

Corporate Governance and Financial Performance with a Perspective on Board Size and Frequency of Board Meetings: Empirical Evidence from India

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ABSTRACT

In today's corporate world, every stakeholder's group requires good corporate governance. Corporate Governance reforms were initiated after the rise of frauds and scams in the corporate sector. Corporate Governance mechanism protects the interests of stakeholders. Corporate governance has an important implication for the growth of an economy. Good corporate governance practices help to reduce the risk of investors, attract investment for capital and improve the performance of companies. In the present scenario of rising business scams all over the world, the present study addresses a central research question: how does corporate governance contribute to firm's financial performance? Relationship of board size and the frequency of board's meetings with firm's financial performance, in terms of ROA, ROE, and EPS, PE Ratios has been examined in this research paper. The study is based on secondary data collected from PROWESS database. Regression analysis has been carried out to find out the impact of corporate governance variables on the firm's financial performance measures.

Keywords: Board Size, Board Meetings, Corporate Governance, Financial Performance, Indian Firms

INTRODUCTION

Corporate governance has become the latest buzzword in India triggered by the scandals in the corporate world. There are several factors

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transforming the business and one major factor among them is corporate governance. Good corporate governance practices reduce the risk of investors, attract investment for capital and improve the performance of companies. Corporate governance is a set of mechanisms, which guarantees that prospective providers of external capital receive a fair return on their investment, as the ownership of the firm is separate from its control (Shleifer and Vishny 1997). Corporate governance is a relationship among stakeholders that determine and control the strategic direction and performance of an organisation. It ensures that strategic decisions are made effectively and establish good relationship between the firm's owners and its top-level managers. Corporate governance is a mechanism which tries to eliminate the principle-agent problem by ensuring accountability to stakeholders. Corporate governance is a good management process of corporations, taking into account the interests of all stakeholders at maximum level and operates according to the principles of transparency, fairness, accountability, and responsibility (Van Horne and Machowicz, 2005). It also increases the firms' responsiveness to the needs of the society and results in improving long-term performance of the business (Gregory & Simms 1999).

A broader view of Corporate governance can be seized from some of the following definitions:-

According to Milton Friedman, "Corporate governance is to conduct the business in accordance with owners' or shareholders' desires, which generally will be to make as much money as possible, while conforming to the basic rules of the society, embodied in law and local customs".

According to the CII's report of 1998, "Corporate Governance deals with the laws, procedure, practices and implicit rules that determine the Company's ability to take managerial decisions vis-à-vis its claimants, and in particular, its shareholders, customers, creditors and the employees".

According to the Cadbury committee "Corporate governance is the system by which companies are directed and controlled".

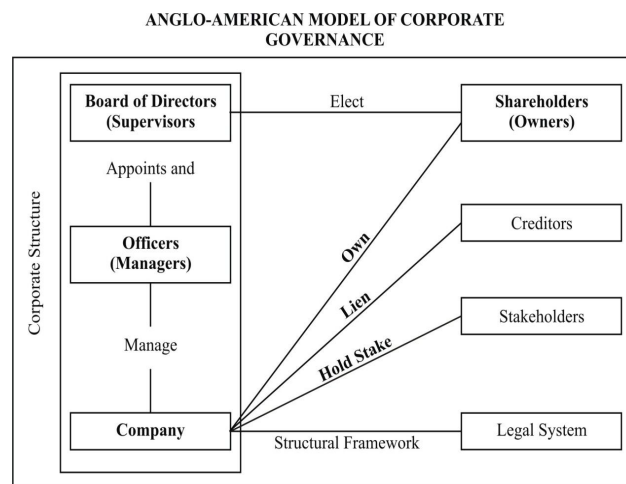
CORPORATE GOVERNANCE MODELS

There are a lot of different models of corporate governance around the world. These vary according to the range of capitalism in which they are rooted. They define various systems of corporate governance along with different dimensions. The noteworthy dimensions are ownership structure, shareholding patterns, capital market outlines and banks and

institutional intermediaries' financing styles, disclosure system, incentive schemes, legislative strength, workers participation. There are three types of corporate governance models such as Anglo-American Model, German Model, Japanese Model and Indian-South Asian Model.

Anglo-American Model

Anglo-American model is also known as '*Unitary Board Model*' or '*Anglo-Saxon Model*', because it prevails in the U.S.A., U.K., Canada, Australia and India. It has single board involving with both executive and non-executive directors. In this model the inside directors represent as executive directors and outside directors as the non-executive directors of the board. This type of model has structure in which board of directors are elected by the shareholders i.e. owners. Shareholders exercise their control through board of directors. Well defined Information system helps the board in supervision. Board of directors acts as supervisor. Board of directors then employs the officers to run the firms and to execute all the policy decisions made by them. The main three functions of the board members are representation, direction and oversight. The board members have to perform three roles such as strategy formulation, controlling and accountability to shareholders. As per this model, for managing day-to-day activities managers are appointed for supervision. The other main feature of this model is dispersed shareholding pattern. In Anglo American Model, the sound legislation and systematic regulatory compliance mechanism provides with the shareholders' protection.

