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MEASURING FINANCIAL PERFORMANCE OF AIRLINE PASSENGER TRANSPORT COMPANY IN EUROPEAN

Abstract:

Airline passenger transport draws attention as a rapidly growing sector in the passenger transportation. In our country (in Turkey), the first in 1933, Turkish Airlines Corporation (THY) was established and today it is seen that the activity of the 10 companies in sector of airlines in Turkey. According to the results of Skytrax passenger evaluation, Turkish Airlines is award for 6 years (2011-2016) as the best airline in Europe seems worthy. In fact, the main reason behind this success can be the presence of a strong financial structure. Therefore, the main aim of this study is to evaluate the success of THY. For this reason, airline companies, which are operating a leading position in Europe, and THY is needed comparison of the results. In our study, datas that seven airline companies operating in Europe are used their financial statements including 2011-2016 periods. According to the results of analysis, Air Berlin Group and Thomas Cook Group have the highest loss in implementation. In addition, It is seen that Lufthansa and Turkish Airlines have the successful performance.

Keywords:

Civil Aviation Management, Financial Performance, Ratio Analysis

JEL Classification: R40, L25, G10

1 Introduction

The first study on civil aviation in our country carried out in 1933 associated with establishment of Turkish Airlines Corporation. Due to the capital which is insufficient, the civil avitation sector in Turkey has not developed. Therefore, Turkish Airlines operated as a monopoly of the state in the civil aviation sector until the 1990s. In The foundation of the capital market institutions in our country is laid in 1985 (Aksoy and Tanrioven, 2007, p.74). When the capital market has not improved in economies, Economic crises and political uncertainties affect the economy negatively (Ulusoy, 2010, p.37). After that the 2000s, it began a process of intense competition in the sector with the establishment of private companies. Especially after 2002, the economic growth experienced in all areas of our country has also observed in the civil aviation sector, in this period Turkish Airlines won a name for oneself in Europe with a rapid growth. From this viewpoint, in this study, the financial performances of other airline companies, which are leader in the Europe, are assessed comparing the financial success of Turkish Airlines.

The purpose of this study is to evaluate Turkish Airlines' financial performance of the 2011-2016 periods. With this aspect this study is thought to serve as an important resource in terms of evaluation of the success of airline companies in the European and in our country. Furthermore, It is evaluated the effect on the competition in the sector in terms of financial performance. It is also expected that this study will contribute to the literature.

2 Literature

In this part of the study, after information is given about our country and the European civil aviation sector, the concept of financial performance is explained.

2.1 Civil Aviation Sector

Aircraft producing companies with the rapidly increasing number of passengers became unable to meet growth in the civil aviation sector by 1960s and 1970s. Depending this development in the world, our national civil aviation company Turkish Airlines has been closely following developments by flying many location of the world. Especially after 2002, Turkish Airlines as a company with a young fleet has achieved great momentum in the civil aviation sector with the development of our economy, falling oil prices in the world and the production of new modern aircraft. Meanwhile, a sharp contraction was observed in the aviation sector in 2001 when the twin towers were hit in America, but Turkish Airlines air routes continued to grow from 2002 onwards.

While the total revenue of our country's civil aviation sector was 2,2 billion dollars in 2003, it rose 23,8 billion dollars in 2014. When analyzed sector's employment level, while the total number of employees was 65 thousand in 2003, it was observed that it exceeded 187 thousand people in 2014 (DGCA, 2015, p.37). While the total number

of aircraft was 162 in the sector in 2003, it rose to 489 in 2015 (DGCA, 2015, p.27). While the total passenger seat capacity was 27,599 in the same year the sector, it rose to 90,259 and there seems to be a large increase in capacity in the sector. In 2003, while cargo carrying capacity was 302,737 kg in 2015 it occurred in the level of 1759,600 kg. Considering the results of the air traffic, while the number of domestic, international and transit flights were 529,205 in 2003, it rose to 1.815.095 and there was an increase of around 243% in 2015 (DGCA, 2015, p.28).

