



Financial Statement Analysis of Airlines: Case Study Finnair, KLM Royal Dutch, and Lufthansa

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Abstract

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<p>This thesis examines the financial performance of three airlines: Finnair, Lufthansa, and KLM Royal Dutch airlines. The study covers the years 2019-2022, and due 2022 being the current year the author will be examining the first three quarters for this year. The Covid-19 outbreak caused massive losses to industries and businesses all around the globe, including the airline industry. The author has selected this research topic to evaluate the financial performance of these airlines pre and post the pandemic. To compare the airlines and their performance with the chosen year financial analysis methods were utilized in the study.</p> <p>The theoretical framework provides the required information to better grasp the financial methods for performance analysis. The quantitative technique and desktop research were chosen as the research methods for this study. The author starts the analysis of the financial performance in chapter 4. The comparison of the three airlines is given in the next chapter, with a focus on the airline's liquidity and profitability.</p> <p>All three airlines were hit with losses in the year 2020. Due to the pandemic and the continued lockdown and travel restrictions in the following year, it has made it harder for the airlines to recover their pre normal levels by the end of 2021. Ratios of profitability and liquidity have been marginally influenced in the given years. Despite passenger numbers increasing in 2021 first three quarters, the pandemic and related travel restrictions continue to have a detrimental impact on air traffic in the first three quarters of 2022 for the airlines Finnair, KLM, and Lufthansa.</p>
Key words Financial analysis, aviation industry, ration analysis, income statement

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1 Introduction

This is a research thesis is for the Degree Program in International Business and for the major of Financial Management. This research will cover the introduction to the case companies Finnair, KLM Royal Dutch, and Lufthansa. The main goal of financial statement analysis is to understand and analyze the data in financial statements to evaluate the firm's profitability and financial stability and to predict its future opportunities. In the first chapter, the author will begin with the introduction to this research, which includes background of the topic, research questions (RQ), demarcation, benefits, key concepts, and end it with a synopsis about the case companies which is KLM, Lufthansa, and Finnair. Chapter 2 will cover the theory that underlying the financial statement analysis is presented in the following chapter. Then begins chapter 3 that concentrates of the research methodology used in this thesis, which the author has selected for the financial analysis for the case companies' data. From there, the author will start analyzing the financial statements and reports of the case companies. Chapter 5 will be served for comparison between the airlines whilst using the ratio analysis, to measure the liquidity and profitability. The airlines Finnair, KLM and Lufthansa performance post Covid-19 is covered in the next chapter. Concluding the research with chapter 7, where the recommendations for the case companies and added highlights of the findings of the previous chapter.

1.1 Background

Financial analysis is utilized by a wide range of businesses and sectors, with analysts using and studying the data to gain a better understanding of your company's financial status. This would provide the required information for managerial decisions made by a company's managers and executives to have a better knowledge before making future judgments. Financial reporting is also an essential part of it, as it sheds light on a company's financial status. When making investment decisions, this information may be used to quantify the risk of investing in a certain business. Financial statements can also be used to establish if a company is meeting its financial obligations. (Oliver 2020.)

A company's financial health and performance are outlined in its financial statements. The balance sheet, income statement, and cash flow statement are the statements. The balance sheet is used to show a company's financial health at a certain period and includes a summary of its assets, liabilities, and equity. A company's revenue, expenses, and net income for a certain time are shown on the income statement. The cash flow statement, which lists a company's inflows and outflows of cash, is the last statement. (Murphy 2022.)

Financial analysis is the core of any business and industry, which is the same for the aviation industry, as it paints a complete picture of a business financial condition and performance. The aviation industry is expanding quickly and will continue in the upcoming years as the International Civil Aviation Organization referred to it as 'bright one' (ICAO s.a.) By 2036 the aviation industry will be expected to generate 15.5 million in direct jobs and 1.5 trillion in gross domestic product to the world economy if this growth below is achieved. With the Covid-19 pandemic causing huge losses to industries and businesses around the globe, and the aviation industry was not an exception. This research will cover the impact of pre and post pandemic on the aviation industry and selected airlines for the research.

1.2 Research Question

In accordance with this topic fundamental objective, this research thesis can be summed up in the research question and followed up with the investigative questions. The outcome of this research will help understand the airline with the higher growth between the studied years of 2019-2022 which will include the first few quarters of the current year, while examining the unforeseen factors such as Covid-19.

The research question for this thesis is '**How is the financial performance of Finnair, KLM and Lufthansa be compared between 2019-2022?**' The research question was divided into investigative questions (IQ) as follows:

IQ 1. What is the financial performance of the airlines between 2019-2022 and compared to each other?

IQ 2. What recovery methods did Finnair, Lufthansa and KLM provide to return to pre- pandemic performance levels?

IQ 3. What recommendations and trends can be provided?

Table 1 below presents the investigative questions, theoretical framework components, research methods and results chapters for each investigative question.

Table 1: Overlay matrix

Investigative Questions	Theoretical Framework	Research Methods	Outcomes (In brackets, include chapter where reported)
IQ 1. What is the financial performance of the airlines between 2019-2022 and compared to each other?	Theoretical aspects will be measured through Financial Statement Analysis	Desktop re-search	Chapter 4
IQ 2. What recovery methods did Finnair, KLM and Lufthansa provide to return to pre- pandemic performance levels?	Financial Performance Analysis	Desktop re-search	Chapter 6
IQ 3. What recommendations and trends can be provided?	Summarizing the recommendations and trends for the airlines case study.	Desktop re-search and authors observations	Chapter 7

1.3 Delimitation

To ensure the coverage of the research question in this thesis, it is critical to utilize the financial statements, and examine the airlines quarterly and annual reports. Furthermore, the airline's management statements, and additional data will be applied to the research to determine their prospects and profitability. Thereby the research question has limited the timeline between 2019-2022, as otherwise it would result in losing perspective and therefore entangling the information and data found in the research. Vertical analysis, horizontal analysis, and ratios analysis are the three methods that will be implemented to help obtain the answer to the research question.

1.4 Benefits

The financial statement analysis will consist of income statements, balance sheet statement of the airlines. These statements can be used by shareholders and future investors as learning resources to assess the company's financial health and to quickly determine its underlying worth and outlook. The benefits for this author may fall by applying knowledge and skill acquired in the studying process into a tangible work.

