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Research Paper

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SOLVENCY ANALYSIS OF SELECTED SCHEDULED DOMESTIC AIRLINES IN INDIA

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ABSTRACT

The Indian aviation sector is one of the fastest growing aviation industries in the world. There is too much potential of growth in this sector and the growth of this sector will definitely affect the growth of Indian Economy positively. So, the present study is conducted to evaluate the solvency position of top five scheduled domestic airlines. The study is based on secondary data collected from the Profit and Loss A/c and Balance Sheet associated with schedules, annexure available in the published annual reports of airlines and Capitaline data base. The data have been collected for the past twelve years ranging from 2004-05 to 2015-16 and compiled into tables and analyzed with the help of Ratio Analysis, Mean, Standard Deviation, Co-efficient of Variation and Compound Annual Growth Rate. It has been found from the present study that the solvency position of the airlines is not satisfactory as the compound annual growth rate found negative in most of the cases. All the selected airlines have been found more dependent over borrowed capital in comparison of owned capital. The debt to total shareholders' fund ratio has been found more consistent in all the cases as the co-efficient of variation is least for this ratio. It can be suggested here that the airlines should try to improve their solvency condition and they should try to reduce burden of debt by issuing new owned capital.

KEYWORDS: *aviation industries, airlines, shareholders' fund, economic crisis*

INTRODUCTION

The aviation industry is a large and developing industry. The growth of an economy depends upon the aviation industry to a large extent. The Indian aviation sector is one of the fastest growing aviation industries in the world. The domestic airlines in India carried 272.79 lakhs passengers in 2017 as against 230.03 lakhs during the corresponding period of previous year with a growth of 18.59% ***(Traffic Report 2017, DGCA).*** The Indian Civil Aviation Industry will become the third-largest aviation market by 2026 ***(IATA Report, 2017).***

The first air mail service was started by Tata Airlines in 1912. In 1946, it was renamed as Air India. In 1953, the Air Corporation Act was implemented by the government which gave birth to Indian Airlines and Air India. In 1986, the government opened the market for the private players. After then, a series of amendments have been made in the sector such as entry of LCCs, mergers and acquisitions and open sky policy. Earlier, the aviation industry was only confined to the government hands but now this scenario has been changed. A number of private players have been added in the sector after the enactment of open sky policy. Another feature of this sector is commercial aviation which is specialized in operating aircraft for passengers and cargo.

The literature review indicates the research gap in this sector. A number of national and international studies have been made on the profitability analysis of airlines. The aviation sector in India is largely unexplored from the perspective of solvency analysis. The present study is aimed to analyze the solvency position of selected airlines in India. Solvency ratios have been used to evaluate the long term financial position of airlines.

LITERATURE REVIEW

Khan and Govindarajan (2017) made an attempt to evaluate the profitability performance of Air India Ltd. on the basis of selected profitability ratios. The study indicates that the Indian airline industry has witnessed major decline on account of global economic crisis, low passenger rate, rising fuel prices and fluctuations in foreign exchange rate. The profitability ratios of Air India from 2012-2015 has been found negative

which clearly indicates that it could not satisfy the standard norms. The study concluded that the profitability of an airline depends upon the efficient utilization of resources, sales and quality management. **Myre (2015)** examined the relationship between the financial performances of six European Airlines. The comparative analysis has been made among these airlines by using a mixture of financial ratios, such as EBT margin, operating expense ratio, current ratio and debt equity ratio. The internal and external factors have also been studied with the help of PESTEL technique. The study found a difference between the performance of full service carriers and low cost carriers. The liquidity and solvency of LCC's has been found to be stronger than the FSC's. **Subiakto and Sukarno (2015)** analyzed the financial performance by making a comparative analysis of the various airlines in Indonesian aviation industry. The study period ranged from 2010 to 2014. The financial ratios which have been used to evaluate the performance are liquidity ratio, solvency ratio and Dupont Analysis. The results showed that the Garuda Indonesia suffering from high loss due to the rising domestic jet fuel price and depreciation of Indonesian local currency. **Walecha et. al. (2013)** studied the financial performance of selected domestic airlines in India i.e. Spice Jet, Jet Airways and Kingfisher. It also analyzed the growth and trend of airlines by considering the average and variation of profitability, liquidity and solvency ratios. The study concludes that Kingfisher airlines have shown huge up and down trends; on the contrary other airlines have seasonal growth. **Goswami and Sarkar (2011)** evaluated the liquidity and profitability position of some selected airlines in India i.e. Air India, Indian Airlines, Kingfisher and Jet Airways. It also measured the correlation between the liquidity and profitability. **Gritta, Adrangi, Adams and Tatyanina (2008)** made an attempt to identify the financial condition of the U.S. airline industry. In the study, a comparison has been made on financial strength of the major U.S. air carrier. The standard Altman Z Score Model has been used considering the financial terms like liquidity, leverage, turnover and profitability. The study concludes that the financial health of the major U.S. airlines has been deteriorated throughout the first decade of 21st century. The reasons for this deterioration include less use of equity over debt, high operating leverage and high degree of competition. **Tsai (2008)** evaluated the impact of financial risk factors such as interest rate exposures, currency fluctuations and fuel price changes on the South African Airlines. The data for the financial ratio analysis of South African Airlines showed a better return on investment in comparison of Comair and an improvement in performance with an increase in revenue.

