

Are Corporate Governance Characteristics Associated with Financial Distress? Evidence from Indian Listed Firms

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ABSTRACT

Purpose – This study examines how distinct board-level governance mechanisms—board size, board independence, board meeting frequency, and audit committee size—are associated with the likelihood of financial distress among Indian listed non-financial firms.

Design/methodology/approach –The study analyses an unbalanced panel of 13,434 firm-year observations for Indian listed non-financial firms over financial years 2010–2025, obtained from the CMIE Prowessdx database. The empirical models estimate associations between four board characteristics and a binary financial-distress indicator derived from the Altman Z-score, with firm-level controls and year and industry fixed effects.

Findings – Board size, board meeting frequency and audit committee size are negatively associated with financial distress, whereas board independence is positively associated with distress. The results indicate that governance attributes do not have uniform implications for firms' financial resilience.

Research limitations/implications – The evidence is limited to listed non-financial firms in India, selected governance characteristics and one accounting-based distress measure. Observational design supports association rather than causal inference.

Practical implications – Boards and regulators should focus on the substantive effectiveness of oversight rather than formal compliance alone, particularly when evaluating board independence.

Originality/value – This study contributes to the corporate governance and financial distress literature by distinguishing the associations of individual board mechanisms in an emerging-market setting characterized by concentrated ownership and substantial regulatory change. The evidence qualifies universal prescriptions for board structure and redirects attention from formal compliance toward the substantive effectiveness of monitoring arrangements.

Keywords: corporate governance; financial distress; board size; board independence; board meeting frequency; audit committee size; Altman Z-score

1.INTRODUCTION

Financial distress (FD) remains one of the most critical challenges confronting corporations worldwide because it threatens firm survival, undermines investor confidence, disrupts capital markets, and adversely affects economic growth. Corporate distress not only erodes shareholder wealth but also imposes substantial costs on creditors, employees, governments, and society through reduced investment, employment losses, and financial instability (Altman, 1968; Ohlson, 1980). The increasing frequency of high-profile corporate failures across developed and emerging economies including Enron, WorldCom, Lehman Brothers, IL&FS, Jet Airways, and Dewan Housing Finance Corporation Limited (DHFL) demonstrated as legendary case studies for accounting fraud, governance failure, asset liability mismatches and regulatory lapses. FD is considered a global problem that has adversely affected developed and developing

economies. Its occurrence depends upon corporate governance practices such as boards competencies or deficiencies, aggressive management practices and board oversight (Shah, 2016).

Corporate governance (CG) has evolved from a compliance-oriented concept into a strategic mechanism for improving corporate performance, accountability, and long-term sustainability. Effective governance mechanisms including an appropriately structured board of directors, independent oversight, active board monitoring, and effective audit committees are expected to strengthen internal control systems, improve transparency, reduce agency conflicts, and facilitate timely strategic decision-making. Conversely, weak governance structures may encourage managerial opportunism, inefficient investment decisions, inadequate risk oversight, and poor disclosure practices, thereby increasing firms' susceptibility to FD (Fama & Jensen,

1983; Jensen, 1993). This growing recognition has prompted regulators and researchers to examine whether internal governance mechanisms serve as effective safeguards against corporate financial failure.

Traditionally, the prediction of FD has focused on accounting-based and market-based models, such as the Altman Z-score (Altman, 1968), the Ohlson O-score (Ohlson, 1980), and the Zmijewski model (Zmijewski, 1984). While these models have proven useful in identifying financially vulnerable firms, they primarily capture the financial symptoms of distress rather than its underlying governance-related causes. Recent research has therefore shifted towards examining the role of CG in preventing FD by improving managerial monitoring, strengthening strategic oversight, and reducing information asymmetry between managers and external stakeholders (Daily et al., 2003; Abdullah, 2006; Manzanegue et al., 2016). This shift reflects the broader understanding that corporate failures frequently originate from governance deficiencies that precede financial deterioration.

The theoretical foundation of the present study is primarily grounded in Agency Theory (Jensen & Meckling, 1976), which argues that the separation of ownership and managerial control creates conflicts of interest between shareholders (principals) and managers (agents). Managers may pursue personal objectives that are inconsistent with shareholder wealth maximization, leading to inefficient investment decisions, excessive risk-taking, or inadequate financial discipline. CG mechanisms are designed to mitigate these agency conflicts through effective monitoring and accountability, thereby reducing firms' exposure to FD (Fama & Jensen, 1983). Complementing this perspective, Information Asymmetry Theory (Akerlof, 1970; Myers & Majluf, 1984) suggests that managers possess superior information regarding firms' financial condition relative to investors and creditors. High levels of information asymmetry increase financing costs, reduce investor confidence, and may delay the recognition of financial problems. Effective governance mechanisms improve transparency, disclosure quality, and board oversight, thereby reducing information asymmetry and strengthening firms' financial stability. In addition, Resource Dependence Theory (Pfeffer & Salancik, 1978) suggests that boards create value not only through monitoring but also by providing firms with access to expertise, external networks, strategic resources, and diverse knowledge, thereby enhancing organizational resilience during periods of financial uncertainty. Based on these arguments, we predict corporate governance mechanism is one of the main parameters in curbing financial distress of the firms.