In the last 20 years, the civil aviation sector in Europe has undergone an unimaginable revolution without taking key measures at European Union (EU) level. Towards the end of the 1980s, air transport was fully controlled by the state governments and over-regulated by very strict bilateral agreements and outdated international contracts. Since that day, the European Union has been a leading force in the field of air transport and a respected policy maker. The EU, which has been extremely successful in liberalizing the aviation sector in the member states, has had the opportunity to further its actions. Other important issues such as competition rules, traffic management, security, airport capacity, environmental protection, passenger rights and external relations have also been noted at a similar level (Zabokrtsky, 2011, p.161). The European civil aviation sector is an important pillar of the European economy, which has reached a turnover of around 160 billion euros and employs over 1 million workers in the EU and beyond (ASD, 2017, p. 1). According to the report of European Parliamentary Research Service; Civil aviation is a strategically important sector of the EU economy and directly contributes 110 billion euros, indirectly contributes 300 billion euros to the EU's GDP and employs approximately 1,9 million people. It seems that aviation has supported up to 9 million professions if the accountability of other industries, such as tourism, is also part of the account France, United Kingdom, Spain, Italy and Netherlands (EPRS, 2016, p. 1).

2.2. Financial Performance Evaluation

Even if many different definition of performance evaluation concept has been defined, in our study, it is evaluated in two basic forms, including technical and financial. In this respect, while technical performance measurement more focuses on non-financial data such as productivity and staff, financial performance measurement is based on financial statements and financial data (Karapinar and Zaif, 2009, pp.117-118).

Financial indicators that consist numerical values and evaluate the effectiveness in the transformation process of inputs into outputs are used in evaluating the financial performance. In this sense financial performance indicators show whether the assets and resources of the company are used effectively (Dayi, 2013, pp.157-159).

The financial performance of airlines is important and needs to be measured because it affects their short-term decisions and their strategic planning (Myre, 2015, p.8). There are many methods used to evaluate financial performance. With the help of these methods, the performances of the enterprises are analyzed and the future planning is done. The main performance evaluation methods are analytic hierarchy process (AHP), economic value-added, data envelopment analysis (Saranga and

Nagpal, 2016), TOPSIS (Omurbek and Kinay, 2013), ELECTRE, PROMETHEE (Bagci and Esmer, 2016), Fuzzy-logic decision-making method (Wang, 2008) and ratio analysis methods (Chen and Shimerda, 1981; Baker etc., 2005). These methods have gone variability for the purpose of use in financial performance measurement and are used for analysis in accordance with this purpose (Esmer and Bagci, 2016, p. 18). For this reason, it is possible to evaluate financial performance by using ratio analysis method in airline companies. Therefore, a ratio analysis method is used in this study.

The relationship between the financial statement items are calculated as a result of the proportion of figures to each other in ratio analysis techniques that are measured whether company uses efficiently its financial structure of the business, strength of liquidity, profitability and assets with the establishment of mathematical relationships between accounts or groups of accounts (Akdogan and Tenker, 2007, p.640). Company's performance is measured by being compared standard financial ratios of the company or industry with the ratios calculated by company in ratio analysis techniques. At this point expected success from ratio analysis depends on correct interpretation of calculated proportion. In our study, the results are interpreted by comparing with the sector average. Therefore, the financial success of the companies is assessed with together.

2.3 Literature Review

Studies that were written on the articles in our country, Europe and the world are included in this part of the study.

Chen and Shimerda (1981) make financial performance analysis in airline companies with five non-financial and seven financial performance indicator. They use seven financial variables including return on equity, financial leverage ratio, short-term liquidity, cash equivalents ratio, equity turnover, receivables turnover and inventory turnover.

Baker et al. (2005) state that many airline companies went bankrupt after 2001 financial crisis and the most important reason of this was poor interpretation of financial statements of the companies. They study ratio analysis to measure financial performance of three companies by using 3-year data from financial statements for the period 2001-2003 in implementation of their study.

Wang (2008) emphasize that a lot of study carried out before him just based on operational information thus making a financial performance analysis is vital for companies. Therefore, starting from the balance sheet, income statement and cash flow, Wang analyzes financial performance of 3 companies operating in Taiwan domestic flight with fuzzy logic decision-making method. Wang states that the model has been successful and the model will use to measure competition of companies with each other in the future.

