Iosr Journal Of Economics And Finance (Iosr-Jef)
E-Issn: 2321-5933, P-Issn: 2321-5925.Volume 15, Issue 5 Ser. 6 (Sept. – Oct. 2024), Pp 33-38
www.Iosrjournals.Org

Board Independence And Financial Distress: Insights From India

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Abstract:
Resource Dependency Theory (RDT) posits that organizations depend on external resources to navigate uncertainty and sustain growth, with independent directors in corporate governance acting as key intermediaries, providing expertise, external networks, and strategic oversight. This study employs Panel [Random Effect (RE)] regression to analyze the impact of independent directors on the financial distress likelihood of 20 manufacturing companies listed on the NSE over the period 2019–2024. The findings reveal that firms with a higher number of independent directors exhibit a significantly higher risk of financial distress, reinforcing the notion that these directors aggravate financial vulnerabilities and enhance organizational instability.
Background: *Corporate frauds like the Satyam and Nirav Modi-PNB scandals highlight the severe consequences of deceptive practices, undermining financial markets and stakeholder trust. These incidents exposed vulnerabilities in governance and risk management, prompting regulatory reforms in India. Weak corporate governance facilitates fraud by allowing insufficient oversight and accountability. Recent reforms under the Companies Act, 2013, and SEBI's regulations aim to enhance transparency and reduce fraud risks. Strong corporate governance would be critical for financial stability, investor confidence, and achieving the "2047 Viksit Bharat" vision. Research explores how independent directors influence the likelihood of financial distress.*
Materials and Methods*: This study investigates financial distress in manufacturing firms listed on the National Stock Exchange (NSE) through a panel data methodology. A random sample of 20 firms was selected to ensure representativeness, covering the period from 2019 to 2024, with banks and financial institutions excluded due to their distinct financial characteristics. Financial distress was assessed using the Altman Z-score, a widely recognized metric for evaluating financial distress. The independent variable in the study is Board Independence, i.e., the total number of independent directors on the Board. The control variables include Profitability, Leverage, and Activity. Panel data estimation techniques were used to address issues of endogeneity and heteroscedasticity. The Hausman test was conducted to determine whether to retain fixed or random effects for the analysis.*
Results*: The Hausman test showed a p-value of 0.0.78 (greater than 0.05) which revealed that that random effect model is appropriate for the analysis. The analysis reveals a negative relationship between board independence and financial distress, indicating that an increase in the number of independent directors is associated with a higher likelihood of financial distress at 5% level of significance. Leverage significantly increases the likelihood of financial distress, while increased operational activity decreases it; Net Profit Margin is statistically insignificant.*
Conclusion: *This finding challenges the conventional understanding of board independence, which is generally seen as a mechanism to enhance corporate governance by providing unbiased oversight, strategic guidance, and external resources.*
Keyword*: Resource Dependency Theory (RDT), Corporate governance, Independent directors, Financial distress.*

Date of Submission: 05-10-2024 Date of Acceptance: 15-10-2024

I. Introduction

Corporate frauds, characterized by deceptive practices such as falsifying financial statements, embezzling funds, insider trading, and manipulating stock prices, can severely distort financial markets and erode stakeholder trust. The Satyam Computer Services scandal, where $1.47 billion in revenue and profits were inflated, led to a significant decline in stock market values and substantial investor losses. Similarly, the Nirav Modi-PNB scam, involving nearly $2 billion in fraudulent letters of undertaking, exposed critical vulnerabilities in India's banking sector's internal controls and risk management, prompting urgent regulatory reforms. Both cases underscore the profound economic consequences of corporate fraud and highlight the necessity for robust oversight and governance mechanisms. These collapses can erode the economy by undermining investor confidence, distorting market integrity, causing financial instability, and triggering significant losses for investors and stakeholders, which can lead to broader market declines and reduced economic growth.The lack of robust