Despite extensive international evidence, it remains unclear which individual governance mechanisms are associated with financial distress in emerging markets after firm characteristics and institutional heterogeneity are taken into account. Prior studies report conflicting results for board size, board independence, board activity and audit committee characteristics, and much of the evidence comes from developed economies, short samples or sector-specific settings (Daily & Dalton, 1994; Elloumi & Gueyié, 2001; Abdullah, 2006; Manzanegue et al., 2016; Luqman et al., 2018). These limitations are

consequential in India, where concentrated promoter ownership and evolving governance and insolvency regulation may alter both directors' incentives and the effectiveness of formal board structures.

India offers a distinctive institutional environment for examining the relationship between CG and FD. As one of the world's fastest-growing emerging economies, India's corporate sector is characterized by concentrated ownership, promoter-controlled firms, family business dominance, evolving governance regulations, and increasing participation of domestic and foreign institutional investors (Khanna & Palepu, 2000; Sarkar & Sarkar, 2009). Unlike dispersed ownership systems prevalent in many developed economies, Indian listed firms often exhibit high promoter shareholding, creating governance challenges that differ substantially from those observed in Western markets. Recognizing the importance of strengthening CG and improving investor protection, India has introduced a series of institutional reforms, including the Companies Act, 2013, the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, and the Insolvency and Bankruptcy Code (IBC), 2016. These reforms seek to improve board accountability, enhance disclosure quality, strengthen creditor rights, and facilitate timely corporate restructuring. Nevertheless, several prominent corporate failures in recent years indicate that governance deficiencies continue to exist despite an increasingly sophisticated regulatory framework. Consequently, evaluating whether internal governance mechanisms effectively reduce FD has become an important empirical and policy question in the Indian context.

The present study addresses these gaps by examining the influence of key CG mechanisms on the FD of Indian listed companies using a comprehensive panel dataset obtained from the CMIE Prowessdx database covering the period 2010–2025. Financial distress is measured as a binary variable using Altman Z-score, while corporate governance variables include Board size (BSIZE), Board independence (BIND), Board meeting (BMEET), and Audit committee size (ACS). The empirical analysis incorporates firm level and industry level characteristics as control variables. The detailed variable definitions reported in Appendix-A.

The baseline regressions indicate that board size, board meeting frequency and audit committee size are negatively associated with the likelihood of financial distress. Board independence is positively associated with distress across the reported specifications, although the magnitude and significance are comparatively weaker. Taken together, the results suggest that governance mechanisms should not be treated as a homogeneous construct: their associations with financial resilience differ across specific board characteristics.

This study contributes to the literature in three ways. First, it shifts the question from whether corporate governance is uniformly beneficial to whether distinct governance mechanisms have heterogeneous associations with financial distress. Second, it uses India's concentrated-ownership and post-reform institutional setting to examine how formal monitoring structures operate where director independence may not translate directly into informational access or effective oversight. Third, the

fifteen-year panel permits comparison of board size, board independence, board meeting frequency and audit committee size within a common empirical framework, reducing the comparability problems that arise when governance mechanisms are studied in isolation. The findings therefore qualify universal prescriptions for board structure and direct attention towards the conditions under which formal governance arrangements become substantively effective.

The remainder of the paper is organized as follows. Section 2 reviews the literature review and develops the hypotheses. Section 3 describes the research methodology, data, variables, and empirical models. Section 4 presents the empirical results and discussion, while Section 5 concludes the study with implications, limitations, and directions for future research.

2.LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Evolution of Financial Distress Research: From Financial Indicators to CG

FD has long been recognized as one of the most important research areas in corporate finance because it directly affects firm survival, shareholder wealth, creditor protection, and financial market stability. Early research primarily viewed FD as a consequence of deteriorating financial performance and therefore concentrated on developing statistical models capable of predicting corporate failure before bankruptcy occurred. The pioneering work of Altman (1968) introduced the Z-score model, demonstrating that a combination of accounting ratios could successfully discriminate between healthy and financially distressed firms. Subsequent studies extended this stream through probabilistic models, including the O-score (Ohlson, 1980), the Zmijewski model (Zmijewski, 1984), and market-based structural approaches such as the Merton distance-to-default model. Collectively, these models substantially improved bankruptcy prediction and continue to underpin contemporary distress assessment.

