

FINANCIAL AND NON – FINANCIAL FACTORS AFFECTING CORPORATE SOLVENCY: AN EMPIRICAL ANALYSIS IN INDIAN CONTEXT

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ABSTRACT

Solvency is an important characteristic of financial stability of any corporate entity. This study aims to empirically investigate the financial and non – financial factors affecting solvency in India. The study used descriptive statistics and t – test to analyze the factors that impact solvency. The results of this study emphasize the importance and significance of financial factors such as debt equity ratio, total outside liabilities/adjusted tangible net worth, interest coverage ratio, debt service coverage ratio, current ratio, quick ratio, net income/total assets ratio, net working capital/total assets, operating income /total assets, retained earnings/total assets, book value of equity/total liabilities, sales/total assets as well as non – financial factors such as size of the company (in terms of revenue), educational qualification & professional experience of the promoters of a company, role of the credit rating agencies, sudden politico-economic decisions, role of regulatory authorities like Competition Commission of India, SEBI, RBI etc., role of management committee. Overall, this study offers valuable insights into the causes and predictors of financial distress and insolvency and suggests steps to mitigate the risks to ensure solvency over long term.

Keywords: Corporate Solvency, Debt Equity Ratio, Current Ratio, Interest Coverage Ratio, Credit Rating, Corporate Governance, Promoters, Regulatory Risk.

INTRODUCTION

Since the 1960s, research has been done on companies going bankrupt. The term “insolvency” refers to a company’s financial situation when it is unable to generate an adequately successful performance to satisfy all of its liabilities. Companies, in order to ensure their long-term viability, conduct operational financial analyses that provide timely warnings about solvency issues and potential risks by analyzing the company’s liquidity, creditability, and financial stability. Various studies have been conducted in numerous fields to adapt insolvency prediction models to businesses of different kinds (for instance private companies, joint stock companies etc.). A lot of research on predicting solvency of firms and its financial indicators has been conducted. Researchers incorporate both financial and non-financial aspects in their computations, allowing for the early detection of solvency issues. Studies focus more on financial ratios derived from financial reports than on non-financial elements like management expertise or firm’s age.

In most of the published research, models for forecasting solvency are primarily based on financial ratio analysis. Altman (1968) firstly used Z – score model to predict the financial bankruptcy based on five variables¹, estimated through income statement and company’s balance sheet. The Z– Score model indicated that a probability of avoiding failure is 1.8; however, for the

company to be in a safe zone, the result must range from 3.0 and upwards. Further, Altman increased the number of variables¹. He categorized the ratios into five categories such as liquidity, profitability, leverage, coverage and activity that are constructed on ten financial ratios (Altman et al., 2010). Moreover; Altman et al. (2016) used eight efficient solvency predictors². William (1966) analyzed thirty ratios in his study and split them into six groups. A ratio has been chosen from each of the groups that specify the possible presence of solvency problems. These ratios were total debt/total assets, no credit interval, current ratio, cash flow/total debt, working capital / total assets, and net income/total assets. According to Ooghe (2008), low financial independence (equity/total balance), weak profitability, increase of expenses and low cash flow were the key predictors of solvency. He observed that increase of expenditure at a constant turnover might work as a predictor of financial problems coupled with inadequate professional competence in implementing decision arising from non – financial predictors (management competence). Liang et al (2016) used ratios such as solvency, profitability, cash flow ratios, capital structure ratios, growth, turn-over ratios to assess bankruptcy. He observed that solvency and profitable ratios were the most significant ratios in predicting solvency. Bhimani et al. (2010) applied eleven financial ratios like working capital/total assets, days in receivables, days in payables, investment ratio, return on investment, financial coverage, interest costs, and return on equity, gross income and solidity. They highlighted days in payables and days in receivables determine the payment behavior of both debtors and creditors. Al-Kassar&Soileau (2014) selected profit before taxes/current liabilities, current assets/total liabilities, current liabilities/total assets and no credit interval for failure prediction. They noted that, bigger the ratio of profit before taxes/current liabilities, current assets/total liabilities, current liabilities/total assets, lowers the risk of insolvency. However, lower the ratio of current liabilities/ total assets, higher the risk of insolvency. Mironiuc et al (2015) took operating profit margin, current assets ratio, quick liquidity ratio, average collection period, financial expenses ratio, financial leverage, return on assets, average payment period, and employees expenses ratio and revealed that these factors were statistically significant in predicting solvency. Mackevičius et al. (2018) reported that financial balance (liabilities/equity), weight of equity in the balance sheet (equity/assets) proportion of liabilities in the balance sheet (liabilities/total assets) should be considered during insolvency problems³.

