

Impact Of Occupancy Ratio On Insolvency Prediction - A Study Of Select Civil Aviation Companies In India

Dr. Syed Khaja Safiuddin

Assistant Professor (Selection Grade), Department of Management Studies, Maulana Azad National Urdu University, Hyderabad

ABSTRACT

The conditions are vulnerable for the civil aviation business in India as a result economic downturns, high fuel prices and market fluctuations. This sector is experiencing bad conditions to huge changes in Economic Environment which is exposed to high risk. The industry is in distress zone as revealed by various reports and media sources. These changes also caused air carriers in India to incur significant losses especially in civil aviation sector. Passenger load factor is an important parameter that reveals the no. of tickets sold or seats occupied by the passengers as compared to the tickets available. It is an important measure used in any transport industry to measure the capacity utilization and idle capacity with reference to passenger occupancy and tickets sold. As far as Airline industry is considered, passenger load factor is also a crucial factor that provide a bench mark and shows whether the particular airline is in profit or not. In this paper, an attempt is made to assess the impact of occupancy ratio on financial health of selected civil aviation companies in India. This study is carried out for a period of ten years i.e from 2007-2016.

Keywords: Civil Aviation Business, Passenger Load Factor and Financial Health.

INTRODUCTION

The airline business in India is characterized by unsteady growth which include the volatility in jet fuel prices and increase in labour cost. As far as Airline industry is considered, passenger load factor is also a crucial factor that provide a bench mark and shows whether the particular airline is in profit or not. Altman Z-score model is used to predict the insolvency of the firms and the impact of passenger load factor on Z-Score is assessed. The calculation and analysis of Altman's Z-score is conducted for selected Indian carriers.

INDIAN AVIATION SECTOR AND PRESENT PASSENGER TRAFFIC SCENARIO

"The civil aviation market in India is all set to become the world's third largest by 2020. Total passenger traffic stood at a 190.1 million in FY15, registering an increase of 12.47 per cent. By 2020, passenger traffic at Indian airports is expected to increase to 421 million from 190.1 million in 2015. Domestic passenger traffic expanded at a compound annual growth rate (CAGR) of 11.8 per cent over FY06–15. The Airports Authority of India (AAI) aims to bring around 250 airports under operation across the country by 2020. Passengers carried by domestic airlines during January-October 2016 were 813.70 lakh as against 660.60 lakh during the corresponding period of previous year thereby registering a growth of 23.18 percent".¹

Insolvency Prediction of Companies: The insolvency prediction of companies is calculated using Altman's Z –Score Model.

Occupancy Ratio or Passenger load factor: "Passenger load factor is also called occupancy ratio which measures the capacity utilization of transport services used for public like civil aviation, railways carrying passengers, and intercity bus services. It is generally used to assess how efficiently a transport provider fills seats and generates fare revenue. According to the International Air Transport Association, the worldwide load factor or occupancy ratio for the passenger aviation industry during 2015 was 79.7% according to sources".³

REVIEW OF LITERATURE

¹ www.ibef.org/industry/indian-aviation.aspx

Safiuddin S.K (2018) studied the financial health of select Indian Aviation Companies. The study reveals that two companies are the potential candidate of bankruptcy despite of many measures.

Monique Timmermans (2014) studied U.S. Corporate Bankruptcy/ Insolvency Prediction models to check how accurate are the bankruptcy predicting models of Altman(1968), Ohlson(1980) and Zmijewski(1984) that were applied to U.S. listed firms in the period after the BACPA change in bankruptcy law? It is found that the predictive power of all models is very low, but for Altman(1964) and Ohlson(1980) bankruptcies are over predicted, as was expected. For the model of Zmijewski(1984), the amount of non-bankruptcies was over predicted, which is contrary to what was expected.

Ummed & Omvir (2012) in their work Distress Prediction Model for predicting Bankruptcy in Aviation Industry found that of the three firms having Z-Score less than 2.60, two have been declared bankrupt. The lending institution has recalled term loan from one firm. Only one firm is financially stable.

Boritz et al. (2007) in their work studied bankruptcy in Canadian firms and found that predictive accuracy of Altman's and Ohlson's original models are higher than re-estimated models. They also compared the accuracy of models developed for Canadian firms, namely Springate (1978), Altman and Levallee (1980), and Legault and Veronneau (1986). It is concluded that the Canadian models are simpler and require less data. All models have stronger prediction related to performance of the original coefficients than the re-estimated coefficients.

Sun and Feng Hui (2006) worked on prediction of bankruptcy and found that bankruptcy not only results in huge individual loss to interested parties such as stockholders, creditors, managers, employees, etc but also too much bankruptcy will greatly shock the whole country's economic development.