Despite their predictive ability, these models share an important limitation. They primarily identify the financial symptoms of distress rather than its underlying organizational causes. Financial ratios generally deteriorate after managerial failures, ineffective governance, poor investment decisions, or inadequate risk management have already occurred. Consequently, although accounting-based models provide reliable early warning signals, they offer limited explanation regarding why firms become financially distressed in the first place. This limitation gradually shifted scholarly attention from predicting FD towards understanding its governance determinants, recognizing that governance mechanisms may influence firms' financial resilience long before adverse financial outcomes become observable (Daily, Dalton, & Cannella, 2003; Claessens & Yurtoglu, 2013). This evolution reflects a broader transformation within CG research. Earlier governance studies largely examined the relationship between board characteristics and firm performance, whereas more recent research increasingly investigates governance as a mechanism for mitigating corporate risk, preventing financial deterioration, and strengthening organizational resilience. Theoretical

developments in Agency Theory, Information Asymmetry Theory, Stewardship Theory, and Resource Dependence Theory collectively suggest that governance mechanisms influence managerial behavior, strategic decision-making, disclosure quality, and resource acquisition, thereby affecting firms' exposure to FD. Consequently, CG is no longer viewed merely as a compliance mechanism but as a strategic capability that shapes firms' ability to anticipate, manage, and recover from financial adversity.

However, the expanding governance literature has also produced increasingly divergent findings. While numerous studies report that stronger governance mechanisms reduce FD through improved monitoring and accountability, others conclude that governance effects vary substantially across institutional settings, ownership structures, legal environments, and regulatory systems. Consequently, future research should move beyond examining CG as a homogeneous construct and instead investigate the effectiveness of individual governance mechanisms within diverse institutional environments.

This recommendation is particularly relevant for emerging economies such as India. Compared with developed markets characterized by dispersed ownership structures, Indian listed companies operate within an institutional environment dominated by concentrated promoter ownership, family-controlled firms, evolving governance regulations, and increasing regulatory oversight following the Companies Act, 2013, the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, and the Insolvency and Bankruptcy Code (IBC), 2016. These institutional characteristics may fundamentally alter how governance mechanisms influence managerial behavior and financial stability. Governance structures that perform effectively in developed economies may therefore produce different outcomes in India because monitoring effectiveness depends not only on formal governance arrangements but also on ownership incentives, regulatory enforcement, and board behavior.

Accordingly, rather than asking whether CG generally reduces FD, contemporary research increasingly seeks to identify which governance mechanisms are effective, under what institutional conditions, and through which organizational channels. This shift from a universal governance perspective to a mechanism-specific perspective represents an important development within the literature and provides the conceptual foundation for the present study. By examining the influence of individual board characteristics on FD among Indian listed companies over the period 2010–2025, this study responds directly to recent calls for context-specific evidence and contributes to a more nuanced understanding of governance effectiveness in emerging markets.

2.2 Corporate Governance and Financial Distress: Competing Theoretical and Empirical Perspectives

The relationship between CG and FD has attracted increasing scholarly attention over the past three decades because governance mechanisms influence managerial incentives, strategic decision-making, risk management, and ultimately firms' financial resilience. Although an

extensive body of literature argues that effective CG reduces the likelihood of FD, empirical findings remain far from unanimous. Rather than converging towards a single conclusion, contemporary research has evolved into several competing streams that differ in their theoretical assumptions, institutional contexts, and empirical findings. Recent evidence suggests that these inconsistencies do not necessarily reflect contradictory theories but instead indicate that governance mechanisms operate differently across ownership structures, regulatory environments, and stages of corporate development. Consequently, understanding the governance FD relationship requires moving beyond a universal perspective towards a more context-specific and mechanism-oriented approach.

The preceding discussion highlights three important observations. First, CG remains an important determinant of firms' financial resilience. Second, existing evidence demonstrates considerable heterogeneity regarding the effectiveness of individual governance mechanisms. Third, institutional context plays a central role in explaining why governance mechanisms generate different outcomes across countries. Despite these advances, limited evidence simultaneously examines multiple board characteristics within a unified empirical framework using a large longitudinal sample of Indian listed firms covering the post-governance reform period. Existing Indian studies often rely on relatively short observation periods, sector-specific samples, or limited governance variables, leaving unresolved questions regarding which board mechanisms are genuinely associated with FD after controlling for firm-specific heterogeneity.

Accordingly, the present study addresses this gap by examining the effects of BSIZE, BIND, BMEET, and ACS on FD using a comprehensive panel of Indian listed companies over the period 2010–2025. By integrating multiple theoretical perspectives and employing firm and industry fixed-effects estimation, the study contributes to the growing literature by identifying which governance mechanisms matter, rather than assuming that CG exerts a uniform influence on firms' financial stability.

