

## A STUDY OF FINANCIAL SOLVENCY OF INDIAN AIRLINE COMPANIES WITH REFERENCE TO Z-SCORE

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### ABSTRACT

*The Indian Aviation Industry promises huge growth potential due to large and growing middle class population, favorable demographic, rapid economic growth, higher disposable incomes, rising aspiration of the middle class, and overall low penetration level (less than 3%). The overall aviation industry has been flawed by cost inefficiencies and aggressive price cuts, rising cost, expensive jet fuel, dearth of experienced pilots, inflexible labour laws, higher cost of capital with a burden of interest payments, rising losses and working capital stretched balance sheet and tight liquidity profile of the most airlines. The banks are unwilling to enhance their exposure to the industry, recast their loan or pickup equity stakes without viable business plans.*

*As in the present study the aviation industry need to come out with this difficult time and also to protect the interest of the small shareholders. In a present study to know the solvency status of airline companies we considered three airline operators as they are listed in the Bombay Stock exchange. The financial statements of last three years are being considered for the study and to predict the solvency of the companies by using Altaman's Z-Score.*

**Key Words:** Airline companies, cost of capital, liquidity, solvency and Z-Score.

### 1. INTRODUCTION

The Indian Aviation Industry has been going through a turbulent phase over the past several years. According to Centre for Asia Pacific Aviation (CAPA), in 2010-2011 major airlines suffered enormous accumulated losses of nearly Rs.12,500 crores. Indian Aviation Industry promises huge growth potential due to large and growing middle class population, favorable demographic, rapid economic growth, higher disposable incomes, rising aspiration of the middle class, and overall low penetration level (less than 3%). According to ICRA Research, March 2012, the industry has grown at a 16% CAGR in passenger traffic growth which averaged 13% in the first half has increased substantially to 19% CAGR during 2006 to 2011. It contributes five

percent of GDP, nearly Rs.290 crores in taxes provides four million jobs and other seven million jobs through tourism and related activities (IATA, 2011). While beginning of 2008-09, the sector was impacted by a rise in crude oil prices, taxes on Aviation Turbine Fuel (ATF), decline in passengers traffic growth, dearth of experienced pilots, inflexible labour laws, and the overall higher cost of capital. In a near term the airline operators faces challenges related to high debt burden and liquidity constraints.

While most of these factors are not under direct control of airline companies, the problem have compounded due to industry-wide capacity additions, much in excess of actual demand. Besides, aggressive fleet expansion of Low Cost Carrier (LCC) airlines added aircraft on long term operating leases; Flight Service Carrier's (FSC) have purchased aircrafts by debt financing backed by bank guarantees. To leverage the anticipated robust growth and to support and expand international operations impacted significantly on the capital structure and weakened the credit profile of most domestic airlines. As the debt proportion increases in the capital structure, the firm's cash outflow in the form of interest payment increases (Kapil 2011). The higher the amount of debt that the firm uses, the higher is the financial risk. However, high debt poses high cost of bankruptcy under the conditions of low operating profits.

Bankruptcy is a business failure that can be defined as "the condition in which a business cannot meet its debt obligations." During the slowdown in the aviation industry, it is become mandatory to study the financial solvency of the airline operators. Solvency is defined as the ability of a company to meet its long term fixed expenses and to accomplish long term expansion and growth (Arun R and Kasilingam R., 2011) As the domestic airline companies are reeling under the pressure of mounting losses and rising debt burden. To know the solvency status of airline companies; Companies use financial ratios, especially leverage ratios to assess and evaluate the past or present condition of a business firm. Z-Score is a good time tested method to assess the financial health and insolvency risk of the companies. The Z-Score formula was developed by Edward Altman. The Z-Score is a multivariate formula that measures the financial health of a company and predicts the probability of bankruptcy (Altman, 1977). The method is based on the statistical techniques of multivariate discriminate analysis. Altman Z-Score was found to be 72% accurate in predicting bankruptcy two years before the event, with a Type II error (false positives) of 6% (Altman, 1968). It has been in use for many years in USA by Government and various agencies to identify the insolvencies of companies (Masson and Harris, 1979).

The Z-Score combines five common ratios viz. Working capital to Total Assets Ratio, Retained Earnings to Total Assets Ratio, Earning Before Interest and Tax (EBIT) to Total Assets, Market Value of Equity to Book Value of Long Term Debt and Sales to Total Assets (Altaman 1977).

