

An Investigation Of The Relationship Between Financial Structure And Financial Stability Of Non-Financial Companies In India: A Panel Study

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Abstract

The objective of the current study is to investigate the relationship between financial stability and their financial structure of Indian companies traded on the Bombay Stock Exchange (BSE). Using panel regression analysis, the research was carried out on a group of 273 firms that are included in the S&P BSE 500 Index from throughout the period from 2011 to 2023. Employing STATA software, this research conducted an empirical analysis on the relationship between Financial Structure and Financial Stability. EBVTA (Equity Book-Value / Total Assets), DTA (Short-term Debts / Total Assets), and RETTA (Retained Earnings / Total Assets) were the three elements used to evaluate the financial structure, and Kida's Model has been implemented to evaluate the financial stability of the firms. The findings showed a noteworthy favorable and significant relationship between financial stability and financial structure. This suggests that a firm's capacity to manage risks, weather economic shocks, and sustain steady operations over time can all be improved by a well-balanced combination of these elements in its financial structure. The study looked at the relationship between financial structure and financial stability in an Indian scenario, a growing market. Businesses can reduce their financial deficiencies and set their own qualities for a prosperous future by carefully controlling their financial obligations, taxable earnings, and retained earnings levels.

Keywords: Financial Stability, Financial Structure, Indian Companies.

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I. Introduction

In today's dynamic and interconnected global economy, the stability of financial systems is paramount for sustainable economic growth and development. Financial stability, defined as the ability of a financial system to absorb and mitigate financial shocks while continuing to support economic activities, has garnered increased attention from policymakers, regulators, academics, and practitioners alike. Central to understanding financial stability is the examination of the financial structure, which encompasses the composition, size, and interconnectedness of various financial institutions and markets within an economy.

The relationship between financial structure and financial stability is complex and multifaceted, influenced by a myriad of factors including regulatory frameworks, market dynamics, technological advancements, and macroeconomic conditions. A robust and resilient financial structure is essential for promoting stability, facilitating efficient allocation of resources, and fostering sustainable economic growth. Conversely, vulnerabilities within the financial structure can undermine stability, leading to systemic risks, contagion effects, and financial crises with far-reaching implications for the broader economy.

Against this backdrop, this research paper aims to provide a comprehensive analysis of the impact of financial structure on financial stability. The paper seeks to unravel the intricate interplay between financial structure and stability. Over the years, India has experienced remarkable changes in its financial architecture, characterized by increasing financial depth, diversity, and complexity. From the liberalization of financial markets to the proliferation of innovative financial products and services, these developments have reshaped the Indian financial landscape and raised important questions about their implications for stability.

Rajan and Zingales (1998) examined the impact of financial structure on economic growth and found evidence suggesting that a well-developed financial system promotes growth by efficiently allocating resources. Furthermore, empirical research by De Nicolò and Loukoianova (2007) investigated the determinants of banking crises in India, highlighting the importance of financial structure in mitigating systemic risks and ensuring financial stability. In the current study, the impact of financial structure on financial stability was analyzed by taking sample of top BSE 500 Indian companies.

The paper is structured as follows: Section 1 provides introduction, Section 2 comprises a review of the empirical literature and suggests some testable hypotheses drawn from that literature; Sections 3 provides

the methodology for the study Section 4 deals with the empirical analysis and results; and Section 5 demonstrated the conclusion, limitations and future research of the study.