2.3 Board Size and Financial Distress

BSIZE represents one of the most extensively debated CG mechanisms because it directly influences a board's capacity to monitor management, formulate strategic decisions, and respond to organizational challenges. Jensen and Meckling (1976) argue that the separation of ownership and control creates agency conflicts that necessitate effective board oversight. Expanding this perspective, Fama and Jensen (1983) conceptualize boards as internal decision-control systems responsible for monitoring managerial decisions, ratifying major investments, and protecting shareholders from managerial opportunism. Despite this theoretical foundation, prior empirical studies report mixed findings regarding the relationship between BSIZE and FD. Several studies suggest that larger boards reduce the likelihood of FD (Chaganti et al., 1985; Platt and Platt, 2012; Simpson and Gleason, 1999) as they provide broader expertise, greater independence, and enhanced monitoring capabilities. From this perspective, increasing BSIZE may strengthen

the board's ability to identify strategic risks before they develop into FD. Conversely, other studies suggest that larger boards increase the likelihood of FD (Cao et al., 2015; Switzer et al., 2018; Jensen 1993; Lipton and Lorsch, 1992; Fich and Slezak, 2008). They argue that smaller boards promote stronger interpersonal relationships, better coordination, and more active participation among directors, leading to more effective governance. Likewise, Platt and Platt (2012) note that although larger boards offer a wider range of knowledge and perspectives, smaller boards are often able to make decisions more quickly, particularly during periods of FD. However, some studies report no significant relationship between BSIZE and FD. Elloumi and Gueyié (2001), Wang and Deng (2006), Darrat et al. (2016), Schultz et al. (2017), and Switzer et al. (2018) find that BSIZE does not significantly influence FD. Likewise, Gerged et al. (2023) conclude that BSIZE has an insignificant impact on FD. By examining Indian listed firms over a period encompassing major governance and insolvency reforms, the present study hypothesizes a negative relationship between BSIZE and FD.

H₁: Board size is negatively associated with the likelihood of financial distress among Indian listed companies.

2.4 Board Independence and Financial Distress

Board independence is intended to strengthen objective monitoring, reduce agency conflicts and protect shareholders from managerial opportunism. Agency theory therefore predicts that a greater proportion of independent directors should reduce the likelihood of financial distress. Resource dependence theory offers a complementary mechanism because independent directors may provide external expertise, networks and access to critical information (Pfeffer & Salancik, 1978; Kesner et al., 1986; Daily & Dalton, 1994). However, formal independence may not produce effective oversight when outside directors have limited firm-specific information, weak involvement or politically connected appointments, circumstances that may be especially relevant in emerging markets (Celiktaş et al., 2025). Because these competing mechanisms leave the direction of the association empirically unresolved, the hypothesis follows from the paper's dominant monitoring argument rather than from the observed coefficient.

H₂: Board independence is negatively associated with the likelihood of financial distress among Indian listed companies.

2.5 Board meeting and Financial Distress

BMEET generally reflects a firm's board activity and monitoring intensity. The common argument is that frequent meeting provides firms specific information, managerial decision monitoring, address corporate challenges to the directors. From this perspective greater BMEET improve board's ability to identify firms' difficulties at an early stage and take corrective measures, thereby reducing the likelihood of FD. supporting this view Kanojia and Gupta (2023) use Indian firms and bankruptcy as their outcome, and Tran (2025) in Vietnam reported higher directors' attendance and frequent meetings are associated with the lower chance of bankruptcy and improved financial health. Rasheed

(2023) also found negative association between BMEET and bankruptcy risk among Egyptian listed firms. However, these findings are not consistently negative. By examining non-financial firms in Pakistan Khurshid et al. (2018) found positive and significant association between BMEET frequency and FD, which suggest frequent BMEET are the signs of worsening financial condition. This interpretation is consistent with Vafeas (1999). therefore, existing a positive relationship. But further evidence suggests Hussain and Mukherjee (2025) in Indian firms, report an insignificant association suggesting only numerical frequency of meeting may not clearly capture the effectiveness of BMEET. These contradictory empirical findings direct the relationship between BMEET and FD remain unresolved particularly in the context of Indian listed companies.

H₃: Board meeting frequency is negatively associated with the likelihood of financial distress among Indian listed companies.

2.6 Audit Committee Size and Financial Distress

Audit committee size may influence financial distress by shaping the committee's capacity to oversee financial reporting, external audit and internal control. Larger committees can provide broader accounting and industry expertise and distribute monitoring responsibilities across more members, thereby improving the early detection of reporting weaknesses and financial risk (Vinten & Lee, 1993; Salloum et al., 2015). However, the benefit is unlikely to be linear: very large committees may suffer coordination and free-riding problems, whereas very small committees may lack the diversity of skills required for effective oversight (Dalton et al., 1999). Consistent with the monitoring-capacity argument, the present study predicts that, over the observed range, larger audit committees are associated with a lower likelihood of financial distress.

H₄: Audit committee size is negatively associated with the likelihood of financial distress among Indian listed companies.

The foregoing review demonstrates that CG has become an important explanatory framework for understanding corporate FD. Since the pioneering contributions of Agency Theory, governance research has progressively expanded from examining individual board characteristics

to analyzing how governance systems influence managerial behavior, organizational decision-making, and corporate survival. Nevertheless, despite extensive theoretical development and empirical investigation, the relationship between CG and FD remains inconclusive. Comprehensive reviews conclude that no single governance mechanism consistently explains FD across countries, industries, or institutional settings because governance outcomes are shaped by multiple theoretical perspectives, contextual factors, and methodological choices.