corporate governance (CG) practices often facilitates fraud by allowing weak internal controls, inadequate oversight, and insufficient transparency, which can enable executives and employees to engage in deceptive practices without detection. Inadequate governance structures fail to enforce accountability and regulatory compliance, creating an environment where fraudulent activities, such as financial statement manipulation and embezzlement, can proliferate unchecked. Recent developments in corporate governance in India have markedly enhanced transparency and accountability, driven by major regulatory changes. Key updates under the Companies Act, 2013, and SEBI's revised Listing Obligations and Disclosure Requirements focus on stricter board independence, more comprehensive disclosure norms, and improved audit standards. The amendments also introduce streamlined processes for corporate restructuring and increased penalties for non-compliance, alongside mandatory CSR spending to foster ethical business practices. Collectively, these reforms aim to bolster market confidence, reduce corporate fraud risks, and modernise the regulatory framework to ensure robust corporate governance. 'Corporate governance encompasses a framework of rules, practices, and processes designed to direct and control an organisation, with the board of directors playing a pivotal role in its implementation. At its core, corporate governance is guided by four fundamental principles: accounting, transparency, fairness, and responsibility. Gupta and Sharma (2014) concluded that corporate governance practices have bearing on both the companies' share prices and their financial performance. Guluma (2021) revealed that corporate governance mechanisms affect firm performance in Chinese listed firms, with managerial overconfidence influencing the effectiveness of these practices. Firms with weak corporate governance structures are particularly susceptible to economic downturns, which heightens their risk of encountering financial distress (Lee and Yeh, 2004). Examining corporate governance and financial distress in India is essential to achieving the "2047 Viksit Bharat" vision of becoming a developed nation. Strong governance promotes sustainable economic growth, investorconfidence, and financial stability. Understanding this relationship enables the formulation of strategies to mitigate financial risks, aligning with the goals of economic resilience and development by 2047.

The research aims to analyse whether an increased number of independent directors is associated with a higher or lower risk of financial distress. By investigating this relationship, the study seeks to uncover whether independent directors, who are generally expected to bring valuable expertise, strategic oversight, and external networks, actually contribute to or mitigate financial instability.

II. Literature Review And Hypothesis Development

Resource Dependence Theory (RDT) views corporations as open systems deeply intertwined with their external environment, relying on external resources to maintain their operations and achieve growth. According to RDT, firms are not self-sufficient; they must seek out and secure essential resources from external entities to survive in competitive markets. The theory suggests that these external resources are often controlled by other organizations or stakeholders, creating a power dynamic that can place the dependent firm at a disadvantage. To mitigate this vulnerability, firms strategically engage with external stakeholders who possess the needed resources, whether in the form of capital, raw materials, expertise, or market access. These alliances and partnerships are critical in shaping the organization's strategic direction, as firms aim to reduce their dependency on external entities while simultaneously increasing their own control over these resources. This dynamic of power and resource dependency not only drives organizational behavior but also influences decisions regarding resource acquisition, risk management, and long-term sustainability (Pfeffer & Salancik, 2003). By doing so, firms can enhance their resilience and adaptability, making them less vulnerable to environmental uncertainties such as economic fluctuations, changes in regulations, or competitive pressures.

One of the critical components within RDT is the role of the board of directors, particularly independent directors, in managing these external dependencies. Independent directors are viewed as key figures in reducing the firm's reliance on external resources by leveraging their external affiliations, networks, and expertise. Their ability to access valuable external resources such as capital, market information, and legitimacy can significantly diminish the firm's vulnerability to resource constraints. Moreover, independent directors contribute to enhanced governance practices by providing an unbiased perspective, ensuring that the firm's strategic decisions are aligned with long-term goals and are not overly influenced by internal biases or short-term pressures. This alignment is particularly crucial in mitigating financial distress, as independent directors play a central role in overseeing risk management, regulatory compliance, and capital allocation. Studies have shown that firms with a higher proportion of independent directors tend to make more prudent decisions concerning resource management, thereby reducing operational risks and improving overall financial health (Hillman et al., 2009). However, some scholars argue that the effectiveness of independent directors can vary depending on the industry and the complexity of the firm's operations. For instance, in fast-evolving industries, independent directors may lack the firm-specific knowledge required to navigate intricate challenges, potentially leading to less effective decision-making (Tahir, 2018). Nonetheless, the general consensus supports the idea that independent directors, through their external linkages and governance role, are integral to reducing resource dependency and ensuring corporate resilience (Gerged et al., 2022; Mariano et al., 2021). Thus, RDT underscores the importance of board

