

# A Governance and Ethics Perspective on Firm Performance: Evidence from NIFTY 500 Companies

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## ABSTRACT

This study examines the relationship between board characteristics, audit characteristics, ethical policies, and firm performance using panel data from Indian listed companies. The initial dataset comprises firms included in the NIFTY 500 index, of which 385 companies were retained in the final sample after excluding firms with incomplete data. The study covers ten years period from 2014–15 to 2023–24, resulting in a comprehensive panel dataset. Financial, governance, and ethical policy data were sourced from the CMIE Prowess database. Firm performance is measured using both accounting-based indicators—Return on Assets (ROA) and Return on Equity (ROE)—and a market-based measure, Tobin's Q. The findings suggest that effective board governance mechanisms are more critical for enhancing firm performance than symbolic compliance with ethical policies. The study contributes to the corporate governance literature by providing robust India-specific evidence and underscores the importance of employing fixed effects estimation in governance–performance research.

**Keywords:** Corporate Governance(CG), Firm performance(FP)

## Introduction

Corporate governance has increasingly attracted global attention due to its pivotal role in ensuring the accountability, transparency, and long-term sustainability of corporations. It encompasses the mechanisms, processes, and relationships by which firms are directed and controlled, shaping how corporate objectives are set and achieved, how risk is monitored, and how performance is optimised. Among the diverse governance mechanisms, board characteristics and audit committee characteristics have emerged as central determinants of effective governance structures that influence firm performance. These two governance dimensions are crucial because they collectively safeguard shareholder interests, enhance decision-making, and reinforce the integrity of financial reporting systems.

The board of directors is widely recognised as the cornerstone of corporate governance, tasked with overseeing managerial decisions and ensuring alignment between the interests of management and shareholders. The effectiveness of a board is largely shaped by its composition, including attributes such as independence, size, diversity, expertise, and the proportion of executive versus non-executive directors. Research has consistently shown that board independence enhances monitoring quality, reducing agency costs, while board diversity fosters broader perspectives and innovative decision-making. However, the relationship is not always linear; excessively large boards may suffer from coordination problems and slower decision-making, potentially undermining performance. Thus, the structure and characteristics of the board are instrumental in shaping governance effectiveness and firm outcomes.

Complementing the board's oversight role, the audit committee has become an essential governance mechanism, particularly in the context of financial accountability and investor protection. The audit committee is responsible for supervising financial reporting processes, ensuring compliance with regulatory requirements, maintaining auditor independence, and strengthening internal control systems. Audit committees with higher independence, financial expertise, and active engagement are better equipped to detect irregularities, curb earnings management, and enhance the credibility of disclosed financial information. In turn, this improves investor trust, reduces information asymmetry, and positively influences firm valuation and market performance.

The interaction between board characteristics and audit committee attributes is also significant. While the

board provides broad strategic oversight, the audit committee ensures operational and financial integrity. Together, they form complementary governance structures that reduce agency conflicts, promote ethical conduct, and support long-term value creation. However, the influence of these governance mechanisms on firm performance is complex and context-dependent, often shaped by institutional environments, ownership patterns, regulatory frameworks, and cultural factors. For example, governance structures that enhance firm performance in developed economies may operate differently in emerging markets due to variations in legal enforcement, investor protection, and market maturity.

Given these dynamics, understanding the relationship between board and audit committee characteristics and firm performance is of both theoretical and practical importance. From a theoretical perspective, agency theory posits that stronger governance mechanisms mitigate conflicts between managers and shareholders, leading to improved performance. Resource dependence theory, in contrast, emphasises the strategic role of boards in providing access to critical resources and networks that enhance firm competitiveness. Practically, the insights gained from studying these governance-performance linkages provide valuable guidance for regulators, policymakers, and practitioners in designing governance frameworks that foster accountability, transparency, and corporate sustainability.

In this context, this study explores how variations in board characteristics and audit committee attributes influence firm performance, with a particular focus on the interplay between governance mechanisms and financial as well as strategic outcomes. By integrating theoretical perspectives with empirical evidence, the analysis contributes to the ongoing discourse on how governance structures can be optimised to strengthen firm value, reduce risk, and enhance stakeholder confidence in a rapidly evolving global business environment.

## 1. Review of Literature

The board of directors plays a pivotal role in aligning managerial actions with shareholder interests. Drawing on agency theory, scholars argue that board characteristics such as size, independence, diversity, and meeting frequency significantly influence monitoring effectiveness and strategic decision-making (Fama & Jensen, 1983). Empirical evidence on board size presents mixed findings. While larger boards provide access to diverse expertise and external resources, excessive size may reduce efficiency due to coordination and free-rider problems (Jensen, 1993; Yermack, 1996). Studies conducted in emerging markets suggest that moderately sized boards positively affect firm performance by balancing advisory and monitoring roles (Gurusamy, 2017). Several studies report a positive relationship between board composition and firm performance, particularly in firms with weak external governance environments (Bhagat & Black, 2002). However, contradictory evidence indicates board composition without firm-specific knowledge may negatively affect performance (Dimitropoulos & Asteriou, 2010). The audit committee, as a sub-committee of the board, enhances financial reporting credibility. Research indicates that audit committee independence, financial expertise, and size significantly reduce earnings management and improve reporting quality (Klein, 2002). Improved reporting reliability, in turn, enhances investor confidence and firm valuation (Xie, Davidson, & DaDalt, 2003). Empirical studies across developed and emerging economies find that high-quality audits are positively associated with firm performance, Tobin's Q, and return on assets (DeAngelo, 1981; Al-Matari et al., 2014). In recent years, scholars have increasingly emphasized ethical policies as a critical dimension of corporate governance. From a stakeholder theory perspective, ethical policies enhance firm legitimacy and long-term sustainability by fostering trust among investors, employees, customers, and regulators (Freeman, 2010). Empirical studies show that firms with strong ethical frameworks experience lower incidences of fraud, reduced reputational risk, and improved financial stability (Kaptein, 2008). Research further indicates that ethical governance positively influences auditor choice and audit quality, suggesting a complementary relationship between ethics and auditing mechanisms (Lennox & Pittman, 2010). Ethical leadership has also been linked to improved financial and non-financial performance by promoting transparency, accountability, and employee commitment (Brown, Treviño, & Harrison, 2005).

