

Corporate Governance Mechanism and Firm Performance: Evidence from Pakistan

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Abstract

This study empirically investigates the impact of corporate governance mechanisms on firm performance using data from 204 manufacturing firms listed on the Pakistan Stock Exchange over the period 2010–2016. While prior literature affirms that effective governance enhances firm outcomes, it also emphasizes that governance practices are context-dependent, varying across institutional and financial environments. Addressing this heterogeneity, the study examines the influence of key governance attributes board size, block ownership, CEO duality, and board independence on firm performance. Using pooled OLS and fixed effects estimations, the findings reveal that larger board size and concentrated ownership positively influence firm productivity, whereas leverage structure and CEO duality exhibit a negative association with firm value, measured through return on assets (ROA), return on equity (ROE), and return on sales (ROS). Board independence, however, shows an insignificant relationship with performance outcomes. These results underscore the nuanced role of governance mechanisms in shaping corporate performance in emerging markets. The study contributes to the corporate governance literature by providing robust, context-specific evidence from Pakistan's manufacturing sector and offers practical insights for policymakers and investors aiming to strengthen governance frameworks in developing economies.

Keywords: Corporate Governance, Firm Performance, Board Structure, CEO Duality, Emerging Markets

1. Introduction

The topic related to corporate governance has always been of remarkable importance in academic literature. Extensive studies address that good governance dynamics lead to high firm profitability by mitigating the agency cost, protecting the rights of shareholders, aligning the managers and all stakeholders in the interest of firm (Akbar, Poletti-Hughes, El-Faitouri, & Shah, 2016; Ko, Tong, Zhang, & Zheng, 2016; Mayer, 1997). Last few decades have been evidence of terrible end of well-reputed and leading companies in the world such as Enron, World com, Tyco etc. One of the major reasmechanism:ch disasters was absence of effective governance mechanism; consequently, these corporations were not fair with their stakeholders. Effective governance structure in the firm identifies and allocates the rights and responsibilities among its stakeholders such as board of directors, managers, creditors, suppliers, shareholders, regulators, customers etc.

Corporate Governance may vary across countries due to the institutional differences of the nations. Hence, there is no one-size-fits-all formula for achieving an effective governance mechanism. Overwhelming studies examined that effective firm governance mitigates agency problems by reducing conflicts of interest among all entities associated to the firm. Enterprise governance mechanisms, such as board features, debt equity ratio, and leadership structure serve as monitoring factor to align managerial incentives with wealth maximization of shareholders. In this regard, larger boards may provide diverse expertise and better monitoring as advocated by resource dependency theory, excessively large boards could suffer from coordination inefficiencies (Bhatt & Bhatt, 2016). Moreover, the role of independent directors has received ample attention, studies assessed that board independence strengthens oversight and limits managerial irregularities (Cavaco, Crifo, Rebérioux, & Roudaut, 2017), while some argue that board independence may not significantly improve firms outcome in developing markets with family-dominated ownership structures (Giraldez & Hurtado, 2014). CEO duality raises further governance imperfections, where agency theory predicts that compound leadership decreases accountability and emanates concentrated power, in a turn harming performance (Salim & Yadiv, 2012). In contrast, stewardship theory suggests that dual role of CEO may facilitate quick decision-making and specifically in dynamic settings (Moradi et al., 2017). Ownership concentration contributes as another critical determinant of governance instruments in developing financial markets. Blockholders can exercise significant influence over management and reduce agency conflicts by closely monitoring managers (Shleifer & Vishny, 1986). Meanwhile, debt equity structure, although often considered a financial control variable, also functions as a governance mechanism. Higher debt in the capital may discipline managers to scrutiny from creditors and limiting free cash flow available for lucrative investments (Dawar, 2014). Thus, leverage can increase financial distress risks, thereby reducing corporate performance.