There could be some factors affecting business that do not depend on company itself, for instance national tax policy, lending rate, legislation and national foreign policy. A company cannot change these factors, but it can try to take these into account or change its business to reduce the risk of insolvency. According to Altman (2006), the most common cause of a company's trouble and potential demise is bad management. Arasti (2011) mentioned that poor administration of the company also leads to company failure. Ooghe et al. (2008) noticed that wrong management decisions and incompetence of management leads to insolvency. There is a dearth of such studies that underline financial and non – financial factors affecting corporate solvency in India. This study has therefore been conceptualized to bridge these knowledge and research gaps.

DATA AND METHODOLOGY

This study collected data through online survey. This study used likert scale to observe the knowledge and attitude towards factors affecting bankruptcy. Total 477 observations were

collected. This study used descriptive statistics and t – test to analyze the data. The questions asking about the financial factors which affect the solvency of a company were based on likert scale 1 to 5, ‘1’ being ‘not at all important’ and ‘5’ being ‘highly important’. The financial factors which were inquired included: Debt Equity Ratio, Total Outside Liabilities, Interest Coverage Ratio, Debt Service Coverage Ratio, Current Ratio, Quick Ratio, Net Income/Total Assets Ratio, Net Working Capital/Total Assets, Operating Income (EBIT)/Total Assets, Retained Earnings/Total Assets, Book Value of Equity/Total Liabilities, Sales/Total Assets and non-financial factors include Size of the Company (In terms of Revenue), Educational Qualification & Professional Experience of the Promoters of a Company, Role of the Credit Rating Agencies, Sudden Politico-Economic Decisions, Role of Regulatory Authorities like Competition Commission of India, SEBI, RBI etc., Role of Management Committee.

RESULTS AND DISCUSSION

Table 1 shows the background characteristics of the study. In this study, a total 477 individuals participated, out of which 95.81% were men and only 4.19% were women. Most of the individuals belonged to 35-44 years age group. More than 71 percent of individuals had professional qualification and most were working in manufacturing sector. More than two – third individuals possessed 11 – 15 years’ work experience.

Table 1		
BACKGROUND CHARACTERISTICS		
	Frequency	Percent
Gender		
Male	457	95.81
Female	20	4.19
Age Group (in years)		
25-34	13	2.73
35-44	325	68.13
45-54	114	23.9
55 and above	25	5.24
Education Qualification		
Graduate	24	5.03
Post Graduate	112	23.48
Professional Qualification	339	71.07
Other	2	0.42
Working's Places		
Manufacturing	284	59.54
Services	193	40.46
Total Professional Experience		
Less than 5 years	0	0
5 to 10 Years	13	2.73
11 to 15 years	325	68.13
More than 15 years	139	29.14

Source: Online survey.

Financial Factors Affecting Solvency in India

In this study, data has been collected using likert scale (1: not at all important, 5: highly important). As seen in Table 2, the mean value of debt equity ratio shows that most of the people believe that debt equity ratio plays a critical role in bankruptcy. The t – test value also shows that it is critical in defining solvency. The findings of the study show that total outside liabilities have a significant impact on solvency. The study highlighted that bigger companies with larger leverage ratios were more probability to face bankruptcy due to high levels of outside liabilities. The results also reveal that interest coverage ratio, debt service coverage ratio, current ratio and quick ratio, net income over total assets ratio are significantly associated with solvency. The study highlighted net working capital over total assets and operating income over total assets as statistically significant predictors. We also observed that retained earnings over total assets and book value of equity to total liabilities have a great impact on bankruptcy.