### 1.1 Objective of the Study

The objective of the study is to examine the relationship between Corporate Governance, Ethical policies, and firm performance of NSE 500 companies.

### 1.2 Hypotheses of the study

As the study proposes to explore the relationship between Corporate Governance, Ethical policies, and Firm performance, the formulated hypotheses are as follows:

H<sub>01</sub>: There is no significant impact of Board characteristics, Audit committee characteristics, and Ethical policies on ROA.

H<sub>02</sub>: There is no significant impact of Board characteristics, Audit committee characteristics, and Ethical policies on ROE.

H<sub>03</sub>: There is no significant impact of Board characteristics, Audit committee characteristics, and Ethical policies on Tobin's Q.

## 2. Research Methodology

### 2.1 Data and Study Period

The study adopts a quantitative, empirical, and explanatory research design to examine the relationship between corporate governance mechanisms, ethical policy practices, and firm-level outcomes of Indian listed companies. The sample comprises Nifty 500 companies, representing large-cap, mid-cap, and small-cap firms across various industries, ensuring adequate market representation. The sample consists of 385 firms selected from the NIFTY 500 index, after excluding companies with missing or inconsistent data during the study period. The study covers ten years from 2015 to 2025. This period is particularly relevant as it captures the post-Companies Act, 2013 governance reforms, the Strengthening of SEBI's corporate governance regulations, and the Increasing emphasis on ethical conduct, sustainability, and compliance practices in Indian corporations. The study is based on secondary data, collected from annual reports and reliable databases such as CMIE Prowess.

### Operational Definition of Variables

Variables	Type	Definition	Symbol	Sources
Board size	Independent	Board size, measured as the number of directors on the company's board	BS	Garg, A. K. (2007) Danoshana & Ravivathani, 2019
Board composition	Independent	The ratio of the number of outside (non- executive) directors to the total number of directors on the board	BC	Khatib & Nour, 2021 Koji, Adhikary & Tram, 2020
CEO duality	Independent	CEO duality, calculated as a function of both the board chairman and CEO, if the CEO is also the chairperson, CEO = 1, else = 0	CD	Shu & Chiang, 2020 Arora & Sharma, 2016
Audit committee size	Independent	Number of members of the audit committee	AC	Zraiq, M., & Fadzil, F. 2018 Alqatamin, R. M. 2018
Audit committee independence	Independent	Dummy variable if the IDs on the Audit committee are more than 50% is 1, otherwise 0	ACI	Hasnan, Razali & Hussain, 2020 Vo & Nguyen, 2014
Frequency of meeting	Independent	Number of times of meeting during the financial year	FOM	Vafeas, N. (1999) Arora & Sharma, 2016
Operational Definition of VariablesCode of Ethics	Independent	A dummy variable that equals 1 if a firm has a formal code of ethics, 0 otherwise	CC	Donker, H., Poff, D., & Zahir, S. 2008
Anti- corruption policy	Independent	A dummy variable that equals 1 if a firm has an anti-corruption policy, 0 otherwise	ACP	Badawi, A., & AlQudah, A. 2019

whistle-blowing policy	Independent	A dummy variable that equals 1 if a firm has a whistleblowing mechanism, 0 otherwise	WP	Lilly, J., Duffy, J. A., & Wipawayangkool, K. 2016
Return on Assets	Dependent	Profit after tax/ total assets	ROA	Haldar and Rao, 2011 Gurusamy, 2017
Return on Equity	Dependent	Profit after tax/ shareholder's equity	ROE	Dawar, 2014 Mitra, 2019
Tobin's Q	Dependent	Ratio of the market value of the firm to total assets	TQ	Ganguli, S. K. (2013). Manna, Sahu, and Gupta, 2016
Firm Age	Control	Natural Logarithm of years since firms' incorporation	FA	Taufil, Rus and Musallam, 2013
Firm Size	Control	Natural logarithm of total assets	FS	Panda and Bag, 2019
Sales Growth	Control	Increase in sales over a period.	SG	Chadha and Sharma, 2015 Afshan, Chhetri, and Pradhan, 2011
Leverage	Control	Total outsiders' debt to total assets	Lev	Margaritis and Psillaki, 2010