The Indian corporate sector provides an appropriate setting for addressing these issues. Indian listed companies operate within a governance environment characterized by concentrated promoter ownership, family-controlled firms, and substantial regulatory reforms, including the Companies Act, 2013, the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, and the Insolvency and Bankruptcy Code, 2016. These reforms have strengthened formal governance requirements, yet empirical evidence remains limited regarding whether they have translated into effective governance capable of improving firms' financial resilience. Examining multiple governance mechanisms simultaneously within this evolving institutional environment therefore provides an opportunity to extend the CG and FD literature beyond evidence generated primarily from developed markets.

3. METHODOLOGY

3.1 Data

The study adopts panel data from Indian listed non-financial firms to evaluate the association between CG mechanism and FD. This study evaluates board level governance characteristics which includes BSIZE, BIND, BMEET and ACS are in relation with the likelihood of FD after controlling for firm specific characteristics. The study considers non-financial Indian listed companies for which data has been collected from the CMIE prowsesdx database. The dataset covers the period from 2010 to 2025. The baseline model contains 13,434 firm year observations. Table 1 represents the descriptive statistics of the dependent, independent and control variables used in the empirical analysis.

Table 1. Summary statistics.

	N	Mean	SD	Median	Min	Max
FD	13434	.702	0.457	1	0	1
BSIZE	13434	9.816	3.115	9	2	26
BIND	13434	.057	0.062	.056	0	.5
BMEET	13434	4.517	3.402	4	0	46
ACS	13434	3.65	1.435	4	0	12
ROE	13434	1.467	4.013	.318	-8.495	28.918
TOBINQ	13434	1.689	1.666	1.114	.216	14.971
FSIZE	13434	7.744	2.002	7.598	2.015	14.012
FAGE	13434	3.345	0.598	3.401	1.386	4.663
LEV	13434	.535	0.448	.481	.007	4.379
SG	13434	.166	0.776	.069	-.939	11
TANG	13434	.264	0.195	.238	0	.81

Note: This table reports descriptive statistics for the empirical analysis over the sample period 2010-2025. All continuous variables are winsorized. Detailed variable definitions are provided in Appendix A.

3.2 Methodology

Financial distress is a binary dependent variable equal to 1 when a firm's Altman Z-score is below 1.81 and 0 when the score is at least 1.81 (Graham et al. 1998). The governance variables are board size measured as the number of directors; board independence measured as the proportion of independent directors; board meeting

frequency measured as the annual number of board meetings; and audit committee size measured as the annual number of audit committee members. The empirical model incorporates firm-specific characteristics such as ROE, TOBINQ, FSIZE, FAGE, LEV, SG and TANG as control variables. ROE reflects firms' profitability, TOBINQ demonstrates the market-based valuation of the firm, FSIZE is calculated using the logarithm of total assets, and FAGE captures the age of the firm. LEV measures the firm's financial obligations relative to its asset base, while SG indicates changes in sales over time. TANG represents proportion of tangible fixed assets to total assets. Detailed variable definitions are appended in Appendix A.

Table 2. Pairwise correlation analysis.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) FD	1.000					
(2) BSIZE	-0.008	1.000				
(3) BIND	0.013	-0.263*	1.000			
(4) BMEET	-0.052*	-0.117*	-0.051*	1.000		
(5) ACS	0.007	0.440*	-0.053*	-0.098*	1.000	
(6) ROE	-0.246*	0.259*	-0.061*	-0.034*	0.113*	1.000
(7) TOBINQ	-0.176*	0.115*	-0.023*	0.035*	0.064*	0.269*
(8) FSIZE	0.073*	0.557*	-0.131*	-0.073*	0.324*	0.339*
(9) FAGE	0.047*	0.165*	-0.035*	-0.148*	0.078*	0.164*
(10) LEV	0.130*	-0.083*	0.026*	-0.025*	-0.053*	-0.219*
(11) SG	-0.073*	-0.018*	0.001	0.067*	-0.023*	0.038*
(12) TANG	0.132*	0.104*	-0.015	-0.110*	0.057*	-0.041*
Variables	(7)	(8)	(9)	(10)	(11)	(12)
(7) TOBINQ	1.000					
(8) FSIZE	0.059*	1.000				
(9) FAGE	-0.006	0.177*	1.000			
(10) LEV	0.128*	-0.037*	0.032*	1.000		
(11) SG	0.079*	-0.065*	-0.062*	-0.043*	1.000	
(12) TANG	-0.060*	0.093*	0.078*	0.168*	-0.047*	1.000

Note: This table reports Pearson pairwise correlation coefficients. * denotes significance level at 5%.

Further, pairwise correlation analysis was conducted to examine the direction and strength of the bivariate relationship among variables. Correlation results are presented in table 2. The results are consistent with the hypothesis. Further, Variance Inflation Factor (VIF) was examined to check the multicollinearity. The VIF values are below 2, representing that there is no multicollinearity existing among the variables. VIF table is reported in Appendix B.