Barros and Peypoch (2009) have conducted a two-step data envelopment analysis to measure the operational performance of member companies in the European airline companies. Operational and financial data for the period 2000-2005 were used in the

study. In the first analysis, it was found that the efficiency is relatively high. It is stated that changes in company management are important for performance. As a result, it is recommended to improve the quality management systems and human resources policies in order to increase effectiveness.

Omurbek and Kinay (2013) emphasize that the airline industry is fragile sector in their study and they assess the financial performance of the companies by selecting one of companies from the Istanbul Stock Exchange the other from the Frankfurt Stock Exchange. The data are used with TOPSIS method for the year 2012 and both of the companies are understood to be superior from each other in terms of various criteria.

Jain and Natarajan (2015) investigated technical and scale activities in terms of type, size and ownership of all airlines operating in India between 2006 and 2010 years. DEA was used in the study. While smaller private sector airlines are more efficient, both larger and smaller public sector airlines are more productive; public sector airlines operate on the most productive scale even if financial losses are experienced; there is greater inefficiency of the two entrances compared to the operating cost input.

Myre (2015) examined the financial performance of the six European airlines, the internal factors that characterize these airlines, and the relationship between the external factors that surround and affect the airline industry in general and Europe. Data from 2004 to 2013 were analyzed by the PESTEL framework. Low-cost carriers (LCCs), which full-service carriers (FSCs) struggle to be profitable in the past years, have generally reached the conclusion that they have a higher EBT margin and more favorably operating expense ratios. Similarly, LCCs have been found to be prone to higher liquidity and payoffs than FSCs.

Saranga and Nagpal (2016) measure the relationship between operational efficiency and market performance by using data from the 2005-2013 period of all companies, including private and public that operate in India. They concluded that low cost companies are more successful than other companies by using DEA analysis and least squares technique in analyze because the discount of air tickets is only possible by reducing costs.

Teker et al. (2016) aims to analyze the financial performance of the World's top 20 airline companies for 2011 and 2014. To establish a unique and comprehensive basis for this purpose, a harmonic index is proposed. The harmonic index includes more financial measures in the order of financial performance, taking into account the single aggregate income or net income. With the largest asset size belonging to Delta, most of the revenue is generated by Luftansa, most airlines are employed by Turkish Airlines, and the largest number of employees work for Luftansa. The financial performance of airline companies affects short and long term corporate decisions, shapes. Therefore, a more comprehensive financial performance measure should be used in the strategic planning of airlines.

3 Methodology

Companies can calculate many ratios to measure their financial performances. However some ratios that are sector specific may be significant in terms of assessment of financial performance. There are financial ratios that show the financial status of a company. These financial ratios are presented in four categories; profitability ratios, activity (efficiency) ratio, financial structure ratios and liquidity ratios (Bertoneche and Knight, 2001, p.74). Thus, it is possible to calculate the ratios that are more than twenty in total belonging to four groups of financial ratio. However, it is expected that the success of the study will increase and it will be more meaningful thanks to interpretation of results rather than calculating large number of ratios, by using the limited number of ratios for the purpose of study (Ceylan and Korkmaz, 2008, p.47).

In this direction, the main purpose of this study is to measure financial performances of 7 airline companies that operate in the Europe during the period 2011-2016. For this, an analysis is carried out with ratio analysis method by using the audited financial statements data of the companies for the related period.

3.1 Data Set

Data set, which are used in this study were obtained by downloading from “investor relations” section of airline companies’ web page. Data set include accessible financial statement data of 7 airline companies for the period 2011-2016.

3.2 Performance Indicators

Financial performance indicators and formulas that are used in the implementation of the study are presented in Table 1.