**2.2 Research Equation:** The following regression model was employed to evaluate the research hypothesis using the variable as previously described:

$$ROA_{i,t} = \beta_0 + \beta_1 BS_{i,t} + \beta_2 BC_{i,t} + \beta_3 FOM_{i,t} + \beta_4 CD_{i,t} + \beta_5 AC_{i,t} + \beta_6 ACI_{i,t} + \beta_7 CC_{i,t} + \beta_8 ACP_{i,t} + \beta_9 WPI_{i,t} + \beta_{10} FA_{i,t} + \beta_{11} FS_{i,t} + \beta_{12} SG_{i,t} + \beta_{13} Levi_{i,t} + \epsilon_{i,t}$$

$$ROE_{i,t} = \beta_0 + \beta_1 BS_{i,t} + \beta_2 BC_{i,t} + \beta_3 FOM_{i,t} + \beta_4 CD_{i,t} + \beta_5 AC_{i,t} + \beta_6 ACI_{i,t} + \beta_7 CC_{i,t} + \beta_8 ACP_{i,t} + \beta_9 WPI_{i,t} + \beta_{10} FA_{i,t} + \beta_{11} FS_{i,t} + \beta_{12} SG_{i,t} + \beta_{13} Levi_{i,t} + \epsilon_{i,t}$$

$$Tobin's Q_{i,t} = \beta_0 + \beta_1 BS_{i,t} + \beta_2 BC_{i,t} + \beta_3 FOM_{i,t} + \beta_4 CD_{i,t} + \beta_5 AC_{i,t} + \beta_6 ACI_{i,t} + \beta_7 CC_{i,t} + \beta_8 ACP_{i,t} + \beta_9 WPI_{i,t} + \beta_{10} FA_{i,t} + \beta_{11} FS_{i,t} + \beta_{12} SG_{i,t} + \beta_{13} Levi_{i,t} + \epsilon_{i,t}$$

Where,

$ROA_{i,t}$  = Return on Assets of Firm  $i$  at time  $t$   $ROE_{i,t}$  = Return on Equity of Firm  $i$  at time  $t$  Tobin's  $Q_{i,t}$  =

Tobin's Q of the Firm  $i$  at time  $t$   $BS_{i,t}$  = Board Size of the Firm  $i$  at time  $t$

$BC_{i,t}$  = Board Composition of the Firm  $i$  at time  $t$   $FOM_{i,t}$  = Frequency of meetings of the Firm  $i$  at time  $t$   $CD_{i,t}$  = CEO Duality of the Firm  $i$  at time  $t$

$AC_{i,t}$  = Audit Committee of Firm  $i$  at time  $t$

$ACI_{i,t}$  = Audit Committee Independence of Firm  $i$  at time  $t$

$CC_{i,t}$  = Code of Conduct of Firm  $i$  at time  $t$

$ACP_{i,t}$  = Anti- corruption Policy of Firm  $i$  at time  $t$   $WPI_{i,t}$  = whistle-blowing policy of Firm  $i$  at time  $t$   $FA_{i,t}$  = Age of Firm  $i$  at time  $t$

$FS_{i,t}$  = Size of Firm  $i$  at time  $t$

$SG_{i,t}$  = Growth in Sales of Firm  $i$  at time  $t$   $Levi_{i,t}$  = Leverage of the Firm  $i$  at time  $t$   $\beta_0$  = common y-intercept

$\beta_1 - \beta_8$  = coefficients of the concerned explanatory variables.  $\epsilon_{i,t}$  = stochastic error term of Firm  $i$  at time  $t$

**2.3 Statistical Tool Used:** The study employs panel data econometric techniques to analyse the impact of corporate governance and ethical policy variables on firm-level outcomes of Nifty 500 companies over the period 2015- 2025.

### 3. Results and Discussion

**3.1 Pre-Diagnostic tests:** Before estimating panel data analysis, it is important to check the stationarity properties and multicollinearity of the variables to make sure the data is valid and reliable.4.1(a) Unit Root Test:

**Table 4.1(a): Unit root statistics for variables**

Variables	At the base level		
	Levin Lin	P- value	Remark
BS	-6.12214	0.0000	Stationery
BC	-3.32982	0.0000	Stationery
FOM	-3.42744	0.0000	Stationery
CD	-1.00121	0.0000	Stationery
AC	-5.74162	0.0000	Stationery
ACI	-1.32210	0.0000	Stationery
WP	-1.11098	0.0000	Stationery
CC	-1.21821	0.0000	Stationery
ACP	-1.95241	0.0000	Stationery
ROA	-9.71205	0.0015	Stationery
ROE	-3.52120	0.0009	Stationery
TQ	-5.77175	0.0012	Stationery
FS	-12.2524	0.0000	Stationery
FA	-11.5887	0.0000	Stationery
SG	-19.8782	0.0001	Stationery
Lev	-8.12425	0.0000	Stationery

Source: Own compilation

Table 4.1(a) shows the result that all variables, including board size (BS), board composition (BC), frequency of meetings (FOM), CEO duality (CD), audit committee (AC), audit committee independence (ACI), whistleblowing policy (WP), code of conduct (CC), anti- corruption policy (ACP), and firm performance measures such as return on assets (ROA), return on equity (ROE), and Tobin's Q (TQ), are stationary at their level form. Because all the variables are stationary at the base level, the series are integrated of order zero, or I(0), and don't need to be differenced. This makes sure that the regression results from the panel data models are correct and not based on unreliable relationships.