1.5 Key concepts

Financial Statement – refers to statements prepared periodically to offer financial information about the company's activities, including profit and loss statements, balance sheet and cash flow statement. (Corporate Finance Institute 2022a.)

Vertical analysis – is a method to help analyze financial statements, and every line item on a financial statement is entered as a percentage of another item. (Corporate Finance Institute 2022b.)

Horizontal analysis – known as trend analysis, is a method known to examine financial statements over multiple periods, it also identifies trends and development patterns. (Corporate Finance Institute 2022c.)

Ratios analysis - points to the examination of several financial data to determine various aspects of an organization such as profitability, liquidity, and solvency. (Corporate Finance Institute 2022d.)

1.6 Case companies

The case companies for this research thesis are Finnair, KLM, and Lufthansa airlines. The author has selected these specific airlines due to the competition between those three major airlines because of their recently won award for 'The Best Airlines in Europe 2021' In the Skytrax world line awards (Skytrax World Airline Award 2021.) The 2021 Awards are based on a lengthy customer survey that ran from September 2019 to July 2021, indicating both the average travel times and the travels during the global pandemic.

Finnair is one of the world's oldest continually operational airlines, having been founded in 1923. To add, Finnair is part of the One World Alliance. The airline has over 80 destinations all part of Europe, Asia, and North America. In 2019 Finnair added flights to Los Angeles, Sapporo, Porto, and Bologna. The airline launched the push for change initiative in the year's start, where customers could offset their flights or purchase biofuel. Finnair conducted its first "Push for Change"

biofuel flights in August, which were funded by biofuel sales made by consumers. The biofuel planes took off from San Francisco and landed in Helsinki. Moreover, Finnair has joined the Nordic initiative for electric aviation, which promotes the development of electric aircraft. 2020 was the year Finnair launched its new sustainability strategy in aims to be carbon-neutral airline by the end of the year 2045 (Finnair s.a.) In brighter outlook for the new year, Finnair began the initial steps towards their comeback from the pandemic in 2021. During the year, the airline transported 2.9 million customers. The sales increased marginally year on year in 2021 to 838.4 million euros, which is still less than 30% of the amount in 2019. The comparable operating performance for the year was significantly negative, totaling -469.9 million euros, and that would be due to the pandemic and its effect on the airline.

KLM is one the oldest airline in the world still in business today. It was established on October 7, 1919. The main airlines of the KLM group are KLM and KLM Cityhopper, which collectively handle 34.1 million passengers and 621,000 tons of cargo. KLM offers direct flights to 92 sites in Europe and 70 international places through a vast network (KLM s.a.) Due to KLM's engagement in the SkyTeam Alliance, travelers now have access to 1,063 destinations in 173 different countries announces 2021 as 'the year of hope', as they began their second year post the pandemic. In the wake of Covid-19 KLM took the intuitive to take proactive role in a safer global travel and successfully been awarded 'The Diamond Award for Health Safety' by APEX as well as 'World Class Award' for best airline in the field of safety, sustainability, and service (KLM 2021.) Taking a closer glimpse of the financial perspective of airline, in comparison of the previous year, 2021 was indeed significantly better for KLM. The airline has reported to have reduced operating losses from 1.154 million euros in 2020, to 227 million in 2021 by focusing on strict cost, cash management, keeping investments low and generating higher revenues. (KLM 2021.)

Lufthansa was founded in 1926, with the airline headquarters being officially established on January 6, 1953, in Cologne. Lufthansa group has recorded to have up to 105,290 employees and 211 destinations in 74 countries, 24 of which are in the United States (Lufthansa s.a.) Despite the Covid-19, Lufthansa airline has been recovering as it generated revenue of 5,164 million euros by the end of 2021 causing an increase of 21% more than the previous year of 2020 with 4,280 million euros. (Lufthansa 2021.)

2 Theoretical Framework

In this chapter the theoretical framework for the analysis will be explored, as it will be followed up by the financial statement analysis (FSA) and applied in the upcoming research method chapter, through the financial statement methods such as horizontal analysis, vertical analysis, and ratio analysis.

2.1 Financial Statement Analysis

Financial Statement analysis adds a great benefit to understanding and assessing the financial health, solvency, and profitability of a company. In addition, it gives a more detailed understanding of how the company effectively runs internally, and it helps monitor the company's position in the market while observing the competition. Financial statements along with other reports are equally a defining and necessary part when it comes to evaluating the company and its securities. Analysts use the information found to examine the performance of the company and its financial position, and to forecast the future performance, customer behavior, and the risks that might arise ahead, more importantly in the airline industry. This might lessen the exposure to these risks and assist the company in creating a strategic business plan. Financial statements consisting of balance sheets, income statement and cash flow statement are the primary statements that financial analysts review, as they provide the complete picture of a company's financial performance. Information about financial position is provided in the balance sheet, information about performance is provided in the incoming statement, and the changes in the cash position is provided in a statement of cash flow. (Weetman 2011, 52-53.)

Analysts use a variety of techniques to obtain a thorough understanding of a company's financial performance over a period, and the most common methods are ratio analysis, and comparative financial statements. Comparative financial statements incorporate horizontal and vertical analysis covered in this research. (Corporate Finance Institute 2022e.)

2.2 Vertical & Horizontal analysis

The horizontal approach, also known as trend analysis, compares actual data from either the income statement, balance sheet, or cash flow statement in financial statement analysis over various financial periods. In a horizontal analysis, comparisons between years may be conducted using either absolute numbers or percentages. Horizontal analysis can be used by analysts and potential investors to identify trends across several years, evaluate both past performance and recent growth, and estimate the future using insightful insights acquired. (Thakur s.a.)

Vertical analysis is a technique for analyzing financial statements that shows each column item as a percentage of another item. The vertical analysis determines a ratio between each line item on the financial statement and the base item to illustrate how they are related to one another. Each additional line in the statement indicates a percentage of the overall, with the first line always displaying the base value at 100%. (Accounting tools 2022.)