In light of the above arguments, thus we have taken a series of major governance proxies (board structure, leadership, debt ratio and separation of control) as motivated by prior studies (Akbar et al., 2016; Moradi, Velashani, & Omidfar, 2017) and three accounting measures (ROA, ROE and ROS) to investigate the performance of listed firms from manufacturing sectors of Pakistan Stock Exchange. Hence, extensive research, the link between corporate governance and firm performance remains inconclusive, particularly in emerging markets with unique institutional settings. This study examines how governance mechanisms board size, block ownership, CEO duality, and board independence affect firm performance in Pakistan's manufacturing sector. Using data from 2010–2016 and applying pooled OLS and fixed effects models, the study provides empirical evidence on how governance structures shape firm outcomes in developing economies and offers practical implications for policymakers and corporate decision-makers.

2. Literature Review

2.1 The SECP Codes of Corporate Governance in Pakistan

Although, the history of organized layout of corporate governance is not too old but its techniques and mechanism were founded many centuries ago. In 1970, it was initially started in US and later on SECP (Securities and Exchange Commission of Pakistan) introduced the codes and conducts of corporate governance of Pakistan in 2002. In 2012 and 2017, SECP updated the codes of firm governance to sustain in the market. Pakistan's corporate governance adopts the Anglo Saxon System, in which board members monitor and managed the entire activities of management, in order to expanding stakeholder's wealth. SECP restricts firms to comply with the codes of corporate dynamics updated from time to time. All firms shall be provided secretarial compliance certificate at the end of every financial year. As per 2002 codes, one independent member was compulsory; however, in 2012 codes regulator encourages having 1/3 of independent board members in overall board, in which one will be compulsory. Moreover, the representation of 75% executive directors was decreased to 33% in 2012. SECP updated codes also discourage the compound leadership, which contains the CEO performs as a chairman of board. Statement of compliance with CG codes also included the criteria of board

composition, procedure of board evaluation, number of directorships and training of board. In addition, appointment, dismissal, remuneration, qualification, and terms and conditions of employment of chief secretary, chief financial officers and head of internal audit committee purely associate with the discretion of board decision rather of CEO.

2.2 Corporate Governance Mechanism and Firm Performance

Bhatt and Bhatt (2016) suggest that although the practices, process, nature and mechanism of corporate governance may be vary from country to country but it characteristics like board size, ownership structure, capital structure as well as leadership structure indeed maximize firm performance, strengthen the confidence of firms and linked investors. At first glance, firm governance deals with the way in which investors, both equity holders and creditors, to f assure themselves to availing a return upon their investment (Shleifer & Vishny, 1997). Meanwhile, issuing equities or financing through debts, both cases a common dilemma led the management in trouble, what to prefer. Because both lead the management in a motivational contradiction, one between shareholders and managers (principal-agent conflict), other managers and creditors clash known as an agency conflicts (Cosset et al., 2016; Giroud & Mueller, 2010, 2011). Simultaneously, separation of control, where majority shareholders expropriate the rights of minority shareholders, in a turn deteriorates firm performance by promoting self-interest/ prestige, particularly in developing markets due to weak regulatory regime (Rashid & Islam, 2013). Similarly, the role of block holders, board size and leadership structure plays a crucial part while affecting firm performance.

Increase in board size cause drop in firm future risk expectations (Haider & Fang, 2016). Several authors addressed the positive association between the value of a firm and size of board (Conheady, McIlkenny, Opong, & Pignatel, 2015; Kalsie & Shrivastav, 2016; Rashid & Islam, 2013). Another study address, that in India top firms have been favoring large board to manage their resources, required additional competency and expertise (as proposed by resource dependency theory) as a result appoint more board of directors (Kalsie & Shrivastav, 2016). In contrast, Lipton and Lorsch (1992) favored the small board, associated with timely decisions and relatively low free-riding rather than a large board. Supporting small board size, Cheng (2008) argued that large board size less deviates firm productivity, hesitates to take decisions of risky projects.