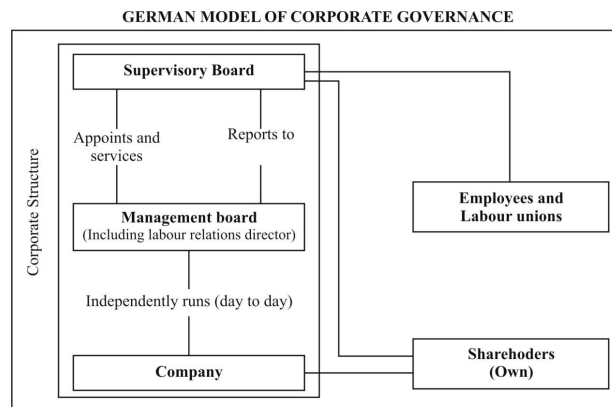


Source: Secondary data

Fig. 1: Anglo-American Model

German Model of Corporate Governance

This model is also known as '*Continental Europe Model*' or '*Two-tier Board Model*'. This model is existing in the Germany, Holland, Switzerland, Netherlands and France. It has features of having two boards, one is supervisory board and the second is executive board. In this model shareholders do not dictate the governance of the company although they are owners of the company. Half of the supervisory board members are elected by the shareholders. On the other hand remaining half members are elected by the labor unions. As per this model employees are not only stakeholders but they also take part in governance and also responsible for the policy implementation. Management board members are appointed and monitor by the supervisory board. Reporting relationship between supervisor board and management board handles day-to day operations of the company.



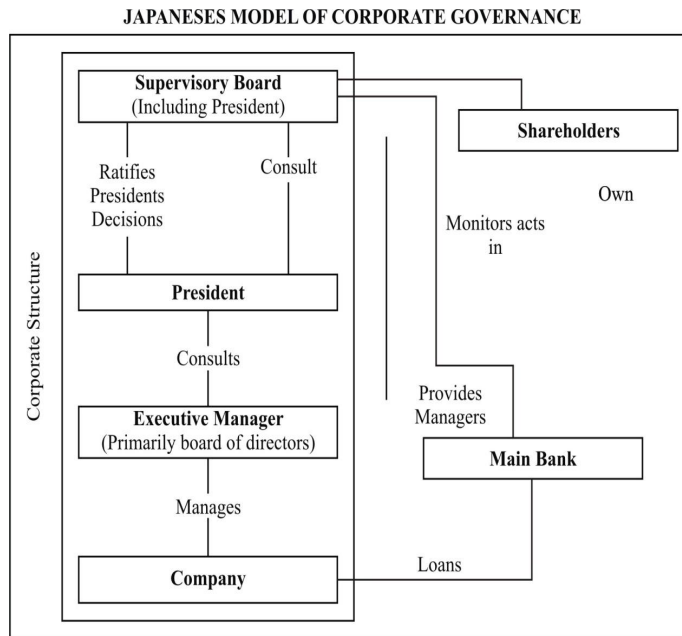
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Fig. 2: German Model

Japanese Model of Corporate Governance

In this model, financial institutions are having main role in the governance structure. Although shareholders own the firm but financial institutions have main role in the structure. As per this board of directors are appointed jointly by the shareholders and the bank. President is also appointed by the shareholders and the bank. There is hierarchical relationship of the board and the president. In general, board approves the president's decision while president always consult the board.

Executive management performs the management function. In case of emergency, financial institutions have the power to take the place of the board members. The shareholders appoint insider directors as executive directors and financial institution appoints their board members as outside directors of the board. This give importance to the employees participation in the firm performance.



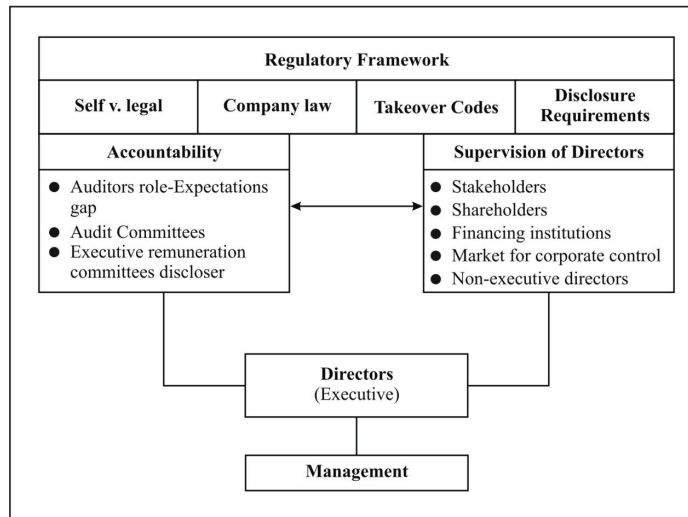
Source: Secondary data

Fig. 3: Japanese Model

Indian - South Asian Model

Indian corporate have been governed by the company's Act of 1956. Indian model is combination of two models such as Anglo-American and German models. In this model, company board is dominated by the family members or founders of the company. The shareholders have the right to elect the board members. The primary role of the board members is to formulate the policies. They also formulate the strategies for the management and monitor their performance. Various codes, regulations and policies are used to keep check on the firms performance by government, regulatory agencies and stock exchanges.

