
Quantitative Financial Risks Analysis of Investment Firms

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Abstract: *Every investment act and business acts are connected with the risk. This applies to the almost every organization including investment firms because they are often facing similar risks as other business enterprises. In a business environment, they need to manage each risk to secure the continuity of business as well financial distress or bankruptcy. Thus the quantitative analysis of the firm is very important to identify the risk associated with the investment. The main category of the quantitative analysis tends to identify the investment company's objectives, including execution and profitability goals, methodology, execution of the objectives and actions along with safeguarding assets. The second class identifies the readiness of published financial statements including quarterly reports and chose financial information got from such statements, such as reported publically, earning releases, etc. The third deal is supportive of those laws and directions to which the Company is liable. Also, this journal includes types of risks along with the financial ratios used to measure or identify them. Thus, identification of financing, liquidity, and solvency risks with the help of financial ratios can help investment firms to gain optimum returns on the investments.*

Keywords: Investment firms; financial ratios; financial analysis; risk management.

1. Introduction

The management applies the process of internal risk management in investment firm, Board of Directors and employees at various levels to ensure that operations are efficient, effective and aligned as per strategy; financial management and reporting is timely prepared, timely and complete; the firm strictly follows laws and regulations; and the ethical values and internal policies of the organization are safeguarded. Nowadays, it has become much more difficult to run a business as compared to the past. Financial managers face multiple challenges while finding better strategies and procedures to increase the top line revenues, improve margins, necessary capital ratios, enhance efficiencies and strengthen balance sheets [1]. Economic volatility, regulatory changes and issues relevant to data security troubled assets and distressed lending add even more concerns. Financial Risks Management

mitigates these risks and helps in improving the competitive posture of the organization to evolve investment environments

1.1. Active Risk Management Techniques

Here are some of the techniques and procedures that can limit and proactively manage risks associated with the investment firms.

Step1: Establish Reports and Standards

Financial reporting and Standard setting are the essential conditions of any risk management company. Risk categorization, underwriting standards, and review standards are the necessary traditional tools to control risks. To understand the entrenched risks in the portfolio and mitigate these risks, the management needs to evaluate and rate the exposure of risks consistently. Moreover, standardized financial reporting is important for

investors to gauge firm-level risk as well as asset quality.

Step2: Impose Limits, Positions, and rules

An organization needs to impose limits to cover exposures to credit, counterparties and overall positions relevant to the systematic risks. An individual who can promise capital, such as lenders, traders and portfolio managers must have a well-defined limit. The summary reports of the organization can easily show capital exposure, counterparty, and credit by the company periodically.

Step3: Set Investment Strategies and Guidelines

Before going for the investment, the investing firms need to set investment strategies and guidelines. These guidelines must be based on the particular market area, the extent of asset liability mismatching and hedge against systematic risks at a particular period. Syndication and Securitization are one of the fast growing techniques for investment firms or individuals those wants to minimize exposure in line with the guidelines of the management.

Step4: Align Compensation and Incentive Contracts

To the degree that management can go into incentive-compatible contracts with line supervisors and relate remuneration to the risks they bear, the requirement for intricate, costly controls diminishes. However, such motivating incentive contracts require exact position valuation, appropriate cost and capital accounting systems, considerable cost accounting analysis, and risk weighting that may take years to set up. Despite the trouble, the outlined compensation contracts bring into line the objectives of managers to different partners in an attractive way.

2. Financial Risk Evaluation

There are various other techniques to account the associated risks with the organization. Thus, in the upcoming sections, we are going to discuss the role

of financial data and ratios in identifying, evaluating and mitigating the associated risks to the investments decisions.

2.1. Use of financial data and ratios to identify risks

The major reason behind the bankruptcy of the investing firms is due to their negligence in the identification of the critical developments of their business. Therefore, the company needs to carefully identify the necessary developments and risks and their impact on their financial situation. Some economists have tried and found the set of ratios in order to predict and minimize the associated risks with the investments. By comparing these key financial ratios with the other companies in the same industry, the organization can identify the default risk. There are various methods developed to gauge the usability of the key ratios in assessing the insolvency risk of the organization [2]. Moreover, evaluation of the key financial ratios offers more information than an analysis of the historical data and assists in reacting towards the critical developments and mitigating the identified risks. Though there are several ratios associated with the financial management but it is important to identify and work on the key ratios that will be helping the investing firms. In order to choose an appropriate set of ratios that will be included in the analysis and overview sheet, these ratios must fulfill two major requirements. Firstly, they must match the main financial risks of the organization to deliver important information and not missing the significant risk factor. Secondly, the ratios must be relevant in two different manners. On the one hand, they should be independent to one other, which means they must deliver necessary information while not using in regression. On the other hand, the ratios must show different development for strong companies as compared to financially distressed companies which mean that different between both categories of companies must be large enough that can be easily observed.