Most of the studies on bankruptcy of companies in the services sector, Airlines industry is prone to bankruptcy prediction considerably on a larger scale. To find the real problems associated, most of the studies are found not considering the passenger load factor which is assumed to be a crucial factor that provide a bench mark and shows whether the particular airline is in profit or not. This study is an attempt to compare the passenger load factor and the insolvency prediction of companies and try to develop relation between the two by assessing the impact of Passenger Load factor on the insolvency prediction of select civil aviation companies.

OBJECTIVE OF THE STUDY

The objective of the study is to assess the impact of passenger load factor on the financial health of select Indian Civil Aviation Companies.

RESEARCH METHODOLOGY

The impact of occupancy ratio on financial health is also assessed. Regression analysis has been carried out for assessing the impact.

The selection of the companies is based upon market capitalization. The top four private civil airline companies of India have been selected for the study.

TECHNIQUES OF DATA ANALYSIS

The tools which has been used for assessing the passenger load factor is the occupancy ratio which shows the passengers travelled as compared to the plane capacity. Altman's Z-score that puts together five financial ratios (Four for service industry) generated using the following formula for publicly traded service sector firms¹.

SCOPE OF THE STUDY

¹ Altman, E. I., & Hotchkiss, E. (2006). Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyze and Invest in Distressed Debt.

Scope of the study is confined to assessing the impact of Occupancy ratio on Z-Score of selected Civil Aviation companies in India using regression analysis. The study was carried out for a period of 10 years from 2007 to 2016.

LIMITATIONS OF THE STUDY

Top players in the sector have been considered for the study based on market capitalization. The study is limited for a period of ten years and for some of the companies the data was not available for all the ten years.

Impact of Occupancy Ratio (Passenger Load Factor) on Z-score of Select Indian Aviation Companies:

The results from regression analysis of Indigo airlines reveals that the calculated R square is 0.253 which reflects that a minor change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.179. (Table: 1.1 and Table: 1.2)

The results from regression analysis of Jet Airways reveals that the calculated R square is 0.612 which reflects that a major change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.009. (Table: 1.1 and Table: 1.2)

The results from regression analysis of Go Air reveals that the calculated R square is 0.171 which reflects that a minor change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.411. (Table: 1.1 and Table: 1.2)

The results from regression analysis of Spice jet reveals that the calculated R square is 0.067 which reflects that a negligible change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.491. (Table: 1.1 and Table: 1.2)

Table-1.1: Regression Analysis showing Impact of Occupancy Ratio on Z-Score of Select Civil Aviation Companies

Variables Entered/Removed	Model Summary				Coefficients				
					Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Variables Entered	R	R Square	Adjusted R Square	Std. Error of the Estimate	B	Std. Error	Beta		
INDIGO_OR ^b	.501 ^a	0.253	0.144	2.12	0.224	0.146	0.501	1.531	0.179
Jet_OR ^b	.780 ^a	0.612	0.559	3.292	-0.707	0.201	-0.78	-3.524	0.009
GoAir_OR ^b	.416 ^a	0.171	-0.034	6.454	-0.758	0.829	-0.416	-0.915	0.411
Spice_OR ^b	.262 ^a	0.067	-0.064	4.838	0.173	0.241	0.262	0.719	0.491

(Source: Tabulated from the data analyzed for regression using SPSS from www.acekp.in)

Table-1.2: Regression Analysis showing Impact of Occupancy Ratio on Z-Score of Select Civil Aviation Companies

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
INDIGO	Regression	10.542	1	10.542	2.345	.179 ^b
	Residual	31.463	7	4.495		
	Total	42.005	8			
JET	Regression	134.551	1	134.551	12.419	.009 ^b
	Residual	86.675	8	10.834		

	Total	221.226	9			
GO AIR	Regression	34.853	1	34.853	0.837	.411 ^b
	Residual	166.613	4	41.653		
	Total	201.466	5			
SPICE	Regression	12.085	1	12.085	0.516	.491 ^b
	Residual	163.853	7	23.408		
	Total	175.938	8			

(Source: Tabulated from the data analyzed for regression using SPSS from www.acekp.in)

FINDINGS, SUGGESTIONS AND CONCLUSION

The Airline companies in India are prone to financial distress because of many reasons. Aviation sector has already seen many bankruptcy filings in the world. The present study reveals that out of the selected Indian Airlines, the financial health of Indigo is very good and it is in safe zone. The Z score of other three companies reveal that these companies reveal a poor financial health and lie in the distress zone as measured through Z-score model. These companies need to take necessary corrective measures to prevent them from possible bankruptcy.

