

## **Revisit Applicability of Forensic Accounting: A case study of Kingfisher Airlines and Indigo Airlines**

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**Abstract:** Over last decades, organisations of all sizes and types have witnessed frauds. These frauds have not only impacted the capital markets negatively but have also contributed to a loss of shareholders value. In some cases companies have also gone bankrupt. Kingfisher Airlines is one such example. Therefore, it is necessary to have a clear understanding of the treat that corporate and financial frauds pose.

The purpose of our case study is to explore possibility of Financial Reporting Frauds using the ratio analysis technique. To achieve this objective an in-depth analysis of four years financial statements (2010-2013) is done for two companies from aviation industry, namely Kingfisher Airlines and IndiGo Airlines. Ratio analysis is used for the purpose of analysing the financial data. 21 key ratios were taken for the purpose of ratio analysis. Further, Altman Z score is also calculated to find out the financial viability of the company. Comparative analysis is performed to find out whether the difference between the two indicates any red flags as early signals of fraud.

The result of the comparative study shows that the company's financial statements (Kingfisher Airlines) have been indicating serious red flags in the said period of 4 years. This should have been addressed to avoid such cases of business failure and possible fraudulent behaviour. Thus financial ratios are important tool to deduct fraud and predict the possibility of fraudulent financial statements. Further, comparative study between the two companies shows that they can also be used for indentifying the fraudulent financial reporting and distinguishing it from the non fraudulent one.

**Index Terms:** Kingfisher Airlines, IndiGo Airlines, ratios, financial statement fraud, Altman Z score, red flags, Fraud detection

### **Introduction:**

In today's highly buoyant economic environment, both, the opportunity and incentive to commit fraud have raised. Instances of money laundering, asset misappropriation, accounting fraud and cybercrime are expanding by the day. With the advancement in technology, frauds have taken the shape and styles of organised crime, making use of increasingly sophisticated methods of execution.

A large number of fraud cases and alleged auditors negligence has been witnessed over the past decade. Kingfisher Airlines, DHFL and IL & FS are to name a few. For many people, scandals taking place in corporate sector of India are synonymous with Financial Reporting Fraud. According to ACFE, Frauds can be divided into three main parts: "Asset misappropriation, fraudulent financial reporting, and corruption." However, in this research the focus will be on fraudulent financial reporting because as stated by the ACFE report (2008; P.6), financial statement fraud is the costliest type of fraud where it caused a median loss of \$2 million. Besides, fraudulent financial reports can have a substantial negative impact on a company's existence as well as market value.

Examination of frauds and manipulations suggests that many of them emerge after some similar symptoms (**Yucel, 2013**). These symptoms although are not considered as a definite proof of fraud but can indicate malpractices in accounting function (**Kaseem, 2010**). **ACFE (2014)** defined red flag as "Indicators of the possibility of fraud existing with unique characteristics associated with specific fraud schemes."

In the current study the financial ratios has been applied as ref flags to predict potential financial statement fraud-risk. Ratio analysis technique is being used because of its flexibility, popularity among the financial community and simplicity of calculation. The financial ratios are used to study correlation between different items (two or more) on the financial statements and identify positive or negative trends in these relationships. The components of a financial ratio (numerator and denominator) should be appropriate and meaningful. The company's strengths/weaknesses can be

pointed out using these financial ratios by highlighting red flags for the problem areas. Financial ratios may be grouped into five basic categories: Liquidity ratios, debt ratios, activity ratios, profitability ratios, and investment ratios (International Conference on Financial Criminology 2013)

### **Significance of Study:**

In last couple of years the Civil aviation industry has turned up to be one of the fastest growing industry in India with private airlines accounting for more than 75% of this sector. The contribution of aviation industry amounts to \$72 Bn to GDP of India. Kingfisher Airlines was one of the largest passenger airlines in 2010. In Year 2011 Kingfisher also won the Sky Trax Award for being India's best airline but soon it crashed and had to shut down its operations in late FY 2012. Soon the CMD of the company Vijay Mallya fled India leaving Rs. 9000 Crs. of unpaid loans primarily from PSU banks and was included in the "Wanted List of India" for wilful default. Thus it is important to know what actually went wrong with Kingfisher Airlines. The comparative study Kingfisher Airlines and IndiGo Airlines of this type could help to highlight the major red flags which indicated the distress financial position of the company and if these red flags would have been noticed and acted upon by the regulatory bodies and banks earlier, this scam could have been avoided and huge public money could have been saved.

### **Review of Literature:**

In order to better understand the case of Kingfisher Airlines, other common schemes of fraudulent accounting practices, how they are performed and how can a tool of Forensic Accounting; Ratio analysis can help in detecting the same; an intensive review of literature has been performed. The same is discussed in following points:

- Case studies related to kingfisher airlines
- Various cases of Financial Statement fraud
- Use of Ratio Analysis as a Fraud detecting tool

**Case studies related to Kingfisher Airlines :**( Gupta, 2017) has in the case study has explained in detail the rise and fall of the Kingfisher Airlines. The case study has highlighted some major

reasons for the collapse of this company such as, lack of Strategy and delegation, recession, high operational cost, frequent changes in business model and high debt structure of the company. Further, the study also raised some major points to be considered in future to avoid such failures. These points are: Lessons the banks should learn from Kingfisher Airlines before lending some huge funds; Role of strong business background and political influences in bank lending; Not only Vijay Mallaya but the banks are equally responsible for not keeping a check on utilization of borrowed funds; and lastly acquisition of Air Deccan, a low cost airline was also not a justifiable business decision by a luxury airlines like Kingfisher Airlines.

