

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Trade and Finance



Bachelor Thesis

**Assessment of the Financial Position and Performance of
a Chosen Company Operating in the Aviation Industry**

Ainur Nubiyeva

© 2024 CZU Prague

BACHELOR THESIS ASSIGNMENT

Ainur Nubiyeva

Business Administration

Thesis title

Assessment of the Financial Position and Performance of a Chosen Company Operating in the Aviation Industry

Objectives of thesis

The aim of this bachelor thesis is to assess the financial position and performance of a chosen company in the aviation industry by analyzing the company's financial statements with focus on the representation and changes of the reported assets, liabilities, expenses and revenues for a chosen period and to identify the potential financial problems and the most significant factors influencing the profit from the company and the industry point of view.

Methodology

Methodology for the literature overview is based on data collection from the relevant legal framework, specialized publications and other written or online sources. The practical part of the thesis will be based on the information gained from the published annual reports of the chosen company. Vertical and horizontal analysis and ratio analysis of the financial statements will be used to assess the financial position and performance of the company and to prepare the practical part of the thesis. The methods of analysis, synthesis, comparison and deduction will be used to formulate the conclusions of the thesis.

The proposed extent of the thesis

40-50

Keywords

financial statements, financial analysis, financial position, balance sheet, assets, liabilities, equity, financial performance, Income statement, expenses, revenues, profit, cash-flow, airline industry

Recommended information sources

AHSAN, I. Financial Statement Analysis, 2020, 194 p., ISBN-13: 979-8614905569

FRIDSON, M., ALVAREZ, F. Financial Statement Analysis: A Practitioner's Guide, New York :J.Wiley, 2022, 448 p., ISBN: 978-1-119-45716-9

Global Market Insight. Top 8 Challenges for the Aviation Industry in the Post-COVID 19 Era, December 2022, available online at gminsights.com

HELPERT, E. A. Financial analysis: tools and techniques : a guide for managers. New York: McGraw-Hill, 2001, 480 p., ISBN-13: 978-0071378345

MAYNARD,J. Financial Accounting, Reporting, and Analysis. UK:OUP Oxford, 2017, 936 p., ISBN-13 : 978-0198745310

MELVILLE, A. International Financial Reporting: A Practical Guide. Harlow, UK: Pearson, 2017. 512 p. ISBN 978-1-292-20074-3

PLACEK, M. Air transportation – statistics & facts. 2023, available online at statista.com

REED, J. 10 Challenges Facing Passenger Aviation. 2023, available online at aviationtoday.com

YOUNG, David S. et al. Corporate Financial Reporting and Analysis: A Global Perspective. Hoboken: Wiley, 2019. 368 p., ISBN 978-1-119-49457-7

Expected date of thesis defence

2023/24 SS – PEF

The Bachelor Thesis Supervisor

Ing. Enikő Lörinczová, Ph.D.

Supervising department

Department of Trade and Finance

Electronic approval: 27. 2. 2024

prof. Ing. Luboš Smutka, Ph.D.

Head of department

Electronic approval: 8. 3. 2024

doc. Ing. Tomáš Šubrt, Ph.D.

Dean

Prague on 12. 03. 2024

Declaration

I declare that I have worked on my bachelor thesis titled " Assessment of the Financial Position and Performance of a Chosen Company Operating in the Aviation Industry " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.3.2024

Acknowledgement

I would like to thank Ing. Eniko Lorinczova, PhD for all the advice and support during my thesis work.

Assessment of the Financial Position and Performance of a Chosen Company Operating in the Aviation Industry

Abstract

The main purpose of this thesis is to collect financial data and perform financial analysis of balance sheet and income statement of Air France and Air Astana, to obtain information about company's financial performance throughout post pandemic period of 2021-2022.

The thesis consists of two parts: theoretical part and practical part.

In theoretical part, the author presents information about the basic accounting financial statements, such as balance sheet, income statement and cash flow. The theoretical part also deals with the selected financial analysis and ratio analysis.

The practical part of the thesis consists of calculations of horizontal and vertical analysis of balance sheets and income statements and ratio analysis of companies.

Horizontal and Vertical analysis and Ratio analysis were performed using official financial statements of Air Astana and Air France for period of 2021-2022.