composition in enhancing an organisation's capacity to manage external dependencies, thereby fortifying its position in competitive and uncertain environments. Research on the relationship between independent directors and financial distress has yielded mixed results. Some studies, like Li et al. (2008) and Chang et al. (2019), show a negative relationship, suggesting that independent directors enhance governance, improve oversight, and reduce the likelihood of financial distress. Similarly, Wang et al. (2016) found that firms with more independent directors tend to avoid financial instability. However, other studies, such as Adams et al. (2012) and Bhagat and Bolton (2008), argue for a positive relationship, claiming that independent directors may contribute to financial distress due to conflicts of interest, lack of firm-specific knowledge, or slower decision-making processes (Fich & Shivdasani, 2006).

H1: There is a negative relationship between Independent Directors and Financial Distress

III. Material And Methods

Data Methodology

This study investigates financial distress among manufacturing firms listed on the National Stock Exchange (NSE) using a panel data approach. A sample of 20 manufacturing firms was selected through a random sampling method to ensure representativeness and mitigate selection bias. The study covers the period from 2019 to 2024, allowing for a comprehensive analysis of financial trends and distress over a significant timeframe. The study specifically excludes banks and financial institutions from the sample due to their unique modus-operandi, distinctive financial structures, and regulatory environments, which would not be comparable to manufacturing firms, in line with Mariano et al., 2021). By focusing solely on manufacturing companies, the research aims to provide insights into the financial stability and distress within this sector, where traditional financial metrics and risk factors are more uniformly applicable. Financial distress is approximated using the Altman Z-score, a widely recognized measure of financial distress likelihood (Udin et al., 2017) and its interpretation as given in Table 1. The Z-score is calculated using the formula:

Z-score = (1.2*X1) + (1.4*X2) + (3.3*X3) + (0.6*X4) + X5

Where,

X1 = Working Capital / Total Assets
X2 = Retained Earnings / Total Assets
X3 = Earnings Before Interest and Taxes / Total Assets
X4 = Market Value of Equity / Book Value of Total Liabilities
X5 = Sales / Total Assets

Table 1:

Z-score Range	Interpretation	Description
Z-score > 2.99	Safe Zone	Companies are considered financially stable with low bankruptcy risk.
1.81 < Z-score < 2.99	Grey Zone	Companies are at the grey zone i.e., moderate risk of financial distress.
Z-score < 1.81	Distress Zone	Companies are at high risk of financial instability and potential bankruptcy.

In this study, panel data methods were used, combining time-series data with cross-sectional observations from N firms over t time periods, i.e., annual interval. To address endogeneity and heteroscedasticity in the dataset, we applied panel data estimation techniques, in line with (Younas et al., 2021). Both fixed effects and random effects models were employed to ensure unbiased estimates. The fixed effects model assumes constant slopes but allows intercepts to vary across cross-sections and time, while the random effects model treats intercepts as random rather than fixed for each cross-section (Younas et al., 2021). The Hausman test (Hausman, 1978) was used to assess whether the fixed or random effects model should be retained.