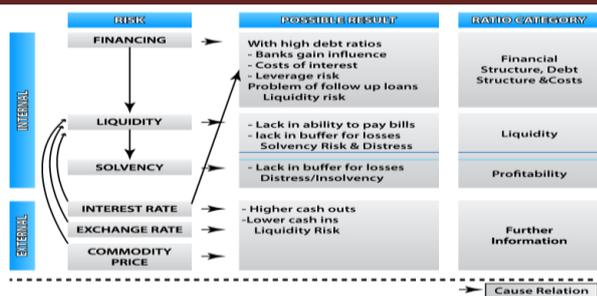


Figure 1: Risk factors of investment firms, their possible results and matching financial ratios

Though there are several categories of ratios associated with the organization’s risk, here we will be only discussing ratios that are helpful in finding the internal financial risks of the organization. In figure 1 we can see that risks are categorized into six divisions (first three are internal, and other three are external risks).

RISK	RATIO CATEGORY	RATIO FOR OVERVIEW
FINANCING	Financial Structure, Debt Structure & Costs	debt / total assets interest payments long-term assets / (long-term debt + equity)
LIQUIDITY	Liquidity	working capital / total assets
SOLVENCY	Profitability	EBIT / total assets retained earnings / total assets

Figure 2: Internal risks along with key financial ratios associated with the investment firm.

The ratios majorly cover the risk categories of the liquidity, solvency, and financing with ratios of the financial structure, the profitability and the liquidity of the organization. Moreover, it must be noted that single ratio with a value close to a bankrupt firm does not mean that the organization is also near to bankruptcy, which means it just shows higher risk and needs to consider other ratios to come with a solid outcome.

2.1.1. Financing

Firm financing can turn into a risk for the organization because of various reasons. The decision between floating rate debt and fixed rate, the span of the obligation and the general measure of debt financing are conceivable sources of risks that as of now have been surveyed in the section about interest rate risk. The organization needs to be adaptable and in the meantime bring down the expenses for financing.

In order to analyze the financing risks, there are several key ratios, such as debt ratio (=total debt/total assets), Debt to equity ratio (=Long-term debt + short-term debt/Total Equity), Debt to Equity ratio (=long-term debt/long term equity) and much more [3]. However, here we will be discussing total debt to assets ratio of an organization for analyzing the financing risk associated with the firm. This ratio shows a huge difference in between the non-bankrupt and bankrupt companies.

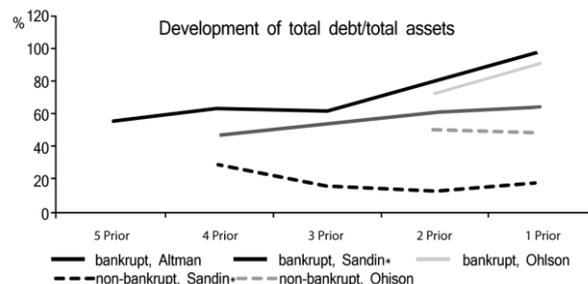


Figure 3: Development of total debt/ total assets ratio

The above figure shows the clear trend in the development of the debt ratio. The bankruptcy of the company is directly proportional to its debt ratio, which means higher the debt ratio faster the company gets bankrupt. In figure 3 we can see that regarding debt ratio the difference between the healthy company and the bankrupt company is extremely high. Higher the amount of debt a company holds higher the financial risk that leads to bankruptcy. The same conclusion comes in regards of the other financing ratios named debt to equity ratio. The debt to equity ratio is just the other way of

showing the firm’s financial structure saying that when the total debt of the company becomes equal to its equity than there are higher chances of the firm to face bankruptcy [4]. Moreover, when the equity and the total debt of the firm equal to its assets then at such condition also the firm becomes bankrupt. Thus, the information of total debt/ total assets is trustworthy and must be used to measure the risk associated with the firm. In almost three out of five research papers we will be observing the debt ratio taken by the analyst to measure one of the factors associated with the investing firm. Though there are several ratios that can be used to find the financing risk associated with the investing company, the debt ratio is highly reliable in comparison to another financing ratio. Also, there are some companies with negative equity in their balance sheets, which indicates that the firm is under high financial instability/distress.

