

Empirical Evidence of Board structure, Board Size and Performance of Indian Listed Companies

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Abstract

Board structure and board diversity are an important internal governance mechanisms. The present study involves the investigation of the association between the quality of a firm's corporate governance practices and its performance measured in terms of Tobin's Q by constructing a firm-specific board structure index and board diversity index for Indian listed companies. Relationship between board size and financial performance has also been examined in this study. Analysis has been carried out by applying regression analysis between different board characteristics and financial performance parameters. Evidences obtained from the empirical analysis indicate strong positive relationship between board structure index and corporate financial performance concluding that better governed companies are always valued higher and they shows a better financial performance in the long run. Results also exhibit a positive and significant relationship between board size and board diversity index and Tobin's Q (proxy for company performance) suggesting that investors reward the companies having a diverse and larger board.

Key words: Corporate Governance, Board Structure Index, Board Diversity Index, Board Size, Corporate Financial Performance

JEL Classification: G30, G34

INTRODUCTION

Corporate governance has attracted much interest and attention in the past few years, especially in the wake of collapse of some of the world's most high profile corporations. In order to determine the quality of governance in a firm, internal and external mechanisms of corporate governance play a significant role. The internal governance mechanisms such as board structure, board

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diversity, size and composition of the board and the equity ownership structure of the firm are based on specific actions and mechanisms undertaken by the individual firm to enforce control and accountability (Varshney et al.2015). Whether these internal governance mechanisms are related to firm financial performance indicators is the question that has been answered in the present study.

In 1990s, numerous reforms were undertaken in order to advance corporate governance in India. The most important reform was the establishment of the Securities and Exchange Board of India (SEBI) in 1992. Four major committees (Bajaj Committee in 1996, Birla Committee in 2000, Chandra Committee in 2002, and the Narayanan Murthy Committee in 2003) were formed as a result of the establishment of the SEBI. These committees aimed to examine governance issues and to propose governance reforms and laws. Through the enactment of Clause 49 of the Listing Agreements, SEBI implemented the governance reforms and recommendations given by these committees. These reforms include dealing with the issue of duality, increasing the number of outside directors and the existence of financial expertise of directors. Certain changes were made in Clause 49 of the Listing Agreement by the SEBI in 2005 requiring the presence of minimum number of outside directors on board. Enactment of Companies Act, 2013 introduced new provisions related to board of directors and board diversity to enhance corporate governance in India such as presence of at least one women director on board of listed companies in case of certain specified companies, policy of familiarisation programme for independent directors, formal policy for succession planning at senior levels of management. It is expected that these changes in the operation and composition of the boards of directors as measures considered to improve corporate governance, may also be shown in improved firm performance (Jackling et. al (2009).

Good corporate governance helps in achieving high level market valuation and financial performance (Klapper et al. 2004; Rajagopalan et al. 2008). La Porta et al. (2000) stated that emerging economies have traditionally been discounted in financial markets due to their weak governance. Therefore, an examination of aspects of board structure and board diversity as an important driver in corporate governance may provide insights that may lead to improvement in corporate governance in an emerging economy like India. As a result, in this study, an attempt has been made to explore the relationship between board structure, board diversity and board size, and financial performance of Indian listed companies.

This paper has been divided into five parts. Section I highlights the review of existing literature. Section II provides relevance, objectives and hypothesis of the study followed by section III which is concerned with the research design and methodology. Section IV has been devoted to the findings and analysis that include descriptive statistics and regression analysis. Last section of the paper gives implications and conclusions of the study.

REVIEW OF LITERATURE

In the existing literature, arguments are mixed; some favours and whereas others are against board structure, board diversity and board size.

Board Structure and Firm Performance

Kanojia, Sharma and Jain (2020) have expounded board structure by constructing an index for large listed Indian companies and have also analysed their impact on the financial performance (measured in terms of Tobin's Q) of such Indian companies for the period 2009-10 to 2016-17. Ordinary least square regression analysis has been employed to analyse such associations. The evidence collated from the empirical tests shows positive relationship between board structure index and financial performance. This highlights that companies which are well-governed and having well-structured boards are highly valued and their financial statements shows better performance over the long term. Also, a positive relationship has been found between board size and corporate financial performance which suggests that large sized boards prove to be more beneficial to a firm in terms of greater experience, expertise, intellectual knowledge and contacts. Market capitalisation and age of the companies have also been found to be positively and significantly related to the performance indicator. Javaid (2015) in his study examined the association between board of directors index and firm performance measured in terms of accounting (Return on asset and Return on equity) and market performance (Tobin's Q). To find the results, 58 manufacturing sector companies were selected listed on the Karachi Stock Exchange for the period of 2009 to 2013. The board structure index based on 7 proxies was developed. The board structure index and firm performance both in terms of accounting and market found to be positively and significantly associated with each other which indicated that firms having larger board structure, more independent directors, executive directors, avoiding CEO duality and having CFO chair, holding frequent meetings and having effectiveness of board, can perform better and lead to sound implementation of corporate governance practices. Using the sample of BSE 500