II. Review Of Literature And Hypotheses Development

Financial Structure

The financial structure of a company serves as a critical indicator of its potential to lenders and equity investors, offering insights into its future prospects, as indicated by Stiglitz (1988). Variation in financial structures across nations with similar economic profiles stems from the diverse methods employed to mobilize savings and allocate them toward investments, as elucidated by Gurley and Shaw (1967). Scott (1972) emphasizes the imperative of crafting an optimized financial structure to minimize operational costs effectively. Naceur and Goaid (2002) elaborate on the multifaceted nature of financial structure, delineating the myriad sources of financing, spanning from long-term to short-term options, and encompassing various property rights. Yinusa (2015) underscores the perpetual quest for striking an optimal balance between debt and equity to bolster shareholder wealth. Allen et al. (2018) provide a comprehensive definition, framing financial structure as a comprehensive depiction of financing sources showcased in a company's balance sheet. Broyles (2007) characterizes it as the amalgamation of debt and equity, collectively comprising a company's capital framework. Myers (2000) underscores the importance of financial structure in financing a company's entire asset base. Liu and Zhang (2018) delve into the intricacies of financial structure, elucidating its role in representing diverse financing sources for different assets, each carrying distinct cost implications. Fischer and Krauss (2018) further underscore the nuanced cost dynamics associated with various financing sources. Sivadasan et al. (2007) paint a picture of financial structure as a fixed blend of debt and equity securities. Altman and Ratios (1968) and Thurani (2014) highlight its profound impact on company valuation and the overarching goal of maximizing shareholder wealth. Acharya et al. (2012) emphasize the pivotal role of an optimal financial structure in ensuring adequate capital for lucrative investments while mitigating risks. Ultimately, the Chief Financial Officer shoulders the responsibility of determining the optimal debt-equity mix and identifying the most cost-effective financing sources, as emphasized by Atrill and McLaney (2009). Brigham and Houston (2012) underscore the pivotal role of financial structure in shaping investment and financing decisions, influencing profitability, and guiding risk management strategies in fiercely competitive market landscapes. In the current study, following indicators was used to measure the financial structure:

(1.) **Equity at Book Value to Total Assets:** The indicator reflects the capacity of industrial companies to fund their assets through internal resources, with an upward trend signaling a favorable outlook. Conversely, a decline in this indicator signifies challenges in companies' ability to internally finance their investments. It is computed using the equation below: (Ross, Westerfield, & Jordan, 2008 and Yasir and Harjan, 2020).

$EBVTA = \text{Equity at Book Value} / \text{Total Assets}$

(2) **Total Short-Term Debt to Total Assets:** This metric quantifies the extent to which companies rely on debt financing to fund their assets. A higher value of this indicator suggests a greater dependence on debt and borrowing, potentially constraining the company's future access to credit. The calculation of this indicator follows the equation outlined below: Ross, Westerfield, & Jordan, 2008 and Yasir and Harjan, 2020).

$DTA = \text{Total Short-Term Debt} / \text{Total Assets}$

(3) **Retained Earnings to Total Assets:** This metric gauges the extent to which corporations utilize their internal resources, specifically retained earnings, to finance their assets. An increase in this indicator signifies the company's reliance on its own funds to support its asset base. Conversely, a low value of this indicator suggests heightened dependence on external sources to finance the company's financial structure. It is calculated as: (Altman & Ratios, 1968 and Yasir and Harjan, 2020).

$RETTA = \text{Retained Earnings} / \text{Total Assets}$

Financial stability

Ensuring the financial stability of any company is paramount for navigating financial crises and executing the organization's developmental agenda. Moreover, it fosters sustainability in investments, thereby securing the financial well-being of companies. Financial stability hinges on two fundamental conditions. Firstly, the company must maintain solvency, which entails the timely fulfillment of financial obligations. Achieving solvency necessitates the effective management of cash flow to ensure ongoing liquidity. Secondly, long-term financial stability necessitates access to adequate financial resources for company development and investment financing over extended periods (Lassoued, 2018).