**Various cases of Financial Statement fraud:**(Bhasin, 2015) has studied the various creative accounting practices in Indian corporate sector and highlighted some common techniques used in the manipulation of financial data, such as Recognizing Premature or Fictitious revenue, “Big Bath” Accounting, Using Cookie Jar Reserves, Being generous with Bad Debts, manipulating inventory, Abuse of Materiality concept, getting Creative with the Income Statement: and so on. The author has given various examples of Indian companies who have employed different techniques of creative accounting. WIPRO Ltd. Larsen & Toubro Limited, Tata Motors Ltd, Satyam Computers Services Limited etc are few of them. (Zack, 2013) in a ACFE report has emphasized that even though the Financial Statement Fraud represents the small percentage of fraud cases, it usually causes the most material loss. According to a COSO Report “The schemes used to commit these financial statement frauds are Improper Revenue recognition (61%), Overstatement of Assets (51%), understatement of liabilities and expenses (31%), misappropriation of assets (14%) and other techniques (20%).” Carter, Locate plus Holding, Olympus are some of the companies whose Accounting information were manipulated using one or other of such above mentioned techniques. (Ferraro and McPeak, 2000) have also discussed the common techniques employed to manage the earnings and suggested that substantial time should be devoted in examining the firm’s financial report by the investors.

**Use of Ratio Analysis as a Fraud detecting tool:**(Elsayed, 2017) in his study of indicators of financial statement fraud, the author has tried to relate red flags to specific financial statement frauds chemes and had raised the awareness of fraud possibility. In this study an attempt has been made to categorise the red flags related to accounting anomalies, internal control weakness, analytical anomalies, unusual behaviour, tips and complaints and extravagant lifestyle.

It is seen that fraud signals are usually observed much before fraud detection and thus, can be used as tools in fraud detection. The current study analysed five potential fraud indicators; Financial Health Indices, Financial performance Indices, Management Efficiency Indices, Corporate Governance Indices and Accounting practices. These indicators were tested to predict the probability of financial statement fraud and to differentiate the fraudulent financial reporting from the non-fraudulent one. **(Kanapickiene, 2015)** made the use of Financial Ratios and developed a Logistic Regression model of fraud detection. Initially 51 ratios were analysed for study and then 32 were taken. The ratios that indicated the presence of fraud were mainly Profitability, Liquidity, Activity and Structure Ratios.

**(Rang'alalari, 2009)** in his study investigated fraud detection capabilities of ratios used by saving & credit co-operative societies in Kenya. The study has identified 8 ratios as significantly capable of detecting fraud in such societies. These ratios are Dividend Return Ratio; Members' Loan Schedule Balance / Loan Ledger Balance (LMS/LLB); Financial Investment / Total Asset; Members Net Loans / Total Assets; Saving Members Deposit / Total Asset; Liquid Investment + Liquid Assets – Short Term Creditors (less than 3 days)/Total Assets and Non-Earning Liquid Asset/Total Asset; Members Loans / Total Asset (ML/TA). These ratios differ from the commonly used ratios for measuring the performance. Further, the study advocates the importance of these uncommon ratios to auditors, researchers, investors and other regulatory bodies to identify fraudulent practices. **(Grove &Basilico, 2008)** in their research paper, "Fraudulent Financial Reporting Detection: Key Ratios Plus Corporate Governance Factors" have demonstrated the usefulness of financial ratios both quantitative and qualitative for detecting financial reporting frauds. The research has been done from 5 industries by taking a sample of 42 companies: Telecommunication, Global energy, Computer equipments, Software and Food Services.

Here the authors have pointed out that the practices of such fraudulent financial reporting companies in above stated industries can be used as lessons learned for future reference for investors, management, auditors, regulators and government to evolve a early warning systems (EWS) or to identify red flags for reporting financial fraud.

In this study, probit model was practiced on financial reporting statement data (profit & loss statement, balance sheet, and cash flow statement) for 42 (19 fraudulent and 23 comparable non-

fraudulent) companies for two years; (Year 1) year prior to that year in which the fraud was publically disclosed by SEC or European investigators and (Year 2) year prior to Year 1.

Authors had selected 5 financial ratios namely (i) gross margin index(GMI) (ii) Sales growth index (SGI) (iii) material increase in the sales in receivables index (DSRI) (iv) increase in total accruals to total assets index(ACC) (v)increase in value of intangible assets or asset quality index (AQI) for identifying fraudulent financial reporting and also Beneish's non-manipulators' and manipulators' mean index numbers were used for all the five ratio indexes to analyze each of them separately applying the Probit model to sample companies, the authors assured the overall accuracy of 76% (32/42) and 66% in the second year.

The study revealed that among the 5 financial ratios, the highest number of red flags was detected by the GMI i.e. Gross margin index. The next two best ratios were SGU and DSRI. The rest of 2 ratios were not as helpful as the first 3 ratios to stipulate the red flags.

To analyze the non-financial factors, the researchers had collected various Corporate Governance variables from proxy statements of US companies. The major variables used in this study are: Percentage of board members' common stock holdings held by insiders, Percentage of insiders on the Board of Directors, having greater than 50 percent control of the board, CEO being the company founder, CEO also being on the board, use of a Big Six Auditor, formation of audit committee and number of directors. Among the above mentioned nonfinancial indicators following were commonly present in fraudulent companies: Weak system of management control, insider stock trading, all powerful CEO, senior management turnover and questionable business strategies with unclear disclosures. The study here reveals that a combination of quantitative financial ratio indexes and qualitative corporate governance factors work best for identifying fraudulent financial reporting.