**CORPORATE GOVERNANCE, ACCOUNTABILITY AND
ENTERPRISES-INDIAN MODEL FOR PSUs**



Source: Secondary data

Fig 4: Indian - South Asian Model

REVIEW OF LITERATURE

A large number of studies have been conducted by various researchers to find out the relationship of board size and board meetings with financial performance of companies. This section covers studies emphasizing the optimal number of members in a board and the impact of board size on the firm's performance. Various other studies explaining the requisite number of meetings and their influence on firm's performance have also been included in this section.

Board Size

Board size refers to the total number of members of a board. According to the economic and strategic management literature, the effects of agency problem can be mitigated by the board of the organisation. The board is considered to be hefty decision-making group. Changanti et al. (1985) found that board size is a noteworthy board attribute and affects board functions and corporate performance. Size can affect the decision-making process and effectiveness of the board. Ideal size of the board has been an

issue of debate over the years.

There are severe variations in board size across countries. Balasubramanian (1997) found that the average board size of a British company in 1996 was 7, whereas, on the other extreme, some of the Japanese companies were having around 60 directors on their boards. Traditionally, board size ranged from a very small (which is 5 to 6) to very large (30 plus). A number of studies (Conference Board, 1962, 1967) have found that the average size of board has remained the same in between 12 and 14 for the last 50 years or so. As suggested by agency theorist (Jensen 1993), an optimal limit of the board size should be around eight directors. Bennedsen et al. (2008) argued that there is an optimal board size beyond which performance of the company would be impaired. Kiel & Nicholson (2003) stated that from an agency perspective, larger companies require bigger boards to monitor and control the management actions.

There is diverse evidence in the empirical literature linking board size to corporate performance. Yermack (1996) stated that smaller size of board leads to better performance of the firm. Samuel, Eyenubo A. (2013) examined the relation between board size and firm's performance and concluded that bigger board size impacts the firms' financial performance in a negative way. He analyzed 50 firms quoted on the Nigerian Stock Exchange during the period of 2001-2010. Mishra et al. (2001) found that smaller boards help to make decision more speedily. Brickley et al. (1997) suggested that large boards (beyond seven or eight) can be less effective than smaller boards. Garg (2007) analyzed that for Indian companies the board size is negatively related to all performance variables except market adjusted stock prices (MASR).

Many researchers have argued that a relatively large board size can improve the performance of the company. Various beneficial factors of large board size which are suggested by the researchers are managerial talent (Nicholson and Kiel, 2007; Van den Berghe and Levrau, 2004), access to financial and product markets (Frooman, 1999), and potential alliance with other stakeholders and interest groups (Korac-kakabadse, Kakabadse & Kouzmin, 2001). This supports Resource Enrichment theory which asserts that a larger board size will enhance a firm's financial performance. Kathuria and Dash (1999) found the positive relationship between the size of the board and firm performance for 504 Indian firms. Jackling and Johl (2009) also found the board size to be significant and positively associated with financial performance for Indian firms. Sanda et al. (2005) in their study stated that board size is significantly positively

related to firm performance. Dwivedi et. al. (2005) found that bigger boards are in a position to improve the governance of the organisations. Coleman and Biekpe (2005) found a positive association between the board size and the value of firm.

Carter et al. (2002), in their study, did not find any significant relationship between firm value and the presence of board members. Bayrakdaroglu et al. (2012) found that board size does not significantly affect performance. Beiner et al. (2004) mentioned no relationship between the board size and performance of a firm in the developed financial markets.

FREQUENCY OF BOARD MEETINGS

Prior literature suggests that increasing the frequency of board meetings leads to improved operating performance. Thus, it is proposed that board meetings are a key resource. According to Conger et. al (1998) board-meeting time is an important resource in improving the effectiveness of a board. Directors who meet more frequently are more likely to perform their duties in accordance with the shareholders' interests. Vefas (1999a) discovered that firms use board meetings as effective governance mechanism because it is much easier and less costly for a firm. In order to achieve superior governance, adjusting the frequency of its board meetings is easy rather than to change the composition of the board itself.

Ntim (2009) suggested that a higher frequency of board meetings would result in a higher quality of managerial monitoring, and thereby impact positively on the firm's financial performance. Lipton and Lorsch (1992) noted that frequent meetings, intermingled with informal sideline interactions, create and strengthen consistent bonds among the directors and thus the higher frequency of board meetings leads to superior performance. Karamanou and Vafeas (2005) found a positive association between the frequency of the board meetings and the accuracy of management earnings forecasts, by using a sample of 275 US listed firms from 1995 to 2000. Mangena and Taurigana (2008) also reported a positive relationship between the frequency of board meetings and corporate performance, they used a sample of 157 Zimbabwean listed firms over the period 2001-2003.

On the Other side, many researchers viewed that board meetings are not necessarily beneficial to shareholders. Lipton and Lorsch (1992) found that frequency of board meetings had negative impact on the corporate performance and mentioned that the routine tasks and various

formalities suck up more time of the directors condensing the quantity of time of directors to have effectively supervised management. Vafeas (1999a) stated that board meetings are costly in the form of managerial time, travel expenses, refreshments and directors' meeting fees and had negative influence on firm's performance and found that the frequency of board meetings is inversely related to the firm's value. A study by Jensen (1993) also confirms this view. He argues that the board meetings do not essentially improve the firm's performance and that board meeting frequency increases when there are problems. Coleman (2007) noted that the frequency of board meetings had a positive influence on market based performance measures, but a negative association with the ROA.