**4.1(b) Multi-Collinearity Statistics:** The problem of multicollinearity among the independent variables had been examined into using tolerance values and the Variance Inflation Factor (VIF). Multicollinearity occurs when independent variables exhibit a high degree of correlation, potentially skewing regression estimates and compromising the reliability of results.

**Table 4.1(b): Multi-Collinearity Statistics for the Independent Variables**

Variables	BS	BC	FOM	CD	AC	ACI	WP	CC	ACP	FA	FS	SG	LEV
VIF	1.21	1.07	1.05	1.11	1.19	1.04	1.04	1.02	1.05	1.08	1.03	1.00	1.00
Tolerance values	0.72	0.56	0.82	0.27	0.67	0.30	0.28	0.34	0.26	0.75	0.71	0.48	0.78

Source: Own compilation

Table 4.1(b) show VIF values for all variables, such as BS (1.21), BC (1.07), FOM (1.05), CD (1.11), AC (1.19), ACI (1.04), WP (1.04), CC (1.02), ACP (1.05), FA (1.08), FS (1.03), SG (1.00), and LEV (1.00), are all considerably lower than the standard limit of 10. The tolerance values also fall between 0.26 and 0.82, which is higher than the lowest acceptable limit of 0.10. These findings show the lack of multicollinearity among the explanatory variables. The low VIF values mean that the independent variables have no correlation with each other.

**Table 4.2: Descriptive Analysis**

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	kurtosis
BS	7.84	8.00	18	0.00	2.04	0.45	1.17
BC	5.88	6.00	12.34	0.65	2.06	0.31	-0.06
FOM	1.64	1.00	1.00	0.00	1.89	3.62	16.53
CD	0.12	0.00	1.00	0.00	0.33	2.31	3.33
AC	3.85	4.00	13	0.00	1.00	1.72	13.03
ACI	0.87	1.00	1.00	0.00	0.34	-2.14	2.59
WP	0.62	1.00	1.00	0.00	0.33	-0.45	-1.80
CC	0.61	1.00	1.00	0.00	0.33	-0.41	-1.79
ACP	0.58	1.00	1.00	0.00	0.33	-0.35	-1.88
ROA	6.32	5.12	44.60	-47.51	3.21	1.21	3.12
ROE	6.16	5.04	46.70	-12.90	12.20	4.11	8.21
TQ	3.83	4.16	71.02	-1.21	3.59	6.46	65.78
FA	1.48	1.51	2.21	0.30	0.34	-1.05	2.38
FS	4.41	4.61	7.56	0.00	1.39	-1.89	4.33
SG	12.93	6.84	35.41	-10.00	5.37	6.52	58.32
Lev	0.39	0.36	16.44	0.00	0.45	2.92	11.54

Source: Own compilation, CMIE Prowess, Statistical Tool: E-Views

Table 4.2 presents descriptive statistics for the selected variables used in the study. The mean and median values indicate the average performance and the distribution balance of the variables. For most variables, such as Board Size, Board Composition, Audit Committee, ROA, ROE, Firm Age, and Firm Size, the mean and median values are close, suggesting a relatively symmetric distribution. This implies that extreme values do not excessively influence the central tendency. Variables such as ROA (Mean = 6.32, Median = 5.12) and ROE (Mean = 6.16, Median = 5.04) show positive average profitability, indicating that firms in the sample are, on average, financially viable. Similarly, Tobin's Q (Mean = 3.83, Median = 4.16) suggests that market valuation exceeds book value for most firms, reflecting favourable investor perceptions. Dummy variables such as FOM, CD, ACI, WP, CC, and ACP have means below 1, as expected, indicating the proportion of firms exhibiting these characteristics in the sample.

The standard deviation reflects the variability of the data. Variables such as ROE (Std. Dev. = 12.20), TQ (Std. Dev. = 3.59), SG (Std. Dev. = 5.37), and Leverage (Std. Dev. = 0.45) exhibit high dispersion, indicating substantial variation across firms. The wide range between minimum and maximum values for ROA (-47.51 to 44.60) and ROE (-12.90 to 46.70) suggests that while some firms perform extremely well, others experience significant losses. This heterogeneity justifies the use of panel data techniques to capture firm-specific effects.

Skewness measures the symmetry of the data distribution. Several variables, such as ROA (1.21), ROE (4.11), TQ (6.46), SG (6.52), and Leverage (2.92), are positively skewed, indicating the presence of extremely high values. This suggests that a few firms outperform the majority. In contrast, variables such as ACI (-2.14), FS (-1.89), and FA (-1.05) are negatively skewed, implying that a larger number of firms are clustered at higher values with fewer low-value observations. Kurtosis indicates the peakedness or tail thickness of the distribution. Variables such as Frequency of meeting (16.53), Audit Committee (13.03), ROE (8.21), TQ (65.78), and Sales Growth (58.32) exhibit very high kurtosis, indicating leptokurtic distributions. This implies the presence of extreme values and heavy tails.