listed companies during the financial year 2008 – 2011, Haldar and Rao (2013) investigated the relationship between the Corporate Governance Index and Tobin's Q. The Corporate Governance index was created using information on six important corporate governance mechanisms where the board of directors index was one of the major mechanisms. The empirical results show that governance positively affects financial performance which proved that well governed companies have higher equity returns, are valued highly, and their financial statements show a better financial performance. Sarkar and Sarkar (2012) found a strong correlation between the Corporate Governance index and the market performance of the companies. The results of the study suggest for undertaking the various governance reforms relating to mainly board structure, even if doing so requires the allocation of additional resources because a well governed company is perceived as less risky by the prospective investors and they are willing to lend capital at lower cost. Black, Jang and Kim (2003) constructed a corporate governance index for 531 of the 560 companies listed on the Korea Stock Exchange (KSE). The construction of index uses information on six important corporate governance mechanisms: board of directors, outside directors, shareholder rights, audit committee and internal auditor, disclosure to investors and ownership parity. The correlation between overall corporate governance index and firm value was found to be strongly positive, which was robust across OLS, 2LS and 3LS regressions, in subsamples, with alternate measures of firm value and in alternate specifications of corporate governance index. Arora and Bodhanwala (2018) tried to estimate the relationship between corporate governance and firm's performance. Their study reveals a positive significant relationship between CGI and firm performance metrics (ROA & RONW) but not significant with EPS. The study concluded that CGI is an important and causal factor in explaining firm performance. For the business firms maintaining high governance standards, the investors would also have positive perception and this will help in reducing possible funding costs. Varshney et al. (2015) analysed the relationship between corporate governance and corporate financial performance by constructing a corporate governance index on the basis of internal and external corporate governance mechanisms in the Indian context & reported that corporate governance has a positive impact on EVA but no significant impact on ROCE, RONW or Tobin's Q. Balasubramanian, Black and Khanna (2010) conducted an extensive survey of 506 Indian public companies in 2006. An Indian Corporate Governance Index (ICGI) was constructed on the basis of 49 firm level attributes which were further grouped into five sub-indices which are as follows: Board Structure, Disclosure, Related Party Transactions, Shareholder Rights and Board

Procedure to analyse the relationship between this index and firm value as measured by Tobin's Q with the help of Ordinary Least Squares Regression and it was found that there is a positive and statistically significant association between ICGI and firm market value in India. Age of the company was also tested and was found to be positively but insignificantly related to the Tobin's Q.

Board Diversity and Firm Performance

Board Diversity has been measured as the presence of women directors, independent directors, non-executive directors, non-executive non promoter chairman on board and CEO non-duality in a corporate firm.

Carter et al. (2003) assessed the relationship between board diversity and firm value. They measured board diversity as the percentage of women, Asians, Americans, African and Hispanics on the board of directors. To investigate such relationship, they focussed their analysis on publicly traded Fortune 1000 firms. Tobin's Q was used as the measure of firm value in the study. Both percentage of women directors and minority directors were found to be significantly and positively associated with firm value. Campbell et al. (2008) made an effort to assess the impact on firm performance of the presence of women on the board of directors. An approximation of Tobin's Q was used to measure firm value. The sample used in the study comprised of non financial firms which were listed on the continuous market in Madrid during the period from January 1995 to December 2000. The panel data methodology was adopted to test the results empirically. In the results, percentage of women directors on board was found to be positively and significantly related to Tobin's Q.