In contrast, El Mehdi (2007) found that the frequency of board meetings has no relationship with economic performance when he analysed a small sample of 24 Tunisian listed firms from 2000 to 2005. He discovered that financial performance is likely to be less affected by the frequency of board meetings.

RESEARCH GAP

- On the basis of the above studies, it can be inferred that there is no conclusive relationship of board size and frequency of board meetings with financial performance of the firms. So, there is a need to find out this relationship in the present scenario in Indian context.
- None of the studies have been done on the governance practices carried out in the initial phase and the lateral phase after the introduction of listing agreement 49.
- There is dearth of study on corporate governance of automobile sector in India.
- There have been few researches related to corporate governance in developing countries like India as compared to the developed nations.

OBJECTIVES OF THE STUDY

The present study has two objectives.

1. To assess the impact of board size on firm's financial performance
2. To examine the impact of frequency of board meetings on the firm's financial performance.

RESEARCH METHODOLOGY

The research design of the present study is descriptive-cum- diagnostic. Top of five automobile companies namely as Hero Motocorp Ltd., Mahindra & Mahindra Ltd., Maruti Suzuki India Ltd., T V S Motor Co. Ltd., and Tata Motors Ltd., were selected on the basis of market capitalization for the period from 2009 to 2013. Data was collected from PROWESS database, various websites and annual reports of the companies. In this study, board size and frequency of board meetings were taken as independent variables and firm's financial performance variables ROA, ROE, EPS, PE Ratio were considered as dependent variables. Multiple regression analysis was employed to examine the relationship between board size, frequency of board meetings and the financial performance of firms.

CORPORATE GOVERNANCE VARIABLES (INDEPENDENT VARIABLES)

Board Size

The board size is defined as the number of directors both executive and non-executive directors on the board of directors of a firm.

Frequency of Board Meetings

Frequency of board meetings means the number of meetings held in a year. As per Clause 49 given recommendation for the corporate governance for listed firms in Indian stock exchange; board members should meet at least 4 times in a year.

MEASURES OF FINANCIAL PERFORMANCE (DEPENDENT VARIABLES)

Return on Assets - ROA

Return on Assets measures a firm's financial performance by measure how much a firm gets profit on its assets. It is a measure, which assesses the efficiency of assets employed (Bonn, Yoshikawa & Phan 2004) and shows investors the earnings the firm has generated from its investment in capital assets (Epps & Cereola 2008). ROA is an indicator of short-term performance, which is calculated as net income divided by total assets (Finkelstein & D'Aveni 1994).

Return on Assets = Profit after Tax/Total Assets.

Return on Equity - ROE

Return on equity measures a firm's profitability by revealing how much profit a company generates with the money, shareholders have invested. Return on equity (ROE) measures the rate of return on the shareholders' equity. It is also known as "return on net worth" (RONW). It is a measure that shows investors the profit generated from the money invested by the shareholders (Epps & Cereola 2008). It is defined as the net income divided by common equity.

$$\text{Return on Equity} = \text{Profit after Tax} / \text{Shareholders' Equity}.$$

Earnings per Share - EPS

Earnings per share provide an indicator of a company's profitability. It is also a main component used to calculate the price-to-earnings valuation ratio. It measures the portion of a company's profit allocated to each outstanding share of common stock. It is calculated as:

$$= \frac{\text{Net Income} - \text{Dividends on Preferred stock}}{\text{Average Outstanding Shares}}$$

Price-Earnings Ratio - P/E Ratio

An assessment ratio of a company's current share price compared to its per-share earnings. In broad, a high P/E suggests that investors are expecting higher earnings growth in the future compared to companies with a lower P/E.

$$\text{Calculated as: } \frac{\text{Market Value per Share}}{\text{Earnings per Share (EPS)}}$$

Model 1

$$\text{PE Ratio} = \alpha + \beta_1 \cdot (\text{Board size}) + \beta_2 \cdot (\text{Board meeting})$$

Model 2

$$\text{ROE} = \alpha + \beta_1 \cdot (\text{Board size}) + \beta_2 \cdot (\text{Board meeting})$$

Model 3

$$\text{EPS} = \alpha + \beta_1 \cdot (\text{Board size}) + \beta_2 \cdot (\text{Board meeting})$$

Model 4

$$\text{ROA} = \alpha + \beta_1 \cdot (\text{Board size}) + \beta_2 \cdot (\text{Board meeting})$$

HYPOTHESIS

The study is based on following hypothesis. Hypothesis regarding the board size and impact of frequency of board meetings on firm's performance has been as follows

Hypothesis 1 : *The board size does not significantly influence the firm's financial performance.*

Hypothesis 2 : *The frequency of board meetings does not significantly influence the firm's financial performance*

LIMITATIONS

The study is based on the secondary data. A small sample size has been taken. Only two indicators have been examined to know their impact on firms' financial performance.

ANALYSIS AND INTERPRETATION

In this section, data has been analysed to find the relationship between corporate governance variables and financial performance of the firms.