The concept of financial stability encompasses a broad spectrum, encompassing various facets of the financial ecosystem, including infrastructure and corporate entities. It encompasses the functionality of the financial system and the operations within the monetary framework. A stable financial system is characterized by companies' ability to efficiently allocate resources and proficiently measure, assess, and mitigate financial risks. Preserving financial stability demands proactive identification and management of risk sources (Brigham

& Houston, 2015). Failure to uphold financial stability may precipitate corporate bankruptcy, a perilous predicament fraught with significant risks. Numerous internal and external factors contribute to the phenomenon of corporate bankruptcy. Predicting a company's resilience or vulnerability and anticipating the likelihood of its failure has become imperative to preempt financial troubles that could culminate in liquidation (Sacadura & Barreto, 2018). Financial stability encompasses diverse facets of finance, although its precise definition remains elusive (Schinasi, 2004). At the micro-level, market structures, characterized by a high degree of concentration, amplify the contagion risks between banks, while the risk profiles of financial institutions themselves, influenced by their business models, also impact financial stability. On a macro-level, the stability of monetary systems and the efficacy of payment systems assume critical importance. These domains are regulated and overseen by central banks, supervisory bodies, and private firms to ensure the smooth functioning of interbank payment systems. Failures in supervision or payment systems can precipitate financial instability.

Various paradigms exist for conceptualizing financial stability, with the micro-prudential and macro-prudential approaches being prominent (Borio, 2003). Micro-prudential policies aim to mitigate the likelihood of financial institutions facing bankruptcy and encountering idiosyncratic shocks. Under this approach, financial instability is considered exogenous to the financial system, and risks are managed on an individual basis. Conversely, macro-prudential policies focus on averting financial crises to mitigate their impact on overall welfare. These policies take a holistic view of the economic system and seek to contain shocks with potential macroeconomic ramifications. Risks are perceived as originating from within the system itself, with significant spillover effects between institutions. Financial stability is achieved through a top-down perspective, with major financial institutions playing a pivotal role in safeguarding stability. Given its multifaceted nature, financial stability is often measured using various proxies. For instance, researchers have utilized proxies such as the ratio of fixed assets, stocks, and construction in progress to total assets, as well as the ratio of non-performing loans to total loans. These measures provide insights into different dimensions of financial stability, enabling a comprehensive assessment of the overall health of financial systems and institutions.

This research undertook an investigation into the financial stability of Indian companies, leveraging the Kida's Z score model as a tool for analysis. By scrutinizing the financial health of these entities, the study aims to shed light on factors influencing their stability and resilience in the face of potential challenges.

Model (Kida's Z score) (1980)

Among the variety of quantitative models used to predict a company's financial resilience, Kida's Z-score model is unique. This approach, which dates back to Kida's work in 1980, combines five different financial ratios in a complex way to evaluate and predict an organization's financial stability. With an impressive 90% accuracy rate, the model was rigorously validated using a dataset from 1974–1975 that included 20 successful enterprises compared to the same number of unsuccessful ones. This empirical validation highlights the model's effectiveness and dependability in assessing financial stability, which can be summed up in the following formula. (Alkhatib & Al Bzour, 2011 and Yasir and Harjan, 2020):

$$FS = 1.042 \times \frac{NI}{A} + 0.42 \times \frac{EBV}{A} + 0.461 \times \frac{C}{CL} + 0.463 \times \frac{S}{A} + 0.271 \times \frac{C}{A} \quad (6)$$

The following is a review of the variables of this model:

NI/A = Net Profit / Total Assets

The return on assets (ROA) statistic is a crucial indicator of a company's financial efficiency as it shows the net profit generated for every unit of currency have invested in assets after taxes are taken into account. A high return on assets (ROA) indicates that the business is managing its liquidity well and can make a sizable profit relative to the use of its assets. On the other hand, a lower ROA can be a sign of liquidity issues and possible trouble making money off of asset investments. These observations, supported by Yasir and Harjan (2020) and emphasized by Alkhatib & Al Bzour (2011), show the crucial role that ROA plays in assessing a company's operational efficacy and financial stability.

EBV/A = Total Equity / Total Liabilities,

This measure serves as an indicator for how well property rights meet the organization's financial obligations. A high value for this indicator indicates that the business has a strong ability to pay its debts, which reduces the risk of financial insolvency. On the other hand, a lower number implies that there may have been some failure to meet responsibilities, indicating a greater vulnerability to financial instability. It is essential to comprehend and keep an eye on this indication in order to evaluate the company's long-term financial health and resilience. (Alkhatib & Al Bzour, 2011 and Yasir and Harjan, 2020).