RESEARCH METHODOLOGY

The present study is analytical in nature. The study is based on secondary data collected from the Profit and Loss A/c and Balance Sheet associated with schedules, annexure available in the published annual reports of airlines and Capitaline data base. The top five scheduled domestic airlines on the basis of market share in India have been selected for the study. It includes Indigo Airlines (39.39%), Jet Airways (16.16%), Air India (14.41%), Spice Jet (12.76%) and Go Airlines (8.27%). The data have been collected for the past twelve years ranging from 2004-05 to 2015-16 and compiled into tables. The tools and techniques for analysis include Ratio Analysis, Mean, Standard Deviation, Co-efficient of Variation and Compound Annual Growth Rate.

Collected data have been complied in tables. The data of each airline have been complied into two types of tables; one in which financial data related with variables have been complied and in second type of tables, calculated ratios have been shown.

Selected Solvency Ratios

1. Debt-Equity Ratio: The ratio explains the relationship between debt and equity. It is calculated to analyze the ability of the firm to pay off its long term liabilities. Debt equity ratio of 2:1 is generally considered safe for an industry. If it is more than that, it shows risky financial position.

$$Debt\ Equity\ Ratio = \frac{Debt}{Equity}$$

2. Debt to Total Shareholders' Funds Ratio: It expresses the quantum of debt in relation to total shareholders' funds. The higher the ratio, the risky it is, because it means that the firm depends too much on outside loans for its survival.

$$Debt\ to\ Total\ Shareholders'Funds = \frac{Debt}{Total\ Shareholders'Funds}$$

3. Proprietary Ratio: This ratio explains the relationship between the total shareholders' funds and total assets. It states that how much equity is invested in total assets which includes current assets and fixed assets. It simply means the quantum of total assets funded by shareholders funds.

$$Proprietary\ Ratio = \frac{Total\ Shareholders'Funds}{Total\ Assets}$$

4. Return on Capital Employed: This ratio is computed to evaluate the overall profitability of a firm. It is computed by dividing the earnings before interest and tax to capital employed. It is also used to review the borrowing policy of the enterprise. It helps an enterprise in taking decisions regarding capital investment in new projects.

$$Return\ on\ Capital\ Employed = \frac{EBIT}{Capital\ Employed}$$

5. Debt to Total Liabilities Ratio: The ratio defines the proportion of debt into the total liabilities. A high ratio indicates that the total liabilities are highly composed of debt which may turn the enterprise into a risky position.

$$Debt\ to\ Total\ Shareholders'Funds = \frac{Debt}{Total\ Shareholders'Funds}$$

ANALYSIS AND FINDINGS

Table I: Financial Data of Indigo Airlines

Year	Debt	Equity	Total Shareholders' Funds	Total Assets	EBIT	Capital Employed	Total Liabilities
2006-07	188.37	103.24	-64.54	371.16	-170.63	113.40	381.59
2007-08	165.00	189.77	-258.79	538.77	-196.92	-93.79	538.77
2009-10	968.79	189.77	288.15	1475.22	584.21	871.19	2242.07
2010-11	931.37	34.37	102.74	1977.62	560.03	674.93	2919.46
2011-12	1015.57	34.37	382.68	2680.92	123.40	1435.66	3813.56
2012-13	1800.42	34.37	532.39	3703.65	1065.81	1993.79	5957.07
2013-14	3346.24	34.37	407.63	5599.18	597.88	3003.85	9047.25
2014-15	3926.16	34.37	420.69	7548.94	1996.17	4916.48	10380.30
2015-16	3200.79	360.36	1834.28	9378.49	3009.95	5619.20	12525.50
Mean	**1726.97**	**112.78**	**405.03**	**3697.11**	**841.10**	**2059.41**	**5311.73**
SD	**2760.99**	**114.01**	**594.34**	**3176.00**	**1055.28**	**2057.67**	**4424.04**
CV	**159.88**	**101.09**	**146.74**	**85.90**	**125.46**	**99.92**	**83.29**
CAGR	**42.49%**	**16.91%**	**36.14%**	**49.73%**	**31.42%**	**62.89%**	**54.71%**

