion of outside directors who are independent of the management, and free from any business or other relationship which could interfere with the exercise of independent judgment or the ability to act in the best interest of the stakeholders. *BIND* is computed as the total number of outside independent directors on the board divided by the total number of board members. This measure is widely used in literature (see Abdullah (2006); Klein (2002); Peasnell *et al.* (2006); Chancharat *et al.* (2012)) from agency theory preposition. Agency theory advocate for more outside independent directors to effectively perform their monitoring function.

To test hypothesis three, the variable of interest is the presence of female director on the board. (BGEN), a measure of board gender diversity. This is a dummy variable equal to 1, if there is at least a woman on the board, otherwise 1. This measure is widely used in many empirical studies (see Rose (2007)). The selection of this variable is well grounded in agency theory.

To test hypothesis four, the variable of interest is board skill. Financial expertise is used to proxy board skill (BSKIL). This is measured as the proportion of board members with qualifications or experience in accounting or finance, including those who are members of accounting professional bodies. This measurement is consistent with other empirical studies. It is calculated as total number of board members with financial expertise divided by the total number of board members (Bedard *et al.*, 2004). Consistent with other studies, this variable is selected because board without knowledge and experience in accounting and finance is likely to impair the board monitoring function.

Consistent with other previous empirical studies, we include control variables that may influence board monitoring besides the board attributes. These are demographic (age and size of the firm). This section explains their measurement and justifies their inclusion.

This is measured as natural log of age of the firm from date of incorporation. We include age of firm to explain the level of agency conflict and therefore greater need for control. We expect that firm incorporated for a long time may have high level of agency conflict as compared with those listed for a short period and therefore demand more monitoring.

Size is measured as the natural logarithm of sales. Large corporations are more likely to have highly diffused ownership structures that effectively separate ownership of residual claims from control of corporate decisions. Greater scale of operations is normally the characteristic of large firms. There is therefore greater incentive and opportunities for managers to shirk therefore opportunity to demand for higher monitoring is expected to be high.

3. 3. Empirical Models and Estimation Technique

The general panel equation to be estimated takes the following form:

$$y_{it} = \delta + \theta_1 BSIZ_{it} + \theta_2 BIND_{it} + \theta_3 BGEN + \theta_4 BSKILL + \beta' X_{it} + \lambda_i + \varepsilon_{it} \quad \text{.....} \quad (1)$$

Where:

i = 1, 2, 3, ..., N is the cross-sectional dimension of companies , t = 1, 2, 3,....., T $BSIZ_{it}$ is the board size, $BIND_{it}$ represent board independence, $BGEN_{it}$ is board gender diversity, $BSKIL_{it}$ is board skills, X_{it} is the set of control variables, λ_i represents the unobserved firm specific fixed effect, ε_{it} is the error term. From similar equation, the dependent variable is board monitoring effectiveness (audit committee existence and frequency of board meeting). In addition to the above other variables was used to control the effects of the unobserved variables. These include firm size (FSIZE) and age (FAGE).

3.4. Estimation Technique

Having specified the model for the study and the variables contained in it, we then proceed to describe the technique adopted for estimation. Prior empirical studies adopt different estimation techniques. These include pooled mean group, Fully Modified Least Square, Two Stage Least Square and Generalized Method of Moments. Considering the data set of the study having short time dimension (t=7) and larger firm size (N= 137) renders panel data analysis like co-integration analysis unsuitable. Therefore co-integration techniques such as Pooled Mean Group and Fully Modified Least Square produce inefficient estimates. This study adopts Generalized Method of Moments and logistic regression. For robustness checks purposes, Two Stage Least Square is used to complement it.