Table 1: Financial performance indicators

Ratios	Definition and Formula
Accounts Receivable Turnover	It shows the strength of the collection of receivables. Net Sales on Credit / Average Trade Receivables
Inventory Turnover	It shows how many times inventories turn into the sales revenue per year. Cost of Services Sold / Average of Inventory
Assets Turnover	It shows the efficiency of assets. Net Sales / Total Assets
Net Profit Margin	It shows net profitability in one volume sale amount. Net Profit/ Net Sales
Return on Assets (ROA)	This ratio shows how total assets are used profitable. Net Profit/ Total Assets
Return on Equity (ROE)	It shows to what extent equities are used profitable. Net Profit / Total Equity

Source: own

Operating ratios that are a ratio group measure whether companies efficiently use its assets. Effectiveness and productivity of company are measured by establishing meaningful relations between inputs and outputs in financial analysis. The operating ratios are calculated by establishing relationships between net sales account from income table and items such as trade receivable, stock, trade liability, total assets in the balance sheet (Ercan etc., 2013, p.60).

Profitability ratios are the ratio group that measures the efficiency of the business assets. When profitability ratios are considered together, it is ascertained whether the company operates profitably. Profitability ratios is deemed important in terms of showing success of company in the past years and effectiveness of its activities. Net profitability ratio, return on assets ratio, return on equity are the most widely used profitability ratios.

4 Results

In this part of the study are included 6 financial performance indicators in 6-year period of 7 companies that make up the implementation of research. First the operating ratios that measure operating effectiveness of the business are used after that, the profitability ratios, which show the businesses financial success are included.

Receivable turnover ratio results that belong to airline companies are given in Table 2.

Table 2: Receivable turnover ratio results of airline companies

Companies of Airline	2011	2012	2013	2014	2015	2016
Air Berlin Group	11,27	9,55	10,21	10,50	10,54	12,73
Air France	8,85	11,64	14,37	14,41	9,41	13,29
British Airways	20,76	22,18	22,13	22,06	19,62	14,77
Air France - KLM	8,16	10,67	9,92	11,23	11,72	11,59
Lufthansa	8,35	8,48	11,59	14,20	52,10	33,94
Thomas Cook Group	19,46	21,63	11,86	12,18	13,39	11,35
Turkish Airlines	7,51	9,65	7,42	6,29	27,33	22,08
Average	**12,05**	**13,40**	**12,50**	**12,98**	**20,59**	**17,11**

Source: own

When the results of receivables turnover ratios are evaluated, while receivables turnover was average 12,05 in 2011, it rose to 17,11 in 2016. Average of receivables turnover ratio is shown that an increasing trend. When the ratios are evaluated by years in Table 2, it is seen that receivable turnover ratios of Air France, Air France-KLM, Lufthansa and Turkish Airlines companies follow a rising trend in 6-year period. The increase of receivables turnover shows the collection effectiveness of companies' receivables. When the same table examine again, it is ascertained that the receivables turnover ratios of British Airways and Thomas Cook Group decrease. Hence, it is seen that receivables turnover decrease because companies don't

manage effectively their receivables in 6 year period. The results of Air Berlin Group are shown a slight increase receivables turnover ratio.

Inventory turnover ratio results of the companies within the scope of analysis are given in Table 3.

Table 3: Inventory turnover ratio results of airline companies

Companies of Airline	2011	2012	2013	2014	2015	2016
Air Berlin Group	93,93	86,22	78,22	65,00	63,76	70,09
Air France	31,60	49,23	49,94	46,31	48,98	44,04
British Airways	85,35	92,53	24,30	35,94	78,15	78,93
Air France - KLM	29,59	46,43	47,96	49,96	61,52	50,77
Lufthansa	48,02	48,58	46,19	31,59	288,94	197,51
Thomas Cook Group	253,5	311,2	332,7	252,6	244,81	181,67
Turkish Airlines	46,92	56,95	54,85	53,41	45,06	38,62
Average	**84,12**	**98,73**	**90,59**	**76,40**	**118,75**	**94,52**

Source: own

When Table 3 is examined, the results of inventory turnover ratio in the period 2011-2016 are as follows: 82,12, 98,73, 90,59, 76,40, 118,75 and 94,52 respectively. Inventory turnover results do not show much change over the 6-year period. Inventory turnover ratio rose only 12,36% in 6 years. The rate of inventory turnover of Air Berlin, British Airways, Thomas Cook Group and Turkish Airlines in the six-year period declines during while other companies are on the rise. Furthermore, it is seen that Thomas Cook Group has got the highest rate company compared the others results. As airline companies, which are service business, should not need to keep stock, the inventory turnover ratio is high. Furthermore, inventory turnover ratio is expected to be high. Although the most important inventory item of industry is fuel, it doesn't stock up too much amount.