Table I shows the financial data relating to the solvency position of Indigo Airlines. This table shows the financial data only and these data are useful in computing various ratios. As per the data of the table, there is an increasing trend in the debt used by the airline except the year 2016, with an average of Rs. 1726.97 cr. Co-efficient of variation has been found maximum for this variable. So, it can be said here that debt is less consistent as compared to the other variables. CAGR for debt has been found 42.49%. Equity for this airline has a fluctuating trend. Total shareholders' fund were negative in the year 2007 after that improvement has been recorded this fund. Average and CAGR of total shareholders' fund for this airline are Rs. 405.03 cr. and 36.14% respectively. An increasing trend has been found in the total assets of the airline. It is a very positive sign that total assets are increasing day by day. It shows the bright future for Indigo Airlines. Average of total assets has been found Rs. 3697.11 cr. with a compound annual growth rate of 49.73%. In the year 2007, EBIT (Earnings before Interest and Taxes) of the airline was Rs. -170.63 cr. and in the year 2016 it is Rs. 3009.95 cr. It is a drastic change in the EBIT and shows the operating efficiency of the airlines. The mean value and CAGR for EBIT have been found Rs. 841.10 cr. and 31.42% respectively. Capital employed has been found in escalating trend as it was Rs. 113.40 cr. in the year 2007 and Rs. 5619.20 cr. in the year 2016. Total liabilities have been found in an increasing trend during the study period. It is matter of great concern that the CAGR of Total Assets (49.73%) is less than the CAGR of Total Liabilities (54.71%).

Table II: Ratio Analysis of Indigo Airlines

Year	Debt to Equity Ratio	Debt to Total Shareholders' Funds	Proprietary Ratio (%age)	Return on Capital Employed (%age)	Debt to Total Liabilities Ratio (%age)
2006-07	1.82	-2.92	-17.39	-150.47	49.36
2007-08	0.87	-0.64	-48.03	-209.96	30.63
2009-10	5.11	3.36	19.53	67.06	43.21
2010-11	27.10	9.07	5.20	82.98	31.90
2011-12	29.55	2.65	14.27	8.60	26.63
2012-13	52.38	3.38	14.37	53.46	30.22
2013-14	97.36	8.21	7.28	19.90	36.99
2014-15	114.23	9.33	5.57	40.60	37.82
2015-16	8.88	1.74	19.56	53.57	25.55
Mean	**37.48**	**3.80**	**2.26**	**-3.81**	**34.70**
SD	**42.35**	**4.31**	**21.93**	**103.57**	**7.87**
CV	**112.99**	**113.40**	**969.32**	**-2720.08**	**22.68**
CAGR	**21.88%**	**-10.35%**	**0.02%**	**-3.68%**	**-7.90%**

Table II shows the computation of solvency ratios of Indigo Airlines respectively. Debt equity ratio was 1.82 times in 2007 and 8.88 times in 2016. The ratio was highest in 2015 (114.23 times) and lowest in 2008 (0.87 times). The average of debt equity ratio has been found 37.48 times. The co-efficient of variation was 112.99%. Debt equity ratio has been decreased from 114.23 times to 8.88 times in 2016 with a compound annual growth rate of 21.88%. Debt to total shareholders' fund has been found negative in the first two year due to the negative balance of reserves in shareholders' funds. The highest and lowest ratio was 9.33 times and -2.92 times respectively. The mean and co-efficient of variation has been found 3.80 times and 113.40% respectively. Proprietary ratio was highest in 2016 (19.56%). The average and compound annual growth rate of proprietary ratio was 2.26% and 0.02% respectively. In the first two years, return on capital employed was negative due to heavy losses incurred by the airline. This is why the mean value as well as the compound annual growth rate has been found negative. The highest return on capital employed was 82.98% in 2011.

Debt to total liabilities shows a fluctuating trend throughout the study period. It has negative CAGR (-7.90%) as the ratio has been decreased from 49.36% to 25.55%.