Cost of Debt

The other aspect of the financing risk is the cost of debt. The organization needs to pay interest on its debt, which is a financial obligation and can be harmful if the company generates low income. Most of the economists have been using the variable interest expense / Earning before Income Tax to measure the cost of debt, which shows how much of the amount Before Tax and Interest spent in financing the debt. Debt ratio and cost of debt are directly related to one other because higher debt ratio includes higher interest obligations. Thus, showing the clear trend of the organization towards bankruptcy. It might be possible that the higher debt increases the amount of interest payment in two ways. The first is that when the total amount of debt is higher for which the interest needs to be paid. The second way is that when there is a higher amount of debt, then there is higher risk premium involved which increases the overall rate of interest payment [5]. Thus, this ratio shows the capability of the company to cover its interest expenses which further indicates its default risks.

2.1.2. Liquidity

The liquidity ratios measure the firm’s ability to pay its margin of safety and debt obligations with the help of calculation metrics such as quick ratio, current ratio, and operating cash flow ratio. Mortgage originators and Bankruptcy analysts make the perfect use of liquidity ratios in order to measure the ongoing concern issues because liquidity ratios indicate cash flow positioning. In most of the research paper, there is a use of liquidity ratio that shows the relation in between firm’s current assets and current liabilities.

Though the liquidity ratio is highly used in the regression, when the closer look was given, it was not able to deliver the reliable information of the risk situation. It was observed that for some of the bankrupt companies the liquidity ratio was higher than that of the healthy company whereas on the other hand it was also observed that being on the higher side of liquidity ratio the company became bankrupt [6]. Thus liquidity ratio alone is not reliable and unable to distinguish in between the healthy and bankrupt companies. Therefore instead of using liquidity ratio setting the diffidence between current assets and current liabilities, we can use working capital into relation with total assets.

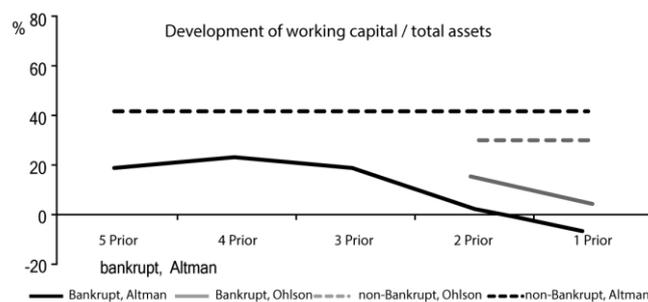


Figure 4: Development of working capital / total assets ratio

Figure 4 presents the clear picture of the ratio, which shows the clear development at the time of financial distress for both types of firms and making it easier for us to use the ratio in the risk management. Fundamentally, the ratios tell the capability of the

organization to pay its current liabilities with the help of its current assets. In case the company's current liabilities become higher than its current assets than there is an insolvency risk.

Moreover, the higher amount of total assets lessens the associated insolvency risk with the organization because with the help of current assets the company is unable to pay its current liabilities, therefore, the other assets are used to it. However, this measure safes company from being bankrupt but it is most inconvenient and difficult. Due to the inclusion of total assets, this ratio decreases the risk. Hence, this ratio could be considered for evaluating the liquidity of the company.

2.1.3. Solvency

There are wide ranges of ratios that are being used to find the productivity or profitability of the company. These ratios are categorized into three divisions. The first division focuses on the profit or sales margin as a measure of the company's productivity. The second division focuses on the income of the organization with the help of net or operative income and Earnings before Income taxes (EBIT). Finally, the third division focuses on the cumulative profit of the organization during the former periods. The total asset turnover ratio (sales or revenue/total assets) is the indicator of the company's productivity with which it is deploying its assets to generate revenue. In other words, the higher the asset turnover ratio better the company is performing. The usability of the asset turnover ratio is visible in figure 5.

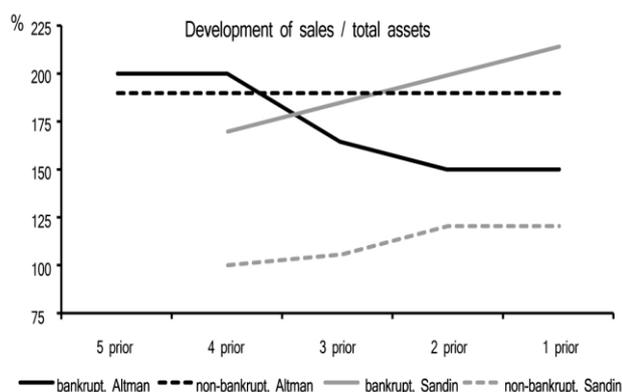


Figure 5: Development of sales / total assets ratio

From the above figure, you can easily observe that there is no large difference between the two groups of the investment firms, which means that there are no significant changes in the values when the companies get closer to the state of bankruptcy. Companies those went bankrupt showed a huge decrease in the total asset ratio with the period of 5 years [6]. Specifically, these companies started with the higher asset turnover ratio as compared to the solvent companies, and then certainly decreased within five years that they went bankrupt. If we analyze this particular ratio, then it is not significant enough to conclude. Therefore, we need to consider some more profitability ratios to know the solvency risk associated with the company.

