



A Study On Evaluating Financial Performance Metrics At Aviation Industry

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ABSTRACT

The purpose of this research is to examine the financial performance of the Indian aviation sector from 2018-2019 to 2022-2023. Using financial tools like ratio analysis, trend percentage analysis, and the Altman Z-score model, the paper assesses the key financial metrics such as liquidity, profitability, solvency, and risk-adjusted returns. The broader aviation sector was severely impacted by the COVID-19 pandemic due to steep loss of cash flow and profitability. There was a remarkable bounce back by FM 22-23, w.r.t. ROE, EPS, as well as Gross profit margins. The results highlight the significance of financial constraint, risk management and planning for sustainability in this capital-intensive and highly regulated industry.

Index Terms - Altman Z-score, Liquidity, Profitability, Solvency and Risk-adjusted returns

I. INTRODUCTION

Aviation is a lifeline for the world's transportation, trade, and tourism. Ground handling and support service are a crucial pilot of this cycle of activity which sees aircraft turned around quickly. The financial performance of this industry will be a barometer of how well it can deal with operational efficiency, external shocks, and stakeholder value. This article aims to analyze some of the key financial ratios among the aviation firms to offer information on their soundness and strategic endurance.

II. OBJECTIVES OF THE STUDY

- To examine the short-term solvency of aviation companies.
- To understand the role of debt in funding growth.
- To appraise of the invariability of profitability and the performance of the long run.
- To investigate the interconnections between financial indicators and risk control.

III. SCOPE OF THE STUDY

The scope of this study is limited to the analysis of financial performance in the case of Indian aviation service organizations. The analysis is limited five financial years from 2018-19 to 2022-23 and concentrated liquidity, solvency and profitability ratio. It considers how these indicators influence financial planning, risk reduction and investor confidence in and beyond the time of the COVID-19 crisis.

IV. REVIEW OF LITERATURE

Liao & Yu (2021), Liao and Yu (2021) emphasized the importance of traditional financial performance metrics such as Return on Investment (ROI) and Earnings Before Interest and Taxes (EBIT). These metrics, widely used across various sectors, remain critical in analyzing the financial health of companies, including service-oriented companies like AIASL. AIASL, which operates in airport services, can utilize these indicators to gauge its profitability and operational efficiency in an industry that is highly sensitive to economic fluctuations, such as those caused by the COVID-19 pandemic.

Bianchi et al. (2018), Bianchi et al. (2018) discussed the growing need to incorporate non-financial performance metrics alongside traditional financial measures. For AIASL, this would include customer satisfaction, service quality, and employee engagement, which can directly influence profitability. Given that AIASL is involved in service sectors like ground handling and passenger services, non-financial metrics are key to understanding the company's long-term sustainability and competitive positioning in the airport services market.

Pereira & Ladeira (2019), Pereira & Ladeira (2019) explored the alignment of financial metrics with strategic goals. AIASL's strategic objectives, such as improving operational efficiency and expanding its market share in the airport services sector, can be assessed through profitability metrics like Operating Profit Margin and Net Profit Margin. These metrics help align financial performance with broader corporate strategy, ensuring that AIASL's financial health reflects its operational and strategic priorities.

Büyüközkan & Göçer (2020), Büyüközkan & Göçer (2020) introduced the Multi-Criteria Decision-Making (MCDM) models to improve performance evaluations. For AIASL, applying MCDM methods could provide a more comprehensive understanding of financial performance by integrating both financial metrics (such as Return on Equity and Liquidity Ratios) and operational factors, such as customer service efficiency and staff productivity. These models could also help in evaluating financial health in the face of external challenges, such as fluctuating airline passenger traffic.

V. RESEARCH METHODOLOGY

Design This is a descriptive and analytical study based on secondary data retrieved from financial statements and official databases.

Source of Data: Secondary via the financial statements of airline companies during 2018–2023.

Tools Used:

- Ratio Analysis

- Trend Percentage Analysis
- Altman Z-Score Model

5.1 Ratio Analysis (Liquidity, Profitability, Solvency):

Current Ratio- Although a current ratio which is less than 1 may indicate liquidity problems, but a ratio above 1 means that the business has enough assets to cover its current liabilities. This ratio is important when you analyze a firm's working capital management and its short-term financial health.

$$\text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$$

Gross Profit Margin: A financial metric known as the gross profit margin measures how much of every dollar made by a business is left over after subtracting the cost of goods sold (COGS) from revenues. It measures how good a business is at producing and selling its products and services.