Giraldez and Hurtado, (2014) supporting the notion that firm value positively affected by independent board members, as outside directors are more entrusted by shareholders, their strategy and decisions are unbiased. Meanwhile, several studies advocate the dark aspect of board independence, as many firms appointed the independent directors only compliance with regulators codes. Additionally, the independent board members could not be well updated with the current happening firm, they do not have enough knowledge about firm's competitive position and capabilities (Cavaco, Crifo, Rebérioux, & Roudaut, 2017; Moradi et al., 2017). Moreover, the role of CEO duality shows diverging results particularly in developing markets. Firth, Wong, and Yang (2014) confirmed that COE duality contained both positive and negative characteristics. In environmental pressure, firms having separate leadership has significantly lower return on asset, poor performance and imperfect growth of shareholders' wealth (Dey, Engel, & Liu, 2011). Private owned enterprises positively moderated by the dual role of CEO but could not found effective for state-owned enterprises (Peng, Li, Xie, & Su, 2010).

In developing markets, block holders disciplining the internal corporate governance mechanism, restricting managers' free riding and their private investment motives (Koke & Renneboog, 2005; Moradi et al., 2017). However, Majority equity holders may exploit the deserving funds of minority shareholders, engaged in seeking self-benefits from firm assets (Rashid & Islam, 2013). Modigliani and Miller (1958) described that firm value is not affected by financial strategies but applied certain assumptions i.e. no taxes, nil transaction cost, symmetric information, and a perfect capital market. However, these assumptions may not actually exist in the real world. Further, studies in developing financial markets regarding debt structure show significant but mixed results.

Gompers, Ishii, and Metrick, (2003) presents that those firms, where shareholder rights are protected,

enjoyed large sale growth, higher profit, higher firm value, small corporation acquisition, and low capital expenditure. Hence, debt and equities both are associated with certain pros and cons. Salim, and Yadiv (2012) argued that return on asset, return on equity and earning per share have negatively affected by total debt. Might be default risk was being a cause of that. In contrast, several other studies suggested that financial leverage has positive impact on firm performance. It serves as a disciplinary mechanism in the firm and mitigates the free cash flow of managers (Liao, Mukherjee, & Wang, 2015; Ibhagui & Olokoyo, 2018). In this regard, Dawar (2014) reported the inverse association between firm performance and financial leverage in the Indian market. Justification may be that the agency factor of debt is a moderator element of this effect. Le and Phan (2017) also documented the negative effect of debt in Vietnam. Sheikh, Wang, and Khan (2013) argued that in Pakistan board size has positive, whereas, outsider directors and compound leadership have a negative effect on firm growth. However, concentrated shareholder structure is effective in Pakistan, as it prevents management from expropriation behavior. High leverage has a negative impact due to conflict between creditors and managers which bound the management abilities of innovations and creativity. So considering the theoretical grounds we set the following hypotheses:

H1: Large board size enhances firm performance in developing financial markets.

H2: Independent board members improve the firm value in developing markets.

H3: In developing financial markets block holders enhance the performance of a firm.

H4: Compound leadership deteriorates the firm performance in developing markets.

H5: Debt structure deteriorates the value of the firm in developing financial markets.

3. Data and Methodology

3.1 Research Sample and Data Collection

In our study, non-financial listed companies of Pakistan Stock Exchange were selected as a total population, in which all manufacturing firms have been taken as a final sample. Banks and other financial firms were eliminated from the sample because of the special reporting process and impaired capital factors. Initially, it was decided that the current study will be span on 12 years of data. However, due to data non-availability of consistent firms' years, we were finally limited with most possible years of 2010 to 2016. Data were manually extracted from seventeen different manufacturing sectors (presented in Appendix I) of Pakistan Stock Exchange, whose data were present on the State Bank of Pakistan, and corporations' websites. Descriptive statistics have been used to measure the essential feature of data and also a correlation to finding a linear association among variables. Data has been analyzed by Pooled OLS model and fixed effect model based on hausman test.