Overall, the descriptive statistics reveal considerable variation across firms in terms of governance

characteristics, financial performance, growth, and leverage. The presence of skewness and kurtosis indicates non-normal distributions for several variables; however, this does not invalidate the analysis, as panel data models are generally robust to such deviations. The results provide a sound basis for further econometric investigation into the relationships among corporate governance, financial performance, and firm-specific characteristic

**Table 4.3: Correlation Matrix**

V	BS	AC	BC	CD	ACI	FOM	WP	ACP	CC	ROA	ROE	TQ	FS	SG	lev	FA
<b>BS</b>	1.00															
<b>AC</b>	0.45	1.00														
<b>BC</b>	0.76	0.27	1.00													
<b>CD</b>	-0.14	-0.03	-0.16	1.00												
<b>ACI</b>	0.03	0.04	0.08	0.02	1.00											
<b>FOM</b>	0.12	0.12	0.12	-0.03	0.11	1.00										
<b>WP</b>	-0.12	-0.02	-0.16	0.98	-0.03	-0.01	1.00									
<b>ACP</b>	-0.12	-0.02	-0.16	0.99	-0.03	-0.01	0.98	1.00								
<b>CC</b>	-0.14	-0.03	-0.16	0.98	-0.03	-0.01	0.99	0.98	1.00							
<b>ROA</b>	0.55	0.32	0.09	-0.05	-0.09	-0.01	-0.02	-0.01	-0.12	1.00						
<b>ROE</b>	0.07	0.05	0.03	-0.01	0.01	0.32	0.09	0.04	0.01	0.06	1.00					
<b>TQ</b>	-0.02	-0.03	-0.03	0.06	0.03	0.02	0.00	0.01	0.00	0.04	0.03	1.00				
<b>FS</b>	0.09	0.07	0.03	0.00	0.05	0.02	0.00	0.00	0.00	0.01	0.01	0.07	1.00			
<b>SG</b>	-0.02	0.00	-0.01	-0.01	0.01	0.00	0.00	-0.01	-0.01	0.21	0.05	-0.01	0.00	1.00		
<b>Lev</b>	-0.04	-0.04	-0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.04	-0.02	0.01	0.00	0.02	1.00	
<b>FA</b>	0.04	0.06	0.03	0.08	-0.03	-0.07	0.08	0.08	0.08	-0.06	-0.01	0.02	0.16	-0.03	-0.03	1.00

The results of Table 4.3 present the correlation among the variables used in the study. a moderate to strong positive correlation between Board Size (BS) and Board Composition (BC) ( $r = 0.76$ ), suggesting that firms with larger boards tend to have a higher proportion of independent or diverse board members. Similarly, Board Size is positively correlated with the Audit Committee (AC) ( $r = 0.45$ ), implying that larger boards are more likely to establish or strengthen audit committees.

CEO Duality (CD) shows negative correlations with Board Size ( $-0.14$ ), Board Composition ( $-0.16$ ), and Audit Committee ( $-0.03$ ), indicating that firms practising CEO duality tend to have relatively weaker governance structures. These findings are consistent with corporate governance theory, which argues that CEO duality may reduce board independence.

A very high positive correlation is observed among CEO Duality (CD), Whistle-Blowing policy (WP), Audit Committee independence(ACI), and Code of conduct (CC), with correlation coefficients ranging from 0.98 to 0.99. This suggests that these governance attributes move together and may represent closely related or overlapping governance characteristics. While such high correlations do not automatically imply multicollinearity, they warrant careful attention in regression analysis.

Board Size exhibits a moderate positive correlation with Return on Assets (ROA) ( $r = 0.55$ ), indicating that firms with larger boards tend to perform better in terms of asset utilization. Audit Committee (AC) is also positively correlated with ROA ( $r = 0.32$ ), suggesting that effective monitoring mechanisms contribute positively to firm performance.

Board Composition (BC) shows a weak positive relationship with ROA ( $r = 0.09$ ), while CEO Duality (CD) and related governance variables (WP, ACP, CC) exhibit weak or negative correlations with ROA, indicating that concentration of power may adversely affect firm performance.

Return on Equity (ROE) shows generally weak correlations with most governance variables, except for Frequency of Meetings (FOM), which has a moderate positive correlation with ROE ( $r = 0.32$ ). This implies

that frequent board meetings may enhance shareholder returns by improving strategic oversight and decision-making.

Tobin's Q (TQ), representing market-based performance, shows very weak correlations with governance variables, suggesting that market valuation may be influenced more by external or macroeconomic factors than by internal governance mechanisms. Firm Size (FS) exhibits weak positive correlations with ROA, ROE, and Tobin's Q, indicating that larger firms may enjoy slight performance advantages. Sales Growth (SG) is positively correlated with ROA ( $r = 0.21$ ), suggesting that growing firms tend to be more profitable.

Leverage (Lev) shows weak correlations with all performance indicators, implying that capital structure does not have a strong linear association with firm performance in the sample. Firm Age (FA) has a weak negative relationship with ROA ( $-0.06$ ) and ROE ( $-0.01$ ), indicating that older firms may experience marginally lower profitability.

Importantly, except for the high correlations among CD, WP, ACP, and CC, most correlation coefficients remain below the commonly accepted threshold of 0.80. This indicates no serious multicollinearity problem among the majority of independent variables. Therefore, the variables are suitable for inclusion in multivariate regression models.

Overall, the correlation analysis suggests meaningful associations between corporate governance mechanisms and firm performance, particularly for accounting-based performance measures such as ROA and ROE.