Assets turnover results of the European airline companies in the period of 2011-2016 are given in Table 4.

Table 4: Assets turnover ratio results of airline companies

Companies of Airline	2011	2012	2013	2014	2015	2016
Air Berlin Group	1,99	1,94	2,19	2,23	2,87	2,73
Air France	0,69	0,93	1,01	1,07	1,11	1,08
British Airways	0,71	0,91	0,79	0,88	0,69	0,59
Air France - KLM	0,65	0,87	1,01	1,13	1,13	1,08
Lufthansa	1,06	1,09	1,41	1,45	0,70	0,60
Thomas Cook Group	1,46	1,61	1,48	1,49	1,31	1,12
Turkish Airlines	0,72	0,78	0,73	0,75	0,60	0,45
Average	**1,04**	**1,16**	**1,23**	**1,29**	**1,20**	**1,09**

Source: own

Asset turnover ratio is an important ratio because it indicates how efficient the company uses its assets. As the aircraft are the most important asset of the airline companies, high investment in fixed assets leads to high assets. Thus, annual sales do not exceed the asset, so the asset turnover results of the airline companies vary around 1,00. While the European average of the companies that were involved in the ratio analysis was 1,04 in 2011, it was seen that the ratio rose 1,09 in 2016. It is determined that the asset turnover ratio results follow an increasing trend in the analysis period. The highest average of asset turnover ratio is 1,29 in 2014. But later it is declined 1,09 in 2016. The number of aircraft in airline companies has increased in the total asset. Due to the high fixed assets, asset turnover ratio has declined. Therefore, it is recommended that companies use their assets better.

Net profitability ratio results of the companies in the implementation are given in Table 5.

Table 5: Net profitability ratio results of airline companies

Companies of Airline	2011	2012	2013	2014	2015	2016
Air Berlin Group	-0,09	-0,01	-0,07	-0,09	-0,09	-0,27
Air France	-0,02	-0,05	-0,07	-0,01	-0,01	0,03
British Airways	0,06	-0,01	0,02	0,06	0,01	-0,14
Air France - KLM	0,01	-0,01	0,01	0,03	0,01	0,05
Lufthansa	0,01	0,03	0,01	0,01	0,06	0,07
Thomas Cook Group	-0,05	-0,06	-0,02	-0,01	0,01	0,01
Turkish Airlines	0,01	0,08	0,04	0,07	0,01	-0,01
Average	**-0,01**	**0,00**	**-0,01**	**0,01**	**0,00**	**-0,04**

Source: own

The average net profitability ratio of the European airline companies in the implementation of the study was -%1 in 2011. It is ascertained that the ratio in question decreases every passing year and it declined to the level of -4% in 2016. It is ascertained that Lufthansa makes profit each year in the 6-year period and Turkish Airlines is in 2011-2015 years, too. The highest net profit margin ratio belonged to Turkish Airlines with the rate of 8% in 2012. Air Berlin Group makes loss every year in 2011-2016 and has the most loss with a rate of 27% in 2016.

The return on assets ratio results of the European airline companies are shown in Table 6.