Tests for Stationarity

Frequency of Board Meetings

First of all stationary feature of the data was checked by applying correlogram and unit root test. Correlogram table shows Autocorrelation value (AC) and Partial Autocorrelation value (PAC). The result of correlogram shows that PAC value is not near to one (Table 1), so frequency of Board meetings is stationary as per correlogram.

Table 1: Correlogram of Frequency of Board Meetings

	AC	PAC	Q-Stat	Probability value
1	0.424	0.424	5.0662	0.024
2	0.22	0.049	6.4864	0.039
3	0.055	-0.067	6.579	0.087
4	-0.263	-0.337	8.8086	0.066
5	-0.204	0.027	10.209	0.07
6	0.005	0.24	10.21	0.116
7	-0.128	-0.215	10.824	0.146
8	0.01	-0.021	10.828	0.212
9	-0.113	-0.217	11.363	0.252
10	-0.163	0.062	12.564	0.249
11	-0.072	0.021	12.813	0.306
12	-0.091	-0.11	13.248	0.351

Unit root test: Unit root test was performed with null hypothesis: frequency of Board meetings has a unit root. Prob. value is more than 0.05, so, null hypothesis is accepted. Thus frequency of Board meetings is not stationary. It has unit root as it is clear from Table 2.

Table 2: Unit Root Test of Frequency of Board Meetings

	t-Statistic	Probability value *
Augmented Dickey-Fuller test statistic	-2.912033	0.0587
Test critical values: 1% level	-3.737853	
5% level	-2.991878	
10% level	-2.635542	

Table 3: Unit root Test of Frequency of Board Meetings with First Difference

Null Hypothesis: D(BME) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Probability value *
Augmented Dickey-Fuller test statistic	-6.311273	0.0000
Test critical values: 1% level	-3.752946	
5% level	-2.998064	
10% level	-2.638752	

Board size

Correlogram Test: As per correlogram test, PAC value is less than one, so Board size is stationary. It is clear from Table 4.

Table 4: Correlogram of Board Size

	AC	PAC	Q-Stat	Probability value
1	0.732	0.732	15.073	0.000
2	0.350	-0.401	18.665	0.000
3	0.069	0.010	18.811	0.000
4	-0.083	-0.045	19.032	0.001
5	-0.041	0.224	19.090	0.002
6	0.015	-0.155	19.097	0.004

	AC	PAC	Q-Stat	Probability value
7	0.013	-0.015	19.104	0.008
8	-0.004	0.002	19.104	0.014
9	-0.096	-0.157	19.490	0.021
10	-0.184	-0.044	21.015	0.021
11	-0.135	0.182	21.889	0.025
12	-0.058	-0.085	22.064	0.037

Unit Root Test: Table 5 indicates that prob. value is less than 0.05, So null hypothesis is rejected and concluded that Board Size is stationary.

Table 5: Unit Root Test of Board Size

Null Hypothesis: BS has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.196443	0.0333
Test critical values: 1% level	-3.752946	
5% level	-2.998064	
10% level	-2.638752	

Earning per Share (EPS)

Correlogram Test: As per Table 6 , Value of PAC is less than one, So EPS is stationary.

Table 6: Correlogram of Earning Per Share (EPS)

	AC	PAC	Q-Stat	Prob
1	0.685	0.685	13.184	0.000
2	0.391	-0.146	17.674	0.000
3	0.188	-0.036	18.759	0.000
4	-0.007	-0.159	18.760	0.001
5	-0.033	0.144	18.797	0.002
6	-0.070	-0.117	18.971	0.004
7	0.077	0.350	19.196	0.008
8	0.178	-0.093	20.459	0.009
9	0.184	0.078	21.888	0.009
10	0.196	-0.056	23.625	0.009
11	0.021	-0.187	23.647	0.014
12	-0.148	-0.154	24.785	0.016

Unit Root Test: The result shows that prob. value is more than 0.05, Null hyp. is accepted. Earning per Share (EPS) is not stationary (Table 7).

Table 7: Unit Root Test of Earning Per Share (EPS)

Null Hypothesis: EPS has a unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.764779	0.3878
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

Unit Root test at first Difference: Table 8 indicates that while taking first difference of data, Earning per Share (EPS) becomes stationary as prob. value is less than 0.05.

Table 8: Unit Root Test of Earning Per Share (EPS) at First Difference

Null Hypothesis: DEPS has a unit root

Exogenous: Constant

Lag Length: 5 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.826622	0.0014
Test critical values:	1% level	-3.857386	
	5% level	-3.040391	
	10% level	-2.660551	

Price-Earnings Ratio - P/E Ratio

Correlogram: The result indicates that Price-Earnings Ratio - P/E Ratio is stationary because PAC value is less than one (Table 9).

Table 9: Correlogram of Price-Earnings Ratio - P/E Ratio

	AC	PAC	Q-Stat	Prob
1	0.629	0.629	11.114	0.001
2	0.158	-0.393	11.844	0.003
3	-0.129	-0.040	12.356	0.006
4	-0.195	-0.004	13.574	0.009
5	-0.193	-0.125	14.831	0.011

6	-0.137	0.020	15.493	0.017
7	-0.061	-0.011	15.634	0.029
8	-0.027	-0.069	15.663	0.047
9	0.028	0.092	15.696	0.074
10	0.060	-0.030	15.857	0.104
11	0.029	-0.065	15.897	0.145
12	-0.029	-0.004	15.942	0.194

Unit Root Test: Null hypothesis: Price-Earnings Ratio - P/E Ratio has unit root. PE is stationary because prob. value is less than 0.05 as is clear from Table 10. Thus, null hypothesis not accepted.