2.3 Ratio Analysis

Ratio analysis is the study of several financial data points seen in the financial statements of a company. This research uses a quantitative method to evaluate a company's profitability, operational effectiveness, and liquidity. Evaluation of the company's financial strengths and weaknesses is made easier by understanding the link between financial ratios. Indicators from financial statements are used to assess three potential problems. A company's liquidity level indicates how well positioned it is to meet its short-term obligations. Solvency/Leverage is the second thing to consider. Leverage ratios, commonly referred to as "solvency," determine how much debt a company has and whether it can service it. Third on the list is profitability. Ratios of profitability show how lucrative a business is in relation to its size. (Corporate Finance Institute 2022f.)

2.3.1 Liquidity ratio

The liquidity ratio assesses a company's capacity to convert assets to cash and pay down short-term creditors at any one point in time. Liquidity ratios help owners and potential investors determine if a company's short-term obligations can be satisfied. It shows that the company is financially solid and less likely to face financial troubles in the future, as well as that the company's is more capable of satisfying its short-term obligations. Liquidity ratio contains the current ratio and the quick ratio. The current ratio is determined by comparing current assets to current liabilities. (Hayes 2022a.) The following formula is used to compute the current ratio:

$$\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities.}$$

The quick ratio is the next liquidity ratio, and often referred to as the acid ratio. The quick ratio evaluates a company's ability to pay its short-term obligations with its liquid assets. Understanding of the cash flow of a company is a requirement to understanding the quick ratio. (Weetman 2011, 345.) The following is the formula for the current ratio:

$$\text{Quick Ratio} = (\text{Current Assets} - \text{Inventories}) / \text{Current Liabilities}$$

2.3.2 Profitability ratio

Analysts and investors use profitability ratios to quantify and evaluate a company's potential to create income in terms of revenue, balance sheet assets, and shareholders' equity over a certain time. They show how well a company uses its resources to produce profit and shareholder equity. (Hayes 2022b.)

A type of profitability analysis is the ratio of operating profit (also known as operating margin) to revenue. The margin is influenced by market competition, economic circumstances, the ability to distinguish products or services, and the ability to control expenditures. (Weetman 2011, 345-346.) To determine if operating margin is increasing or decreasing, it is also helpful to look at historical trends in operating margin. It is calculated as follows:

$$\text{Operating Profit Margin} = \frac{\text{Operating Profit}}{\text{Revenue}} \times 100$$

The return on assets measures how profitable a company's assets is for producing revenue. It is computed by dividing net income by total assets. Shareholders and future investors may use this ratio to assess a company's financial health. (Weetman 2011, 345.) The following is the formula for the ratio:

$$\text{ROA} = \frac{\text{Net income}}{\text{total assets}}$$

2.4 Aviation Industry Post Pandemic

The global economy is dominated by the aviation industry. Aviation is a significant part of business globally since it accounts for more than one-third of all trade in terms of value. Around the world, the aviation sector provides 87.7 million employments, either directly or indirectly through the industry's supply chain, employees' consumption, and the tourism sector. Over 11 million people are employed directly in the aviation industry, in jobs such as: airlines (cabin crew, executives, check-in), airport operators and air navigation service providers and other airport-based roles. Through purchasing goods and services by the air transport sector, aviation indirectly supports over 18.1 million employments worldwide. According to Aviation Benefits Beyond Borders (Aviation benefits s.a.), the aviation industry contributes 3.5 trillion dollars which is around 4% of the global GDP (Gross domestic product). Throughout the Covid-19 breakout, Europe was one of the first and worst hit areas alongside other continents. The airlines in the area suffered significant losses in 2020 due to reduced passenger volume and flight activity. The situation did, however, start to improve in 2021 for most airlines, with the recovery beginning in the summer. The impact of Covid-19

might have been certainly reflected in EU countries as the lockdown was placed in action in the beginning months of 2020 as traffic dropped by more than 80% compared to the previous year's levels, with 92.8% as the lowest percentage. With just a brief high over the Christmas holidays, air traffic started to decrease once more in September 2020 and continued to do so until April 2021. There was a substantial discrepancy between the effects on EU and non-EU airports, with EU airports losing 1.32 billion passengers as opposed to non-EU airports losing 400 million. Moreover, there has been a significant loss for the EU airports. The European airports have reported to have suffered more losses compared to the non-EU countries. The number of passengers passing through European airports in 2020 was predicted to be 1.7 billion lower than in 2019, with a 33.6 billion euros loss in income. In comparison to 2019, the average daily movements at EU airports decreased by almost 73% in 2020. EU airports saw huge passenger losses compared to airports outside the EU, where the decline in passenger traffic was estimated to be 61,9%. Covid-19 has not only affected the aviation industry in the past two years, but the pandemic's longer-term impacts on the industry appear. The industry is forecasted to continue shrinking as analysts estimate that traffic will not reach 2019 levels until 2024. This industry has and will continue to face enormous long-term problems. (Aviation benefits s.a.)

The aviation industry must exploit this crisis as a driver of change to avoid being affected by it in the long run. These four areas, which more airlines have already incorporated, have been recommended by Eurocontrol (2020.) to transform the industry's future. Health safety are a fundamental component of post pandemic recovery for any industry, but for the aviation industry that considered safety and security as the foundation, this might be a slight change as health safety would represent an equal threat. The second area would be financial sustainability for the whole sector. Along with the well-publicized financial losses experienced by airports and airlines due to the decline in air travel, certain questions were important to answer to decide the next steps that needed to be taken. (Eurocontrol 2020.)

Green recovery is the next area reported, and as the aviation sector being one of the leading industries in sustainability initiative, making flying more environmentally friendly and sustainable was a primary priority at the beginning of 2020. Due to Covid-19, the plans were stopped, but it has not convinced industry to invest money in more fuel-efficient alternatives. Airlines must be able to reprioritize and be able to forcefully reply with reasons in opposition and measures that make flying more sustainable. Last, and one of the most futuristic segments addressed is investing in modern technologies. Every cloud, as they say, has an unseen benefit and the aviation sector should lean to it to the structural capability of the European air navigation service supply can only be boosted by the adoption of innovative technology. (Eurocontrol 2020.)

3 Research Method

In this chapter, the research methods used will be discussed, followed up by the data collection, ways of collecting the information, further risks and limitations, and the thesis's reliability and validity.