### **Objectives:**

The objectives of this study are as follows:

- To explore the possibility of revenue and inventory related fraud techniques in financial statements.

- To explore the possibility of fraud through understating liabilities, expenses and overstating assets and inadequate disclosure.

**Hypotheses:**

H<sub>01</sub>: There is no significant difference between the profitability ratios and liquidity ratios of Kingfisher Airlines and of Indigo Airlines.

H<sub>02</sub>: There is no significant difference between the activity ratios, debt ratios and investment ratios of Kingfisher Airlines and Indigo Airlines.

**Sample Design:** In the current study, we have taken two companies from the Aviation Industry of India, namely Kingfisher Airlines Limited and IndiGo Airlines (InterGlobe Aviation Limited) for a comparative Ratio Analysis. The reason why we have chosen this particular industry is that during last couple of years the Civil aviation industry has turned up to be the fastest growing industry in India. And now, India is the 3<sup>rd</sup> largest domestic aviation market in the world. Further, between April 2000 and March 2020, the FDI inflow in India's air transport sector has reached US\$ 2.75 billion as per the data provided by the Department for Promotion of Industry and Internal Trade (DPIIT). This shows how important the Aviation industry is.

Secondly, the selection of sample companies (i.e Kingfisher Airlines and IndiGo Airlines) has been made to match one fraud company with a non- fraud company.

Further, for the purpose of the study, Fraud Company is defined, considering the following parameters:

- Wilful Default :
- OR
- Investigation/Inquiry has been initiated against the company by SFIO, SEBI, RBI, MCA or any other government body.

**Sources of Information:** The data collection is "Secondary" in nature. Data is collected mainly from the related literature published in the reports, journals, books, newspapers and statements. The Financial data of the companies for 4 years (2010-2013) are taken from the Knowledge Portal [acekp.com](http://acekp.com). We have taken these 4 years data because data is available for these 4 common years

for both the companies. (IndiGo Airlines data is available only after the 2010 and Kingfisher Airlines data is not available after 2013 so we have taken the common period i.e. 2010 to 2013. Further, a period of 4 years seems appropriate to study the trend of Ratios.

**Techniques of Data Analysis:** In order to explore the possibility of fraudulent accounting practices in case of the sample companies, Ratio Analysis has been employed as a tool. The ratios for 4 years i.e. 2010-2013 are calculated and analyzed to determine that whether any Revenue or inventory related manipulation techniques have been used or whether any financial information related to liabilities, expenses or assets have been manipulated or improperly disclosed.

Further, Altman Model and Z Score test have been administered to check the financial health of the company. Statistical tools like Mean and Coefficient of Variation (CV) has also been used for the purpose of analysis.

**Analysis and Discussion:** On the basis of literature review, we have selected 21 ratios which are significant in detecting Financial Statement Frauds. These 21 ratios are grouped under 5 groups namely: Liquidity Ratios, Safety Ratios, Profitability Ratios, Efficiency Ratios and Structure Ratios.

**Liquidity Ratio:** Four Ratios are taken under this head namely, Current Ratio, Quick Ratio, WC/TA and Cash/Current Assets.

Here we have made a comparison of the above four ratios calculated for 4 years, i.e. 2010-2013 for both the companies, namely Kingfisher Airlines and IndiGo Airlines. In case of Kingfisher Airlines (Ann) the value of Current Ratio is much lesser than that of IndiGo Airlines in all the 4 years (2010-2013) and it is also lesser than the standard value according to the literature i.e. 2:1. The mean values of this ratio for both the companies are 0.33 for Kingfisher Airlines and 2.03 for IndiGo Airlines, which shows a huge gap between the two and describes the liquidity crunch in Kingfisher Airlines

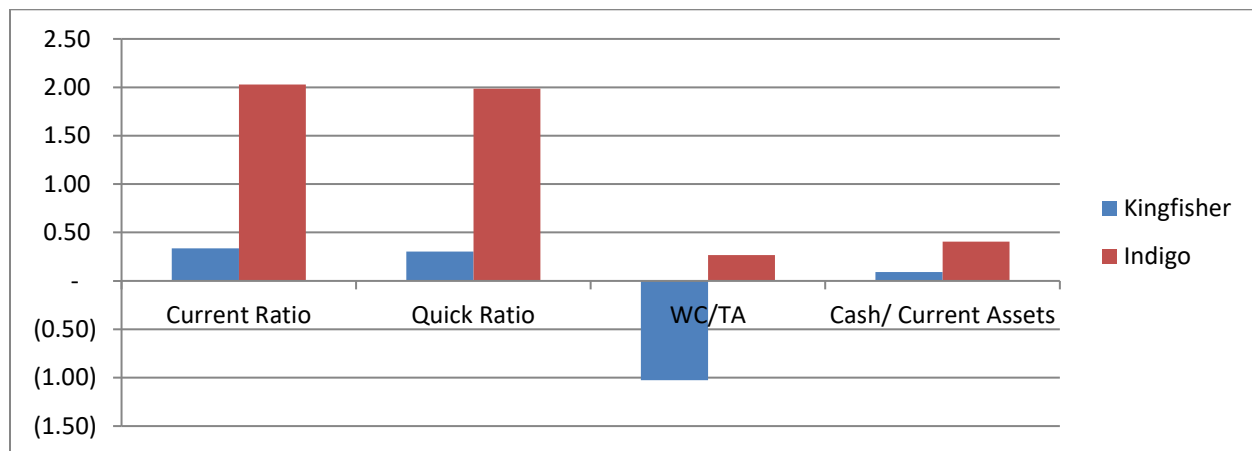
Same is the case with Quick Ratio. For Kingfisher Airlines the mean value of this ratio is 0.30 whereas, it is much higher 1.99 for IndiGo Airlines which speaks loud about the cash crisis in Kingfisher Airlines. **RED FLAG NO. 1**



Further, taking the 3<sup>rd</sup> Ratio of this Group; WC/TA Ratio, in case of Kingfisher Airlines it gives a negative(-ve) value for all the 4 years which means Current liabilities are greater than company's current assets and an increasing (-ve) trend year on year is a more alarming situation especially for applying Going Concern assumption. But this is not the case with IndiGo Airlines and the mean value of this ratio is 0.27 whereas it is -1.03 in case of Kingfisher Airlines.