Table 10: Unit Root Test of Price-Earnings Ratio - P/E Ratio

Null Hypothesis: PE has a unit root

Exogenous: Constant

Lag Length: 3 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.810055	0.0011
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

Return on Assets - ROA

Correlogram Test: Table 11 reveals that PAC value is less than one. So, Return on Assets- ROA is stationary. The result of this test as follow:

Table 11: Correlogram Test Result of ROA

	AC	PAC	Q-Stat	Prob
1	0.668	0.668	12.550	0.000
2	0.513	0.120	20.261	0.000
3	0.525	0.263	28.712	0.000
4	0.321	-0.254	32.019	0.000
5	0.249	0.072	34.111	0.000
6	0.196	-0.104	35.476	0.000
7	0.181	0.203	36.711	0.000
8	0.164	-0.067	37.783	0.000

	AC	PAC	Q-Stat	Prob
9	0.034	-0.144	37.832	0.000
10	-0.002	-0.079	37.832	0.000
11	-0.087	-0.153	38.194	0.000
12	-0.274	-0.224	42.082	0.000

Unit Root Test: The result specifies that prob. value is more than 0.05 (Table 12); null hypothesis is accepted and thus ROA has a unit root. Then we take difference of the series which showed prob. value is less than 0.05, concluded that ROA is stationary at first difference (Table 13).

Table 12: Unit Root Test Result of ROA

Null Hypothesis: ROA has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.959862	0.7487
Test critical values: 1% level	-3.769597	
5% level	-3.004861	
10% level	-2.642242	

Table 13: Unit Root Test Result of ROA at First Difference

Null Hypothesis: DROA has a unit root,

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.346244	0.0000
Test critical values: 1% level	-3.769597	
5% level	-3.004861	
10% level	-2.642242	

Return on Equity-ROE

Correlogram Test: The outcome of this result shows PAC value is less than one, ROE is stationary (Table 14).

Table 14: Correlogram Test of ROE (Return on Equity)

	AC	PAC	Q-Stat	Prob
1	0.781	0.781	17.164	0.000
2	0.517	-0.240	25.003	0.000
3	0.307	-0.017	27.897	0.000
4	0.187	0.053	29.022	0.000
5	0.179	0.157	30.109	0.000
6	0.104	-0.256	30.492	0.000
7	0.071	0.164	30.684	0.000
8	0.038	-0.069	30.741	0.000
9	-0.010	-0.047	30.745	0.000
10	-0.046	-0.080	30.841	0.001
11	-0.133	-0.087	31.694	0.001
12	-0.214	-0.134	34.082	0.001

Unit Root Test: Table 15 shows that prob. value is more than 0.05, Null hyp. is accepted i.e. ROE (Return on Equity) has unit root.

Table 15: Unit Root Test of ROE

Null Hypothesis: ROE has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.326799	0.6000
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

Unit Root Test at First Difference: After applying First difference of the ROE then prob. value is less than 0.05 (Table 16). Null hypothesis is rejected and concluded that ROE is stationary at first difference.

Table 16: Unit Root Test Result at First Difference

Null Hypothesis: DROE has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=5)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.905107	0.0001
Test critical values: 1% level	-3.752946	
5% level	-2.998064	
10% level	-2.638752	

Regression and Correlation Analysis

In this study, five companies and five years data have been taken. Dummy variables were generated for 5 companies such as d2, d3, d4, d5.

Association of ROE (Return on Equity) with Board Size and Frequency of Board Meetings

In this study X1 and X3 are independent variables such as X1 is board size and X3 frequency of board meetings while Y9 is ROE. ROE and board size are found to have positive relationship i.e. 0.1488 ; on the other hand frequency of board meetings showed negative relationship i.e. -0.0114 with ROE

Table 17: Impact of Board Size and Frequency of Board Meetings on ROE

Regression Analysis Table for the Y9 (ROE)					
	Coef.	Standard error	t	p> t	
X1(Board Size)	2.556836	2.141684	1.19	0.249	
X3(frequency of board meetings)	-0.2974723	1.250474	-0.24	0.815	
d2	-3.946813	8.102856	-0.49	0.632	
d3	0.8838953	9.02307	0.1	0.923	
d4	9.872394	13.32821	0.74	0.469	
d5	-1.456995	8.12491	-0.18	0.86	
Constant	-31.58271	28.90795	-1.09	0.29	

Annova Table			
Source	SS	Df	MS
Model	284.117644	6	47.3529406
Residual	2356.597444	17	138.623379
Total	2640.715088	23	114.813699

R -squared values Table	
Number of observations	24
f(6,24)	0.34
Prob>F	0.9051
R -squared	0.1076
adjusted R-squared	-0.2074
Root MSE	11.774

Table 17 explains R- squared which is 10.76 percent which states that Board size and frequency of board meetings explain variance in ROE

by approximately 11%. It shows that 89.24 per cent variance remains unexplained. Board size coefficient is 2.55 and has positive impact on the ROE and indicated that change in ROE by Board size is not statistically significant as p. value is more than 0.05. Frequency of board meetings indicated negative impact on ROE. This implies that Increase in Frequency of board meetings leads to reduction in ROE. But statistically this relationship was found to be non -significant as the p. value is more than 0.05. Other corporate governance variables explained 31.5, variance in ROE and have negative relationship with ROE. Thus both hypothesis 1 and 2 are accepted.