3.3 Model Specification

The relationship between CG and FD is formulated using the following empirical model:

$$FD_{it} = \alpha + \beta_1 CG_{it} + \gamma' X_{it} + \lambda_t + \delta_j + \varepsilon_{it} \quad (1)$$

In Equation (1), FD_{it} is the financial-distress indicator for firm i in year t ; CG_{it} represents board size, board independence, board meeting frequency or audit committee size; X_{it} is the vector of firm-level controls; λ_t denotes year fixed effects; and δ_j denotes industry fixed effects. The fully specified model includes both year and

industry fixed effects, while alternative columns sequentially introduce these controls.

4. RESULTS AND DISCUSSION

4.1 Board size and Financial Distress

Table 3 reflects the relationship between BSIZE and FD. BSIZE has a negative significant coefficient ($\beta = -0.005$, $p < 0.001$), indicating that larger boards are associated with lower likelihood of FD. The coefficient suggests that an additional board member is associated with approximately a 0.5%-point lower probability of FD. So, the findings support the fact that larger boards may provide greater expertise, monitoring capacity and resources for addressing financial difficulties.

The findings are consistent with the result of larger board leading to lower chances of FD. Chaganti et al. (1985) compares failed and non-failed retailing firms and found non failed firms tend to have larger boards than failed firms. Further Shahab-Ud-Din et al. (2020) by examining the board structure and FD non-financial firms in an emerging Asian market using the Altman Z-score, found increase in the BSIZE significantly decreases the chance of FD. The advantage of larger boards will lead to higher

performance due to the greater collective information that the board possesses (Dalton et al., 1999).

Table 3. Association between board size and financial distress

	(1)	(2)	(3)	(4)
VARIABLES	FD	FD	FD	FD
BSIZE	-0.005*** (0.001)	-0.006*** (0.001)	-0.005*** (0.001)	-0.006*** (0.001)
ROE	-0.028*** (0.001)	-0.028*** (0.001)	-0.025*** (0.001)	-0.025*** (0.001)
TOBINQ	-0.032*** (0.003)	-0.034*** (0.003)	-0.035*** (0.003)	-0.037*** (0.003)
FSIZE	0.038*** (0.002)	0.039*** (0.002)	0.041*** (0.002)	0.042*** (0.002)
FAGE	0.040*** (0.006)	0.038*** (0.006)	0.052*** (0.006)	0.051*** (0.006)
LEV	0.078*** (0.007)	0.079*** (0.007)	0.092*** (0.007)	0.094*** (0.007)
SG	-0.020*** (0.005)	-0.018*** (0.005)	-0.024*** (0.005)	-0.022*** (0.005)
TANG	0.199*** (0.017)	0.203*** (0.017)	0.324*** (0.020)	0.328*** (0.020)
Constant	0.329*** (0.025)	0.307*** (0.028)	0.356*** (0.085)	0.332*** (0.085)
Observations	13,434	13,434	13,434	13,434
R-squared	0.120	0.122	0.192	0.195
Year FE	No	Yes	No	Yes
Industry FE	No	No	Yes	Yes

Note: This table reports baseline regression examining the association between board size and financial distress. Board size as the independent variable and financial distress as dependent variable. Financial distress is estimated as binary variable equal to one if value of Altman Z-Score is below 1.81 and zero otherwise. Robust standard errors in parentheses. All continuous variables are winsorized. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The relationship shows consistent across other specifications with coefficients of -0.006, -0.005, and -0.006 respectively significant at the 1% level after controlling separately for year and industry fixed effects. The model uses 13,434 observations while R^2 increases from 0.120 to 0.195. Overall, the findings provide stable evidence of negative association between BSIZE and FD supporting H_1 .

4.2 Board independence and financial distress

Table 4 reports a positive association between board independence and financial distress across the four specifications, with coefficients ranging from 0.098 to 0.130 and significance at the 10 or 5 percent level. This result is contrary to the conventional monitoring prediction in H_2 and should not be interpreted as evidence that independent directors cause distress. One possibility is reverse causality: firms may appoint additional independent directors after financial problems emerge.

Another is that formal independence does not ensure firm-specific knowledge, information access or active engagement. These explanations remain provisional because the baseline models establish association rather than causation.

The result is consistent across all the specifications after controlling year and industry fixed effects shown in column 2,3 and 4. The findings show that higher proportions of independent directors do not necessarily transform into lower FD. One possible explanation is that independent directors may be appointed when firms are already facing financial difficulties. This positive association is consistent with the evidence of Hsu and Wu (2014), who find that firms with higher proportion of independent directors have a higher likelihood of corporate failure in the UK. Their findings suggest that CG reforms in the recent time may have placed much importance on the monitoring role of independent directors simultaneously undervaluing the benefits of closer affiliation directors to the firm.