3.4.1. System Generalized Method of Moment (GMM)

As stated earlier, this study adopts the System Generalized Method of Moment to test the hypothesis described. This method is selected because firm governance structure is endogenously determined. For instance Hillman and Dalziel (2003) observe that board characteristics are product of firm structure and economic environment. Therefore the possibility of endogenenity existing among these variables cannot be ruled out. The use of system GMM is able to account for endogeneity and improves the consistency and efficiency of the dependent and independent variables as compared to other estimators and is capable of accounting for the problem of endogeneity which are normally ignored by other studies. The data used in this study consists of individual firm over time as described and this estimator offers the possibility of controlling the unobserved heterogeneity between individuals with panel data methods. This implies that the lagged dependent variable is likely to be correlated with the error term in the model. In such a situation, estimating the above equation using Ordinary Least Square (OLS) estimator, results in inefficient and biased estimates. In order to treat this problem and use OLS to estimate the model, the equation is transformed by differencing the time series means of each variable for each firm. Though differencing the time series means of the variables eliminate the individual firm -specific effects, λ_i because it does not vary with time, the correlation between $\left(y_{it-1}-\bar{y}_i\right)$ and $\left(\varepsilon_{it}-\bar{\varepsilon}_i\right)$ still remains. This again renders the estimate inconsistent. Thus, in order to deal with this problem, the first-differenced GMM is used. This estimator uses lagged level of the dependent variable and other endogenous explanatory variables as instruments for the first-differenced equation. In the light of this, it becomes essential to use the system GMM which provides consistent and efficient estimates. The system GMM is derived from estimating two simultaneous equations, one in levels (with lagged first differences as instruments) and the other in first-differences (with lagged levels as instruments).

3.4.2. Logistic Regression

Considering the dichotomous nature of the existence of audit committee as a measurement of board monitoring effectiveness, logistic regression is adopted as an estimation technique to identify the determinants of board monitoring effectiveness. This is because logit adopt the coefficient and combines continuous independent variables to predict the probability of occurrence of a binary dependent variable Also, logit model produces transformation which is nonlinear of the input data that decreases the influence of outliers suggesting reliability and efficiency of results.

3.5. Diagnostic Test

The various models for the various estimations and data are tested for presence of autocorrelation, mutlicollinearity and heteroskedasticity which can affect the overall results.

As it can be observed from the Pearson correlations shown in table 3.4 (see Appendix), no serious collinearity problem exist between the variables. In addition to the correlation values, variance inflation factor (VIF) test is performed since multicollinearity may not be necessarily be detected using correlations matrix between variables. The VIF test ran on the independent variables also confirmed no multicollinearity problem between the independent variables.

In addition to the above test, heteroscedasity was not a problem in the data set since the sampled firms consisted mainly of large firm characteristics. In order to be sure, White test was conducted and the results ruled out the presence of heteroscedasity.

In relation to autocorrelation, the tests on the models did not confirm the presence of autocorrelation. As shown in table 2, the results are significant at 1% and 5%.

4. Empirical Results

In this section, the empirical results obtained are presented, analyzed and discussed. More importantly, the study finds out the determinants of board monitoring effectiveness. The discussion begins with the results of the descriptive statistics and this is followed by the GMM and 2SLS estimator results.

4.1. Descriptive Statistics

Table 1 presents the descriptive statistics of the main variables used for the study. It reveals that on average, companies have seven (7) members as board with the maximum and minimum of 13 and 5 respectively. This average size is consistent with the optimal board size recommended by Jensen (1993). The firms sampled had at

least one member of the board been an independent outside director and a maximum of five. This is relatively lower than seventy –five percent recommended by the Ghanaian Code of Best Practice. Relating to females on firm boards, the sampled firms had at least one female and a maximum of five. Though corporate governance codes in these countries do not make it mandatory, this is relatively lower than what is been recommended by some European countries such as UK, Norway and Spain (Sealy and Vinnicombe, 2012). One key characteristic of the sampled firm is that on the average, each firm had a member with accounting and finance knowledge. This observation is in line with many corporate governance codes. The code of best practice in Ghana recommend regular board meeting but did not recommend the number of meetings in a year. From the sampled firms, it is observed that on the average, four meeting are held in a year. Interestingly, it is observed that some firms in the sample do not have an audit committee even though it is recommended for effective board function.