Now, when we compare WC/TA and Long Term Debt/ TA, it is observed that there is no major change in TA of the company but still WC/TA is decreasing and LTD/TA (Figure 5) is increasing. So here the question arises that if Debts are taken (Both long term and Short Term) where is the funds utilized if TA are same year on year. On the analysis of P&L and Balance Sheet of the company it came into light that in the year 2011; the company has invested in unquoted investments which is a questionable move by the company in such a situation. **RED FLAG NO. 2** Even the 4<sup>th</sup> Ratio, Cash/ CA are also miserable for Kingfisher Airlines in all the 4 years.

**Figure -1**



Source: Own computation on MS Excel 2007.

### Safety Ratio:

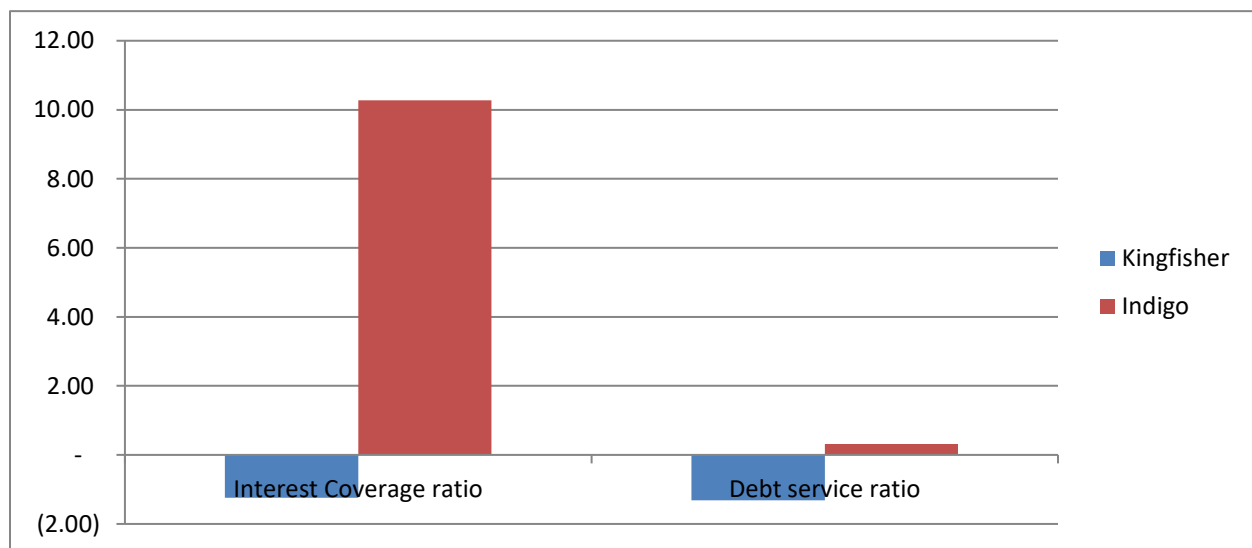
Here we have calculated two ratios: Interest coverage ratio & Debt service ratio. In case of Kingfisher Airlines both Interest coverage ratio and Debt coverage ratio were negative, which means that the company was barely able to meet its interest obligation with current earnings. Still long term funds were provided to Kingfisher Airlines from time to time mostly by PSU Banks, which is clearly against the lending norms of Banks. Further, in year 2013 the secured loans of the

company were restructured as unsecured loans amounting to nearly 3800 Crs. and not only this but more funds were provided to the company in the form of unsecured loans amounting to approx 2800 Crs. Now, this again triggers as red flag (**RED FLAG NO. 3**) because in general scenario it is nearly impossible for a company in such a poor financial position to raise so much funds from the banks.

This also puts question marks on the role of regulatory authorities like RBI, SEBI, Company's Internal Auditors and Statutory Auditors.

On the other hand, the values of these two ratios is quite satisfactory in case of IndiGo Airlines as against the mean value of Kingfisher Airlines for Interest Coverage Ratio which is (-ve) 1.24, it is 10.28 and Debt service Ratio is 0.03 as against (-ve) 1.31 in case of Kingfisher Airlines.

**Figure -2**



Source: Own computation on MS Excel 2007.

### **Profitability Ratio:**

Profit margins are used as metric to assess a company's financial health. Negative margins are the indication of a company's inability to control costs. A continuous low profit margin indicates that in long run the survival of the business may be in danger.