Table 2							
FINANCIAL FACTORS AFFECTING SOLVENCY IN INDIA							
	Mean	Std. Err.	Std. Dev.	T test	Prob.	[95% Conf. Interval]	
Debt Equity Ratio	4.367	0.030	0.659	144.698	0.000	4.308	4.426
Total Outside Liabilities/ Adjusted Tangible Net Worth	3.845	0.046	1.003	83.752	0.000	3.755	3.935
Interest Coverage Ratio	4.367	0.030	0.659	144.698	0.000	4.308	4.426
Debt Service Coverage Ratio	4.570	0.025	0.556	179.678	0.000	4.520	4.620
Current Ratio	3.780	0.038	0.830	99.467	0.000	3.705	3.855
Quick Ratio	3.595	0.044	0.951	82.531	0.000	3.510	3.681
Net Income/Total Assets Ratio	3.421	0.034	0.737	101.438	0.000	3.355	3.488
Net Working Capital/Total Assets	3.578	0.041	0.869	87.189	0.000	3.497	3.659
Operating Income (EBIT)/Total Assets	3.650	0.034	0.743	107.338	0.000	3.583	3.717
Retained Earnings/Total Assets	3.562	0.038	0.834	93.228	0.000	3.487	3.637
Book Value of Equity/Total Liabilities	3.338	0.044	0.953	76.457	0.000	3.252	3.423
Sales/Total Assets	2.998	0.035	0.748	85.283	0.000	2.929	3.067

Source: Primary survey

Non - Financial Factors Affecting Solvency in India

This study also studied the non – financial factors that affect corporate solvency in India as seen in Table 3. The result shows that size of the company is significantly associated with solvency. Our findings show that educational qualification & professional experience of the promoters of a company also play a significant role in solvency. The role of credit rating agencies are also important, and our result shows significant impact. The sudden political economic decisions also affect bankruptcy in India. The results reveal that Role of Regulatory Authorities like Competition Commission of India, SEBI, RBI etc. play important and significant roles in regulating the economy and financial markets. The role of management committee is also important and will depend on the definite circumstances.

Table 3
NON – FINANCIAL FACTORS AFFECTING BANKRUPTCY

Factors	Mean	Std. Err.	Std. Dev.	T test	Prob.	95% Interval	Conf.
Size of the Company (In terms of Revenue).	3.901	0.054	1.185	71.909	0.000	3.795	4.008
Educational qualification & professional experience of the Promoters of a Company	4.172	0.044	0.968	94.141	0.000	4.085	4.259
Role of the Credit Rating Agencies	4.048	0.045	0.981	90.146	0.000	3.960	4.136
Sudden Politico-Economic Decisions	3.971	0.034	0.750	115.662	0.000	3.903	4.038
Role of Regulatory Authorities like Competition Commission of India, SEBI, RBI etc.	4.048	0.042	0.928	95.278	0.000	3.965	4.132
Role of Management Committee	4.153	0.032	0.695	130.535	0.000	4.091	4.216

DISCUSSION

Study of financial and non-financial factors in the present study have revealed a plethora of significant predictors which corroborates with much of the published literature. Several studies have highlighted a positive and significant association between debt – equity – ratio and solvency. They have observed that companies with high volume of debt equity ratio were more probability to face financial distress. Altman (1968) has developed Z – score and found that low Z – score were more likely to cause financial distress and greater the probability of solvency. Shleifer&Vishny (1992) detected that companies with high debt – equity – ratio were more likely to happen financial distress. Liang et al. (2018) also recently found that debt – equity – ratio has an important impact on solvency. It is crucial for companies to manage their outside liabilities carefully and keep a healthy balance sheet to escape any financial distress and solvency. Li et al. (2021) noticed that total outside liabilities was significantly and positively associated with solvency. Krishnan & Moyer (1997) conducted a study in USA and observed no significant difference between total outside liabilities and solvency. The findings of this study are consistent with Scott (1981) who conducted a study in USA and found that interest coverage ratio was a significant factor of solvency. Hein et al. (2012) revealed that low debt service coverage ratio was a strong factor of solvency. Altman (1968) noticed that low current and quick ratio was significantly associated with solvency. A study by Beaver (1966) found that companies with low net income over total assets ratio led to insolvency. The study found that net working capital over total assets is statistically significant and it measures a company's capability to meet short-term obligations. A high net working capital over total assets ratio denotes that the firm/company has enough assets to cover its current liabilities and is likely to be more stable. A study conducted by Altman (1984) found that net working capital over total assets ratio was an important and significant predictor of solvency for manufacturing companies. Operating income over total assets is emerged as significant predictor in our study. Few studies conducted by Altman (1968), Beaver (1966), Taffler (1984) also observed it as one of the important financial ratios in predicting bankruptcy. The findings of this study is consistent with Ullah et al. (2021) who predicted that companies with higher retained earnings lead to have low likelihood of bankruptcy. A study conducted by Altman (1968) revealed that book value of equity to total assets ratio of less than one denotes high risk of bankruptcy.