Table-1. Descriptive Statistics of Variables

Variable	Mean	Standard Dev.	Minimum	Maximum
BSIZ	7.522917	1.578497	5	13
BIND	1.851028	.5536594	1	5
BGEN	.7260417	.4843203	0	1
BSKILL	1.442708	.6992093	1	3
FBM	3.902083	.4220164	3	5
ACE	.628125	.4835572	0	1
InFAGE	26.35312	63.94694	10	46
InSIZ	8.49e+07	2.99e+08	18745	5.75e+09

4.2. Regression Results

Contained in table 2 are models which estimates the determinants of board monitoring effectiveness using Generalized Method of Moments and Two Stage Least Square.

Table-2. Determinant of Board Monitoring Effectiveness

Model Dependent Variable / Independent Variable	**System GMM Frequency of Board Meeting**	**2SLS Frequency of Board Meeting**	**Logistic Regression Existence of Audit Committee**
BSIZ	11.6*** (5.92)	8.651* (4.26)	4.744 (2.95)
BSIZ ^{2}	-10.334*** (-6.45)	-7.254** (-5.25)	-11.450 (-7.25)
BID	9.416* (1.87)	4.531* (0.225)	16.841** (0.45)
BGEN	-26.12 (-0.39)	-15.45 (0.15)	-9.326 (-1.92)
BSKILL	23.211** (1.64)	12.25** (0.32)	6.299*** (6.24)
InFAGE	0.677*** (20.01)	0.724** (21.01)	0.160*** (6.73)
InSIZ	0.424** (12.75)	0.214** (6.23)	0.260** 10.97
No. of observation	959	959	959
No of Firms	137	137	137
Test for auto correlation	AR(1) -2.12**	AR(1)- 3.12***	
Sargan Test	72.4**	74.5**	
No. of observations	957	957	957
Number of firms	137	137	137

***denotes significance at 1% level, ** denotes significance at 5% level, * denotes significance at 10% level. The *t*-statistics are provided in parentheses. Results of the logistic regression are marginal effects

As it can be observed, GMM, 2SLS and logistic regression models provide similar results. This demonstrates the robustness of the estimates.

Board size is by far the second most determinant of board monitoring effectiveness. There is a positive relationship between board size and board monitoring effectiveness and significant at one percent. A percentage point increase in board size all things been equal would increase the board monitoring effectiveness by about 11.6% and 4.7 percent using frequency of board meeting and existence of audit committee respectively. This presupposes that board size is important in explaining board monitoring effectiveness. This result is consistence with agency

theory preposition that board size depicts the level of board control over management (Pearce and Zahra, 1991). This result is also consistent with previous empirical studies (see Peasnell *et al.* (2006) ; Bedard *et al.* (2004); Xie *et al.* (2003)). This is because large boards have more time, experience and are able to share work load over a greater number of directors making them more effective in their monitoring function.

Interestingly, there is a negative and statistically significant relationship between board monitoring and the Square of board size. This presupposes that as board size increases, it gets to a point where it affects negatively the effectiveness of board monitoring function. This confirms the non- monotonic relationship in estimating optimal number of board size for effective board function. This may imply that as the size of the firm becomes larger, the level of coordination reduces and results in free rider problem.

Expectedly, there is a statistically significant (at 1% and 5%) relationship between board independence and board monitoring effectiveness and a theoretical positive sign. This means that board independence is a key determinant of board monitoring effectiveness. A percentage increase in board independence resulted in 9.4% and 16.8% increase in board monitoring effectiveness in model 1 and 2 respectively. This is consistent with agency theory and the findings by Baysinger and Hoskisson (1990). This is because independent directors are desirable because of their breadth of knowledge and experience, as well as their independence from corporate management. This implies that their presence on the corporate board will enhance its monitoring function.