**Table 4.4: Results of Panel Regression for ROA**

<b>SG</b>	3.20	0.46	0.02	1.14	0.04	1.64
<b>Lev</b>	-2.23	-4.21	-2.35	-2.76	-4.57	-3.25
<b>F- statistic</b>	2.56*		3.21*		2.48*	
<b>Prob(F- statistic)</b>	0.00		0.00		0.00	
<b>Adj R<sup>2</sup></b>	0.05		0.07		0.34	
<b>B-PLM</b>	297.50 (0.0000)*		-		-	
<b>HT</b>	-		16.78 (0.0000)		-	
<b>Variables</b>	<b>Dependent Variable - ROA</b>					
	<b>OLS</b>		<b>REM</b>		<b>FEM</b>	
	<b>Coeff.</b>	<b>t- statistics</b>	<b>Coeff.</b>	<b>t- statistics</b>	<b>Coeff.</b>	<b>t- statistics</b>
<b>C</b>	6.32	1.52	4.23	1.24	8.57	1.76
<b>BS</b>	0.07	2.13*	0.04	1.66	0.08	3.45*
<b>BC</b>	0.03	1.21	0.03	1.21	0.07	2.14*
<b>FOM</b>	0.02	1.32	0.01	1.59	0.08	2.41*
<b>CD</b>	0.01	-0.12	0.03	-0.61	0.01	-0.05
<b>AC</b>	0.07	2.71*	0.09	1.33	0.09	1.99*
<b>ACI</b>	0.03	-0.31	0.03	-0.42	0.01	1.22
<b>WP</b>	0.01	-0.14	0.01	0.21	0.04	0.96
<b>ACP</b>	0.03	-0.12	0.01	0.12	0.02	0.87
<b>CC</b>	0.03	0.08	0.02	0.16	0.08	1.04
<b>FA</b>	1.21	0.65	0.87	0.35	-2.44	-0.23

<b>FS</b>	0.42	1.55	0.85	1.56	1.32	1.41
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Source: Own compilation, CMIE Prowess, Statistical Tool: E-Views

Table 4.4 presents the results of OLS, REM and FEM for all the explanatory variables used in the study. The OLS test indicates that Board Size and Audit Committee has positive and statistically significant effect on ROA. Leverage (Lev) shows a negative and highly significant relationship with ROA ( $\beta = -2.23$ ,  $t = -4.21$ ). Other governance variables, such as Board Composition, Frequency of Meetings, CEO Duality, Audit Committee Independence, whistle-blower policy, anti-corruption policy, and code of conduct, are statistically insignificant, indicating no direct impact on ROA under pooled estimation. The Breusch-Pagan Test was used to determine whether the random effect model is better than the pooled model. The cross-sectional B-PLM test statistic(297.50) was shown to be significant. When examined for cross-sections, the p-values for every model were less than 0.05. As a result, the REM outperformed the pooled model for these variables.

The REM results reveal that board size continues to exert a positive influence on ROA, although the magnitude and significance of the coefficient decline compared to the OLS model. Leverage remains negative and statistically significant, reinforcing the conclusion that higher financial leverage has an adverse effect on firm profitability. However, most other corporate governance variables and firm-specific controls remain statistically insignificant in the random effects framework.

The Hausman test is used to determine whether a fixed effects model (FEM) or a random effects model (REM) is more appropriate for a given dataset. The p-value of (0.00) is less than the conventional significance level of 0.05, which suggests that the fixed effects model (FEM) is preferred over the random effects model (REM) for this analysis.

Finally, the Fixed Effects Model (FEM) was estimated to control for time-invariant firm-specific characteristics that may be correlated with the explanatory variables. The FEM results provide stronger and more reliable evidence of the relationship between corporate governance and firm performance. Board size exhibits a positive and highly significant effect on ROA, indicating that firms benefit from larger boards when firm-specific heterogeneity is controlled. Board composition also becomes statistically significant with a positive coefficient, suggesting that a higher proportion of independent or non-executive directors enhances firm performance through improved governance practices. In addition, the audit committee and frequency of board meetings show a positive and significant association with ROA, implying that more active and engaged boards contribute to better monitoring and decision-making. Leverage continues to have a negative and significant impact on ROA, confirming that excessive reliance on debt reduces profitability. Adjusted R<sup>2</sup> (0.34) indicates that approximately 34% of the variability in ROA can be explained by the independent variables included in the model, suggesting a reasonably good fit. Other variables, including CEO duality, audit committee characteristics, whistle-blower policy, anti-corruption policy, code of conduct, firm age, and firm size, do not exhibit significant effects under the fixed effects specification.

**Table 4.5: Results of Panel Regression for ROE**

Variables	Dependent Variable - ROE					
	OLS		REM		FEM	
	Coeff.	t- statistics	Coeff.	t- statistics	Coeff.	t- statistics
<b>C</b>	1.53	1.59	1.36	1.48	7.25	1.47
<b>BS</b>	0.06	1.80	0.04	1.81	1.02	2.24*
<b>BC</b>	0.04	1.45	0.05	1.78	0.86	1.24
<b>FOM</b>	0.03	1.05	0.02	0.69	0.44	0.56
<b>CD</b>	0.01	-0.02	0.02	-0.41	0.01	0.05
<b>AC</b>	0.05	1.06	0.09	1.23	0.78	1.17
<b>ACI</b>	0.02	0.03	0.02	0.04	0.26	0.87
<b>WP</b>	0.01	0.02	0.02	0.01	0.03	0.03
<b>ACP</b>	0.02	0.02	0.03	0.02	0.03	0.02