Research Variables

Operationalization of Research Variables: Table 2

Variable	Abbreviation	Expected Sign	Definition	Source
Dependent Variable				
Financial Distress	Zscore	-/+	Altman Z- Score	Udin Et Al. (2017)
Independent Variable				
Board Independence	INDP_DRC	+	Number of independent directors on the board of directors	Udin et al. (2017), Dang et al. (2023)
Profitability	NPM	-	Net Profit Margin	Mukherjee & Sen (2019)
Leverage	LEVR	+	Debt to Equity Ratio	Mukherjee & Sen (2019)
Activity	ACTV	-	PPE to Total Asset ratio	Mukherjee & Sen (2019)

Source: Author's Tabulation

Model Specifications

The panel regression equation is as follows to examine the association of financial distress and board independence is as follows:

$$Zscore_{it} = \beta 0 + \beta_1 INDP\_DRC_{it} + \beta_2 NPM_{it} + \beta_3 LEVR_{it} + \beta_4 ACTV_{it} + u_{it} + \varepsilon_{it}$$

In this regression model, Zscore is the dependent variable for firm i at time t, influenced by INDP_DRC (no. of independent directors), NPM (net profit margin), LEVR (leverage ratio), and ACTV (asset turnover ratio). The model also includes uit, the firm-specific effect, and εit, the error term.

IV. Result

Descriptive Statistics

Table 3: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Zscore	120	4.2318	3.6771	0.8902	18.3046
INDP_DRC	120	6.3417	1.6009	3	12
NPM	120	5.3976	7.3489	-32.02	42.4
LEVR	120	0.642	0.5383	0	2.09
ACTV	120	4.9539	4.1892	0.66	18.83

Source: Author's Tabulation

Table 3 represents the descriptive statistics. It reveals notable variability across the variables. The Z-score, measuring financial distress, has an average of 4.23 with a wide range from 0.89 to 18.30, indicating significant differences in financial stability. The number of Independent Directors averages 6.34, with a standard deviation of 1.60, and ranges from 3 to 12, suggesting some variability in governance structures. Net Profit Margin shows substantial variability, with a mean of 5.40 and a broad range from -32.02 to 42.4, highlighting diverse profitability levels. Leverage averages 0.64, with a standard deviation of 0.54 and a range from 0 to 2.09, reflecting different levels of financial leverage. Activity levels average 4.95, but vary widely from 0.66 to 18.83, indicating a broad spectrum of operational intensity. Overall, these statistics suggest significant differences in financial and operational characteristics among the entities in the sample.

Correlation Analysis

Table 4: Correlation Matrix

	Zscore	INDP_DRC	NPM	LEVR	ACTV
Zscore	**1**				
INDP_DRC	-0.3011	**1**			
NPM	0.275	0.0649	**1**		
LEVR	-0.5854	0.4191	0.0428	**1**	
ACTV	0.2591	-0.231	-0.2123	-0.3935	**1**

Source: Author's Tabulation

Table 4 shows the correlation matrix. The results indicate that the independent and control variables do not exhibit strong correlations with each other, thereby eliminating the chances of multicollinearity among the independent variables. Specifically, the correlation coefficients between the independent variables (INDP_DRC, NPM, LEVR, ACTV) and the Z-score are relatively modest. The highest correlation observed is between LEVR and the Z-score (-0.5854), suggesting a moderate negative relationship. In contrast, the correlations among the independent variables themselves vary, with some being weak or even negligible. For instance, the correlation between NPM and LEVR is quite low (0.0428), and the correlation between INDP_DRC and ACTV is also relatively weak (-0.2310). Overall, these correlations suggest that while some relationships exist, the independent and control variables are not strongly interrelated.

Hausman Test Analysis

Table 5: Hausman Test Results

Variable	Fixed (b)	Random (B)	Difference (b-B)	S.E.
INDP_DRC	-0.2732	-0.2954	0.0222	0.0492
NPM	0.0215	0.0565	-0.035	0.018

LEVR	-2.2959	-2.4076	0.1117	0.3846
ACTV	0.2771	0.1875	0.0896	0.0685

Source: Author's Tabulation

- Chi-squared statistic: 8.38
- Degrees of freedom: 4
- p-value: 0.0787

Table 5 shows the Hausman Test which reflects the best-fit model amongst the Random Effect and Fixed Effect model. Since the p-value (0.0787) is greater than 0.05, we fail to reject the null hypothesis, suggesting that the random effects model is appropriate for the analysis.