Salim Darmadi (2011) used a sample of 169 firms listed in Indonesia stock exchange in his study. Age, gender and nationality were used as the proxies for the diversity of the board members. Both accounting and market performance indicators were found to be significantly and negatively related with gender diversity. Nationality diversity was found to have no impact on the performance. In contrast, the percentage of young directors in the boardroom was positively associated to market performance. Similarly, Bøhren and Strøm (2007) and Adams and Ferreira (2009) indicated a negative relationship between a fraction of women in the boardroom and financial performance. While examining the effect of board gender diversity on the financial

performance of Karachi stock exchange 100 Index firms from 2008 to 2010, Yasser (2012) reported no significant relationship between board gender diversity and Economic Value Added. Naseem, Xiaoming and Rehman (2017) investigated the impact of gender diversity on the financial performance of listed companies of Pakistan Stock Exchange (PSX) representing six different sectors of the economy for the period from 2009 to 2015. Tobin's Q and earning per share were taken up as the indicators of financial performance of the companies. To test the relationship, panel regression analysis was used. The findings of the study did not support the claim that gender diversity positively affects the firm performance.

Board Size and Firm Performance

Gurusamy (2017) tested empirically the relationship and impact of corporate governance measures on the financial performance of 357 manufacturing firms listed on Bombay Stock Exchange during the period 2006-2015. Board characteristics, audit committee and Ownership Structure were used as the corporate governance measures. Tobin's Q, ROA and ROE were used as the indicators of the financial performance of the companies. The study was empirical in nature and applied panel data regression analysis to test the relationships. A negative and insignificant relationship was found between board size and Tobin's Q found suggesting that changes in the financial performance of a firm cannot be excused by its display panel size. However, a positive and significant relationship was found between board size and other performance measures-ROA and ROE. Johl et al. (2015) opined that boards with larger size are preferable as they can create value for the firms more efficiently as compared to smaller sized board. This was reported after analysing the impact of board size on return of assets of 700 public listed firms in Malaysia. Similarly, Udaile (2010) believed that larger board performs effectively. Therefore, boards with a larger size should be encouraged. Jackling and Johl (2009) used the sample of top Indian companies listed on Bombay Stock Exchange in the year 2006 to assess the relationship between board size and ROA and Tobin's Q. 3 Stage Least Squares (3SLS) analysis was used to test the result. Board size was found to be positively correlated with the firms' financial performance suggesting that greater depth of intellectual knowledge will be brought in by the larger boards as compared to the smaller boards and hence, this will improve decision making which in turn will improve performance. Also, age of the company used as control variable in the study and found to be negatively related to the performance indicators.

Palaniappan (2017) in his study analysed the impact of board size on the financial performance of manufacturing firms listed on the BSE of India during 2011-2015. It was found that there exists a negative and significant relationship between size of the board and firms' performance indicators such as ROA, ROE and Tobin's Q. Further, age of the company which was taken as one of the control variables was not found to be significantly related to the performance variables suggesting that age is not related to the financial performance of the companies. Arosa et al. (2013) from the Spanish perspective examined the association between board size and profitability of the firm as indicated by return on assets (ROA). Their results indicate a negative but insignificant relationship between board size and ROA. The study concluded that although there are many benefits of having a larger board size but these benefits seem to be outweighed by problems of poorer communication, coordination and flexibility. Horváth et al. (2012) contributed to the existing literature in U.S. by stating that size of the board does not matter. It has no impact on the financial performance of the company as measured by Price to Book ratio.

RELEVANCE, OBJECTIVES AND HYPOTHESIS OF THE STUDY

As the provisions leading to improved corporate governance and well defined board structure were made rigorous and mandatory with the enactment of the Companies Act, 2013, few empirical studies were available in Indian context and there is a dearth of available literature on this topic. Also, the studies in the area of board structure are mainly concentrated on developed countries. Therefore, there are very few studies that have analysed the provisions related to board structure in the developing countries.

The study aims to examine whether the provisions and the norms related to internal governance structure and board diversity are associated to performance indicators of listed Indian companies especially after the enactment of Companies Act 2013. In Companies Act 2013, new and improved provisions relating of board of directors have been included like presence of at least one women director, women directors not related to nominee and promoter directors, policy of conducting structured training programs for directors, policy of familiarisation programme for independent directors, a system on evaluating executive and outside directors and so on which have helped us in developing a comprehensive board structure index and these elements of index were not a part of past studies. Thus, the following objectives have been laid down for this research paper:

1. To examine the relationship between board structure index and financial performance of the companies.
2. To study the relationship between board diversity index and performance indicator of the companies.
3. To unearth the relationship between board size and companies' performance.

On the basis of the various objectives given above, following hypotheses have been formulated, examined and analysed by applying various statistical tests and techniques.

H₀₁: The relationship between board structure index and performance variable is not statistically significant for better corporate governance.