C/CL = Cash/Current Liabilities

This measure assesses how well the business uses its cash as well as its cash equivalents in order to meet its short-term financial obligations. A high number for this indicator indicates that the business can meet its short-term obligations on time and with strength. On the other hand, a decrease in this indicator suggests that

the company would have trouble meeting these commitments, which could make it more vulnerable to bankruptcy. As such, it acts as a vital indicator of the organization's resiliency and short-term financial health. (Alkhatib & Al Bzour, 2011 and Yasir and Harjan, 2020).

$S/A = \text{Sales} / \text{Total Assets}$,

This indicator illustrates a key component of operational efficiency and assesses how well a company's management uses its resources to create income. This idea is closely related to the Altman model, a comprehensive structure designed to assess credit risk in businesses. The Altman model examines a variety of financial measures; among its fundamental components are evaluations of asset use efficiency. It emphasizes how crucial skillful asset management is in determining the stability and well-being of an organization's finances, providing essential information for risk assessment and strategic decision-making (Alkhatib & Al Bzour, 2011 and Yasir and Harjan, 2020).

$C/A = \text{Cash} / \text{Total}$

This metric assesses the adequacy of a company's cash reserves in proportion to its total asset investment. A heightened value of this measure reflects a robust liquidity stance, demonstrating the organization's ability to meet its financial commitments without succumbing to insolvency threats. Conversely, a decline in this metric signals a liquidity shortfall, indicating the company's incapacity to honor its debt obligations, consequently heightening the peril of bankruptcy. Maintaining a favorable balance in this indicator is imperative for ensuring financial stability and mitigating bankruptcy risks (Alkhatib & Al Bzour, 2011 and Yasir and Harjan, 2020).

Financial Structure and Financial Stability

Alkhatib and Al Bzour (2011) investigated the intricate relationship between ownership rights represented by book value to total assets and the stability of financial structures. They posited that an elevation in this indicator, fueled by increased paid-up capital, acts as a catalyst for bolstering financial stability within companies. Their findings underscored the notion that companies endowed with higher ownership rights demonstrate enhanced ability to meet their financial obligations, consequently fortifying their overall financial stability. Elton, Gruber, Agrawal, and Mann (2001) echoed these sentiments, affirming a positive correlation between financing derived from ownership rights and the stability of financial structures.

In contrast, Preve, Love, and Sarria-Allende (2005) delved into the intricacies of leverage, particularly focusing on its impact on financial stability. Their study revealed a nuanced perspective, indicating a negative association between leverage, measured by short-term debt to total assets, and financial stability. Meanwhile, Royer (2017) undertook an exploration of the effects of capital structure on financial stability, arriving at a somewhat surprising conclusion that financial leverage had negligible influence on stability.

Altman and Ratios (1968) contributed valuable insights into the role of retained earnings in shaping corporate financial stability. Their research highlighted the affirmative impact of the retained earnings index to total assets on companies' capacity to rely on internal financing, thus bolstering stability. Additionally, their study shed light on the positive correlation between the market value of shares and financial stability.

Moreover, Yasir and Harjan (2020) embarked on an extensive investigation into the multifaceted components of financial structures and their impact on financial stability. Employing data sourced from the Iraq Stock Exchange spanning nearly a decade, their study elucidated the pivotal role of ownership rights in book value to total assets in fostering financial stability. They found that a higher proportion of financing attributed to ownership rights was associated with enhanced financial stability, primarily by reducing overall financing costs. Their research advocated for the maintenance of high levels of ownership rights to facilitate access to financing at reduced costs and mitigate reliance on debt financing, thereby promoting financial stability within companies. Given the scarcity of studies within the Indian context, the current research endeavors to bridge this gap by developing hypotheses grounded in an extensive review of existing literature.