3.2 Research Model

$F\text{ Performit} = \beta_0 + \beta_1 B\text{ indit} + \beta_2 B\text{ lockit} + \beta_3 L\text{ eadit} + \beta_4 G\text{ earit} + \beta_5 B\text{ dszit} + \beta_6 L\text{ iquit} + \beta_7 F\text{ Sizeit} + e$

All five research hypotheses have been tested through this research model by two alternate methods.

3.3 Research Variables

3.3.1 Dependent Variables

In our research model, firm productivity is the dependent variable, calculated by the following three variables.

Return on Asset (ROA): Profit which is compared to assets measured as (net profit/ total assets).

Return on Equity (ROE): Income after-tax as compared to shareholders equity (net profit/ shareholders equity).

Return on Sales (ROS): gross profit margin ratio that is (gross profit/ net sales).

3.3.2 Independent Variables

Following are the independent variables:

Board Size (Bdsz): Board size has been measured by a total number of board members comprising board structure.

Board Independence (B Ind): Board independence is measured by the total number of outside board members in total composition.

Leadership Structure (Lead): Structure of leadership observed through dummy variable. If chairman of board also performs as CEO it would be defined as 1 otherwise 0.

Capital Structure (Gear): It is a percentage of debt in whole capital measured by (Total debts/ Total Assets).

Ownership Concentration (Block): Ownership concentration or block holders is calculated as the owner of more than 5% shares of the firm.

3.3.3 Controls Variables

Firm size and firm liquidity are used as control variables in this study. The firm size determines the performance ranking and it was noticed that large size firms' enjoyed high firm value (Moradi et al., 2017; Sheikh et al., 2013). Firm size (F Size) is calculated by the natural log of firm total sales. Moreover, studies suggest that liquidity has a strong positive effect on firm profit. Moradi et al. (2017) also reported the positive aspect of the firm's cash ability associated with firm value. Liquidity ratio (Liq) has been measured through current assets divided by current liabilities.

4. Empirical Analysis

4.1 Descriptive Statistics

Initially, a test for descriptive statistics of all variables has been conducted and presented in Table I.

Variable	Observations	Mean	Std. Dev.	Min	Max
ROA	1,428	0.061	0.134	-0.756	0.742
ROE	1,428	0.114	0.460	-3.905	3.302
ROS	1,428	-0.033	0.588	-5.053	5.478
Debt structure	1,428	0.588	0.298	0	2.406
Block holders	1,428	0.644	0.202	0	1
Board size	1,428	7.825	1.325	6	14
Board Indep	1,428	1.241	1.449	0	8
HHI	1,428	0.184	0.107	0.065	0.634
Market size (ML)	1,428	141341.47	83572.6	4243.67	625726.76
Liquidity	1,428	1.443	1.152	0.01	8.694
Firm size (ML)	1,376	10345.58	19597.3	1.587	184591.56

Table 1 Descriptive Results

It represents initial insights of variables i.e. measure of central tendency, measure of dispersion along with the minimum and maximum value of the sample. 1428 yearly observations have taken from almost 204 non-financial manufacturing firms for the time span of 2010 to 2016. According to Table I, ROS with the value of -0.03 describes that on average firms are suffering to attain profit in respect of their sales. On the financial side, the mean of capital structure 58% indicates that Pakistani firms are preferring debt for raising finance. Dual leadership average value of 18% shows that only 217 cases, out of 1,428, have single person hold the dual position of CEO and Chairman. Moreover, on average 64% of ownership follows the literature (Haider & Fang, 2016, Moradi et al., 2017; Rashid & Islam, 2013). Those argued that developing countries have concentrated ownership structure. Meanwhile, almost one person in board represents as an independent director, which is quite low and nearly 8 members formulate the entire board respectively.