In our study, the overall aviation industry has been flawed by cost inefficiencies and aggressive price cuts, rising cost, expensive jet fuel, high interest payments, rising losses and working capital stretched balance sheet and tight liquidity profile of the most airlines. The banks are unwilling to enhance their exposure to the industry, recast their loan or pickup equity stakes without viable business plans. As in the present study the aviation industry is need to come out with this difficult times and also to protect the interest of the small shareholders. The present study considered three airline operators as they are listed in the Stock exchange. The financial statements of last three years are being considered for the study and to predict the solvency of the companies Altaman's Z-Score is used.

## **2. OBJECTIVE OF THE STUDY**

1. To Study the present status of the Aviation Industry.
2. To study the financial performance of the Airline Companies.
3. To predict the financial solvency of the Airline companies.

## **3. RESEARCH METHODOLOGY**

This paper is an attempt to study the financial solvency of Indian Airline Companies with reference to Z-Score. For carrying out the research Secondary data is used. Secondary data was collected from past annual reports and from BSE and money control website. The data also collected from various Reports, books, Journals, Magazines, News Papers etc. In India, 5 Airline companies are operating. Out of five companies two companies are private limited companies so to carry out the research three limited/listed airline companies from BSE are selected. A Purposive sampling method is used to select the sample. The period of this study is ranging from the financial year 2008-09 to 2010-11. From the three years data were analysed on the basis of five ratios and further to check the solvency of the companies Z-Score is used. Altaman assigned a score and three Zones to measure the solvency of the non manufacturing company.

$Z > 2.6$  -"Safe" Zone

$1.1 < Z < 2.6$  -"Grey" Zone

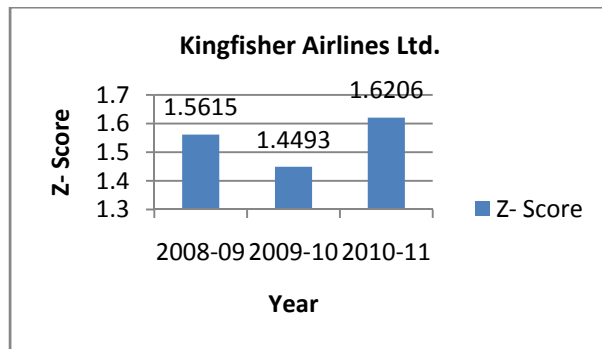
$Z < 1.1$  -“Distress” Zone

#### 4. DATA ANALYSIS AND INTERPRETATION

Table 1: Computation of Z-Score for Kingfisher Airline Ltd.

Variable	2008-09	2009-10	2010-11
Working Capital to Total Assets	(-) 0.9570	(-) 0.8373	(-) 0.9127
Retained earning to Total Assets	(-) 0.4544	(-) 0.4093	(-) 0.2502
EBIT to Total Assets	0.0129	(-) 0.0032	(-) 0.2497
MV of equity to Book value of debt	11.5418	12.22	21.13
Sales to Total Assets	1.4883	1.25	1.5181
Z-Score	1.5615	1.4493	1.6206

Graph 1: Graphical Representation of Z-Score for Kingfisher Airline Ltd.

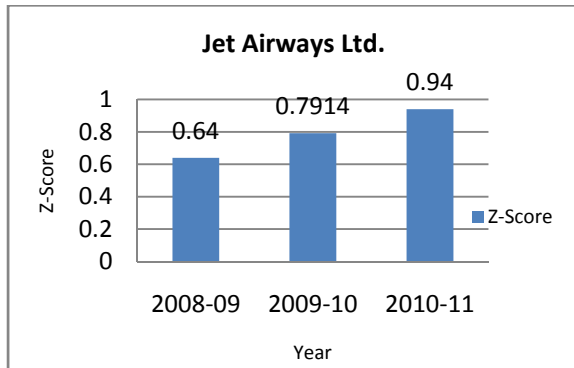


As per the calculation of Z-Score for Kingfisher Airlines Ltd. in 208-09 the Z-Score was 1.5615 which reduced to 1.4493 in 2009-10 and in 2010-11 it again increases to 1.6206. The Z-Score of Kingfisher Airlines Ltd. is in a Gray Zone. The financial solvency level of the company is medium.

Table 2: Computation of Z-Score for Jet Airways Ltd.

Variable	2008-09	2009-10	2010-11
Working Capital to Total Assets	(-) 0.0850	(-) 0.1256	(-) 0.2209
Retained earning to Total Assets	(-) 0.0206	(-) 0.0282	0.0006
EBIT to Total Assets	0.05367	0.1426	0.1719
MV of equity to Book value of debt	8.2524	26.36	25.1442
Sales to Total Assets	0.5939	0.6311	0.7946
Z-Score	0.64	0.7914	0.94

Graph 2: Graphical Representation of Z-Score for Jet Airways Ltd.