Table III: Financial Data of Jet Airways

Year	Debt	Equity	Total Shareholders' Funds	Total Assets	EBIT	Capital Employed	Total Liabilities
2004-05	2964.84	86.33	2010.16	4685.05	835.78	3574.12	6085.93
2005-06	4895.60	86.33	2305.88	8663.51	963.79	7334.91	8530.08
2006-07	6056.30	86.33	2237.28	10656.48	291.44	8555.71	10394.35
2007-08	12015.04	86.33	4551.68	19229.89	80.08	15251.60	20545.01
2008-09	16323.53	86.33	3156.98	21195.81	268.32	17735.51	22940.81
2009-10	13896.98	86.33	2642.00	18511.72	525.37	14793.98	20256.72
2010-11	13536.24	86.33	2604.36	16730.94	1166.25	12344.26	20653.75
2011-12	13118.61	86.33	1180.86	17124.70	-284.10	11066.11	20879.16
2012-13	11248.95	86.33	-342.53	15111.61	633.48	7469.22	19038.99
2013-14	10448.32	113.60	-2227.77	14009.61	-2670.81	4060.21	18749.21
2014-15	11902.67	113.60	-4090.28	15180.99	-929.65	5015.26	19374.45
2015-16	10812.86	113.60	-3014.00	15057.82	2041.67	4383.64	19712.92
Mean	**10601.66**	**93.15**	**917.89**	**14679.84**	**243.47**	**9298.71**	**17263.45**
SD	**3980.22**	**12.33**	**2713.43**	**4683.99**	**1181.81**	**4858.80**	**5565.62**
CV	**37.54**	**13.24**	**295.62**	**31.91**	**485.41**	**52.25**	**32.24**
CAGR	**12.48%**	**2.53%**	**-203.75%**	**11.20%**	**8.46%**	**1.87%**	**11.28%**

Table III shows the financial data relating to the solvency position of Jet Airways. Ratio analysis of this airline is shown by the table IV. As per the data of the table, debt has been found in increasing trend up to the year 2009 after that fluctuation have been evidenced in debt. Average of debt has been found Rs. 10601.66 cr. with a CAGR of 12.48%. Second variable is the equity, it has been found as a most consistent variable. The co-efficient of variation for equity is 13.24%. It is minimum for the airline as compared to other variables. Average of equity has been found Rs. 93.15 cr. with a CAGRof 2.53%. When the debt and equity are compared, it can be concluded that the airline is more dependent on debt. It may be positive for the airline as this proportion of debt and equity can reduce the overall cost but side by side it increases risk factor for the stakeholders. Total shareholders' fund was Rs. 2010.16 cr. in the year 2005 and Rs. -3014.00 cr. in the year 2016. Average and CAGR of total shareholders' fund for this airline are Rs. 917.89 cr. and -203.75% respectively. A mixed trend has been found in the total assets of the airline. In the year 2005 EBIT of the airline was Rs. 835.78 cr. and in the year 2016 it is Rs. 2041.67 cr. with a mean value and CAGR of Rs. 243.47 cr. and 8.46% respectively.

Table IV: Ratio Analysis of Jet Airways

Year	Debt to Equity Ratio	Debt to Total Shareholders' Funds Ratio	Proprietary Ratio (%age)	Return on Capital Employed (%age)	Debt to Total Liabilities Ratio (%age)
2004-05	34.34	1.47	42.91	23.38	48.72
2005-06	56.71	2.12	26.62	13.14	57.39
2006-07	70.15	2.71	20.99	3.41	58.27
2007-08	139.18	2.64	23.67	0.53	58.48
2008-09	189.08	5.17	14.89	1.51	71.15
2009-10	160.98	5.26	14.27	3.55	68.60
2010-11	156.80	5.20	15.57	9.45	65.54
2011-12	151.96	11.11	6.90	-2.57	62.83
2012-13	130.30	-32.84	-2.27	8.48	59.08
2013-14	91.97	-4.69	-15.90	-65.78	55.73
2014-15	104.78	-2.91	-26.94	-18.54	61.43
2015-16	95.18	-3.59	-20.02	46.57	54.85
Mean	**115.12**	**-0.70**	**8.39**	**1.93**	**60.17**
SD	**47.17**	**11.04**	**20.90**	**26.47**	**6.21**
CV	**40.98**	**-1588.02**	**249.11**	**1372.90**	**10.32**
CAGR	**9.71%**	**-208.42%**	**-193.30%**	**6.46%**	**1.08%**