As far as non –financial factors are concerned, the size of a company plays a significant role in solvency; however, it is not essentially a definitive predictor. Altman (1968) found that smaller companies were more likely to cause solvency due to their limited financial resources and access to credits. The educational qualification & professional experience of company

promoters can differ from company to company depending on nature of the product and business. Some promoters may have technical and professional degrees related to their business work, while others may have degrees in other fields. In general, it is significant for the promoters to have a better understanding of their business and industry to be successful. Our result shows significant impact of the role of credit rating agencies. Credit rating agencies have an important function in the financial markets by assessing the creditworthiness of the corporations and governments, suggesting investors with a rating that denotes the risk of default on their debt obligations. Based on this rating, investors make decisions about the allocations of their resources in the capital markets. Sudden political – economic decisions impose significant impact on bankruptcy. For instance, changes in the tax laws or trade policies adversely affect business behavior and causing to increase bankruptcies. Similarly, unexpected changes in political instability create uncertainty and market vitality, which lead to financial distress and bankruptcy. The competition commission of India (CCI) has the power to review and approve mergers and acquisitions that is an essential part of the structuring process for companies in financial markets. SEBI ensures transparency in trading of securities of companies and RBI maintains monetary stability and regulates the financial system and the same has been reiterated in the present study.

CONCLUSION AND POLICY SUGGESTIONS

Solvency is an important characteristic of financial stability of a company and it translates in to the stability of an entity to meet their financial obligations as they become due. The findings of this study reveal that financial and non – financial factors affecting solvency. While the financial factors such as debt equity ratio, total outside liabilities, interest coverage ratio, debt service coverage ratio, current ratio, quick ratio, net income over total assets ratio, net working capital over total assets ratio, operating income over total assets, retained earnings over total assets, book value of equity over total liabilities and sales over total assets play a critical role in determining solvency, non – financial factors like size of the company, educational qualification & professional experience of the promoters of a company, role of the credit rating agencies, sudden political economic decisions, role of regulatory authorities like competition commission of India, SEBI, RBI etc. and role of management committee also have a significant impact.

Government should strengthen financial regulations and ensure transparency, accountability, and stability to mitigate the risks associated with financial distress and insolvency. Government should encourage financial education so that individuals and organizations better understand and manage their financial risk. Policy makers should develop targeted solutions to address the unique challenges faced by selected companies which are more vulnerable to financial distress. Government should promote good corporate governance through regulations, incentives, and public education campaigns.

Overall, addressing the multifaceted predictors that contribute towards financial and non – financial distress involves a multi-dimensional approach that reflect both financial and non – financial factors. By implementing a range of policy solutions, government, and policy – makers can endeavor to ensure solvency and financial stability of the companies.

ENDNOTES

¹Total liabilities and sales, market value of equity, earnings before interest and taxes, retained earnings and working capital and total assets.

²Working capital/total assets, sales/total assets, short term debt/equity, cash/total assets, retained earnings/total assets, receivable/liabilities, liabilities/total assets, EBITDA (earnings before interest, taxes, depreciation and amortization)/total assets, EBITDA/interest expenses, EBIT (earnings before interest and taxes).

³Total assets to equity ratio, growth in total assets, cash flows to total assets ratio, cash and other liquid assets to short-term debt, change in the short-term debt to total assets ratio, returns on assets ratio, short term debt to total assets ratio.

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