Finally, liquidity averages 1.44, though with high dispersion, indicating uneven ability among firms to cover short-term obligations. While the mean value of firm size of 10346 million with the widespread stated that the data consists of very small and very large firms, demonstrating diversity in firm characteristics.

4.2 Correlation Matrix

Table-II presents the Pearson correlation, among all proxies — ROA, ROE, ROS, gear, leadership, board independence, and board size, block holders, liquidity, and firm size. Overall, the correlation coefficients among explanatory variables seem to be relatively below 0.50, thus the issue of multicollinearity is not of our concern. Otherwise, the rest of variables are mostly statistical significantly correlated with dependent variables. In which negative coefficient of gear and dual leadership indicates that increase in these, being a decrease in independent variables, also align with the expected hypothesis. Here significant positive relationships among control and dependent variables supported the particular works of those authors, who manifested the importance of this association.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(09)	(10)
ROA (1)	1									
ROE (2)	0.49***	1								
ROS (3)	0.37***	0.06***	1							
Gear (4)	-0.34***	-0.10***	-0.38***	1						
Leadership (5)	-0.09***	-0.09***	-0.05*	0.05**	1					
Block holders (6)	0.05*	0.06**	-0.01	0.05*	-0.04	1				
Board size (7)	0.18***	0.14***	0.10***	-0.14***	-0.15***	-0.05*	1			
Indep (8)	0.05**	0.03	0.01	0.01	-0.03	0.03	0.21***	1		
Liquidity (09)	0.34***	0.11***	0.19***	-0.51***	-0.08***	-0.01	0.07***	0.01	1	
Firm Size (10)	0.33***	0.16***	0.38***	-0.19***	-0.03	0.05**	0.26***	0.08	0.1	1

***show significance at 1%, ** at 5% and * at 10% correlation.

Table II Correlation among Variables

All performance variables (ROA, ROE, and ROS) are all positively related to one another, which captures the different aspects of profitability. While ROA and ROE indicate the significant association, proposing that firms using assets effectively also tend to increase shareholders wealth. On the other hand, leverage is negatively related to all performance indicators, especially ROS, highlighting that firms with higher debt generally struggle to generate outcomes. Concentrated ownership shows insignificant positive relationship with ROA and ROE, while leadership and performance have a relatively negative association. On the other hand, board size displays a positive correlation with ROA, proposing that larger boards may support better governance and decision-making, while board independence appears to be insignificant. Moreover, firm size is also significantly and positively related to all proxies of performance, particularly ROS, indicating that larger firms tend to achieve higher profitability. Overall, the results suggest that profitability is improved by liquidity, firm size, and larger boards, and greater presence of block holders but adversely affected by heavy reliance on debt.

4.3 Empirical Results

In this section, all five hypotheses of linkage between firm governance and performance have been estimated and presented in tables below. All models analyzed are significant at 5%, using F statistics. Pooled OLS has been implemented due to its BLUE properties, as well as fixed effect model has also been employed, on the basis of hausman test, to capture firms' heterogeneity effect.

4.3.1 Results of Governance Mechanism and Firm Performance

The regression analysis was conducted using both the Pooled OLS and Fixed Effect techniques to access the relationship between internal governance instruments and firm performance and a summary of this model is presented in Appendix-I&II. Consistent with existing literature, firm performance is significantly related to corporate governance (Bhagat & Bolton, 2008; Core et al., 1999; Gompers et al., 2003; Rashid & Islam, 2013; Shleifer & Vishny, 1997; Yu et al., 2017). More precisely, debt ratio, board size, block holders and leadership structure have significant relation with firm value, measured by pooled OLS technique. In the fixed effect model, firm performance significantly affected by only three governance attributes (board size, gear, and leadership structure). Block holders show insignificant impact but only in fixed effect model. However, the independent board found insignificant in both models, this could be the low representation could not allow appropriate contribution and signs of this variable are almost negative, which is not similar to our hypotheses. Moradi et al. (2017) also mentioned the weak effect of board independence with firm value.