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Revenue}}$$

Return on Equity (ROE): A measure of financial performance known as return on equity (ROE) shows how well a company uses shareholders' equity to generate net income. It indicates how much money a business has earned from the money that its owners or shareholders (not creditors) have invested in it.

$$\text{ROE} = \frac{\text{Net Profit}}{\text{Total Equity}} \times 100$$

5.2 Trend Percentage Analysis:

Trend percentage analysis, a technique for analyzing financial data by comparing changes in financial data over time, is illustrative of the use of the Table and related computer programs. When financial accounts are compared year after year, investors and companies alike can identify trends in growth, financial stability, and areas of concern. This is useful when studying cash flow, balance and income statements to detect trends in performance.

$$\text{Trend Percentage} = \frac{\text{Current Year Value}}{\text{Base Year Value}}$$

5.3 Altman Z-Score:

Altman Z-Score was created by Edward Altman, and provides common measure of company's liquidity, profitability, leverage, solvency, and efficiency. The Z-Score serves as a way to get an understanding of the financial health of a company, with a higher result meaning financial stability and a lower result financial distress. It is a widely used tool among investors, analysts and lenders in assessing business risk, particularly in corporate credit and investment decisions.

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1.0X5$$

VI. DATA ANALYSIS AND INTERPRETATIONS

TABLE: 1 CURRENT RATIO

Year	Current Assets (₹ Million)	Current Liabilities (₹ Million)	Current Ratio
2018-19	3,747.51	4,451.61	0.84
2019-20	4,402.73	5,201.14	0.85
2020-21	3,526.17	7,347.26	0.48
2021-22	4,187.95	5,904.35	0.71
2022-23	5,642.29	6,148.25	0.92

INTERPRETATION:

The computation of current ratio from 2018–19 to 2022–23 shows that the firm was facing liquidity problem and did not reach up to the standard position of 1. A sharp decline to 0.48 in 2020–21 levelled a significant financial strain that most likely led to losses. Still, there was slight progress in 2021–2022, and by 2022–2023, the ratio hit 0.92, marking a significant rebound. This means more value for your money, improved financial performance and improved short-term financial health at the end of the period.

FINDINGS:

The company was not in a position to meet its short-term liabilities as is reflected from its current ratio which was less than 1 and reached to its lowest at 0.48 in 2020–21. While this ratio had risen to 0.92 by 2022–23, it needs to be further strengthened to service short-term commitments.

FIGURE: 1 CURRENT RATIO

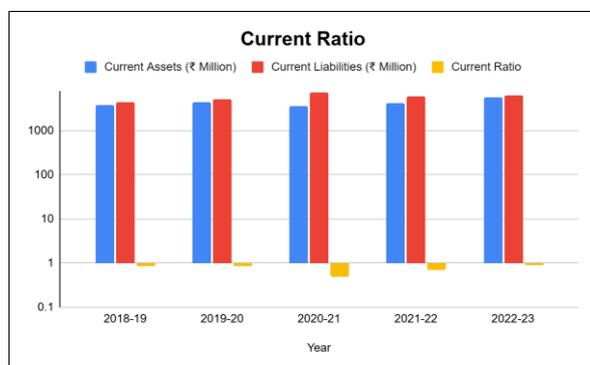


TABLE: 2 GROSS PROFIT MARGIN

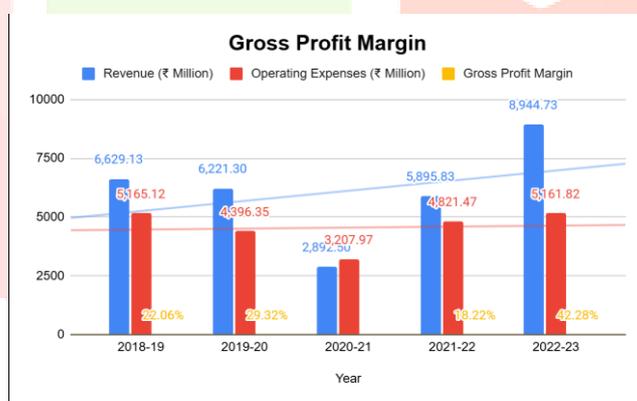
Year	Revenue (₹ Million)	Operating Expenses (₹ Million)	Gross Profit Margin
2018-19	6,629.13	5,165.12	22.06%
2019-20	6,221.30	4,396.35	29.32%
2020-21	2,892.50	3,207.97	-10.90% (Loss)
2021-22	5,895.83	4,821.47	18.22%
2022-23	8,944.73	5,161.82	42.28%