Hypothesis Development:

H1. There is significant relationship between EBVTA and Financial Stability.

H2. There is significant relationship between DTA and Financial Stability.

H3. There is significant relationship between RETTA and Financial Stability.

III. Methodology

Sample and Data

The sample selection for this empirical study is based on S&P BSE 500 Index. Since BSE is the oldest and one of the top 10 stock exchanges in the world in terms of market capitalization. For selection of companies, initially, every public company in the sample is removed due to range of social responsibilities and politically motivated decisions that could have been difficult to defend. In these companies, the government owns more than half of the shares. Secondly, due to their compliance with distinct legislative frameworks, all

banking and financial enterprises was excluded. Their performance measurements cannot be compared to manufacturing or other service providers. Thirdly, the companies that remained unlisted for the entire ten-year study period was excluded. The sample selection criteria given earlier demonstrated the following:

Table 1: Summary of Sample Selection Procedure	
Details of Filters Used	No. of Companies
Total number of companies in BSE 500 Index	500
Less: Public sector corporations	49
Banking sector corporations	73
Companies not listed over the thirteen-year period	103
Actual Sample Size	273
Total Firm-year observations (273*13)	3549

Source: Prepared by Researcher from Prowess Database

The present study was conducted by taking period from April 1, 2011 to March 31, 2023, which is thirteen financial years. In total, 3549 observations have been made, spanning thirteen years from FY 2011-12 to FY 2022-2023. Prowess database was used to gather data regarding ownership structure and audit quality.

Variables and Model:

The study employed the following model to examine the relationship between ownership structure and audit quality:

$$FS_{it} = \alpha + \beta_1 Fin_St_{it} + \epsilon_{it}$$

where;

i refers to firms, t refers to time

FS = Financial Stability

Fin_St = Financial Structure

ϵ = Error term

IV. Data Analysis And Results

Descriptive Analysis and Normality test

For the study period of FY 2010-2011 to FY 2022-2023, the Table 2 shows descriptive statistics for the study variables employed in the analysis of 273 sample companies. These statistics provide a summary of the distribution and central tendency of the variables in the dataset. Financial Structure (FS) is observed across 3549 instances, with a mean value of 0.445 and a standard deviation of 0.272. The minimum and maximum values recorded are -0.028 and 1.994, respectively. EBVTA is showing a mean of 0.027 and a standard deviation of 0.058. The variable ranges from a minimum of 0 to a maximum of 1.54. Debt to Assets Ratio (DTA) is exhibiting a mean of 0.273 with a standard deviation of 0.259. The minimum and maximum values observed are 0.002 and 8.009, respectively. Retained Earnings to Assets Ratio (RETTA) is observed across 3548 instances, with a mean value of 0.047 and a standard deviation of 0.108. The minimum value recorded is -2.798, while the maximum value is 0.903.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FS	3549	.445	.272	-.028	1.994
EBVTA	3549	.027	.058	0	1.54
DTA	3549	.273	.259	.002	8.009
RETTA	3549	.047	.108	-2.798	.903

On the other hand, with regard to normality, Jarque Bera Test was used. It is found that every single set of data had a normal distribution in this study. Additionally, Porter and Gujarati (2009) revealed that the normality is not a problem if there are more observations than 100. This study contains 3549 observations. Presently, there is an enormous amount of data that includes enormous number of observations. Therefore, large data sets may not make the normality assumptions extremely relevant (Porter and Gujarati, 2009).

Correlation Analysis

The correlation matrix displays the pair-wise correlation coefficients between the variables EBVTA, DTA, and RETTA. Each cell in the matrix represents the correlation coefficient between the corresponding pair of variables. The correlation coefficient between EBVTA and DTA is 0.6258, indicating a moderately positive correlation between the two variables. Similarly, the correlation coefficient between EBVTA and RETTA is -0.4271, suggesting a moderate negative correlation between EBVTA and RETTA. Finally, the correlation coefficient between DTA and RETTA is -0.4830, indicating a moderate negative correlation between DTA and

RETTA. These correlation coefficients provide insights into the direction and strength of the relationships between the variables, aiding in the understanding of their interdependencies.