Here we have taken 8 ratios in this category namely,

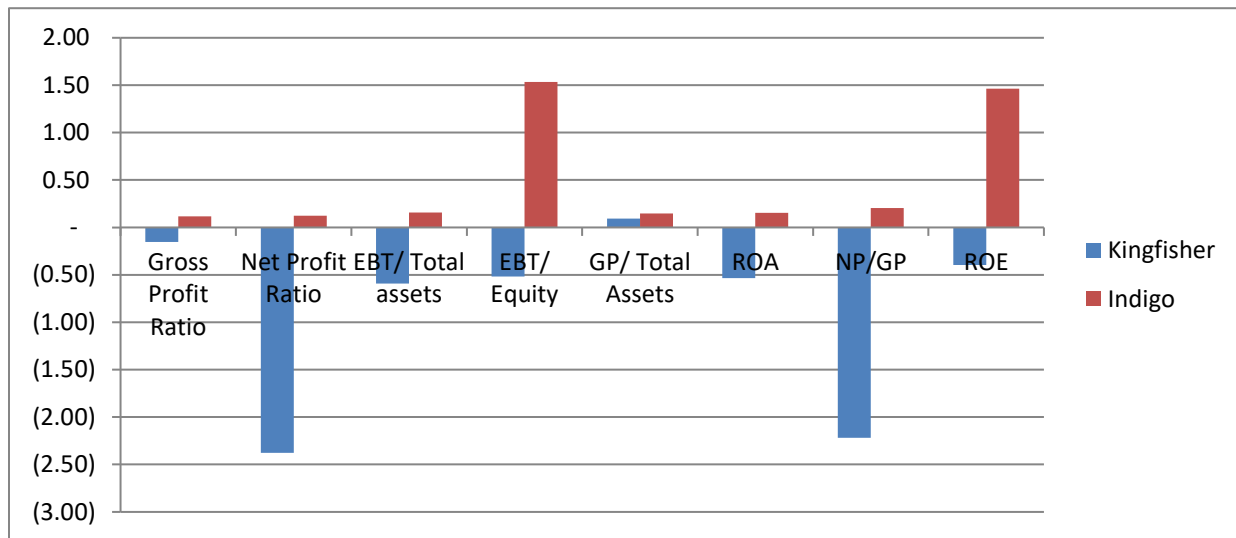
In case of Kingfisher Airlines, The GP Ratio shows wide fluctuations. From year 2010-12, this ratio is above 25% every year but in year 2013, it not only falls dramatically but went to negative. And further, on analyzing the other 7 ratios of this category, it was found that all were –ve for the years under study i.e. 2010-13, which again is a red flag (**RED FLAG No.4**) and raises question mark on the commercial success of the business.

Now, on analyzing the same 8 ratios for IndiGo Airlines it is evident that though the profit margins of the company were not that high but still they all were positive except for one year i.e. 2012 when the GP of the company was –ve.

Further, it was observed that in case of Kingfisher Airlines that the Net Profits for all the 4 years were negative but the Gross profit ratio is above 25% except year 2013 which shows that the indirect expenses were too high when compared to IndiGo Airlines. In spite of this situation the company has made expansion by overtaking Air Deccan Airlines, just to play on international routes. This was not a good move when the profits of the company are negative and even the cash position was very poor. (**RED FLAG NO. 5**)

The major non operating expense was huge interest charges which kept on rising year to year.

All the other ratios in this category are too low as compared to the same ratios calculated for IndiGo Airlines.

**Figure -3**

Source: Own computation on MS Excel 2007.

### Efficiency Ratio:

An efficiency ratio is used to measure a company's ability to use its assets for generating income. These are important ratios to analyse a company's performance as improved efficiency ratios means improved profitability.

Fixed Assets turnover ratio is an indicator of how well company is generating net sales from its fixed assets. In case of Kingfisher airlines this ratio is declining year to year which is not a good signal, in year 2013 the decline was more step which triggers a red flag situation. (**RED FLAG NO. 6**)

Whereas, when we see the same ratio of IndiGo airlines it shows an increasing trend with a marginal decrease in year 2013.

Sales Growth Ratio shows the percentage of growth in sales volume year to year. A decreasing ratio indicates that the rate of growth is declining which means though the sales in absolute volume are increasing but the growth rate is declining.

But in case of Kingfisher Airlines, this ratio shows negative(-ve) value which means that there is also an absolute downfall in the sales volume and a continuous downfall on sales year to year should be a major concern for any company. (**RED FLAG NO. 7**)

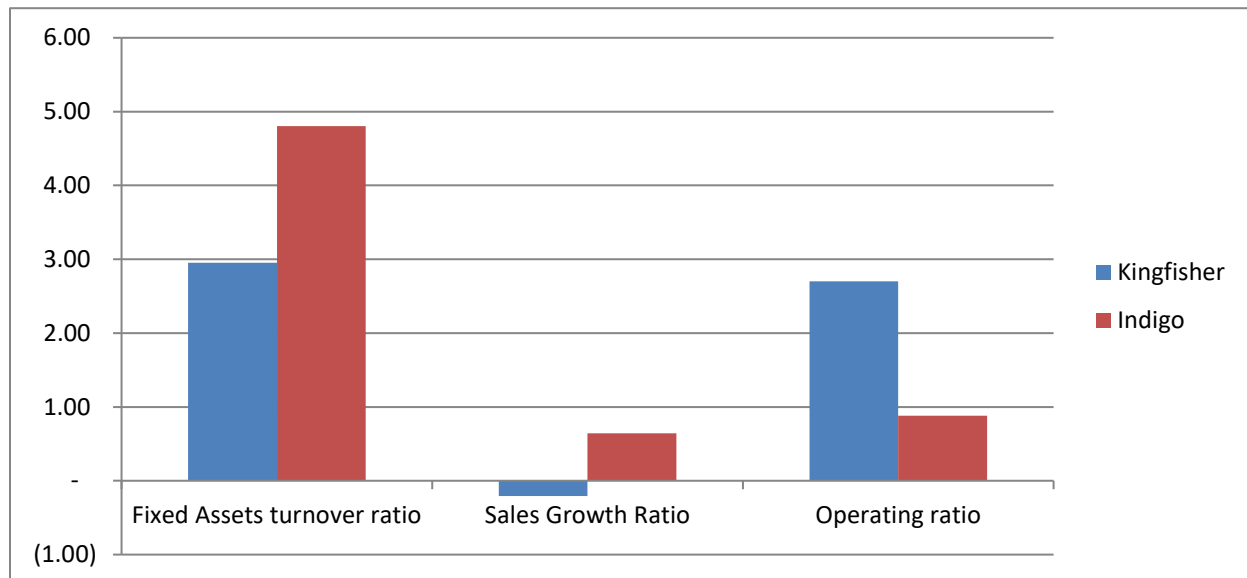
When we analyse this ratio for IndiGo Airlines, we see that the rate of sales growth is declining for the yr 2010 to yr 2012 but again it increases in yr 2013 so there is nothing to worry about.