Table IV depicts the ratio analysis of Jet Airways. Debt equity ratio was 34.34 times in 2005 and 95.18 times in 2016. The highest debt equity ratio was 189.08 times in 2009 which clearly indicates the dependency of airline over debt for having funds as well as depicts the highly risky position of airline. The average of debt equity ratio has been found 115.12 times. The compound annual growth rate was 9.71%. Debt to total shareholders' funds has been found good for first few years. But later on, it has been turned into negative figures due to negative balance of reserves and surplus in shareholders' funds. Proprietary ratio was highest in 2005 (42.91%). The lowest positive proprietary ratio was in 2012 (6.90%) and after 2012 it became negative. Return on capital employed ratio was quite good in first few years, and then

found negative. The highest return on capital employed was 46.57% in 2016. The mean value and compound annual growth rate of return on capital employed ratio was 1.93% and 6.46% respectively. Debt to total liabilities ratio was 48.72% in 2005. It shows an increasing trend up to 2009 and then shows a decreasing trend up to 2014. It has been decreased from 61.43% to 54.85% within the last two years with a compound annual growth rate of 1.08%.

Table V: Financial Data of Air India

Year	Debt	Equity	Total Shareholders' Funds	Total Assets	EBIT	Capital Employed	Total Liabilities
2007-08	18413.40	145.00	5813.13	28158.68	-2597.04	22949.07	29436.14
2008-09	19242.44	145.00	208.35	33253.42	-5525.36	28021.04	36371.92
2009-10	25066.82	945.00	-4481.61	37606.43	-3118.09	30966.77	40580.83
2010-11	42526.36	2145.00	-10128.79	36808.12	-3623.18	29628.94	40901.29
2011-12	45683.72	3345.00	-16443.17	37671.33	-3673.67	25644.34	42671.61
2012-13	49126.06	9345.00	-15997.71	40484.50	-1621.20	28207.50	46973.62
2013-14	50645.51	14345.00	-16646.59	39794.19	-2208.26	27697.99	47604.35
2014-15	51367.08	17178.00	-16260.67	39992.61	-1831.63	28146.70	48164.09
Mean	**37758.92**	**5949.13**	**-9242.13**	**36721.16**	**-3024.80**	**27657.79**	**41587.98**
SD	**14363.58**	**6780.01**	**8791.23**	**4163.51**	**1269.65**	**2441.77**	**6391.75**
CV	**38.04**	**113.97**	**-95.12**	**11.34**	**-41.97**	**8.83**	**15.37**
CAGR	**15.78%**	**97.80%**	**-215.83%**	**5.14%**	**-4.87%**	**2.96%**	**7.29%**

As per the Table V, there is an increasing trend has been found in the use of debt during the period of study. The average of debt has been found Rs. 37758.92 cr. with CAGR of 15.78%. Equity for this airline has also been found in an increasing trend. It was Rs. 145 cr. in 2007 and Rs. 17178.00 cr. in the year 2016. CAGR of equity for this airline has been found maximum as compared the CAGR of other variables of the study. It can be said that the airline is more dependent on debt as compared to equity. Total shareholders' fund was negative from the year 2010 to the year 2016. This is the reason behind the negative Average (Rs. -9242.13 cr.) and CAGR (-215.83%) of total shareholders' fund. A fluctuating trend has been found in the total assets of the airline. Average of total assets has been found Rs. 36721.16 cr. with a compound annual growth rate of 5.14%. EBIT for the airline has been found negative throughout the study period. It resulted in the negative mean value (Rs. -3024.80 cr.) and CAGR (-4.87%). Capital employed was Rs. 22949.07 cr. in the year 2008 and Rs. 28146.70 cr. in the year 2015. The co-efficient of variation has been found minimum (8.83%) in case of capital employed as compared to other variables. So, it can be said that capital employed is more consistent for this airline. Total liabilities have been found in increasing trend during the study period. Total liabilities were Rs. 29436.14 cr. in the year 2008 and Rs. 48164.09 cr. in the year 2015. The average of total assets for the airline has been found Rs. 36721.16 cr. with a CAGR of 5.14%. Total Assets have been found growing with a CAGR of 5.14% and the Total Liabilities with CAGR of 7.29%. It is not a positive sign for the airline.