INTERPRETATION:

Between 2018–19 and 2022–23, there was a net upturn in profitability, although the company actually reported a negative gross margin in 2020–21, which in effect means it made a loss. It recovered significantly in 2021–2022 and was up to 42.28% by 2022–2023, which shows healthy growth and improved control on cost. Overall, it recovered well from a very tough period.

FINDINGS:

The business first made a marginally profit before taking a substantial loss on its gross profit margin in 2020–21. But it rebounded quickly in the subsequent two years, and by 2022–2023, it was in the black, due to better cost control and greater revenue growth.

FIGURE: 2 GROSS PROFIT MARGIN**TABLE: 3 RETURN ON EQUITY**

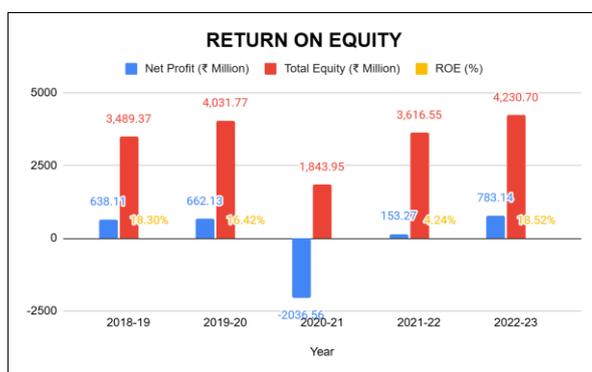
Year	Net Profit (₹ Million)	Total Equity (₹ Million)	ROE (%)
2018-19	638.11	3,489.37	18.30%
2019-20	662.13	4,031.77	16.42%
2020-21	(2,036.56)	1,843.95	-110.49% (Loss)
2021-22	153.27	3,616.55	4.24%
2022-23	783.14	4,230.70	18.52%

INTERPRETATION:

Net income, book equity, and return on equity (ROE) are shown in the table summarizing the company's financial performance over the past five years. The company made a huge loss in 2020–21, leading to an ROE of -110.49%. But it did well in 2018–19 (18.30% ROE) and 2022–23 (18.52% ROE). ROE ranged from 16.42% in 2019–20 to 4.24% in 2021–22, with marked reduction in 2021–22. The table provides a Measure for total volatility and rebounding in 2022–2023 after the shock in 2020–2021.

FINDINGS:

It performed very well in 2018-19 and 2022-23, but in 2020-21 it posted a large loss, bringing a negative ROE. Performance was mixed during the intervening years, but 2021–22 was a disaster. The company was volatile over all, but it bounced back in 2022–23.

FIGURE: 3 RETURN ON EQUITY**TABLE: 4 TREND PERCENTAGE ANALYSIS**

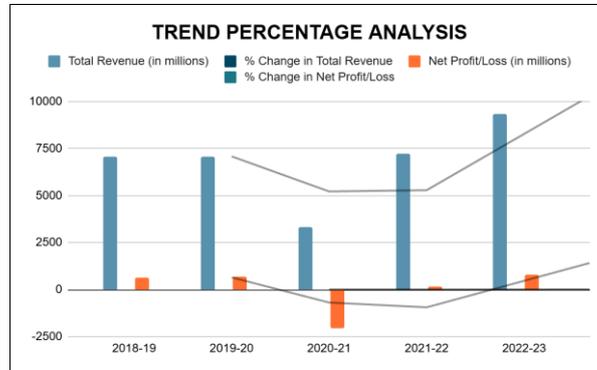
Financial Year	Total Revenue (in millions)	% Change in Total Revenue	Net Profit/Loss (in millions)	% Change in Net Profit/Loss
2018-19	7,071.64	-	638.11	-
2019-20	7,088.01	0.23%	662.13	3.76%
2020-21	3,341.15	-52.86%	-2,036.56	-407.56%
2021-22	7,222.51	116.14%	153.27	-119.92%
2022-23	9,322.98	29.08%	783.14	410.95%

INTERPRETATION:

In the following table, the company's revenue and net profit/loss for the last five years are shown. There was some growth in revenue and profit in 2019–20. The business incurred heavy losses in 2020–21 on account of 52.86% decline in revenue and 407.56% drop in balance sheet profit. Revenue for 2021-22 was up 116.14%, but its net profit increased only by a bit more. The company's sales jumped by 29.08% and the net profit by 410.95% 2022–2023.