The profit margin of the company is obtained with the help of income and sales, which is a part of the revenue that is left after removing all costs. The major benefit of this ratio is that it determines whether there is quantity change or buffer for the cost. A low-profit margin indicates that with a change in quantity or cost the company can lead to losses [7]. Though it is one of the solvency ratios, but according to most of the researchers, it has been not able to identify the significant developments because the ratios of both the groups (Solvent and Insolvent) were constant over the period.

The other ratios that are helpful in measuring the insolvency risks are Return on Equity (net income/equity), EBIT/debt and net income/assets. Figure 6 shows the EBIT/total asset and Net income/Total asset for both bankrupt and nonbankrupt group of companies. The EBIT/Total asset ratio for the bankrupt company went immensely downwards within the five years period whereas the companies with negative net income/total asset also went bankrupt. Thus in this perspective, we can conclude that the both net income/total asset and EBIT/ total assets ratios of the firm go negative then we can assume that the risk of insolvency is approaching [8].

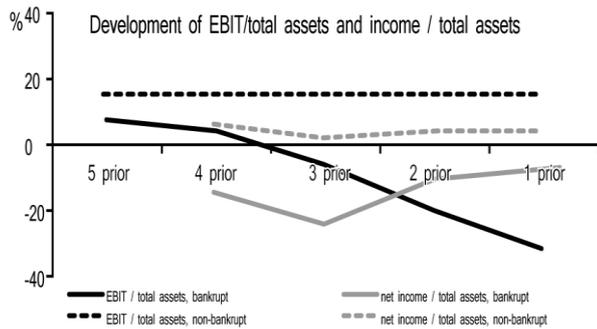


Figure 6: Development of EBIT / total assets and net income / total assets

The figure 7 shows the earning/total assets and retained earnings/equity. While the non-bankrupt group of companies on an average have positive retained earnings/total assets and retained earnings/ equity whereas on the other side the bankrupt companies have positive retained earnings/ total assets and retained earnings/ equity. Thus we can conclude by saying that in order to identify the solvency risks associated with the company we can check the companies retained earnings/total assets, retained earnings/ equity, EBIT/total assets and income/total assets ratios.

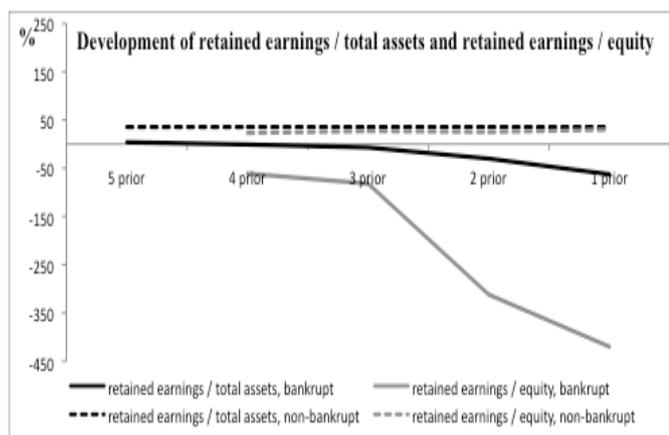


Figure 7: Development of net income/sales and operative income/sales

3. Conclusion

The objective of the journal was to find the quantitative measures for risk identification, evaluation, and monitoring that can be easily applied

by the investment firms in order to manage their internal financial risk. Thus, for this purpose, the financial analysis has been used to identify certain measures for firm bankruptcy. Financing, Liquidity and Solvency risks are the most important risks that need to be taken care off by the investment firms. There are multiple ratios that indicate these financing, liquidity and solvency risks. Therefore, investment firms need to a thorough analysis of these associated ratios to identify the risks that would lead the company towards bankruptcy. These ratios can be easily applied to the investment firms. These ratios work as a risk identification tool a mean for analyzing risk on a higher level. With these ratios, the company can easily check which is the major risk category and needs to be managed urgently. Once a risk is recognized in an abnormal state then further internal data can be investigated to make sense of where the source of risk arises. But it should not be considered that identification of financial risk would manage or decrease the risk.

4. Constraints

1. Financial ratios are unable to provide the clear and reliable image of the company's financial situation however they aim towards eliminating effects in balance sheets.
2. In order to make an effective use of financial ratios one should not only be limited to the key figures and ratios but also needs to understand the business process of the company.
3. Ratio analysis with the help of financial statements for performing the stock valuation can be limited.
4. The disadvantage of conducting this type of analysis is that if these ratios are used alone, they will just provide the simplistic image of the financial condition of the company.

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