Table VI: Ratio Analysis of Air India

Year	Debt to Equity Ratio	Debt to Total Shareholders' Funds	Proprietary Ratio (%age)	Return on Capital Employed (%age)	Debt to Total Liabilities Ratio (%age)
2007-08	126.99	3.17	20.64	-11.32	62.55
2008-09	132.71	92.36	0.63	-19.72	52.90
2009-10	26.53	-5.59	-11.92	-10.07	61.77
2010-11	19.83	-4.20	-27.52	-12.23	103.97
2011-12	13.66	-2.78	-43.65	-14.33	107.06
2012-13	5.26	-3.07	-39.52	-5.75	104.58
2013-14	3.53	-3.04	-41.83	-7.97	106.39
2014-15	2.99	-3.16	-40.66	-6.51	106.65
Mean	**41.44**	**9.21**	**-22.98**	**-10.99**	**88.24**
SD	**55.21**	**33.69**	**23.82**	**4.57**	**24.34**
CV	**133.24**	**365.82**	**-103.67**	**-41.64**	**27.58**
CAGR	**-41.46%**	**-199.96%**	**-210.17%**	**-7.60%**	**7.92%**

Table VI depicts that Debt equity ratio has been found 126.99 times in 2008. The data shows a high debt equity ratio in the first few years which means the airline was dependent over debt funding in the beginning. The average debt equity ratio has been found 41.44 times. The compound annual growth rate has been traced -41.46%. The ratio of Debt to total shareholders' funds has been found good for the period of initial 2 years (2008 & 2009) and then after, it has been turned into negative figures. The main reason behind this is the negative balance of reserves and surplus in shareholders' funds. Proprietary ratio was highest in the year 2008, the value of proprietary ratio has been found 20.64%. Return on capital employed ratio of this Airline has not been found good due to the negative balance of EBIT. The mean value has been found -10.99% with a compound annual growth rate of -7.60%. Debt to total liabilities ratio was maximum in the year 2012 (107.06%). The average Debt to total liability ratio has been found 88.24% with a CAGR of 7.92%. When the overall performance of Air India is considered, it shows four negative values out of five ratios for compound annual growth rate. So, it can be said that the growth in performance of Air India airlines is not satisfactory. Debt to total liabilities ratio has been found more consistent than the other four ratios of Air India as it has least coefficient of variation (27.58%).

Table VII: Financial Data of Spice Jet

Year	Debt	Equity	Total Shareholders' Funds	Total Assets	EBIT	Capital Employed	Total Liabilities
2004-05	112.04	154.47	-36.78	164.29	-27.45	74.10	165.45
2005-06	420.73	184.34	-12.77	565.28	-35.95	398.58	574.66
2006-07	432.15	240.65	184.58	1225.57	-65.50	535.51	1306.79
2007-08	531.61	240.65	27.98	1351.61	-117.37	559.23	1351.97
2008-09	488.81	241.02	-429.45	751.97	-333.23	59.36	751.97
2009-10	438.29	241.88	-344.08	986.96	79.20	94.21	986.96
2010-11	85.00	405.38	321.11	368.75	137.20	-309.54	1109.61
2011-12	1008.58	441.45	-147.23	1284.58	-551.74	269.45	1970.34
2012-13	1802.19	484.35	-224.44	2580.40	-74.21	1221.68	3071.01
2013-14	1708.92	535.28	-994.48	2347.01	-863.90	269.93	2947.02
2014-15	1477.34	599.45	-1085.93	2261.98	-522.02	257.58	2606.59
2015-16	1232.46	599.45	-631.62	2256.23	525.14	457.46	2703.80
Mean	**811.51**	**364.03**	**-281.09**	**1345.39**	**-154.15**	**323.96**	**1628.85**
SD	**609.14**	**164.88**	**440.39**	**834.18**	**366.26**	**372.49**	**996.78**
CV	**75.06**	**45.29**	**-156.67**	**62.00**	**-237.60**	**114.98**	**61.20**
CAGR	**24.36%**	**13.12%**	**-214.65%**	**26.89%**	**37.06%**	**18.00%**	**28.91%**

Table VII shows that there is a mixed trend in the debt used by the airline with an average of Rs. 811.51 cr. CAGR for debt has been found 24.36%. Equity for this airline has been in increasing trend throughout the period of study. The average and CAGR for equity are Rs. 364.03 cr. and 13.12% respectively. The average of total shareholders' fund has been found Rs. -281.09 cr. with a CAGR of -214.65%. Average of total assets has been found Rs. 1345.39 cr. with a compound annual growth rate of 26.89%. In the year 2005, total assets were Rs. 164.29 cr. and Rs. 2256.23 cr. in the year 2016. It is a huge growth in the total assets. Average EBIT for the airline has been found Rs. -154.15 cr. Capital employed has been found maximum at Rs. 1221.68 cr. in the year 2013. The average of total liabilities has been found Rs. 1628.85 cr. with a CAGR of 28.91%.