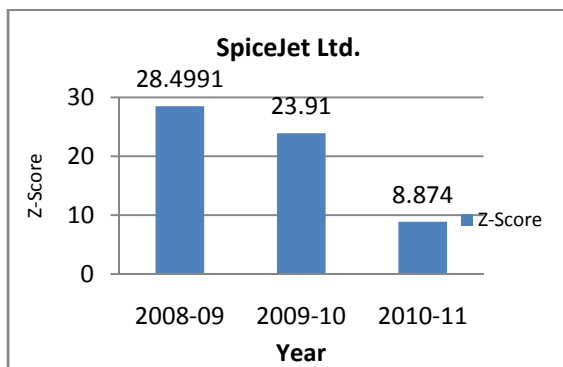


As per the calculation of Z-Score for Jet Airways Ltd. in 2008-09 the Z-Score was 0.64 which increased to 0.7914 in 2009-10 and in 2010-11 it increases by 0.1486 to 0.94. The Z-Score of Jet Airways Ltd. is in a Distress Zone but the company shown an improvement in a Z-Score. The financial solvency level of the company is poor

Table 3: Computation of Z-Score for Jet SpiceJet Ltd.

Variable	2008-09	2009-10	2010-11
Working Capital to Total Assets	(-) 8.6469	(-) 6.0365	(-) 1.5843
Retained earning to Total Assets	(-) 5.7351	0.6974	0.2486
EBIT to Total Assets	0.7592	5.1060	1.4175
MV of equity to Book value of debt	37.5861	166.2965	295.485
Sales to Total Assets	28.4610	22.6935	7.0773
Z-Score	28.4991	23.91	8.874

Graph 3: Graphical Representation of Z-Score for SpiceJet Ltd.



The Z-Score of SpiceJet Ltd. in 2008-09 the Z-Score was 28.4991 which reduced to 23.91 in 2009-10 and in 2010-11 it further reduced to 8.874. The Z-Score of SpiceJet Ltd. is in a Safe Zone. The financial solvency level of the company is Good.

## **5. FINDINGS**

The Kingfisher Airlines Ltd. is in a Gray Zone. Every alternate year the Z-Score of the company is upwards. The solvency level of the company is medium level. The company needs to push its earnings, at the same time the company needs to focus on its total assets as well the rising debt portion in its capital. The working capital is also a concern of the company.

As the Z-Score of Jet Airways Ltd. is very low, the company is in a financially distress zone. The solvency level is poor. The company has to improve its solvency level. The reduction in EBIT is not sounding good and retained profit against the total assets is very low which is pulling the company into financially distress zone. The company must take measure to avoid its bankruptcy. The Z-Score of SpiceJet Ltd. is in a safe zone. The solvency is good. The working capital of the company is indicating a good financial position at the same time the EBIT and retained profit of the company is in proportionate to its total assets. The rising debt in capital and interest portion will lower the financial position in future. To avoid this situation in future the company needs to improve its earnings and utilization of its capital over assets deployment.

## **6. SUGGESTIONS**

The company can deal the financial distress by disposing of real properties and may opt to sell the property to pay the creditors so that working capital of the companies will improve. The operating costs and other costs can be financed by such activity.

The companies can reframe the terms and condition with creditors to extend the credit period and the new interest rate to save the company from bankruptcy.

The merger or strategic alliance can put the distressed company back in good financial position. The company can use its authorized capital by offering the stake to foreign companies, instead of adding leverages into capital structure.

## **7. CONCLUSION**

Altman's Z-Score helps in predicting the financial solvency of the companies. It is possible to the companies to reduce the rate of bankruptcy through use of Z-Score by identifying and control the variables that induce the financial failure. EBIT is the important factor for the solvency position of the company but at the same time the retained profit and the utilization of capital over the assets must in proportionate. The rising creditors and liabilities create pressure on the financial position as the interest payment pull down the profit margin. Hence the more earnings, more is the solvency position of the companies.

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Comparison of a company's financial results to other peer companies for the same time period is called A. horizontal analysis. B. time-series analysis. C. cross-sectional analysis. C.

In order to assess a company's ability to fulfill its long-term obligations, an analyst would most likely examine A. activity ratios. B. liquidity ratios. C. solvency ratios.

• solvency ratios: ability of the company to pay long-term financial obligations.  
• activity ratios: efficiency in management's use of the enterprise's assets.  
• profitability ratios: management's return on sales and investments.

METHODOLOGY A study sample of 500 lodging financial executives were randomly selected from a directory of hospitality financial and technology professionals (HFTP). This resulted in 81 usable responses, which is a response rate of 16.2 per cent. Approximately 90 per cent of the.