Further it states that formal BIND does not necessarily bring effective monitoring or superior firm survival outcome, thus leading to possible financial difficulties. Supporting this argument Chou et al. (2010) find that outside directors show less efforts when firm experiencing greater FD. Patton and baker, (1987) also mentions independent directors serve on part-time basis and on multiple boards. So, they are less likely to spend their time

to understand the business and rely on their general knowledge rather than firm specific information (Baysinger& Hoskisson,1990). Independent directors have limited contact with day-to-day affairs of the business, they are largely dependent on the information provided by the top management (Fama &Jensen,1983). Also, independent directors are strict monitors and top

management is willingly don't share critical information with them out of fear of their intense scrutiny (Adams &Ferreira,2007). This informational disadvantage mitigates their influence in corporate control, leading to possible FD. These possible explanations should be interpreted cautiously because the present analysis establishes an association rather than a causal relationship.

Table 4. Association between Board Independence and Financial Distress.

	(1)	(2)	(3)	(4)
VARIABLES	FD	FD	FD	FD
BIND	0.116*	0.130**	0.098*	0.110*
	(0.060)	(0.061)	(0.058)	(0.058)
ROE	-0.028***	-0.028***	-0.025***	-0.025***
	(0.001)	(0.001)	(0.001)	(0.001)
TOBINQ	-0.033***	-0.034***	-0.036***	-0.037***
	(0.003)	(0.003)	(0.003)	(0.003)
FSIZE	0.034***	0.035***	0.037***	0.037***
	(0.002)	(0.002)	(0.002)	(0.002)
FAGE	0.038***	0.037***	0.051***	0.049***
	(0.006)	(0.006)	(0.006)	(0.006)
LEV	0.080***	0.082***	0.094***	0.096***
	(0.007)	(0.007)	(0.007)	(0.007)
SG	-0.020***	-0.018***	-0.024***	-0.022***
	(0.005)	(0.005)	(0.005)	(0.005)
TANG	0.193***	0.196***	0.321***	0.323***
	(0.017)	(0.017)	(0.020)	(0.020)
Constant	0.307***	0.284***	0.335***	0.309***
	(0.025)	(0.029)	(0.085)	(0.085)
Observations	13,434	13,434	13,434	13,434
R-squared	0.120	0.122	0.192	0.194
Year FE	No	Yes	No	Yes
Industry FE	No	No	Yes	Yes

Note: This table reports baseline regression examining the association between board independence and financial distress. Board independence as the independent variable and financial distress as dependent variable. Financial distress is estimated as binary variable equal to one if value of Altman Z-Score is below 1.81 and zero otherwise. Robust standard errors in parentheses. All continuous variables are winsorized.

*** p<0.01, ** p<0.05, * p<0.1

4.3 Board Meeting and Financial Distress

Table 5 reports a negative association between board meeting frequency and financial distress. In the baseline model, the coefficient is -0.003 (p < 0.05), which corresponds to an estimated 0.3 percentage-point reduction in the probability of distress per additional meeting if the specification is a linear probability model.

The coefficient remains negative across the alternative specifications, although statistical significance weakens to the 10 per cent level in models 3 and 4. The result is therefore consistent with H3, but it should be interpreted as an association because financially troubled firms may also alter the frequency of board meetings.

The findings direct that more board meetings may provide closer monitoring of managerial activities, improve information flow between directors and management and enable boards to respond more prominently to emerging financial problems. Vafeas (1999) show that BMEET is related to board activity during the period of firm's poor prior performance which suggest increased board activity or BMEET may be a response to deteriorating condition as it can contribute to improving firm performance. But Chou et al. (2010), examined that financial distress is significantly associated with lower attendance of independent board members to the board meeting. Firms experiencing financial difficulties may also conduct BMEET in response to their circumstances. Overall, the

studies prove that more BMEET are associated with a lower likelihood of FD supporting H₃

Table 5. Association between Board Meetings and Financial Distress.

	(1)	(2)	(3)	(4)
VARIABLES	FD	FD	FD	FD
BMEET	-0.003**	-0.003**	-0.002*	-0.002*
	(0.001)	(0.001)	(0.001)	(0.001)
ROE	-0.029***	-0.028***	-0.025***	-0.025***
	(0.001)	(0.001)	(0.001)	(0.001)
TOBINQ	-0.033***	-0.034***	-0.036***	-0.037***
	(0.003)	(0.003)	(0.003)	(0.003)
FSIZE	0.034***	0.035***	0.037***	0.037***
	(0.002)	(0.002)	(0.002)	(0.002)
FAGE	0.037***	0.035***	0.049***	0.048***
	(0.006)	(0.006)	(0.006)	(0.006)
LEV	0.080***	0.082***	0.094***	0.096***
	(0.007)	(0.007)	(0.007)	(0.007)
SG	-0.019***	-0.018***	-0.024***	-0.022***
	(0.005)	(0.005)	(0.005)	(0.005)
TANG	0.191***	0.193***	0.319***	0.320***
	(0.017)	(0.017)	(0.020)	(0.020)
Constant	0.333***	0.313***	0.357***	0.335***
	(0.026)	(0.029)	(0.084)	(0.085)
Observations	13,434	13,434	13,434	13,434
R-squared	0.120	0.122	0.192	0.194
Year FE	No	Yes	No	Yes
Industry FE	No	No	Yes	Yes