3.1 Selected research method

There are two categories of data gathering methods: quantitative and qualitative. Quantitative method focusses on numerical or quantifiable data. The qualitative method, on the other hand, focuses on observed but not measuring data and firsthand experiences or written materials that explicitly show how individuals think or act in a certain social context.

The type of the desired result is one of the features that separates qualitative research from quantitative research. The qualitative method aims to acquire specific information from the accounts of company's/persons that are under investigation. On the other hand, the goal of the qualitative research method is to provide in-depth comprehension and answers to the "how" and "why" issues, which are inaccessible to quantitative techniques (Bauer, Gaskell 2000, chapter 1.) The comparison of the two methodologies' "soft" and "hard" components is another intriguing tool for identifying differences between the quantitative and qualitative research. As implied in the table below, quantitative research is regarded as "hard" research, as it involves gathering and analyzing non-numerical data, such as conducting focus groups or interviews to get information that is not already in documentation or records. In comparison qualitative research is regarded as "soft" research as it relies on numerical or measurable data.

Table 2. Difference between quantitative and qualitative research (Bauer, Gaskell 2000, chapter 1)

	Strategy	
	Quantitative	Qualitative
Data	Numbers	Texts
Analysis	Statistics	Interpretation
Prototype	Opinion polling	Depth interviewing
Quality	Hard	Soft

Quantitative research has been selected for this thesis as the research topic touches on the financial health of the case study airlines and the impacts of before and post pandemic by analyzing the financial statements and reports and followed up by comparison between the three case

companies selected for this research. Desktop research will work as the foundation for the research, furthermore, obtaining reports and additional information of the airlines will be needed to answer the investigative questions that lead to research question. The research will then aim to provide recommendations for the airlines and future investors based on the study.

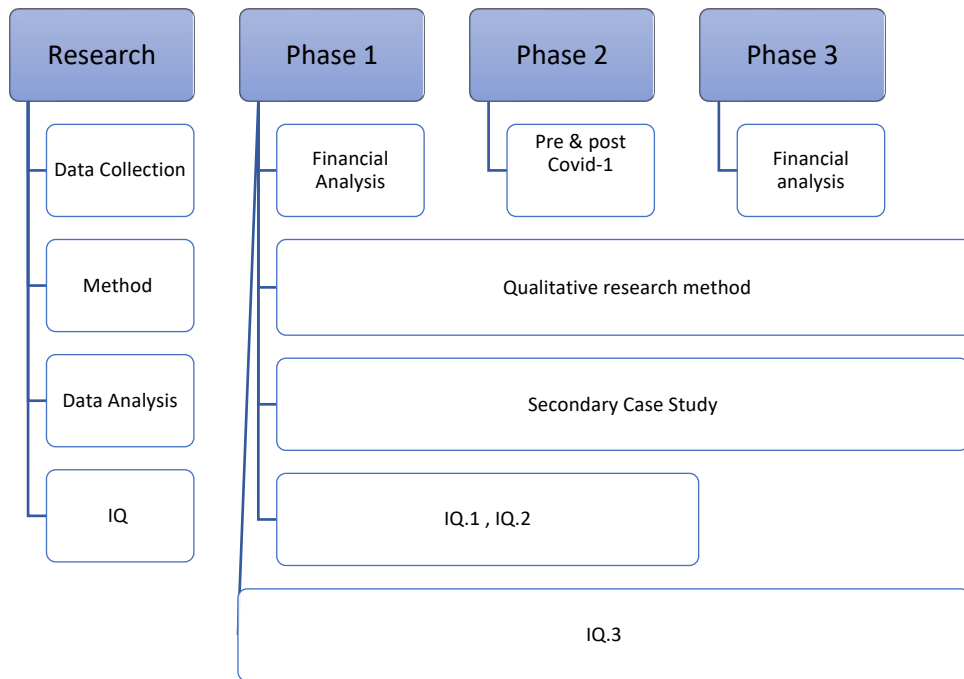


Figure 1. Research methods

The research structure starts with the first phase, which highlights the foundation being collecting the data and reports needed for the financial analysis for these airlines, and examining the significant figure changes from 2019-2021, as well as the first three quarters of 2022 for the case airlines selected. Followed by the second phase, quantitative research is the foundation of the second part of the thesis. By determining the key financial ratios and producing performance charts for the airlines. Charts and figures provided significant evidence to support the quantitative approaches, therefore, all three airlines financial data will be gathered for this study and analyzed. The pre Covid-19 performance levels for all three airlines will be included in the analysis pre pandemic in the year of 2019, post the pandemic effect on the airlines 2021, and how the airlines be able to predict how the performance would recover to its 2019 level based on the numerical data from the second phase. The recovery approaches utilized in the post the pandemic years 2021-2022 will be studied. The third and last phase of this research will cover the comparison between these airlines and concluding the findings, and highlights of the research.

3.2 Data Collection

The data collection will be based on desktop research throughout the thesis which incorporates secondary material such as academic papers, journals, articles, and books that have been dominantly found in the library of Haaga-Helia University of Applied Sciences. Desktop research is an important part of the study, as the author will be evaluating the found data to reflect in the study, and to gain knowledge more about the financial analysis aspect for this thesis. As the author will be using the annual financial reports provided by the airlines to answer the research question and complete the thesis.

4 Financial Performance Analysis

This chapter is dedicated to answering research questions and the investigation questions through analyzing the case airlines selected for this research employing their respective annual reports. In addition to the latest interim report dated 2022. The author will also conduct vertical and horizontal analysis.

4.1 Finnair

The first case airline in this study is Finnair airlines between the years 2019-2022. To better understand the financial performance of this airline, examining the revenue has been executed. The Covid-19 pandemic's effects led to a severe reduction in Finnair's revenue in 2020 with revenue of 829.20 million euros. Entering our current year 2022, Covid-19 pandemic and associated travel restrictions still hold a detrimental influence on the traffic, even with the numbers of passengers increasing yearly. Russian airspace restrictions have resulted in increase in fuel costs in the first quarters of 2022 as seen in the table below.