In addition, capital structure shows a negative correlation with ROA, ROE, and ROS in both models as similar to prior literature, suggesting that higher debt levels reduce profitability by increasing financial risk (Dawar, 2014; Le & Phan, 2017; Salim & Yadv, 2012). Compound leadership has also a negative relationship with performance variables, in aligned with agency theory which argues that managerial dominance could harm firm efficiency (Dey et al., 2011; Firth et al., 2014).

Pooled OLS model			
Variables	ROA	ROE	ROS
Gear	-0.108*** 0.014	-0.055 0.055	-0.829*** 0.062
Leadership	-0.207*** 0.008	-0.067** 0.032	-0.085** 0.036
Block holders	0.047*** 0.015	0.145*** 0.062	0.036 0.07
Board size	0.005** 0.002	0.030*** 0.009	-0.012 0.011
Independent directors	0.000 0.002	-0.003 0.008	-0.005 0.009
Liquidity	0.023*** 0.003	0.028** 0.013	-0.022 0.014
Firm size	0.196*** 0.001	0.032*** 0.007	0.108*** 0.008
Constant	-0.139*** 0.027	-0.469*** 0.1.9	-0.302*** 0.122
No of Observations	1376	1376	1376
F Statistics	67.11	67.11	72.31
Prob> F	0.00	0.00	0.00
R Square	0.25	0.04	0.26

***shows significance at 1%, ** at 5% and * at 10% correlation.

Table III Corporate Governance and Firm Performance

Meanwhile, block holders have a positive effect upon firm performance (only in pooled OLS model), as mentioned in the literature that concentrated ownership enhances monitoring, leading to better asset and equity returns (Ayodeji & Raphiri, 2015; Moradi et al., 2017). On the other hand, in a fixed effect model, block holders variable is negatively related to ROA and ROE but not significant. Furthermore, in a fixed effect model board size is negatively related with performance measure but in OLS estimations large board delivers high return on sale and equity. Positive relation followed the results of (Conheady et al., 2015; Kalsie & Shrivastav, 2016). From theoretical support, the large board size having versatile skills and power improve monitoring of management irregularities, accordingly, increase earning.

Fixed Effect Model			
Variables	ROA	ROE	ROS
Gear	-0.086*** 0.24	-0.249*** 0.107	-0.057 0.087
Leadership	-0.003 0.009	-0.108*** 0.041	0.038 0.034
Block holders	-0.037 0.03	-0.108 0.016	0.072** 0.120
Board size	-0.013*** 0.003	-0.013 0.015	-0.010 0.013
Independent directors	-0.003 0.002	-0.005 0.011	-0.0004 0.009
Liquidity	0.014*** 0.005	0.016 0.019	-0.0132 0.016
Firm size	0.024*** 0.005	-0.025 0.021	0.329*** 0.018
Constant	0.030 0.05	0.646*** 0.25	-2.62*** 0.208
No of Observations	1376	1376	1376
F Statistics	11.75	2.49	49.18
Prob> F	0.00	0.00	0.00
R Square	0.18	0.001	0.16
Hausman test: chi2	39.89	21.65	384.65
Prob>ch2=2	0.000	00.29	0.000

***shows significance at 1%, ** at 5% and * at 10% correlation.

Table IV Corporate Governance and Firm Performance

Overall, the hausman test confirms the dominance of the fixed effect model, highlighting the importance of firm-specific heterogeneity. The findings suggest that while pooled results emphasize the significance of governance mechanisms such as board structure and ownership, the fixed effect estimates reveal that structural firm characteristics; debt ratio, liquidity, and firm size are more robust drivers of performance over time. These results align with prior literature that stresses the persistent role of firm fundamentals in explaining long-term profitability, while governance attributes may be more reflective of cross-sectional variation than dynamic drivers of change (Moradi et al., 2017; Sheikh et al., 2013).