	EBVTA	DTA	RETTA
EBVTA	1.0000		
DTA	0.6258	1.000	
RETTA	-0.4271	-0.4830	1.000

Multi-collinearity

Porter and Gandhi (2009) mentioned that Variance Inflation Factors (VIF) is one of the tests that gauge the multicollinearity of all the variables present in the study. As shown in Table 4, there is no multicollinearity issue in the study, because all the variables in data have VIFs less than 10. Consequently, no variable will be left out of the model for this study.

Variable	VIF	1/VIF
DTA	1.81	0.551492
EBVTA	1.70	0.588096
RETTA	1.35	0.741037
Mean VIF	1.62	

Panel Regression Analysis:

The present study employed panel data. Two tests comprise panel data: Random effect model and fixed effect model. The Hausman test was applied to make the final decision which concludes that the acceptance of fixed effect model is preferable because of rejection of null hypothesis. It eventually becomes evident that Fixed effect model is most suitable approach for this study. As a result, the fixed effect model was used for final equation model.

Table 6: Panel Regression Analysis

FS	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
EBVTA	-.497	.187	-2.67	.021	-.904	-.091	**
DTA	.469	.054	8.74	0	.352	.586	***
RETTA	.693	.13	5.33	0	.41	.976	***
Constant	.298	.023	12.89	0	.248	.349	***
Mean dependent var	0.445		SD dependent var		0.272		
R-squared	0.136		Number of obs		3549		
F-test	104.250		Prob > F		0.000		
Akaike crit. (AIC)	227.299		Bayesian crit. (BIC)		245.823		
*** $p < .01$, ** $p < .05$, * $p < .1$							

The table presents the results of a regression analysis with the dependent variable FS and three independent variables: EBVTA, DTA, and RETTA, along with a constant term. For each independent variable, the table provides the coefficient estimate (Coef.), standard error (St.Err.), t-value, and p-value. The coefficient estimate represents the estimated effect of each independent variable on the dependent variable, while the standard error indicates the precision of the estimate. The t-value is the coefficient estimate divided by the standard error, and the associated p-value indicates the statistical significance of the coefficient estimate. In this analysis, EBVTA has a coefficient estimate of -0.497 with a p-value of 0.021, suggesting a statistically significant negative relationship with FS. Similarly, DTA and RETTA have positive coefficient estimates of 0.469 and 0.693, respectively, both with p-values of 0.000, indicating statistically significant positive relationships with FS.

V. Conclusion

To make sure that its capital structure matches its risk tolerance and financial objectives, the company might think about reviewing it. Changing the proportion of debt to equity financing could assist strengthen financial stability. The corporation should concentrate on optimizing its debt levels given the detrimental effects of EBVTA on financial stability. This could entail bringing down reliance on debt financing and making an effort to keep debt and equity in a healthy balance. The company should prudently manage its short-term debts to avoid excessive reliance on short-term financing, which could increase financial risk, especially during economic downturns. Retained earnings represent profits that are reinvested into the company rather than distributed to shareholders as dividends. Therefore, the company should strive to generate and retain earnings to

bolster its financial stability over the long term. The company should focus on maintaining a balanced capital structure, prudently managing its debts, and retaining earnings to strengthen its financial stability. Additionally, it should continuously monitor and analyze its financial performance to identify areas for improvement and adapt its strategies accordingly. It is imperative to prioritize diversification in financing sources and steer clear of conventional reliance on singular funding channels. A strategic outlook is essential in constructing a financing framework conducive to fostering financial stability within enterprises. Regulatory bodies must undertake timely financial assessments of companies' year-end statements to facilitate prompt decision-making regarding the provision of requisite financial support when necessary.

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