H_{A1}: The relationship between board structure index and performance variable is statistically significant for better corporate governance.

H₀₂: There is no statistically significant relationship between board diversity index and financial performance of the companies.

H_{A2}: There is statistically significant relationship between board diversity index and financial performance of the companies.

H₀₃: Board size is not significantly related to performance indicator of the companies.

H_{A3}: Board size is significantly related to performance indicator of the companies.

RESEARCH DESIGN AND METHODOLOGY

This study examines the impact of board structure index, board diversity and board size on the corporate financial performance. For that purpose S&P BSE 200 companies are considered over a period of eight years from 2009-10 to 2016-17. Banking and financial institutions have different type of structure and governance. Therefore, they have been excluded from the sample. Companies following reporting period other than the financial year (1st April to 31st March) and those for which data was unavailable with respect to the variables used in the study have also been dropped from the study. This led to the net sample of 154 companies in total.

Data has been collected from various secondary sources for empirical analysis. Annual reports of the sample companies have been accessed for extracting the data related to independent variables of the study. Data for dependent and control variables have been obtained from *proWess* which is maintained by CMIE.

The following variables have been used in the study:

Dependent variables

1. Board Structure Index: It is an index consisting of 30 variables based on their desirability in improving corporate governance in a firm. A score of 1 was given to a particular item if it was present, otherwise 0. Few variables were not applicable to some of the companies before the incorporation of companies Act, 2013. Therefore, board structure index was calculated in percentage terms. The final score of each company was divided by the maximum possible score and then multiplied by 100. Few of these variables were taken up from the past studies and rest have been derived from the Companies Act 2013.
2. Board diversity index: It comprises of five variables representing board diversity. Each variable was given a score of 1 if it was present in a firm, otherwise 0.
3. Board size: It is measured as the total number of directors on the board of a company.

Independent variable

Tobin's Q: It is used to capture financial performance. It has been computed as a sum of market capitalisation of equity and debt divided by total assets. It is a market based performance indicator. Although, there are other market based performance indicators like market value added but Tobin's Q is considered as an important measure of firm performance in the sense that it represents the value investors put in the assets of the firm above or below the total value of firms assets thus representing investor confidence, which in turn is an indicator of effectiveness of corporate governance mechanisms of the firm. Also, it has been widely used in the past studies as well. Therefore, it has been selected for this study also to test the associations.

Control variables

1. Size: Firm size is measured by natural logarithm of market capitalisation.

2. Age: Age of the firm is taken as the natural logarithm of the number of years between year of incorporation of the firm and the observation year.

FINDINGS AND ANALYSIS

The table 1.1 shows the descriptive statistics of all variables considered in the study (dependent, independent and control variables) of all the sample companies over a period of 8 years.

Table 1.1: Descriptive statistics+

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
B_INDEX	66.12785	64.28571	100	32.14286	13.7986	1232
B_DIVER	3.193182	3	5	0	1.092781	1232
B_SIZE	10.29545	10	20	3	2.765761	1232
LG_MKTCAP	9.555978	9.551465	13.12016	-4.41774	1.586775	1232
LG_AGE	3.595734	3.555348	5.252273	0	0.678054	1232
Q	2.69242	1.67174	69.65457	0	3.455699	1232

Source: Author's computation

The minimum value of board structure index is 32.14% and maximum value is 100%. Firms are complying with, on an average, 66.12% of board parameters included in the study. Board size has a minimum value of 3 with a maximum value of 20. On an average, each firm has 10.29 numbers of directors on their board. This indicates that sample firms in the study have diverse but not very large boards.

MODEL SPECIFICATION

This study involves the use of panel regression model for the analysis of data. Panel data have space as well as time dimensions (Gujarati et al. 2011). Therefore, this model provides the results that are not detectable in pure cross-sections or pure time-series studies.

Model: Relationship of board structure index, board diversity index and board size with company financial performance.

$$Q_{it} = \beta_0 + \beta_1(B_INDEX)_{it} + \beta_2(B_DIVER)_{it} + \beta_3(B_SIZE)_{it} + \beta_4(LG_AGE)_{it} + \beta_5(LG_MC)_{it} + \epsilon_{it}$$

Hausman test has been applied to find the preferred model (Fixed or random) from the two panel data models (Gujarati & Porter, 2011). The table below gives the results of the Hausman Test.

Table 1.2 Results of Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.910956	5	0.0107

Source: Author's computation

From the above table, it can be seen that as p value is less than 0.05, therefore, we reject the null hypothesis and accept the alternate hypothesis stating that fixed effect model is appropriate for this panel data model.