<b>CC</b>	0.01	0.01	0.01	0.02	0.05	0.02
<b>FA</b>	1.36	1.23	1.23	1.15	1.49	-0.75
<b>FS</b>	1.24	1.42	1.18	1.74	1.22	-0.21
<b>SG</b>	3.20	2.10	2.14	2.44	3.21	1.78
<b>Lev</b>	1.23	3.68	3.21	3.36	2.37	2.25
<b>F- statistic</b>	2.50*		3.14*		2.16*	
<b>Prob(F-statistic)</b>	0.00		0.00		0.00	
<b>Adj R<sup>2</sup></b>	0.004		0.004		0.010	
<b>B-PLM</b>	395.50 (0.0000)*		-		-	
<b>HT</b>			19.22 (0.0000)		-	

Source: Own compilation, CMIE Prowess, Statistical Tool: E-Views

Table 4.5 shows the results of OLS, REM, and FEM for all the explanatory variables used in the study. The pooled OLS regression results indicate that board size has a positive and marginally significant effect on ROE, suggesting that firms with relatively larger boards tend to generate higher returns for shareholders. Sales growth also exhibits a positive and statistically significant relationship with ROE, indicating that firms experiencing higher growth are more successful in enhancing shareholder returns. Leverage shows a strong positive and statistically significant impact on ROE. Other governance variables, including board composition, frequency of meetings, CEO duality, audit committee characteristics, whistle-blower policy, anti-corruption policy, and code of conduct, are statistically insignificant under pooled estimation. Although the overall OLS model is statistically significant, the low adjusted R<sup>2</sup> indicates limited explanatory power, reflecting the inability of pooled OLS to capture firm-specific heterogeneity.

To improve upon the pooled estimation, the Random Effects Model (REM) is estimated, allowing for unobserved firm-specific effects under the assumption that these effects are uncorrelated with the explanatory variables. The REM results largely confirm the OLS findings. Board size continues to display a positive and statistically significant association with ROE. Sales growth remains positively significant, indicating that expanding firms are better positioned to improve equity returns. Leverage exhibits a positive and statistically significant coefficient, and other governance variables remain statistically insignificant, suggesting that their effects on ROE are either indirect or overshadowed by firm-specific characteristics. The significant Breusch-Pagan Lagrange Multiplier test supports the presence of panel effects, validating the use of REM over pooled OLS, although the adjusted R<sup>2</sup> remains relatively low.

The FEM results provide more consistent and reliable estimates. Board size shows a positive and statistically significant effect on ROE, indicating that increases in board size contribute to higher shareholder returns once firm-specific characteristics are accounted for. Sales growth continues to exhibit a positive and marginally significant impact on ROE, suggesting that growth-oriented firms are more capable of generating enhanced equity returns. Leverage remains positive and statistically significant, highlighting the role of capital structure decisions in improving ROE. In contrast, other corporate governance mechanisms—such as board composition, board meetings, CEO duality, audit committee attributes, and ethical governance policies—remain statistically insignificant, indicating that these mechanisms do not exert a direct influence on ROE after controlling for firm-level fixed effects. The Hausman test is statistically significant, confirming that FEM is preferred over REM and that firm-specific effects are correlated with the explanatory variables. Although the adjusted R<sup>2</sup> improves slightly under FEM, it remains modest, which is common in governance-performance studies using accounting-based measures.

Overall, the panel data analysis suggests that board size, sales growth, and leverage are key determinants of Return on Equity, while most other governance mechanisms do not exhibit a direct impact on shareholder returns. The superiority of the Fixed Effects Model underscores the importance of controlling for firm-specific heterogeneity when examining the relationship between corporate governance and financial performance. These findings provide empirical evidence that strategic board structure and financial policy decisions play a crucial role in enhancing shareholder value.

**Table 4.6: Results of Panel Regression for Tobin's Q**

Variables	Dependent Variable – Tobin's Q					
	OLS		REM		FEM	
	Coeff.	t- statistics	Coeff.	t- statistics	Coeff.	t- statistics
<b>C</b>	-0.87	0.06	0.12	0.51	2.36	1.44
<b>BS</b>	0.08	0.45	0.04	0.84	0.09	3.21
<b>BC</b>	0.05	0.43	0.05	0.68	0.07	2.32
<b>FOM</b>	0.04	0.21	0.04	0.64	0.04	1.96
<b>CD</b>	-0.01	-0.45	-0.02	-0.50	-0.01	-0.05
<b>AC</b>	0.06	0.03	0.05	0.03	0.08	2.02
<b>ACI</b>	0.03	0.03	-0.01	0.02	0.02	1.03
<b>WP</b>	0.02	0.01	0.02	0.03	0.02	0.87
<b>ACP</b>	0.02	0.01	0.03	0.01	0.03	0.56
<b>CC</b>	0.03	0.01	0.01	0.02	0.01	0.51
<b>FA</b>	1.45	-1.21	1.28	1.02	-3.91	-0.65
<b>FS</b>	0.64	1.45	0.76	1.21	1.22	1.35
<b>SG</b>	3.20	2.35	1.21	1.14	2.32	1.64
<b>Lev</b>	1.20	1.28	1.15	1.45	1.24	2.15
<b>F- statistic</b>	3.15*		3.08*		2.45*	
<b>Prob(F- statistic)</b>	0.00		0.00		0.00	
<b>Adj R<sup>2</sup></b>	0.002		0.004		0.085	
<b>B-PLM</b>	287.70 (0.0000)*		-		-	
<b>HT</b>	-		78.64 (0.000)		-	