4.1.1 Vertical analysis

Reviewing the financial analysis for Finnair serves as the starting point for the study, with a vertical and horizontal analysis, and as Finnair airlines is based in Finland the numerical structure used is based on the Euro currency. As 2022 is the current year, the author could only obtain the first three quarters from the interim report and will be compared to the first three quarters of 2021.

Table 3. Vertical analysis of Income Statement (Finnair airlines)

Vertical	Finnair Consolidated income statement									
	€ million									
	2019	% of total revenue	2020	% of total revenue	2021	% of total revenue	2021 (Q1-Q3)	% of total revenue	2022 (Q1-Q3)	% of total revenue
Revenue	3,097.7	100 %	829.2	100 %	838.4	100 %	424.9	100 %	1,669.3	100 %
Staff costs	534.7	17 %	283.5	34 %	229.3	27 %	164.8	39 %	332.6	20 %
Fuel costs	687.3	22 %	232.7	28 %	211.4	25 %	109.0	26 %	608.1	36 %
Capacity rents	130.2	4 %	89.3	11 %	71.3	9 %	48.4	11 %	76.3	5 %
Aircraft materials	201.2	6 %	104.7	13 %	117.2	14 %	55.7	13 %	131.4	8 %
Traffic charges	331.3	11 %	112.4	14 %	120.4	14 %	67.0	16 %	155.4	9 %
Passenger and handling services	476.7	15 %	168.6	20 %	148.0	18 %	82.7	19 %	249.5	15 %
Operating result	160.0	5 %	-464.5	-56 %	-454.4	-54 %	-394.2	-93 %	-238.6	-14 %
Result for the period	74.5	2 %	-523.2	-63 %	-464.3	-55 %	-380.7	-90 %	-529.5	32 %

In 2019, sales reached a high of 3,097.7 million euros. Looking at the most significant change in percentages in the above table are seen in the expenses such as the staff costs with total of the revenue being at 17% in 2019 and the following year at 34%. As the travel restriction started clearing up in the early three quarters in 2022 the staff costs began to increase compared to 2021 first three quarters which remained similar by the end of the year. In 2021 the revenue increased a bit from the previous year and the staff costs decreased compared to 2020. Fuel costs was at 22% in 2019 and 28% in the following year. Additionally, the decreased air traffic has resulted in reduction in fuel costs in 2020 compared to 2019. The fuel costs have rose between the 2021 quarters and 2022, with it being 36% of the 2022 quarters revenue and that is because of the Russian airspace. The operating results of the airline for 2019 was marked at 5% of the revenue and dropped the next year to -56%. Due to Covid-19, Finnair's 2020 performance was significantly dropped because the airline as many other airlines was compelled to cancel several thousands of its flights and was only allowed to serve a restricted number of destinations because of strict travel restrictions in many countries, and the effect of the virus can be seen on the revenue for the year. Not much change was shown in the operating results by the end of 2021 as it pointed at -54%.

Similarly, the first three quarters of 2021 the operating results were at -394.2 million euros and in 2022 the first three quarters -238.6 million euros, due to the huge increase in the revenue the change between the years can see in the percentage. The result for the period was at -63% in 2020 following the Covid-19 outbreak and hasn't shown much change by the end of 2021 with -55%.

4.1.2 Horizontal analysis

Table 4. Horizontal analysis of Income Statement (Finnair airlines)

Horizontal	Finnair Consolidated income statement € million							
	2019	2020	% Change	2021	% Change	2021 (Q1-Q3)	2022 (Q1-Q3)	% Change
Revenue	3,097.7	829.2	-73 %	838.4	1 %	424.9	1,669.3	293 %
Staff costs	534.7	283.5	-47 %	229.3	-19 %	164.8	332.6	102 %
Fuel costs	687.3	232.7	-66 %	211.4	-9 %	109.0	608.1	458 %
Capacity rents	130.2	89.3	-31 %	71.3	-20 %	48.4	76.3	58 %
Aircraft materials	201.2	104.7	-48 %	117.2	12 %	55.7	131.4	136 %
Traffic charges	331.3	112.4	-66 %	120.4	7 %	67.0	155.4	132 %
Passenger and handling services	476.7	168.6	-65 %	148.0	-12 %	82.7	249.5	202 %
Operating result	160.0	-464.5	-390 %	-454.4	-2 %	-394.2	-238.6	39 %
Result for the period	74.5	-523.2	-802 %	-464.3	11 %	-380.7	-529.5	-32 %

The revenue change from 2019 to 2020 showed a huge change of -73% due to the start of the Covid-19 pandemic taking over the globe, and not much change was managed to pick up from the next year with just 1% difference from 2020-2021 with the travel restrictions slowly panning out. The first quarters of 2021 to this year's quarters there was a huge increase with 293% difference, and the impact can be seen in the huge difference of revenue between the two, due to being in post pandemic. Aircraft materials and traffic charges dropped to by -48% in change from 2019 to 2020 but compared to the huge change in the revenue. Fuel costs increased massively in 2022 first three quarters by 102% compared to 2021 first quarters, and that would be equally due to the Russian airspace. The results for the period in 2021 first quarters show the loss that impacted the airline due to the pandemic and slow air traffic, and how it slowly is recovering on this current year. The operating results of the airline from 2019 to 2020 the change was at -390% which is a huge

change from last years 160.0 million euros to -464.5 million euros, but the huge difference in the revenue could point at the -390% change. Oppositely, the operating results only changed by -2% between 2020-2021 but compared to the first three quarters of 2021 and three quarters of 2022 the change was marked at 39% which shows how the airline is recovering from the pandemic. The result for the period was at -802% between 2019-2020 as many airlines marked huge losses with the start of Covid-19 and travel restrictions. 11% increase shown in the following year in 2021 and again at -32% from 2021 three quarter and 2022 three quarters.

4.2 Lufthansa

We enter the second case airline with Lufthansa group. In 2020, the entire aviation industry, including the Lufthansa group, suffered unprecedented damage due to the Covid-19 pandemic. The pandemic has had a substantial impact on airline industry stock prices from the crisis's start in early 2020 (Lufthansa 2020.) as a result, on the performance of the Lufthansa share. There was a significant improvement at the beginning of the current year for the Lufthansa group, with a climb in the revenue of 4,280 million euros to 5,164 million euros. As 2022 is the current year, the author could only obtain the first three quarters from the interim report and will be compared to the first three quarters of 2021.