Thus it is evident that in case of Kingfisher airlines the expenses and loans of the company was always on higher side but still it was not able to boost its sales .

Operating ratio is measured by comparing total operating expenses of a firm to its net sales. It shows the overall efficiency of a company's management. It indicates how efficiently the cost of generating revenue can be kept low by a proper management. The smaller the ratio the better is the efficiency of the company to generate revenue against its total expenses.

In case of Kingfisher Airlines in year 2012, there was an increase in this ratio by almost 40%. On analysing profit & loss account it was observed that the sales decreased by 10% while expenses were higher by 20 % when compared with the last year. Likewise in 2013 there was a high jump in operating ratio which was due to fall in revenue by almost 90%. As in 2013, many of the flights were cancelled and the operations of the company were squeezed. The analysis of the ratio indicates the inefficiency of Kingfisher airlines.

When we compare the mean of the said ratio of Kingfisher Airlines with the IndiGo Airlines we see that Indigo Airlines is much more efficient in its operations with a mean of 0.88 as against 2.70.

**Figure - 4**

Source: Own computation on MS Excel 2007.

### Structure Ratios:

These ratios measure the long term stability and structure of the firm. Financial leverage of a company can be assessed using Debt to Equity Ratio. Higher leverage ratio shows that the company's share holders are at a higher risk, as the company is depending more on debt for financing its growth. Ideally it should be in a range of 1.5 to 2.

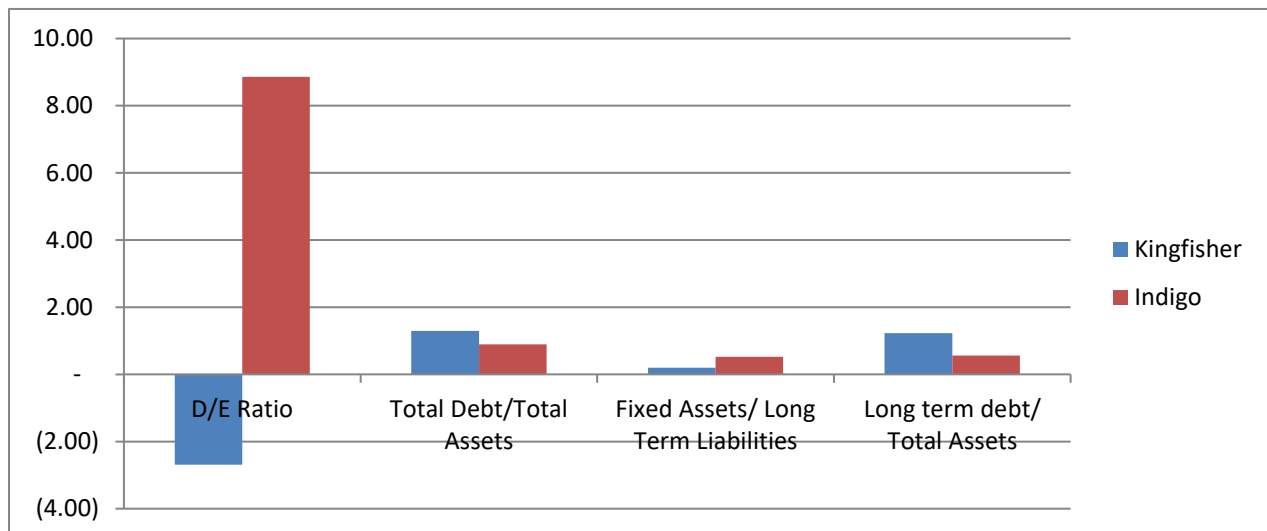
The debt to total asset ratio indicates the financial leverage of a company. It shows us that how much debt is used to finance the company's total assets. The company with a high Debt to Total Asset Ratio exhibits higher financial risk associated with high degree of leverage (DoL). This ratio is continuously on a higher side for all the 5 years which is an alarm sign. When we compare the average value of this ratio for the two companies Kingfisher Airlines and IndiGo Airlines, the values are 1.29 and 0.89 for Kingfisher and IndiGo Airlines respectively which shows a huge difference between the two.

The solvency of a company can also be measured by calculating the Fixed assets to Long term liabilities ratio. This ratio also concerns the creditors as generally the fixed assets are pledged as a security against the long term debts of a company. Higher the ratio, the better it is, as a lower ratio

indicates that fixed assets may not cover the debt. The value of this ratio for all the 5 years under study was very low, indicating a very serious red flag in case of Kingfisher Airlines (**RED FLAG NO. 8**). On comparing the average value of the ratio for both the companies, 0.20 is for Kingfisher Airlines and 0.52 is for IndiGo Airlines.