Dummy variables were also tested and result are such as:

$$F(4, 17) = 0.40$$

$$\text{Prob} > F = 0.8065$$

Here p value is more than f value, null hypothesis is accepted that pooled CCM is justified. Hence the regression equation of this model such as:

$$\text{ROE} = -31.58 + (2.55). (\text{board size}) + (-0.29). (\text{board meeting})$$

Association of EPS (Earning Per Share) with Board Size and Frequency of Board Meetings:

Regression was run on EPS (Y5) as dependent variable and x1(Board size) and x3(frequency of board meetings) independent variables. Board size showed negative relation i.e. -0.0825 with EPS while frequency of Board meetings showed positive association i.e. 0.06086 with EPS .

Table 18 shows the value of coefficients of independent variables. R-Squared, indicate that board size and frequency of board meetings only explain 9 percent variance in EPS. Board size has coefficient value -2.61, showing that it has negative impact on the EPS while frequency of board meetings has coefficient 0.728, only explains low variance. Both corporate variables have not revealed any significant impact on EPS as p- value is more than 0.05. Thus both hypothesis 1 and 2 are accepted. Coefficient of constant is 45.06 that means other factors explained variance around 45 percent in dependent variable such as in EPS.

Table 18: Impact of Board Size and Frequency of Board Meetings on EPS

Regression Analysis Table for the Y5 (EPS)					
	Coef.	Standard error	t	p> t	
corporate governance variables	X1(Board Size)	-2.610376	5.688886	-0.46	0.652
dummy variables	X3(frequency of board meetings)	0.7280554	3.321594	0.22	0.829
	d2	-23.8259	21.52335	-1.11	0.284
	d3	-13.79113	23.96769	0.58	0.573
	d4	-35.05026	35.40329	-0.99	0.336
	d5	-13.37674	21.58194	-0.62	0.544
	Constant	45.0609	76.78725	0.59	0.565

Annova Table			
Source	SS	Df	MS
Model	1836.53122	6	306.088536
Residual	16627.5812	17	978.093
Total	18464.11242	23	802.7874

R -squared values Table	
Number of observations	24
f(6,24)	0.31
Prob>F	0.9214
R -squared	0.0995
adjusted R-squared	-0.2184
Root MSE	31.274

Test Dummy Variables: Dummy variables were tested ; P value is more than f value of this test. Such as $F(4, 17) = 0.42$, Prob. $> F = 0.7937$. Pooled CCM is justified. The regression equation is:

$$EPS = 45.06 + (-2.61) \cdot (\text{Board size}) + (0.728) \cdot (\text{Board meeting})$$

Association of ROA (Return on Assets) with Board Size and Frequency of Board Meetings

Regression was run on Y7 (ROA) as dependent variable and X1 (Board size) and X3(frequency of board meetings). Negative association of ROA with both board size i.e. -0.0678 and frequency of board meetings i.e. -0.08436.

Table 19: Impact of Board Size and Frequency of Board Meetings on ROA

Regression Analysis Table for the Y7 (ROA)					
	Coef.	Standard error	t	p> t	
corporate governance variables	X1(Board Size)	-1.031923	1.193525	-0.86	0.399
dummy variables	X3(frequency of board meetings)	-0.2119522	0.6968687	-0.3	0.761
	d2	-4.064133	4.515589	-0.9	0.381
	d3	-3.741653	5.028408	-0.74	0.467
	d4	-7.504526	7.427592	-1.01	0.326
	d5	-2.281613	4.527879	-0.5	0.621
	Constant	14.58387	16.10993	0.91	0.378

Annova Table			
Source	SS	Df	MS
Model	63.008136	6	10.5013561
Residual	731.876657	17	43.051568
Total	794.884793	23	34.5602084

R -squared values Table	
Number of observations	24
f(6,24)	0.24
Prob>F	0.9553
R -squared	0.0793
adjusted R-squared	-0.2457
Root MSE	6.5614

Table 19 shows coefficient values of the independent variables. Both board size and frequency of board meetings are found to have negative

coefficient value. It indicates that both corporate governance variables have negative impact on ROA. R-squared was only 7 percent indicates that these two variables explain less variance in ROA. Statistically both board size and frequency of board meetings are not found to be significantly impacting ROA as p. value is more than 0.05. Thus both hypothesis 1 and 2 are accepted.

Test Dummy Variables: while testing dummy variables it was found that P value is more than f value. Pooled CCM is justified. Such as: $F(4, 17) = 0.32$, Prob. $> F = 0.8605$.

The Regression equation is:

$$ROA = 14.58 - (1.03) \cdot (\text{Board size}) - (0.211) \cdot (\text{Board meeting})$$

Association of P/E Ratio with Board Size and Frequency of Board Meetings

P/E ratio has positive relationship i.e. 0.22007 with board size and while indicates negative association i.e. -0.17928 with frequency of board meetings.