Random Effect Regression Analysis

Table 6: Panel Regression (Random Effect) Analysis

Variable	Coefficient	Std. Error	z-value	p-value
INDP_DRC	-0.2954**	0.1468	-2.01	0.044
NPM	0.0565*	0.0317	1.78	0.075
LEVR	-2.4076***	0.5811	-4.14	0.000
ACTV	0.1875**	0.0811	2.31	0.021
_cons	6.4171	1.1967	5.36	0.000
Notes: (***), (**) and (*) denote significance at the 1%, 5% and 10% level, respectively.				

Source: Author's Tabulation

The analysis investigates how various factors influence the likelihood of financial distress, as measured by the Z-score. Table 6 reveals that the coefficient for the number of Independent Directors (INDP_DRC) is -0.2954 with a p-value of 0.044, indicating a statistically significant negative impact on the Z-score highlighting unique and surprising results that contradicts the foundation of RDT. This suggests that an increase in the number of Independent Directors is associated with a lower Z-score, potentially increasing the likelihood of financial distress. The Net Profit Margin (NPM) has a coefficient of 0.0565 and a p-value of 0.075, reflecting a positive but not statistically significant effect on the Z-score. This implies that while a higher Net Profit Margin might be associated with a higher Z-score, its impact is not conclusive at the 5% significance level and may require further examination. Leverage (LEVR) shows a coefficient of -2.4076 with a p-value of 0.000, indicating a significant negative effect on the Z-score. This suggests that higher leverage is strongly associated with a lower Z-score, thus increasing the likelihood of financial distress. Activity (ACTV) has a coefficient of 0.1875 with a p-value of 0.021, demonstrating a significant positive effect on the Z-score. This indicates that increased activity is associated with a higher Z-score, potentially decreasing the likelihood of financial distress.

V. Conclusion

The study has discovered a unique finding regarding association and influence of Board Independence and the well being of the organization. The negative coefficient of -0.2954 for the number of Independent Directors (INDP_DRC) suggests that an increase in independent directors correlates with a lower Z-score, indicating a higher likelihood of financial distress. This may challenge the assumption of RDT that independent directors always reduce financial risk by securing external resources and enhancing adaptability. While RDT argues that independent directors improve risk management and compliance, the results from this analysis support the critique by Tahir (2018), who notes that independent directors may lack sufficient firm-specific knowledge, potentially leading to ineffective decisions in complex environments and contradicts the finding of Gerged et al. (2022) and Mariano et al. (2021). Thus, we reject our null hypothesis, which posits that a higher number of independent directors reduces the likelihood of financial distress. The significant effect of leverage (LEVR) and activity (ACTV) further reinforces the need for a well-rounded approach to financial management beyond board composition. While independent directors offer external expertise, the internal financial health, particularly leverage and operational activity, remains critical to reducing financial distress. These findings could prompt a reassessment of the role independent directors play, with a focus on improving their integration into the company's strategic and operational contexts. Corporate codes of conduct may need to evolve to ensure that independent directors contribute more effectively to reducing financial distress, rather than merely fulfilling regulatory requirements.

Based on the results of this study, it is recommended that organisations reconsider the role of independent directors in mitigating financial distress. Despite the expectation that independent directors would enhance financial stability, the findings indicate that an increased number of these directors is associated with a higher risk

of financial distress. Therefore, companies should evaluate the effectiveness of their independent directors more critically. To address this, companies should enhance their audit practices and strengthen internal controls, ensuring that independent directors are actively involved in rigorous oversight and risk management processes. Diversifying the expertise and backgrounds of independent directors can offer a broader range of insights into financial risk management.

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