Table 6: Return on assets ratio results of airline companies

Companies of Airline	2011	2012	2013	2014	2015	2016
Air Berlin Group	-0,18	-0,02	-0,07	-0,20	-0,26	-0,47
Air France	-0,03	-0,10	-0,07	-0,01	0,01	0,03
British Airways	0,05	-0,01	0,02	0,05	0,01	-0,08
Air France - KLM	0,01	-0,01	0,01	0,04	0,01	0,05
Lufthansa	0,01	0,07	0,01	0,01	0,04	0,04
Thomas Cook Group	-0,56	-0,07	-0,03	-0,02	0,01	0,01
Turkish Airlines	0,01	0,06	0,02	0,06	0,10	-0,01
Average	**-0,10**	**-0,10**	**-0,02**	**-0,01**	**-0,01**	**-0,06**

Source: own

A similar situation to net profitability ratio results is also seen in return on assets ratios. Whereas the return on assets ratios of European airline companies occurred on the average -10% in 2011, this ratio raised increasingly at the rate of -6% in 2016. It is ascertained that Lufthansa makes profit each year in the 6-year period and Turkish Airlines is in 2011-2015 years, too. The highest net profit margin ratio belonged to Turkish Airlines with the rate of 10% in 2015. Air Berlin Group makes loss every year in analysis period and has the most loss with a rate of 47% in 2016.

The return on equity ratio results of the European airline companies are shown in Table 7.

Table 7: Return on equity ratio results of airline companies

Companies of Airline	2011	2012	2013	2014	2015	2016
Air Berlin Group	0,04	-0,33	0,17	0,93	0,25	0,83
Air France	0,10	0,09	-0,79	0,31	0,46	0,61
British Airways	0,22	-0,01	0,11	0,33	0,02	-0,02
Air France - KLM	0,02	-0,01	0,06	0,03	0,13	0,05
Lufthansa	0,01	0,12	0,05	0,01	0,22	0,21
Thomas Cook Group	-0,44	-1,28	-0,38	-0,4	0,05	0,02
Turkish Airlines	0,01	0,21	0,09	0,20	0,03	-0,01
Average	**-0,01**	**-0,17**	**-0,10**	**0,20**	**0,17**	**0,31**

Source: own

The high losses of previous period of companies affect equity negatively and it causes to take negative value its return on equity ratios. Because it is not possible to make mention of the return on equity of these companies, finding significant results by starting from negative values is quite difficult. Loss making of companies consecutively leads to reduction of the amounts of equity. Although net income of the period of next year is not high, when it divides by the low equity, the ratio is calculated positively and highly. While the results of the THY and Lufthansa equity ratios were positive during the 5-year period 2011-2015, it is seen that other companies showed a irregular trend. Air France and Air France-KLM have an average equity return of 13% for this period. Thomas Cook Group has an average equity loss of 41% for this period.

Turkish Airlines has an average equity return of %9 in this period. As a result, when the net profitability return on assets and return on equity ratio are examined together, it is seen that Air Berlin Group and Thomas Cook Group have the highest loss in implementation.

5 Conclusion and Discussion

In this work is evaluated the financial performance of airlines companies operating. It is seem that human power costs and fuel costs increase the costs of companies in the civil aviation sector. In addition, the risk of exchange rate changes also causes a significant decrease in the company's sales revenues as a foreign exchange risk. Although there is an increase in the sales of companies with increasing fixed assets, there is not much increase in the turnover ratio. As a result of the increased sales of companies, their receivables are increasing more and more, so the turnover ratio is falling. Lufthansa has the highest rate for average of receivables turnover ratio in 2011-2016 and Air France-KLM has the lowest ratio in the same period.

When inventory turnover ratio results are examined, it is seen that the turnover of stocks of companies decreases and the average stock turnover period increases. Average of inventory turnover ratio is 93 times. As the results of asset turnover ratio are examined, Air Berlin Group has the highest asset turnover rate with 2,32. Turkish Airlines has the lowest rate with 0,67. When the turnover ratios are evaluated together, an increase in the sales performance of the companies can’t be said to be an increase in the financial performances in full. Because the average of the related ratios generally has below the average of 2011-2016 period. This view supports the results in profitability ratios. Net profit margin is negatively in 6 years period. Furthermore average of all the companies has negative return, therefore they has loss. The same is true for the return on asset and return of equity, a negative trend in 2011-2016. Average of return on Assets is -5% in the same period. As a result, it is noteworthy that there are serious problems in the civil aviation sector. Air Berlin Group and Thomas Cook Group have the highest loss in implementation. It is seen that Lufthansa and Turkish Airlines have the successful performance.

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