5. Conclusion and Study Implications

In this study, we attempt to investigate how major firm governance instruments board size, board independence, CEO duality, block holders, and leverage behave differently in relation with firm

performance in developing market like Pakistan. For this purpose, we obtained data from 204 firms from 17 different manufacturing sectors listed in Pakistan Stock Exchange. We employed two different techniques pooled OLS model and fixed effect model on the basis of hausman test.

Firstly, we empirically confirm that internal corporate mechanism significantly affect the performance of firm. More specifically, measured by board size, concentrated shareholding and CEO duality variables in both techniques, while, independent board reported insignificant through the estimations. Secondly, high leverage significantly reduces all performance indicators holistically in both models. Similarly, compound leadership negatively associated with performance measures due to power concentration. Thirdly, we also found that large board is effective in developing financial markets as supported by resource dependency theory which is also consistent with our hypotheses. Moreover, block holders has significant and positive impact on firm growth due to optimum monitoring. Finally, Liquidity and firm size variables are emerged as robust drivers of performance, significantly boosting all three metrics (ROA, ROE, and ROS).

Overall, we contribute to the literature of governance mechanism and firm performance in following ways. Most of the studies in Pakistan were conducted on very limited data set especially of KSE-30 index or KSE 100 index. However, in this study we examine the data of more than 200 firms from 17 different sectors. On the other side, we used two different techniques to seek for robust results for future implications.

For recommendations aspects, the findings highlight for policymakers and regulators, the need to strengthen governance dynamics such as independent boards and shareholder monitoring, particularly in developing markets where agency costs are often high. For managers, the evidence suggests prioritizing prudent leverage management, maintaining adequate liquidity, and leveraging firm size advantages to sustain profitability over time.

From a limitation aspect, due to some unavoidable factors, we could only manage to obtain limited firms' yearly data. So for future suggestions; this relationship requires to be investigated more comprehensively with extensive data set by incorporating additional techniques (e-g GMM).

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Appendix I Summary of Governance and Firm Performance (OLS Model)

Variables	Expected sign	Real Sign (ROA)	Sig (ROA)	Real Sign (ROE)	Sig (ROE)	Real Sign (ROS)	Sig (ROS)
Gear	-	-	✓	-	X	-	✓
Lead	-	-	✓	-	✓	-	✓
Block	+	+	✓	+	✓	+	X
Board size	+	+	✓	+	✓	-	X
Indep	+	+	x	-	x	-	X
Liquidity	+	+	✓	+	✓	-	X
Firm size	+	+	✓	+	✓	+	✓

✓ Sign indicates the significance on any level 10%, 5%, 1% however, X sign shows insignificant

Appendix II Summary of CG and Firm performance (Fixed Effect Model)

Variables	Expected sign	Real Sign (ROA)	Sig (ROA)	Real Sign (ROE)	Sig (ROE)	Real Sign (ROS)	Sig (ROS)
Gear	-	-	✓	-	✓	-	X
Leadership	-	-	X	-	✓	+	X
Blockholder	+	+	X	-	X	+	✓
Board size	+	-	✓	-	X	-	X
Board Indep	+	-	X	-	X	-	X
Liquidity	+	+	✓	+	X	-	X
Firm Size	+	+	✓	-	X	-	✓

✓ Sign indicates the significance on any level 10%, 5%, 1% however, X sign shows insignificant

Appendix III

S No	Sectors	No of Firms
1	Automobile assembler	11
2	Automobile parts & accessories	5
3	Cement	18
4	Chemical	26
5	Engineering	11
6	Fertilizer	6
7	Food & personal care products	17
8	Glass & ceramics	7

9	Leather & tanneries	2
10	Paper & board	7
11	Pharmaceuticals	8
12	Sugar & allied industries	20
13	Synthetic & rayon	6
14	Textile composite	19
15	Textile spinning	37
16	Tobacco	2
17	Vanaspati & allied industries	2
	Total Firms	204