The the occupancy ratio all the four companies selected for the study are healthy for all the years but except indigo all the three companies are either in the gray zone or in the distress zone .

It is suggested that Jet Airways, Go Airlines and Spice Jet needs to enhance its earnings capability through expansion of the business by adopting new policies for business expansion and to attract customers. The pricing strategy of the airlines companies seems to be not up to the mark and needs to be revised and reconsidered. The cost management policies also needs to reconsidered in order to reduce the level of break even.

There may be other variables which are influencing the financial health of the aviation companies other than occupancy ratio.

REFERENCES

- ❖ Altman, E. I., & Hotchkiss, E. (2006), Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyze and Invest in Distressed Debt.
- ❖ Altman, Edward I. "Financial ratios, discriminant analysis and the prediction of corporate bankruptcy." The journal of finance 23.4 (1968): 589-609.
- ❖ Boritz, J. E., Kennedy, D. B., & Sun, J. Y. (2007), Predicting Business Failures in Canada*. Accounting Perspectives, 6(2), 141-165. doi:10.1506/g8t2-k05v-1850-52u4
- ❖ Campbell, J. Y., Hilscher, J. and Szilagyi, J. (2008), "In Search of Distress Risk", Journal of Finance, Vo. 63, No. 6.
- ❖ Crouhy, M., Galai, D., & Mark, R. (2000). A comparative analysis of current credit risk models. Journal of Banking & Finance, 24(1-2), 59-117. doi:10.1016/s0378-4266(99)00053-9
- ❖ Gedminaitė, I. (2017). Assessment Of Likelihood Of Bankruptcy Of Lithuanian Construction Companies. Works Of Young Scientists
- ❖ Kaur, H. V., & Singh, S. (2013). Managing Working Capital Efficiency in Capital Goods Sector in India. Global Business Review, 14(2), 343-355. doi:10.1177/0972150913477526
- ❖ Kumari, Ummed, and Omvir Chaudhry. "Distress Prediction Model-Model for predicting Bankruptcy in Aviation Industry." ISSN: 2278-9359
- ❖ Lundqvist, D., & Strand, J. (2013). Bankruptcy Prediction with Financial Ratios-Examining Differences across Industries and Time. lup.lub.lu.se

- ❖ Morris, R.(1997). Early Warning Indicators of Corporate Failure: A Critical Review of Previous Research and Further Empirical Evidence. Aldershot: Ashgate Publishing Company
- ❖ O'Leary, D. (1998). Using Neural Networks to Predict Corporate Failure. International Journal of Intelligent Systems in Accounting Finance and Management, 7(3), 187-97.
- ❖ Ohlson, J. A. (1980). Financial Ratios and the Probabilistic Prediction of Bankruptcy. Journal of Accounting Research, 18(1), 109. doi:10.2307/2490395
- ❖ Safiuddin S.K (2018), "Measuring the Financial Health and Insolvency Prediction of Select Indian Aviation Companies, International Journal Of Economic Research", vol.15 issue03, 2018, 947-954.
- ❖ Sheela, C.S. and Karthikeyan. K (2012). Financial Performance of Pharmaceutical Industry in India using DuPont Analysis. European Journal of Business and Management. Vol 4, No.14. [http://pakacademicsearch.com/pdf-files/ech/517/84-91%20Vol%204,%20No%2014%20\(2012\)](http://pakacademicsearch.com/pdf-files/ech/517/84-91%20Vol%204,%20No%2014%20(2012))
- ❖ Sun, J. and X.F. Hui, 2006. Financial Distress Prediction Based on Similarity Weighted Voting CBR.
- ❖ Timmermans, M. (2014). U.S. corporate bankruptcy predicting models: how accurate are the bankruptcy predicting models of Altman(1968), Ohlson(1980) and Zmijewski(1984) after recalibration, when they are applied to U.S. listed firms in the period after the BACPA change in bankruptcy law? (Unpublished doctoral dissertation). Thesis / Dissertation ETD.
- ❖ Vasantha, S., Dhanraj, V., & Thiayalnayaki. (2013). Prediction of business bankruptcy for selected Indian airline companies using Altman's Model. International Journal of Research in Business Management, 1, 19-26.

WEB SOURCES

- ❖ www.moneycontrol.com
- ❖ www.ibef.org/industry/indian-aviation.aspx
- ❖ www.acekp.in
- ❖ <https://www.goindigo.in/about-us.html>
- ❖ <https://www.jetairways.com/en/in/jetexperience/about-jet-airways.aspx>
- ❖ <https://www.goair.in/about-us/>
- ❖ <http://www.moneycontrol.com/company-facts/spicejet/history/SJ01>
- ❖ www.capitaline.com