4.2.1 Vertical analysis

The second airline case of the research is Lufthansa group, and the author will be reviewing the financial analysis of the airline. Both a vertical and horizontal analysis will be performed, and because the Lufthansa group is a German airline, the numerical structure will be based on the Euro. The group official reports were used to deploy the data for the income statement. The interim report only included from January-September quarters because 2022 is the current year.

Table 5. Vertical analysis of Income Statement (Lufthansa airlines)

Vertical	Lufthansa Consolidated income statement									
	€ million									
	2019	% of total (re-venue)	2020	% of total re-venue	2021	% of total re-venue	2021 (Jan-Sept)	% of total re-venue	2022 (Jan-Sept)	% of total re-venue
Revenue	16,273	100 %	4,280	100 %	5,164	100 %	10,978	100 %	23,893	100 %
Cost of materials and services	10,762	66 %	5,071	118 %	4,776	92 %	5,830	53 %	13,673	57 %
Staff costs	3,049	19 %	2,217	52 %	2,408	47 %	4,652	42 %	5,934	25 %
Other operating expenses	2,985	18 %	2,342	55 %	1,780	34 %	2,016	18 %	3,469	15 %
Financial results	79	0 %	-2,115	-49 %	351	17 %	-198	-2 %	-98	0 %
Result from operating activities	546	3 %	340	8 %	-3,323	-64 %	-2,120	-19 %	842	4 %
Net profit	595	4 %	-780	-18 %	-2,310	-45 %	964	9 %	5,491	23 %

Due to the travel limitations that followed Covid-19, the airline's revenue decreased from 16,273 million euros in 2019 to 4,280 million euros in 2020 due to the Covid-19 travel restrictions and passenger traffic. The Lufthansa group's cost of material, and service expenses pointed to be at 66% of the airline revenue, and the staff costs showed a huge difference in the compared to the two years from 19% on 2019 and 52% of the revenue the following year, but it should be noted to the difference between the two revenues. 2019 net profit was reported to be 4% of the years revenue and compared to the next year the airline showed loss with -18% of the revenue. 2021 displayed a double with the revenue which impacted the airlines expenses which doubled post the pandemic. The net profits of the first three quarters of 2021 pointed at 9% of the revenue and at 23% of the following years profit.

4.2.2 Horizontal analysis

Table 6. Horizontal analysis of Income Statement (Lufthansa airlines)

Horizontal	Lufthansa Consolidated income statement							
	€ million							
	2019	2020	% Change	2021	% Change	2021 (Jan-Sept)	2022 (Jan-Sept)	% Change
Revenue	16,273	4,280	-74 %	5,164	21 %	10,978	23,893	118 %
Cost of materials and services	10,762	5,071	-53 %	4,776	-6 %	5,830	13,673	135 %
Staff costs	3,049	2,217	-27 %	2,408	9 %	4,652	5,934	28 %
Other operating expenses	2,985	2,342	-22 %	1,780	-24 %	2,016	3,469	72 %
Financial result	79	-2,115	-2777 %	351	117 %	-198	-98	51 %
Result from operating activities	546	340	-38 %	-3,323	-1077 %	-2,120	842	140 %
Net profit for the year	595	-780	-231 %	-2,310	-196 %	964	5,491	470 %

The changes from year to year were mostly seen in 2019 and 2020 with change of -74% in revenue due to the Covid-19 travel restrictions. The following year the change from 2020- 2021 the group was at 21% change in revenue. The other operating expenses pointed to -22% change from 2019 to 2020 due to the huge difference in the revenue the impact might not be comparable in a way, but the other operating expenses were more than half of the revenue of 2020. Nevertheless, the revenues doubling from 2021 first quarters and 2022 first quarters with 118% change, the airline showed an improvement in their passenger traffic and the other operating expenses of the airline. Financial results have shown a massive change from 2019-2020 with -2777% and as the group explained the losses in the results was because there were no hedged items. (Lufthansa 2020.) The financial results increased with the change of 117% in the following year in 2021 but compared to the first three quarters in 2021 and 2022 quarters the results changed by 51%. The net profit for the year was at -231% between 2019-2020 as marked the losses of the airline due to the pandemic, but then highly increased with the pandemic panning out between the first three quarters of 2021 and 2022 with the change of 470%.

4.3 KLM

We enter the third case airline which is KLM Royal Dutch airline. The airlines revenue has decreased drastically in 2020 from 11,075 million euros by the end of 2019 to 5,120. According to the airline (KLM 2020.), the Dutch government help of 3.4 billion euros financing package and the postpone the payment of labor taxes were a helping hand. With the spread of Covid-19 and uncertainty of the pandemic closed in, many airlines have suffered and looked to the following years in hopes of improvements for the air traffic around the world.

4.3.1 Vertical analysis

The third aim of the research is to review the financial analysis for KLM. Both a vertical and horizontal analysis will be performed, and because KLM is a Dutch airline. The information for the income statement was taken from official KLM Airlines publications.

Table 7. Vertical analysis of Income Statement (KLM airlines)

Vertical	KLM Consolidated income statement € million					
	2019	% of total revenue	2020	% of total revenue	2021	% of total revenue
Revenue	11,075	100 %	5,120	100 %	6,065	100 %
External expenses	6,116	55 %	3,455	67 %	3,702	61 %
Employee compensation and benefit expenses	3,189	29 %	2,079	41 %	2,792	46 %
Other income and expenses	173	2 %	127	2 %	160	3 %
Total expenses	9,132	82 %	5,407	106 %	6,334	104 %
Income of operating activities	875	8 %	-1345	-26 %	-1176	-19 %
Result of the year	449	4 %	-1,546	-30 %	-1,258	-21 %

KLM's revenue has dropped in 2020, in comparison to the previous year from 11,075 million euros to 5,120 million euros due to the same reason of all airlines because of the pandemic. Employee compensation and benefit expenses were at 29% in 2019, and 41% in the next year but with the expenses not showing any major difference between the two years from 3,189 million euros to 2,079 million euros, but due to pandemic lockdown the employee compensation and benefit would increase as the airline announced a huge decline of around 5,000 employees with a temporary wages and benefits (KLM 2020). Similarly, the total expenses started with 82% of the revenue in 2019 and hit 106% in the next year indicating the airline expenses increased in the following year

with the pandemic starting. On the other hand, the total expenses did increase again in the following year with the airline trying to recover its level of passenger traffic.