Turning to gender diversity (BGEN), the relationship between gender diversity and board monitoring effectiveness is negative. Though the relationship is negative and expected, it is not statistically significant. The result is similar in all the proxies used for board monitoring effectiveness. This implies that there is no evidence to support hypothesis three suggesting that gender diversity is not a determinant of board monitoring effectiveness.

Consistent with theoretical expectation, board skill (BSKIIL) by far is the most significant determinant of board monitoring effectiveness using frequency of board meeting as a proxy for board monitoring effectiveness. From table 2, there is a positive relationship between board skills and monitoring effectiveness at statistically significant at 1%and 5%. A percentage point increase in board skill resulted in 23.21% and 6.29% increase in board monitoring effectiveness. The findings are consistent with other empirical studies (see Agrawal and Chadha (2005)). This is because board members with financial expertise have the ability and skill to monitor the financial reports resulting in board monitoring effectiveness.

All the control variables thus firm age and size have their expected signs and the coefficient been statistically significant at 1%. This implies that as firm grows in terms of age of incorporation, demand for board monitoring effectiveness also increases. This is consistent with the assertion by Dey (2008) that the level of monitoring increase to respond the level of agency conflict. Also, as firm size increases the board monitoring effectiveness also increases to respond to increases in the level of agency conflict.

The Sargan test results show the validity of the instruments used. This is because Sargan test are all significant at 5% and the implication is that the instruments used for the estimation were very strong. This shows that the variables are exogenous confirming that our results are very efficient.

5. Conclusions and Implications

This paper investigates the determinants of board monitoring effectiveness using Generalized Methods of Moment. Employing Two Stage Least Square to check for robustness, the results confirm earlier findings and agree with agency theory view point. The results confirmed the significance of board size, board independence and board skills in explaining board monitoring effectiveness. The study reveals the monotonic relationship of board size in board monitoring effectiveness. The role of the presence of independent directors is essential in ensuring the effectiveness of board monitoring function and could be used as a way of improving the monitoring role. Given the close and significant relationship between board monitoring effectiveness and board size any increase in the size is expected to improve monitoring effectiveness to a particular point.

In concluding the study, the results and for that matter, findings of the study mentioned above have important theoretical and policy implications. First, it lends support to agency theory propositions as the results provide a very strong justification for agency theorist and various corporate governance codes for the inclusion of greater proportion of independent outside directors and accounting and finance experts as board members.

The results of the study are by no means conclusive because of some limitations associated with the study. First, the study uses frequency of board meetings and existence of audit committee to measure the board monitoring effectiveness. Other measurements of monitoring effectiveness are likely to give different results. Also, the study neglect small and medium scale enterprise and regulated firms. Therefore the findings of the study cannot be generalized to these areas. Further studies should replicate these studies in these areas and also consider the determinants of service and resource function effectiveness. These are expected to provide a comprehensive understanding of the effectiveness of board function.

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APPENDIX

	BSIZE	ACE	BID	BSKILL	BGEN	INFAGE	INSIZE	FBM	$BSIZE^2$
BSIZE	1.0000								
ACE	0.0706	1.0000							
BID	0.3727	-0.0569	1.0000						
BSKILL	0.0234	0.0742	0.0707	1.0000					
BGEN	-0.0648	-0.0169	0.0739	-0.1803	1.0000				
INFAGE	-0.0045	0.0152	-0.1242	-0.0143	-0.2544	1.0000			
INSIZE	0.0056	-0.0112	0.0142	-0.0124	-0.0142	-0.0124	1.000		
FBM	-0.0279	-0.2706	0.0611	-0.0862	-0.0395	-0.01245	0.0142	1.0000	
$BSIZE^2$	-0.0014	0.0045	0.0014	0.0112	-0.0014	0.1240	0.0124	0.0123	1.0000