FINDINGS:

The results reveal a strong general recovery across the curve, with small revenue growth and limited cogs growth in 2019-20, a large financial drop in 2020-21 but a robust revenue recovery and modest profit recovery in 2021-22, and significant revenue and profit expansion in 2022-23.

FIGURE:4 TREND PERCENTAGE ANALYSIS**TABLE: 5 ALTMAN Z-SCORE ANALYSIS**

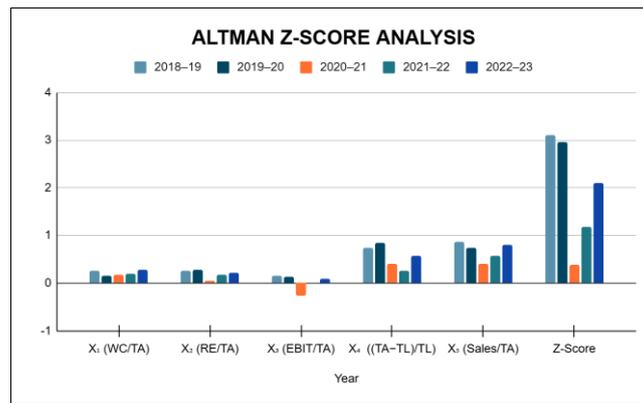
Year	X ₁ (WC/TA)	X ₂ (RE/TA)	X ₃ (EBIT/TA)	X ₄ ((TA-TL)/TL)	X ₅ (Sales/TA)	Z-Score
2018-19	0.268	0.262	0.155	0.735	0.858	3.096
2019-20	0.145	0.274	0.139	0.849	0.734	2.964
2020-21	0.167	0.055	-0.265	0.411	0.397	0.394
2021-22	0.204	0.184	-0.002	0.257	0.57	1.189
2022-23	0.276	0.225	0.083	0.57	0.8	2.112

INTERPRETATION:

The Altman Z-Score reflects that the company swung from healthy (in 2018-19) to distress (in 2020-21), and recovered gradually in the ensuing years, before settling into a moderately stable state in 2022-23.

FINDING:

AI Airport Services Ltd. Despite setbacks due to COVID-19, AI Airport Services Ltd. has witnessed momentum recovery, reflected in enhanced profitability and efficiency that has returned its Z score to the grey zone. The business is not yet cash flow positive, but moving in the right direction.

FIGURE: 5 ALTMAN Z-SCORE ANALYSIS

VII. SUMMARY OF FINDINGS

- Aviation Companies had offered some serious difficulties in 2020–21.
- Profitability ratios, such as Return on Equity (ROE), Earnings per Share (EPS), and Net Profit Margin, collapsed during the pandemic, only to recover in 2022–23.
- The sustainability was moderate and debt dependency also differed from year to year.
- Z-Score interpretation There is a indication of Financial recovery, however, it has not yet reached to stability.

VIII. SUGGESTIONS

- Increase liquidity through improved receivables management and operational expense control.
- Leverage advanced analytics to monitor financial performance in real time.
- Engage in sustainability initiatives to keep overheads down and appeal to ESG-targeted investors.
- Create new income streams to hedge against potential future risk.

IX. CONCLUSION

The period following COVID-19 saw a resilient aviation industry, with strong recovery in financial performance indicators by FY 2022–23. Nevertheless, a brief return to financial fragility in 2020–21, points to how the sector's stability remains sensitive to international developments. Financial performance indicators like ROE, EPS, current ratio, and the Altman Z-score provide considerable guidance in terms of evaluating the progress made, making strategic decisions, and ultimately staying in business for the long haul. Alert monitoring and adaptive financial planning are the keys to sustaining competitiveness and financial viability in this very cyclical business.

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