A company's dependence on its debt to finance its growth can be determined by calculating long term debt to total assets ratio. Generally a ratio less than 0.5 are considered good. In present case, the mean value of this ratio for Kingfisher Airlines is 1.22 which is far more than the benchmark which indicates the company is in a sick zone whereas it is 0.56 for IndiGo Airlines, slightly more than the standard value.

**Figure - 5**



Source: Own computation on MS Excel 2007.

**Table 1A:** Computation of Financial Ratios (Kingfisher Airlines)

Sr. No.	Name of Ratio	Description	Financial Year				Mean	CV
			Mar-10	Mar-11	Mar-12	Mar-13		
	<b>Liquidity ratios</b>							
1	Current Ratio	Current Assets/ Current Liabilities	0.70	0.36	0.18	0.10	0.33	80%
2	Quick Ratio	(CA- INV)/ CL	0.65	0.32	0.16	0.08	0.30	84%
3	WC/TA	Working Capital(CA- CL)/ Total Assets	-0.14	0.38	0.76	2.83	1.03	120%
4	Cash/ Current Assets		0.08	0.14	0.12	0.02	0.09	58%
	<b>Safety Ratio</b>							
5	Interest Coverage ratio	EBIT / Interest Charges	-1.10	0.16	1.70	1.99	1.24	-65%
6	Debt service ratio	(PAT+DEP+AMORTIZATION EXP)/ CURRENT LONG TERM DEBT	-0.58	1.95	0.90	1.81	1.31	-51%
	<b>Profitability Ratios</b>							
7	Gross Profit Ratio	Gross Profit/Total Operating Revenues	0.29	0.40	0.24	1.55	0.15	604%
8	Net Profit Ratio	Net profit/ Total Operating revenue	-0.34	0.16	0.42	8.58	2.38	174%
9	EBT/ Total assets	EBT/ Total assets	-0.28	0.18	0.38	1.53	0.59	106%
10	EBT/ Equity	Earnings before Tax / Share holders fund	-0.55	0.52	0.68	0.33	0.52	-27%
11	GP/ Total Assets	Gross profit/ Total assets	0.19	0.31	0.15	0.28	0.09	276%
12	ROA	Net Profit/ Total assets	-0.23	0.12	0.26	1.53	0.53	124%
13	NP/GP	Net profit/ Gross Profit	-1.20	0.40	1.74	5.53	2.22	103%
14	ROE	Net Profit/ Share holders Fund (Equity)	-0.45	0.35	0.46	0.33	0.40	-17%
	<b>Effeciency Ratio</b>							
15	Fixed Assets turnover ratio	Total Operating Revenue / Fixed Assets	3.26	4.05	3.81	0.70	2.95	52%
16	Sales Growth Ratio	(Current year sales - Last years sales)/ Last year sales	-0.04	0.25	0.14	0.91	0.21	240%



17	Operating ratio	Operating Expenses/ Total Operating Revenue	1.22	1.05	1.46	7.08	2.70	108%
<b>Structure Ratio</b>								
18	D/E Ratio	(Liability side total- shareholder's Fund)/Shareholder's Fund	-2.96	3.80	2.79	1.22	2.69	-40%
19	Total Debt/Total Assets	Total Debt (long + short)/Total Assets	1.04	0.77	0.66	2.71	1.29	74%
20	Fixed Assets/ Long Term Liabilities		0.20	0.25	0.25	0.10	0.20	35%
21	Long term debt/ Total Assets	Total Debt (long )/Total Assets	1.04	0.77	0.63	2.46	1.22	69%

Table 1B: Computation of Financial Ratios (Indigo Airlines)

Sr.No.	Name of Ratio	Description	Financial Year				Mean	CV
			Mar-10	Mar-11	Mar-12	Mar-13		
<b>Liquidity ratios</b>								
1	Current Ratio	Current Assets/ Current Liabilities	3.42	1.36	1.72	1.62	2.03	46%
2	Quick Ratio	(CA- INV)/ CL	3.33	1.33	1.69	1.59	1.99	46%
3	WC/TA	Working Capital(CA-CL)/ Total Assets	0.45	0.17	0.26	0.19	0.27	47%
4	Cash/ Current Assets		0.22	0.40	0.57	0.44	0.41	35%
<b>Safety Ratio</b>								
5	Interest Coverage ratio	EBIT / Interest Charges	9.73	14.62	2.07	14.68	10.28	58%
6	Debt service ratio	(PAT+DEP+AMORTIZATI ON EXP)/ CURRENT LONG TERM DEBT	0.04	0.05	0.01	0.02	0.03	59%