Note: This table reports baseline regression examining the association between board independence and financial distress. Board independence as the independent variable and financial distress as dependent variable. Financial distress is estimated as binary variable equal to one if value of Altman Z-Score is below 1.81 and zero otherwise. Robust standard errors in parentheses. All continuous variables are winsorized. *** p<0.01, ** p<0.05, * p<0.1

4.4 Audit Committee Size and Financial Distress

Table 6 examines the association between audit committee size and FD. The baseline report gives a negative and significant association between audit committee size and FD ($\beta = -0.005$, $p < 0.10$). Here financially distressed firms are taken as dependent variables and is coded as 1, coefficient shows negative, indicating firms with larger audit committee size are associated with lower probability of FD, which implies an additional audit committee member is in relation approximately a 0.5%-point less probability of FD, other variable remains constant. Thus, supporting H₄.

Table 6. Baseline Regression – Audit Committee Size and Financial Distress.

	(1)	(2)	(3)	(4)
VARIABLES	FD	FD	FD	FD
ACS	-0.005*	-0.005*	-0.005**	-0.005**
	(0.003)	(0.003)	(0.003)	(0.003)
ROE	-0.031***	-0.031***	-0.028***	-0.028***

	(0.001)	(0.001)	(0.001)	(0.001)
TOBINQ	-0.028***	-0.029***	-0.030***	-0.030***
	(0.003)	(0.003)	(0.003)	(0.003)
FSIZE	0.036***	0.036***	0.038***	0.038***
	(0.002)	(0.002)	(0.002)	(0.002)
FAGE	0.042***	0.041***	0.054***	0.053***
	(0.006)	(0.006)	(0.006)	(0.006)
SG	-0.022***	-0.020***	-0.026***	-0.024***
	(0.005)	(0.005)	(0.005)	(0.005)
TANG	0.224***	0.225***	0.358***	0.358***
	(0.017)	(0.017)	(0.019)	(0.019)
Constant	0.342***	0.324***	0.384***	0.363***
	(0.025)	(0.028)	(0.086)	(0.086)
Observations	13,434	13,434	13,434	13,434
R-squared	0.114	0.116	0.185	0.187
Year FE	No	Yes	No	Yes
Industry FE	No	No	Yes	Yes

Note: This table reports baseline regression examining the association between board independence and financial distress. Board independence as the independent variable and financial distress as dependent variable. Financial distress is estimated as binary variable equal to one if value of Altman Z-Score is below 1.81 and zero otherwise. Robust standard errors in parentheses. All continuous variables are winsorized.

*** p<0.01, ** p<0.05, * p<0.1

An audit committee becomes effective in monitoring and controlling top management activities if it contains enough members to carry out the responsibilities (Vinten and Lee,1993). Dalton et al. (1999) reveal an audit committee becomes ineffective if their size is too large or too small. Sewpersadh,N.S.(2022) found audit committee size has lower probability of financial distress and Wiryaningrum et al. (2025) found negative significant relationship between audit committee size and FD. These findings are closely consistent with the negative association observed in the present study and support the argument that larger audit committee may reduce likelihood of FD.

In the present study negative relationship remains consistent across all four specifications with the coefficient -0.005. Its statistical significance shows 10% level to 5% after incorporating year and industry fixed effects.

CONCLUSION

This study investigated the selected corporate governance mechanisms and financial distress among listed companies in India using 13,434 firm year observations. Altman Z-score model is used to measure the FD whereas BSIZE, BIND, BMEET and audit committee size were considered as the main CG mechanisms. The baseline regression results point out CG characteristics are significantly associated with the financial distress of the firm.

The findings reveal that BSIZE, BMEET and audit committee size are negatively associated with financial distress, proposing larger boards, more board meetings and larger audit committee size are associated with lower likelihood of financial distress. Conversely, board independence shows a positive significant association with financial distress. These results therefore demonstrate that relationship between corporate governance and financial distress is not consistent across all the governance mechanisms. But the finding remains consistent across different specifications incorporating year and industry fixed effects, showing stability of the observed relationships. The study contributes to existing literature by providing empirical evidence highlighting that just the formal presence of CG mechanisms may not have identical benefits for financial health and hence, individual governance characteristics need to be examined separately instead of treating CG as a similar construct. The positive association between board independence and financial distress directs the need for further investigation to explore the role of independent directors in actually monitoring and controlling the financially unsound firms. From pragmatic viewpoint, the findings suggest that companies should focus not only on-board composition and mere size of the committee but their effectiveness, quality, involvement of oversight which may benefit the boards from the functional effectiveness of the governance variables.

Future analysis should incorporate additional governance mechanisms; alternative measures of financial distress and correct robustness test can provide enhanced evidence on these relationships. Comprehensively, this study concludes that CG is significant factor associated with financial distress. However, the nature and direction of the association differ across each governance attributes. These findings offer a basis for further investigation of CG, firm specific characteristics and financial distress in the Indian corporate environment.

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