Table 20 depicts the coefficient value of board size i.e. 1.7 and frequency of board meetings i.e. -2.28. Both variables are not statistically significant in this model. Other corporate governance variables only impact the 6.2 but negatively. R squared value is 47 percent which is the variance in P/E ratio explained by board size and frequency of board meetings.

Table 20: Impact of Board Size and Frequency of Board Meetings on PE Ratio

Regression Analysis Table for the Y2 (PE Ratio)				
	Coef.	Standard error	t	p> t
X1(Board Size)	1.7908	2.347412	0.76	0.456
X3(frequency of board meetings)	-2.289219	1.370593	-1.67	0.113
d2	0.1209248	8.8812409	0.01	0.989
d3	4.662187	9.889817	0.47	0.643
d4	3.776587	14.6085	0.26	0.799
d5	23.93445	8.905381	2.69	0.016
Constant	-6.200992	31.68482	-0.2	0.847

Annova Table			
Source	SS	Df	MS
Model	2563.87881	6	427.313134
Residual	2831.08751	17	166.53456
Total	5394.96632	23	234.563753

R -squared values Table	
Number of observations	24
f(6,24)	2.57
Prob>F	0.059
R -squared	0.4752
adjusted R-squared	0.29
Root MSE	12.905

Test of dummy variables: $F(4, 17) = 2.85$, Prob. $> F = 0.0564$

While testing dummy variables, p value is less than f- value, pooled

CCM is not justified ,now either fixed effect model or random model will apply. Hausman test was applied for selecting from either fixed effect model or random model.

Hausman Test: Both regression equation such as fixed effect model and Random effect model with null hypothesis that Random effect model is appropriate were used and found that as per Table 22, p-value is more than 0.05, So, null hypothesis was rejected. Thus, fixed effect model is appropriate (table no 21 and 22).

The Regression equation is:

$$PE = 0.5686 + 1.7908 \cdot \text{Board size} - 2.289 \cdot \text{frequency of board meetings}$$

Table 21: Result of the fixed effect model(with in)regression

Regression Analysis Table for the Y2 (PE Ratio)				
	Coef.	Standard error	t	p> t
X1(Board Size)	1.7908	2.347412	0.76	0.456
X3(frequency of board meetings)	-2.289219	1.370593	-1.67	113
Constant	0.5686197	26.89303	0.02	0.983

R -squared values Table	
Number of observations	24
Number of groups	5
obs. Per group:- min	4
avg.	4.8
max.	5
R-Squared:- within	0.1538
between	0.0434
overall	0.115

Corr(u _i ,Bb)=-.0250	F test that all u _i =0
F(2,17)=1.55	F(4,17)=2.85
Prob>F=.2417	Prob>F=.564

Table 22: Result of Random Effects Model

. xtreg y2 x1 x3, re						
Random-effects GLS regression				Number of obs		= 24
Group variable: i				Number of groups		= 5
R-sq: within = 0.1523				Obs per group: min =		4
between = 0.0622				avg =		4.8
overall = 0.1215				max =		5
Random effects u_i ~ Gaussian				wald chi2(2)		= 3.26
corr(u_i, X) = 0 (assumed)				Prob > chi2		= 0.1963
y2	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x1	2.050533	1.69446	1.21	0.226	-1.270547	5.371613
x3	-2.095088	1.385314	-1.51	0.130	-4.810253	.6200767
_cons	-2.600183	19.81895	-0.13	0.896	-41.44461	36.24424
sigma_u	7.1075541					
sigma_e	12.904827					
rho	.23274309	(fraction of variance due to u_i)				

CONCLUSIONS

On the basis of above analysis following conclusions can be drawn. Board size is having positive relationship with ROE and P/E ratio. This result is also supported by Kyereboah-Coleman and Biekpe (2005), who found a positive relationship between the board size and the value of firm in developing markets and stated that board size plays an effective role in affecting value of the firm. This implies that ROE and P/E ratio increase with increase in the size of the board. EPS and ROA are found to have negative relation with board size. Eyenubo A. (2013) and Yermack (1996) also support this study's result that bigger board size impact firms' financial performance in a negative way.

Statistically the relationship between board size and firm's performance is found to be non-significant. This is in line with earlier studies by Carter et al.(2002), Bayrakdaroglu et al. (2012) and Beiner et al.(2004), who reported that board size doesn't significantly affects firm's performance. Frequency of board meetings showed negative relationship with ROE and ROA. The research conducted by Jensen (1993) and Coleman (2007) also supports the present study's result and stated that the frequency of board meetings had a negative association with firm's performance. EPS and P/E ratio are found to have positive association with frequency of board meetings. Both board size and frequency of board meetings are not statistically significant for all performance measures. Thus there is no conclusive relationship.

Scope for Further Research: This study covers only two corporate governance variables such as board size and frequency of board meetings. More variables can be taken to know the effectiveness of corporate governance on firm's performance. Sample size has been quite small. Sample size can also be increased to carry out further research.

Managerial Implications: As per the results of this study, board size and frequency of board meetings don't significantly influence the firm performance. So, there is a need to find out the other variables of corporate governance which significantly affects the firm performance of the firm. This implies that increase or decrease in board size and frequency of board meetings are not the major factors contributing to the firm performance of the firm.

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