Keywords: Financial statement, financial analysis, financial position, balance sheet, assets, liabilities, equity, financial performance, income statement, expenses, revenue, profit, cash flow, aviation industry

Posouzení finanční pozice a výkonnosti vybrané společnosti působící v leteckém průmyslu

Abstrakt

Hlavním účelem této práce je shromáždit finanční data a provést finanční analýzu rozvahy a výsledovky společností Air France a Air Astana, získat informace o finanční výkonnosti společnosti v období po pandemii 2021-2022. Práce se skládá ze dvou (2) částí: teoretické části a praktické části.

V teoretické části autor uvádí informace o základních účetních složkách, jako je rozvaha, výsledovka a tok peněz. Teoretickou část tvoří informace o struktuře a výpočtech finanční analýzy a poměrové analýzy.

Praktickou část práce tvoří výpočty horizontální a vertikální analýzy rozvah a výsledovky a poměrová analýza společností.

Horizontální a vertikální analýza a poměrová analýza byly provedeny s použitím oficiálních finančních výkazů Air Astana a Air France za období 2021-2022.

Klíčová slova: Finanční výkaz, finanční analýza, finanční situace, rozvaha, aktiva, pasiva, vlastní kapitál, finanční výkonnost, výsledovka, náklady, výnosy, zisk, cash flow, letecký průmysl.

Table of content

1 Introduction	9
2 Objectives and Methodology	10
2.1 Objectives	10
2.2 Methodology	10
3 Literature Review.....	12
3.1 The airline and aviation industry characteristics	12
3.2 The Financial Statements	15
1.2.1 The statement of financial position – the Balance sheet	15
1.2.2 The statement of the financial performance – the Income Statement.....	17
1.2.3 The cash-flow statement	19
3.3 Financial Analysis	20
2. Practical Part.....	23
4.1 Air France KLM.....	23
4.1.1 Air France KLM – vertical and horizontal analysis of the balance sheet .	24
4.1.2 Air France KLM – horizontal and vertical analysis of the Statement of financial performance (the Income statement)	27
4.1.3 Selected ratio analysis of Air France KLM	30
4.2 Air Astana.....	31
2.2.1 Vertical and Horizontal Analysis of the Balance Sheet for Air Astana	31
2.2.2 Vertical and Horizontal Analysis of the Income statement for Air Astana	35
2.2.3 Selected financial ratios for Air Astana	38
3. Results and Discussion	39
5.1. Assessment of the financial position and performance of the chosen companies	39
6. Conclusion.....	40
7. References	42
List of pictures, tables, graphs, and abbreviations	44
List of pictures	44
List of tables	44
Appendix – financial statements of the companies	44

1 Introduction

Aviation industry stands as one of the main components in modern day economy, facilitating international trade, tourism, and economical integration. The dynamic nature of aviation industry is characterised by intense competition and high operational cost requires financial assessment to obtain financial growth. The COVID-19 pandemic with travel restrictions and low passengers demand in early 2020s caused a large crisis for aviation sector. As industry enters recovery period evaluating financial position and performance becomes crucial in understanding their responses to the challenges.

This thesis aims to assess a financial position and performance of two airlines: Air France KLM, a huge carrier with large global network and Air Astana a leading airline of Central Asia known for a regional dominance.

The assessment is primarily conducted through performing financial analysis by horizontal and vertical analysis of balance sheets and income statements alongside with ratio analysis. Comparative analysis not only sheds light on specific outcomes of financial performance but also shows outcomes of financial strategies adopted by Air France and Air Astana. Through this analysis thesis provides valuable insight to dynamics of airlines in post-pandemic era.

As aviation sector continues to adapt and evolve in the aftermath of COVID-19 pandemic, this study offers evaluation of how-to distinct airlines have navigated financial turbulence, positioning themselves for recovery and future success.

2 Objectives and Methodology

2.1 Objectives

The aim of this bachelor thesis is to assess the financial position and performance of a chosen company in the aviation industry by analyzing the company's financial statements with focus on the representation and changes of the reported assets, liabilities, expenses, and revenues for a chosen period and to identify the potential financial problems and the most significant factors influencing the profit from the company and the industry point of view.