4.3.2 Horizontal analysis

Table 8. Horizontal analysis of Income Statement (KLM airlines)

Horizontal	KLM Consolidated income statement € million				
	2019	2020	% Change	2021	% Change
Revenue	11,075	5,120	-54 %	6,065	18 %
External expenses	6,116	3,455	-44 %	3,702	7 %
Employee compensation and benefit expenses	3,189	2,079	-35 %	2,792	34 %
Other income and expenses	173	127	-27 %	160	26 %
Total expenses	9,132	5,407	-41 %	6,344	17 %
Income of operating activities	875	-1345	-254 %	-1176	13 %
Result of the year	449	-1,546	-444 %	-1,258	19 %

With -54% change in revenue between 2019-2020 the airline had shown difference due to the Covid-19 impacting the 2020 year. The change in the in the following year was at change of 18% as the airline slowly recovering from the shortage of air traffic. Oppositely, the external expenses for KLM reflected a huge change between 2019 and 2020 with -44% but turned the corner with the airline external expenses pointing to a change of 7% between the two years. The income of operating activities shown one of the most changes with -254% between 2019 and 2020 but turned it to a favorable result in comparison to the next year with 13%. The airline results of the year have indicated much change from 449 million euros in 2019 to -1,546 million euros in 2021 with -444% change due to the slow air traffic but improved a bit with 19% change in the following year.

5 Airline Comparison

This chapter will be dedicated to the comparison between the airlines Finnair, Lufthansa, and KLM. The ratio analysis will be applied to portrait the differences between the airline's financial performance in the selected years 2019-2021. Due to the author not acquiring the interim report for KLM Q1-Q3, this chapter will only include up to 2021. Liquidity ratios will be the first input to compare the airlines, followed by profitability ratios.

5.1 Liquidity

The liquidity ratio evaluates a company's ability to convert assets to cash and pay off short-term liabilities. One or more ratios define a steady liquidity ratio. It demonstrates that the company is financially healthy and less likely to encounter financial difficulties in the future.

5.1.1 Current Ratio

The current ratio assesses a company's capacity to meet its short-term liabilities that are due in a year. It is computed by dividing current assets from current liabilities. A higher ratio demonstrates more liquidity, implying that the company has more than adequate assets to meet its short-term obligations. A smaller ratio suggests less liquidity, whereas a higher ratio indicates the opposite.

Table 9. Current ratio for the case airlines.

Current Ratio	2019	2020	2021
Finnair	1.33	1.33	1.13
Lufthansa	0.21	0.41	0.57
KLM	1.15	0.99	0.94

Finnair starts with a current ratio above 1 in 2019, and it stays the same in the following year, with a state flow of 1.33, and a small drop to 1.13 by the end of 2021. In contrast, KLM airlines have shown a current ratio of 1.15 in 2019 and dropped the following year to 0.99, an explanation for it is due to the pandemic crisis that has slowed down the industry with the travel restrictions. In 2021 the airline was at a ratio of 0.94 with not a significant drop, the airline remained fairly the same throughout the year. Lufthansa had slowly increased from 0.21 in 2019 and to 0.57 by the end of 2021. Finnair Airlines' current assets exceed its current liabilities, although Lufthansa and KLM Airlines' current liabilities were higher over the period of 2019-2021. Compared to the other two airlines, Finnair has shown the most promise when it comes to the airline's ability to pay off its short-term liabilities in a year

5.1.2 Quick Ratio

The ability of a company to satisfy its short-term liabilities with its current accessible assets is measured by the quick ratio, which serves as an indicator of a company's short-term liquidity situation. The viability and some aspects of a company may be illuminated by such ratios based on numbers, but they may not provide a clear overview of the company's state of health.

Table 10. Quick ratio for the case airlines.

Quick Ratio	2019	2020	2021
Finnair	0.96	1.50	1.19
Lufthansa	0.54	1.25	1.79
KLM	0.48	0.46	0.59

Finnair starts with a quick ratio of 0.96 in 2019. On the other hand, both Lufthansa and KLM reached a lower quick ratio of 0.54 for Lufthansa and 0.48 for KLM. Finnair's highest quick ratio was reached in 2020 with it being at 1.50 with the change in current liabilities of -51% of 2019-2020. Compared to Lufthansa being above 1 and with -24% change in the current liabilities in 2019-2020 the quick ratio was lower in comparison between the two airlines. While KLM remain at the lowest position between the two airlines with an average of 0.51 between the three years. Lufthansa has remained with higher current assets than its current liabilities throughout 2020 and 2021, indicating the airline could relief its short-term liabilities with accessible assets.

5.2 Profitability

Profitability ratios are significant because they might draw investors' attention. When a company is making strong profits, it allows investors to understand that things will be going well for the company for a while. Shareholders gain confidence as an outcome, encouraging them to continue to invest in the company. The first ratio that will be used to compare the airlines is profit margin, return on assets for all three case airlines.

5.2.1 Profit margin

Operating profit margin is the next ratio of profitability analysis. To determine if operating margin is increasing or decreasing, it is also helpful to look at historical trends in operating margin.

Table 11. Profit margin for the case airlines.

Operating profit	2019	2020	2021
Finnair	5 %	-56 %	-54 %
Lufthansa	3 %	8 %	-64 %
KLM	8 %	-26 %	-19 %

Finnair airline's profit margin marked 5% in 2019, and decreased drastically to -56% the following year, with a low drop the following year to -54%. This would be due to the pandemic and its impact on the airline. Lufthansa hit 3% in 2019, and increased up to 8% in 2020, leaving the next year with a huge gap of -64% in profit margin. KLM was one of the airlines to steadily grow its profit margin from -26% of 2020 to -19% in 2021.

5.2.2 ROA

The return on assets measures how profitable a company's assets is for generating revenue. It is figured up by deducting the net income from of the total assets. This ratio is used by analysts and shareholders to evaluate a company's financial health. A greater return on assets ratio suggests that a company is more lucrative and efficient.