Source: Own compilation, CMIE Prowess, Statistical Tool: E-Views

Table 4.6 shows the results of OLS, REM and FEM for the dependent variables – Tobin's Q used in the study. The pooled OLS results indicate that most corporate governance variables do not exhibit a statistically significant relationship with Tobin's Q. Board size, board composition, frequency of board meetings, audit committee characteristics, and ethical governance variables show positive coefficients; however, their effects are statistically insignificant. Sales growth shows a positive and statistically significant relationship with Tobin's Q, implying that firms with higher growth opportunities are valued more favourably by the market. Leverage also shows a positive association. Despite the overall model being statistically significant, the very low adjusted R<sup>2</sup> reflects limited explanatory power, highlighting the inadequacy of pooled OLS in capturing unobserved firm-specific factors affecting market valuation.

B-PLM statistic(287.70) and the very low p-value(0.00) suggest that there are significant random effects present in the data, indicating that a random effects model would be more appropriate than a simple OLS regression for analysing the relationships in the dataset.

The REM results largely mirror the OLS findings, with most governance variables remaining statistically insignificant. Board size, board composition, and audit committee attributes show positive but weak effects on Tobin's Q. Sales growth continues to exhibit a positive association, reinforcing the notion that growth prospects are a key determinant of market valuation.

The Hausman Test result provided is (78.64) with a probability value of (0.00). This indicates strong evidence against the random effects model, implying that the fixed effects model is more appropriate for the data.

The Fixed Effects Model (FEM) provides more robust and consistent estimates by controlling for time-invariant firm-specific heterogeneity. Under FEM, several governance variables become statistically significant. Board size shows a positive and significant effect on Tobin's Q, indicating that larger boards are associated with higher market valuation, possibly due to improved monitoring and access to strategic resources. Board composition also exhibits a positive and significant relationship, suggesting that a higher proportion of independent or non-executive directors enhances investor confidence and firm valuation. Frequency of board meetings is positively significant, implying that more active boards are perceived favourably by the market. The audit committee variable also becomes statistically significant, highlighting the importance of strong internal control mechanisms in improving market-based performance. Leverage shows a positive and significant impact on Tobin's Q. Other variables, including CEO duality, audit committee independence, ethical governance policies, firm age, and firm size, remain statistically insignificant. The adjusted R<sup>2</sup> improves substantially under FEM, indicating better explanatory power.

Overall, the panel data analysis demonstrates that corporate governance mechanisms related to board structure, board activity, and audit oversight significantly influence market-based firm performance when firm-specific heterogeneity is properly controlled. The findings underscore the importance of employing fixed effects estimation in governance–performance studies and suggest that effective governance practices enhance firm valuation as perceived by investors.

#### 4. Conclusion

This study empirically examined the relationship between board characteristics, audit characteristics, ethical policies, and firm performance using a panel dataset of 385 NIFTY 500 companies over the study period. Firm performance was captured through both accounting-based measures (Return on Assets and Return on Equity) and a market-based measure (Tobin's Q), while employing pooled OLS, Random Effects, and Fixed Effects models to ensure robustness. The findings consistently demonstrate that board-related governance mechanisms play a more influential role in shaping firm performance than audit characteristics and formal ethical policies, particularly when firm-specific heterogeneity is appropriately controlled. Across all three performance measures, board size emerges as a robust and positive determinant of firm performance. The fixed effects estimates reveal that larger boards contribute positively to ROA, ROE, and Tobin's Q, suggesting that broader expertise, enhanced monitoring capacity, and access to strategic resources outweigh the potential coordination costs associated with larger boards. Board composition—reflecting a higher proportion of independent or non-executive directors—also exhibits a positive and significant impact on ROA and Tobin's Q, underscoring the role of independent oversight in improving both operational efficiency and market valuation. Furthermore, the frequency of board meetings shows a significant positive association with ROA and Tobin's Q under the fixed effects specification, indicating that more active and engaged boards enhance managerial monitoring and strategic decision-making. In contrast, audit-related variables and ethical governance policies, including audit committee independence, whistle-blower policy, anti-corruption policy, and code of conduct, do not exhibit a statistically significant direct impact on firm performance across most model specifications. This suggests that while these mechanisms may be essential for regulatory compliance and risk mitigation, their influence on financial and market performance may be indirect, long-term, or contingent on effective enforcement rather than mere adoption. Overall, the study provides strong empirical evidence that effective board governance—particularly board size, independence, and activity—constitutes a critical driver of firm performance in Indian listed firms. The limited direct impact of audit characteristics and ethical policies suggests that governance effectiveness depends more on-board dynamics and strategic oversight than on formal compliance mechanisms alone. These findings contribute to the corporate governance literature by offering India-specific evidence and by emphasizing the methodological importance of fixed effects estimation in governance–performance research. From a policy and managerial perspective, the results imply that regulators and firms should focus not only on mandating governance structures but also on enhancing the functional effectiveness of boards. Strengthening board composition, engagement, and strategic involvement may yield greater performance benefits than symbolic adoption of ethical policies.

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