Table VIII: Ratio Analysis of Spice Jet

Year	Debt to Equity Ratio	Debt to Shareholders Funds	Proprietary Ratio (%age)	Return on Capital Employed (%age)	Debt to Total Liabilities Ratio (%age)
2004-05	0.73	-3.05	-22.39	-37.04	67.72
2005-06	2.28	-32.95	-2.26	-9.02	73.21
2006-07	1.80	2.34	15.06	-12.23	33.07
2007-08	2.21	19.00	2.07	-20.99	39.32
2008-09	2.03	-1.14	-57.11	-561.37	65.00
2009-10	1.81	-1.27	-34.86	84.07	44.41
2010-11	0.21	0.26	87.08	-44.32	7.66
2011-12	2.28	-6.85	-11.46	-204.77	51.19
2012-13	3.72	-8.03	-8.70	-6.07	58.68
2013-14	3.19	-1.72	-42.37	-320.05	57.99
2014-15	2.46	-1.36	-48.01	-202.66	56.68
2015-16	2.06	-1.95	-27.99	114.79	45.58
Mean	**2.07**	**-3.06**	**-12.58**	**-101.64**	**50.04**
SD	**0.94**	**11.57**	**38.13**	**190.91**	**17.86**
CV	**45.39**	**-378.14**	**-303.11**	**-187.83**	**35.68**
CAGR	**9.93%**	**-198.00%**	**-207.13%**	**5.33%**	**-3.53%**

Table VIII shows the computation of solvency ratios of Spice Jet Airlines. Debt equity ratio was 3.72 times in 2013 and 0.21 times in 2011 and these were the highest and lowest values of ratio during the study period. The average of debt equity ratio has been found 2.07 times with a CAGR 9.93%. The co-efficient of variation was 45.39%. Debt to total shareholders' fund has been found negative throughout the study period except the years 2007, 2008 and 2011. The highest and lowest ratio was 19 times (2008) and -32.95 times (2006) respectively. The mean and co-efficient of variation has been found -3.06 times and -378.14% respectively. Proprietary ratio was highest in 2011 (87.08%). The average and compound annual growth rate of proprietary ratio was -12.58% and -207.13% respectively. Return on capital employed ratio was negative during the period of study excluding the years 2010 & 2016. Due to these negative values, the average of this ratio has also been found negative. The highest return on capital employed was 114.79% in 2016. Debt to total liabilities shows a mixed trend during the study period. It has negative CAGR (-3.53%) as the ratio has been decreased from 67.72% to 45.58%. Debt to total liabilities ratio has been found as more consistent than the other four ratios of Spice Jet Airlines as it has minimum coefficient of variation (35.68%).

Table IX: Financial Data of Go Airlines

Year	Debt	Equity	Total Shareholders' Funds	Total Assets	EBIT	Capital Employed	Total Liabilities
2006-07	1071.00	700.00	-2260.10	1205.40	-2368.40	-1189.10	1205.40
2007-08	2885.00	700.00	-4007.70	2321.20	-1740.30	-1122.70	2321.20
2008-09	5960.40	700.00	-4233.30	2277.10	-225.50	-931.60	4935.80
2009-10	7093.90	700.00	-5132.10	2790.40	-370.80	-616.10	5368.30
2010-11	7681.50	700.00	-4531.60	4375.00	1477.60	564.50	6960.40
2011-12	8128.90	700.00	-5868.90	4306.20	-798.80	-1369.30	7964.80
2012-13	9742.60	700.00	-4276.50	8552.80	2553.20	407.40	13656.90
2013-14	15167.40	1000.00	-3929.70	10342.40	1206.50	4213.70	17420.50
2014-15	20357.50	1000.00	-3657.30	14240.80	1862.00	7095.00	23912.60
2015-16	24919.90	1000.00	-2154.90	21436.60	3359.60	13291.90	30996.50
Mean	**10300.81**	**790.00**	**-4005.21**	**7184.79**	**495.51**	**2034.37**	**11474.24**
SD	**7599.23**	**144.91**	**1142.21**	**6529.66**	**1883.28**	**4826.59**	**9876.49**
CV	**73.77**	**18.34**	**-28.52**	**90.88**	**380.07**	**237.25**	**86.08**
CAGR	**41.86%**	**4.04%**	**-0.53%**	**37.69%**	**17.85%**	**88.10%**	**43.45%**