Table 12. Return on total assets ratio for the case airlines.

ROA	2019	2020	2021
Finnair	2 %	-14 %	-11 %
Lufthansa	2 %	-2 %	-7 %
KLM	4 %	-15 %	-12 %

2019 for Finnair has a return on assets percentage of 2%, but in the following year the airline's return in assets decreased and reached -14% with the total assets change of -6% between 2019-2020. Which showed a huge drop from the normal levels in 2019 pre Covid-19. In contrast, Lufthansa return on assets only dropped to -2% in 2020 with the -11% in total assets change between 2019-2020 and return of assets being at -7% in the following year of 2021. KLM had return in assets of 4% in 2019, the group followed with a drop of -15% to highlight the airline profitability and showed a bit of increase to -12% the next year. This shows that Lufthansa had the highest return of assets with less changes between the years indicating the airline is most profitable when it comes to its assets.

6 Airline Post Covid-19 Recovery

In this chapter the airlines post Covid-19 recovery and, and its effect on their financial performance will be discussed.

6.1 Finnair

With decreased flight travel at the start of 2020 and falling fuel prices, the Covid-19 pandemic has significantly impacted Finnair airlines financial performance. Passenger revenue significantly dropped because of the weak demand induced by the Covid-19-related cancellations and travel restrictions. The pandemic still had an impact on Finnair's airline in the third quarter of 2022. Although the airline passenger traffic continued to boost, the impact of the pandemic travel restrictions started to be more visible in the given year. Both revenue and cargo-related available tonne kilometers grew with the latter by 28%, which were mostly operated between Europe and Asia and North America. The company restates its forecast (Finnair 2022.) which predicts that the comparable operational performance for 2022 would be unfavorable.

6.2 Lufthansa

Lufthansa financial performance have shown improvement in 2021 compared to start of the pandemic in 2020. With passenger capacity reaching 32% higher than the year before, despite that the first quarter of 2020 was unaffected by the Covid-19 restrictions and that has reflected on its revenue in contrast with the 2021 quarters. Nevertheless, the airline had reported reducing their operating losses in the same year. Despite 2022 being reported to be a challenging start of the year for the group, the financial performance for the airline have slowly and gradually increased in the first half of the year, with passenger capacity increasing and the revenue in the first three quarters of 2022 being at 23,893 million euros, indicating the airline is recovering to its pre Covid-19 levels. Operating expenses increased in the current year by 81% year on year. (Lufthansa 2021.)

6.3 KLM Royal Dutch

KLM revenue post the Covid-19 increased with 6,065 million euros compared to the previous year of 2020 of 5,120 million euros. Total revenues increased by 18% compared to 2020, which had solid revenues during the first two months until the pandemic severely damaged KLM's revenues. KLM implemented a restructuring plan called "Van Meer naar Beter" which translated to Building Back Better (KLM 2020.) In 2020 to better prepare the airline for the future, which listed sustainability and societal role, cost reduction, fleet adjustments and renewal and implementing new innovate technology. Due to the plan the following year showed a bit of improvement with revenues in 2021. The operating activities in 2021 were reported to drop and recorded as loss for the airline of

227 million euros compared to 1,154 million euros in the previous year. The airline had announced to be focusing on cost reduction to increase their profitability and competitiveness. (KLM 2021.)

7 Discussion

The purpose of this section is to summarize key results of the research. Recommendations and trends in the industry that are being implemented.

7.1 Key Findings

Despite the Covid-19 outbreak affecting airlines the most of any aviation sector, they were already underperforming. Due to the new IFRS 16 implementation, airlines like Finnair and KLM have faced financial expenses given 2019 and the impact was shown in both airlines' performance as it continued in the next due to the pandemic crisis. In the other hand, Lufthansa group had viewed financial performance drops due to the new application but reported to have still relative stayed in their target range pre Covid-19. In 2021 the airlines continued to be affected negatively with the pandemic and accompanying travel restrictions continue, despite passenger numbers growing. Russian airspace and Ukraine war have had an impact on the airline's financial performance, as they do on any other airline or sector as well as having hand in increasing the fuel costs with the three airlines. In comparison, Finnair has shown the most promise when it comes to the airline's ability to pay off its short-term liabilities in a year. While with the low quick ratios for KLM might apply that the airline struggled in paying their current liabilities solely with their quick assets with lower rates post Covid-19. This demonstrates that both Finnair and Lufthansa are in better short-term financial health in terms of its capacity to pay down its immediate debt obligations by the end of 2021. Ratios of profitability and liquidity have been slightly impacted in the given years. When it comes to profitability ratio of return assets, Lufthansa group had a steady level with the not much difference in 2019 to 2020, while Finnair and KLM shown the most change compared to the other airline, nevertheless negative impact was made with all three airlines from 2020 to the next following year of 2021.

7.2 Recommendations and Trends

As Covid-19 rules loosen and more passengers travel again, profits are increasing. There are factors that could impact on the airline sector negatively in the upcoming years. First on would be fuel costs rising, as the forecast assumes that the conflict in Ukraine might have the potential to spread to other countries, which will result in a bad impact for the airlines alongside of rising fuel costs. Here are few recommendations and trends to enhance the passengers experience and the airline future performance (JSI 2022.) in addition to their cost reduction that is already applied:

Incorporating advanced technology, as many passengers and people in the world rely on their phones and applications to make their lives easier, airlines could take advantage of that especially in a touchless era we live in to incorporate more streamlined, comprehensive information for passengers considering technology advancements and changing customer expectations. Use the app as a one-stop shop for whatever the passenger may want, whether they are in the air or elsewhere in the terminal.

Touchless Experience For passengers, enhancing safety of the passengers and sanitizing simultaneously enabling airports and airlines to increase their productivity and better manage cargo operations is possible by incorporating digital steps to minimize physical encounters between customers and airline workers.

Investing in futuristic aircrafts, due to the airline industry goal in achieving zero net emissions by the year of 2025, models like hydrogen powered aircraft have been tested and implied in airlines and might soon be inculcated in the future of airline industry. These types of aircraft would not only increase the innovative and the goal for the airlines but also can seat more passengers in the same amount of space also allows for the development of cabin designs that are more effective.

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