The main goal of thesis is to obtain financial performance results and compare their financial positions in post-pandemic period and identifying future financial problems by analyzing their annual reports by focusing on the changes in of assets, liabilities, and profits in the period from 1st January- 31st December 2022 of following companies: Air Astana and Air France. Specifically aims to:

1. Evaluate financial health of each airline by examining key financial metrics such as Return on Assets (ROA) and Return on Equity (ROE) over the fiscal years 2021-2022.
2. Compare financial performance of the companies to understand and determine how they have managed to recover from the financial impact of COVID-19 pandemic.
3. Identify financial strengths and weaknesses, and the potential growth after the pandemic of two (2) airlines by analysis of liquidity ratios, investment strategies and capital structure.

2.2 Methodology

Methodology for the literature overview is based on data collection from the relevant legal framework, specialized publications and other written or online sources. The practical part of the thesis will be based on the information gained from the published annual reports of the chosen company. Vertical and horizontal analysis and ratio analysis of the financial statements will be used to assess the financial position and performance of the company and to prepare the practical part of the thesis. The methods of analysis, synthesis,

comparison, and deduction will be used to formulate the conclusions of the thesis.

Methodology of this thesis is structured to ensure analysis of the financial performance of selected airlines financial health. This thesis will employ a mixed approach to achieve the objectives given above, comprising both qualitative and quantitative analysis.

1. Quantitative analysis:

- **Data Collection:** Financial data for the years 2021-2022 will be collected from the annual reports of Air France KLM and Air Astana.
- **Financial Ratio Analysis:** Key ratios such as ROA and ROE will be calculated to evaluate profitability and asset efficiency.
- **Comparative Analysis:** Financial performance of two (2) airlines will be compared using calculated financial data. This will show the relative performance of each airline against its competitors.
- **Horizontal Analysis (Time Series Analysis):** This involves evaluating financial statements over multiple time periods, providing information into trends and operational performance over the years. It will help to describe how each company's revenue, expenses and other financial items have changed over the time.
- **Vertical Analysis (Common Size Analysis):** This method will be used to express each item in financial statement as a percentage of a base figure, such as total assets or sales. This will provide the information for structured evaluation of airlines statement at a single point in time and allows to perform the comparison with other chosen companies.

3 Literature Review

3.1 The airline and aviation industry characteristics

The airline industry operates in a complex environment where financial stability is crucial yet challenging to maintain. The main source for the information about ratio analysis in accounting was collected from a work of James O. Horgan “A Short History of Financial Ratio Analysis” and “Essentials of Financials Analysis” by George T. Friedlob. Lydia L. F. Schleifer.

The literature covers a range of methodologies for evaluating the performance of airlines, including ratio analysis, trend analysis and comparative financial statement analysis (James O. Horgan 1968, pp.285-294). In the context of the airline industry, application of financial ratio analysis is particularly relevant. This industry is characterized by high operational costs, significant capital investments and fluctuations in customers demand and fuel prices. As Horgan suggests (p. 286) use of financial ratios allows analysts to purify complex financial information into understandable and comparable metrics. Ratios as debt-to-equity, current ratio, ROA, and ROE provide insights into company’s liquidity, efficiency, and profitability. By applying the principles outlined by Horgan, this thesis aims to dissect financial performance of airlines during the challenging period of years 2021-2022.

In line with this, the thesis will consider external factors such as regulatory changes, market dynamics and geopolitical events that have influenced the financial performance of the studied airlines. Additionally, George T. Friedlob. Lydia L. F. Schleifer discussion on the interpretation of financial analysis provides valuable guidance for this study. “Essentials of Financial Analysis” offers a great framework for the financial evaluation of companies. Integrating this work with Horgan’s perspective on analysis, will provide a comprehensive study of Air France and Air Astana financial performance during 2021-2022 period.

The COVID-19 pandemic has been a central focus in recent literature. The impact on Aviation industry was profound with studies of Katiano Dube, Godwell Nhamo and David Chikzodi’s “COVID-19 pandemic and prospects for recovery of the global aviation

industry” from the “Journal of Air Transport Management, 2021, vol.92” This study also highlights significant revenue losses and shifts in customer’s demand. This work also explores the strategies adopted by the companies to minimise the financial losses.