Table IX shows the financial data relating to the solvency position of Go Airlines. As per the data of the table, there is an increasing trend in the debt used by the airline with an average of Rs. 10300.81 cr. CAGR for debt has been found 41.86%. For the starting 7 years, equity remained Rs. 700 cr. after that it is Rs. 1000 cr. Total shareholders' fund were negative throughout the study period. Average and CAGR of total shareholders' fund for this airline have been found Rs. -4005.21 cr. and -053% respectively. An increasing trend has been found in the total assets of the airline except in the year 2012. Average of total assets has been found Rs. 7184.79 cr. with a compound annual growth rate of 37.69%. Improvement has been recorded in EBIT of the airline as the value of EBIT in the year 2007 was Rs. -2368.40 cr and Rs. 3359.60 cr. in the year 2016. It is a big change in the EBIT and a positive sign for operating efficiency of the airlines. Mean value and CAGR for EBIT has been found Rs. 495.51 cr. and 17.85% respectively. Average capital employed has been found Rs. 2034.37 cr. with a CAGR of 88.10%. Total liabilities have been in increasing trend during the study period. The CAGR of Total Assets (37.69%) has been found less as compared to the CAGR of Total Liabilities (43.45%).

Table X: Ratio Analysis of Go Airlines

Year	Debt to Equity Ratio	Debt to Total Shareholders' funds	Proprietary Ratio (%age)	Return on Capital Employed (%age)	Debt to Total Liabilities Ratio (%age)
2006-07	1.53	-0.47	-187.50	-199.18	88.85
2007-08	4.12	-0.72	-172.66	-155.01	124.29
2008-09	8.51	-1.41	-185.91	-24.21	120.76
2009-10	10.13	-1.38	-183.92	-60.19	132.14
2010-11	10.97	-1.70	-103.58	261.75	110.36
2011-12	11.61	-1.39	-136.29	-58.34	102.06
2012-13	13.92	-2.28	-50.00	626.71	71.34
2013-14	15.17	-3.86	-38.00	28.63	87.07
2014-15	20.36	-5.57	-25.68	26.24	85.13
2015-16	24.92	-11.56	-10.05	25.28	80.40
Mean	**12.12**	**-3.03**	**-109.36**	**47.17**	**100.24**
SD	**6.98**	**3.37**	**72.85**	**238.63**	**20.77**
CV	**57.59**	**-111.11**	**-66.62**	**505.91**	**20.72**
CAGR	**36.35%**	**42.61%**	**-27.75%**	**-37.34%**	**-1.10%**

Table X represents the financial data and ratio analysis of Go Airlines. Debt equity ratio of the airlines was 1.53 times in 2007 and 24.92 times in 2016. It is also the highest Debt equity ratio during the study period. It can be concluded that the airline is more dependent on the borrowed capital. It is not a positive sign for the airline as it increases risk factor. This risk arises due to the shifting of control of airline in the hands of money lenders. The average of debt equity ratio has been found 12.12 times. Debts to total shareholders' funds ratio and proprietary ratio have been found negative for all the years of study. The average of Debt to total shareholders' funds ratio and proprietary ratio has been found -3.03% and 109.36% respectively. Improvement has been witnessed in the return on capital employed as it has become positive from a negative value. The highest return on capital employed was 626.71% in 2013 and lowest in the year 2007 (-199.18%). The mean value and compound annual growth rate of return on capital employed ratio was 47.17% and -37.34% respectively. Debt to total liabilities ratio has been fluctuated throughout the study period. It was 88.85% in 2007 and after reaching highest point (132.14%) in the year 2010, it started decreasing. It was at 80.40% in the year 2016. The average debt to total liabilities ratio has been found 100.24% with a CAGR of -1.10%. Return on capital employed

of the airline has been found fluctuating at maximum and the debt to total liability ratio has been found consistent as the coefficient of variation is highest (505.91%) in case of return on capital employed and lowest (20.72%) in case of debt to total liability ratio.

CONCLUSION

The Indian aviation sector is one of the fastest growing aviation industries in the world. There is too much potential of growth in this sector. The growth of this sector will definitely affect the growth of Indian Economy positively. In the present study, the solvency performance of five airlines has been evaluated with the help of ratio analysis. It has been found from the present study that the solvency position of the airlines is not satisfactory as the compound annual growth rate of for maximum airlines is negative. All the selected airlines have been found more dependent on borrowed capital as compared to the owned capital. The debt to total shareholders' fund ratio has been found more consistent in all the cases as the co-efficient of variation is least for this ratio. It can be suggested here that the airlines should try to improve their solvency condition and they should try to reduce burden of debt by issuing new owned capital.

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