Table 1.3 Regression results of panel data regression using fixed effects

Variable	Coefficient	Std. Error	t-Statistic	Prob.
B_INDEX	0.005320	0.001347	3.948878	0.0001***
B_DIVER	0.081152	0.024329	3.335605	0.0009***
B_SIZE	0.022300	0.009534	2.339093	0.0195**
LG_MC	3.90E-06	5.60E-07	6.961223	0.0000***
LG_AGE	0.424457	0.141953	2.990121	0.0029***
C	-1.880143	0.465862	-4.035863	0.0001***
R-squared	0.807175			
Adjusted R ²	0.778569			
F-statistic	28.21617			
Prob.(F)	0.0000			
Durbin-Watson	1.287822			

***shows significance value at 1% level

**shows significance value at 5% level

Source: Author's computation

Results of table no 1.3 highlight that DW statistic is 1.28 which is within the acceptable range of -1.5 to +1.5 (Gujarati et al., 2011) indicating the absence of auto correlation. R squared (R^2) is 0.807175 which suggests that 80.72% of variation in Tobin's Q is explained by all the independent variables in our sample data. We may infer that F-statistic is <0.05 depicting that the model significantly shows the difference in group means. It can be seen from the table that all the independent variables in the study (board structure index, board diversity index and board size) are significantly and positively related to the financial performance indicator. Hence, we reject our null hypotheses H_{01} , H_{02} and H_{03} implying that independent variables are having significant relationship with Tobin's Q in our sample companies. Also, we find statistical significant relation for the company size proxy and age with the financial performance.

IMPLICATIONS

1. As hypothesised and as per few previous studies (Haldar et al. 2013; Sarkar et al. 2012), we found a statistically strong positive relationship between board structure index and corporate financial performance measured by Tobin's Q at 1% significance level. This could possibly suggest that companies with well-defined board structure are rewarded more by the investors. This implies that good governed companies with well board structure leads to greater firm valuation and performance. Also, if the firm adopts and implements good governance practices, then market responds positively to such companies.
2. We also find a positive and significant association between board diversity and financial performance indicator at 5 % significance level. This indicates that board member diversity brings different and unique viewpoints, ways and values to express to the boardroom. Board diversity results in producing higher innovation, creativity and quality decision making. Diversity may help in enhancing the independence of thought of board which may enable it to perform its monitoring function in a better way (Adams et al. 2009).
3. Size of the board measured in terms of number of total directors on board has been found to impact the Tobin's Q statistically significantly and positively at 1 % level of significance. This positive relationship indicates that board with larger size can perform monitoring function more efficiently and hence, create more value for a firm. Larger boards provide more benefits to a firm like greater depth of intellectual knowledge, experience, expertise and diversity in contacts than

smaller boards and therefore help in improving decision making and in turn improve financial performance.

4. In our study, both control variables age and size of the sample firms have been found to be significant at 1% significance level. This shows that companies which are quite large in size (in terms of market capitalisation) and old adopt and implement better corporate governance practices and have a well-defined board structure. This has a positive impact on the financial performance. Hence, this enables us to conclude that age and size of the firms are important contributors in their financial performance.

CONCLUSION

The main objective of the present study is to analyse the relationship between different board characteristics and financial performance of the listed companies. The study involves the use of both descriptive and inferential statistics in obtaining these relationships. The descriptive statistics include mean, median and standard deviation. The inferential statistics include the regression analysis. The study has contributed by providing a strong positive relationship between board structure index and financial performance which indicates that companies with well-defined board structure are rewarded more by the investors. This implies that good governed companies with well board structure leads to greater firm valuation and performance. Also, if the firm adopts and implements good governance practices, then market responds positively to such companies. Also, diverse board brings greater knowledge base, innovation and creativity and hence, becomes a competitive advantage. Finally, larger the number of directors on board, larger will be the benefits to a firm in terms of knowledge, expertise, experience, contacts, networks, improved decision making and hence, improved financial performance. Also, as rigorous and mandatory provisions have been introduced with the enactment of Companies Act 2013 and other committees with the time, we can see that on an average, firms are complying with 66.12% of the board characteristics taken into consideration in our study. The minimum board size is three with a maximum board size of twenty and on an average, size of each firm's board of directors is 10.29. Also, each firm, on an average, has adopted majority of the variables of board diversity. This indicates that sample firms in the study have diverse but not very large boards.

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