<b>Profitability Ratios</b>								
7	Gross Profit Ratio	Gross Profit/Total Operating Revenues	0.20	0.18	0.01	0.10	0.12	83%
8	Net Profit Ratio	Net profit/ Total Operating revenue	0.21	0.17	0.02	0.09	0.12	69%
9	EBT/ Total assets	EBT/ Total assets	0.02	0.02	0.00	0.02	0.02	62%
10	EBT/ Equity	Earnings before Tax / Share holders fund	0.13	0.28	0.02	0.19	0.15	71%
11	GP/ Total Assets	Gross profit/ Total assets	0.02	0.02	0.00	0.01	0.01	79%
12	ROA	Net Profit/ Total assets	0.02	0.02	0.00	0.01	0.02	61%
13	NP/GP	Net profit/ Gross Profit	1.06	0.93	2.04	0.88	0.21	726%
14	ROE	Net Profit/ Share holders Fund (Equity)	0.15	0.26	0.03	0.15	0.15	62%
<b>Efficiency Ratio</b>								
15	Fixed Assets turnover ratio	Total Operating Revenue / Fixed Assets	3.11	4.60	6.28	5.22	4.80	28%
16	Sales Growth Ratio	(Current year sales - Last years sales)/ Last year sales	1.00	0.47	0.45	0.65	0.64	39%
17	Operating ratio	Operating Expenses/ Total Operating Revenue	0.80	0.82	1.01	0.90	0.88	11%
<b>Structure Ratio</b>								
18	D/E Ratio	(Liability side total-shareholder's Fund)/Shareholder's Fund	5.12	11.08	8.77	10.46	8.86	30%
19	Total Debt/Total Assets	Total Debt (long + short)/Total Assets	0.84	0.92	0.90	0.91	0.89	4%
20	Fixed Assets/ Long Term Liabilities		0.57	0.60	0.44	0.48	0.52	14%
21	Long term debt/ Total Assets	Total Debt (long )/Total Assets	0.65	0.45	0.54	0.60	0.56	16%

**Altman Z Score:**

Altman Z Score is developed by Altman<sup>68</sup> to measure the financial distress of a company which often acts as a strong motivator for the management to commit fraud. This score is helpful in determining the financial status of the company and also helps to predict the possible bankruptcy in future.

The formula for Z-score for public companies is given by:

$$\text{Altman Z Score formula} = (1.2 \times A) + (1.4 \times B) + (3.3 \times C) + (0.6 \times D) + (0.999 \times E)$$

**Table 2A: Computation of Altman Z Score (Kingfisher Airlines):**

Financial ratio used	Formula for the financial ratio	Mar-10	Mar-11	Mar-12	Mar-13	Mean
A	Working capital / total assets	-0.14	-0.38	-0.76	-2.83	
B	Retained earnings / total assets	-0.57	-0.65	-0.84	-5.70	
C	Earnings before interest and task payment /total assets	-0.15	-0.03	-0.24	-1.02	
D	The equity's market value / total assets	1.64	2.41	1.05	2.30	
E	Total sales / total assets	0.67	0.79	0.64	0.24	
Altman Z Score formula	$(1.2 \times A) + (1.4 \times B) + (3.3 \times C) + (0.6 \times D) + (0.999 \times E)$	0.20	0.79	-1.61	-13.12	-3.43

Source : Own computation on MS Excel 2007.

**Table 2B: Computation of Altman Z Score (Indigo Airlines):**

Financial ratio used	Formula for the financial ratio	Mar-10	Mar-11	Mar-12	Mar-13	Mean
A	Working capital / total assets	0.45	0.17	0.26	0.19	

B	Retained earnings / total assets	0.08	0.02	0.05	0.06	
C	Earnings before interest and task payment /total assets	0.24	0.25	0.03	0.17	
D	The equity's market value / total assets	0.16	0.08	0.10	0.09	
E	Total sales / total assets	1.15	1.24	1.49	1.51	
Altman Score formula	$Z = (1.2 \times A) + (1.4 \times B) + (3.3 \times C) + (0.6 \times D) + (0.999 \times E)$	2.69	2.34	2.04	2.45	2.38

**Source :** Own computation on MS Excel 2007.

In this model, if the Z value is greater than 2.99, then the firm is said to be in the “safe zone” and has a negligible probability of filing bankruptcy.

- If the Z value is between 2.99 and 1.81, then the firm is said to be in the “grey zone” and has a moderate probability for bankruptcy.
- And finally, if the Z value is below 1.81, then it is said to be in the “distress zone” and has a very high probability of reaching the stage of bankruptcy.

Here, the average value of Altman Z score for Kingfisher Airlines is -3.43 whereas it is 2.38 for IndiGo Airlines which clearly shows that Kingfisher Airlines was in a distress zone and was having a very high probability of going into bankruptcy.

### **Findings of the Study and Conclusions:**

In this research study, financial ratios are compared in order to determine the possibility of fraudulent accounting practices in case of Kingfisher Airlines. It was found that all the 5 categories of ratios shows an alarming situation in respect of the company. Among 21 ratios taken for this study, all most all the ratios were showing –ve trends as early as 2009. But that the regulatory bodies of the country like RBI, SEBI, MCA etc. have overlooked this serious situation. Even the Altman Z Score showed that the Company was in serious financial distress and was having a very high probability of going bankrupt.

Further, it also seems that due to strong political connections, the owner of the company, Mr. Vijay Mallya had managed to raise a huge amount of loan funds from the PSU banks. Today even after seven years of its collapse, Rs 9000 crore is still due from various banks as unpaid loans. And Mr. Mallaya is out of the reach of regulatory bodies of India. It leaves many questions in our minds about this unsolved mystery- Whether the story of Kingfisher Airlines was a pre-minded artifice by Vijay Mallya to sweep through the financial crises or was it indeed in a financial trouble?

What is the role of regulatory authorities like SEBI, RBI and other if it is so easy for somebody to escape without repaying the debts?

Who is ultimately going to bear such a huge loss, as the loans given by the banks are all from the money of general public?

Thus, we need to understand the severity of such cases and we badly need an early identification system of such malpractices going in the corporate world to keep our investments and money safe.

It is suggested that financial ratios can be of much importance for auditors, investors, shareholders, lenders and regulatory bodies to identify the probability of financial frauds or business failures well before it is too late. Further, Altman Z Score measure is also relevant to predict the chances of bankruptcy in case of any company.

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