Horizontal and Vertical analysis within the aviation industry is extensive. Main research information was conducted from papers in International Journal of Mechanical Engineering “Apply Horizontal Analysis and Vertical Analysis on Financial Statement based on IFRS” (by W.A. Lumbantobing, L.M. Nia, I. Muda 2022, pp.6791-6795).

Comparative studies are particularly useful for understanding relative performance of airlines in different geographical and regulatory environments. Information for proper financial analysis of airlines were conducted from: Transportation Research Procedia (vol.43, 2019, pp.178-187) “The Comparison of financial performance of airlines with different Business model operated in long term market” by M. Renold, J. Kuljain, M. Kalic. This article’s cross-airline comparisons offer a perspective on how carriers adapt to new market conditions and competitive pressures.

The literature for financial recovery strategies for post-pandemic period is emerging but vital. Research by A. Nguyen Jr. (2021 p.65) “Financial recover of aviation business during the COVID-19 economic recession” mainly focuses on airlines capacity to return to profitability.

The aviation industry has been a and still is a pivotal element of global transportation system, connectivity, and economic development. The history of nowadays aviation trades back to XVIII century, marking a significant leap in transportation technology and progress of the society. This industry includes a wide range of activities, such as passenger travel, cargo transportations, military operations playing a crucial role in international tourism, economical trade, and diplomacy.

Over the years, aviation industry has evolved dramatically, driven by development of technologies, regulatory changes, and shift in consumer preferences. The first well known flight of the human was conducted by Jean Francois Pilatre de Rosier and Marquis de Orlandes in 1783. They flew 8 km in a hot air balloon that was developed by Montgolfier

brothers. The balloon was heated by open fire, was not controllable and it moved by the will of the wind.

The next technological breakthrough in aviation history was made in 1884, when first fully controlled free flight was carried on a French military airship by Charles Renard and Arthur Krebs.

With the new 20th century there was a drastic change in aviation industry, the Wright brothers. They were apparently, the first aircraft manufacturers that conducted serious research, into solving the control and engine issues. As a result, they developed and built an engine that could provide the power and solve a control problem by using a system known as a “wing skew”.

On December 12, 1915, the first flight of the Junkers J1 was made, it was world’s first all-metal aircraft to take off.

After The World War II the industry of commercial flights started to develop rapidly. In the beginning the military planes were used for commercial purposes. But after the 1950s breakthrough in airplane engineering and with new Boeing-707 marked the beginning of mass commercial passenger air travels. Transcontinental and transoceanic air transportation by turbo jet liners provided the strongest competition to railways and ocean liners, moreover, the breakthrough was so strong that it practically led in the 1960s to the complete displacement from the field of passenger traffic. (A Century of Triumph: The history of Aviation, C. Chant, 2002)

The industry is also characterized by its high operational complexity and sensitivity to the geopolitical events, economic conditions, and environmental concerns. Airlines operate in a highly regulated spaces, they are the subjects of international treaties and agreements that govern airspace and air traffic management. Economical changes can also significantly impact on demand for air travel, while geopolitical tensions and pandemics such as COVID-19 can lead to profound challenges for the companies.

The aviation industry’s future appears to be on the cusp of a new era, with new developments in electric propulsion, autonomous flight and space tourism promising to

redefine the structure of air tourism. And as it stands, aviation industry continues to be a vital engine to global connections, economic development, and technological innovation by adapting to the changes of the modern world. (Dube, 2021)

3.2 The Financial Statements

The financial statements are the basis for assessing the financial position and performance of the companies.

1.2.1 The statement of financial position – the Balance sheet

The balance sheet is a fundamental statement that provides a snapshot of a company's financial position at a specific point of time. It is an essential tool for shareholders, including investors, creditors, and management, to assess the financial health and operational efficiency of a business.

While focusing on financial analysis, understanding the characteristics of the balance sheet and its components are crucial. Below are the key characteristics of balance sheet:

- **Indicators of Financial Health:** The balance sheet provides critical data for calculating financial ratios and metrics that assess a company's liquidity, solvency, and capital structure. This analysis is crucial for making investments, lending, and management decisions.
- **Regulatory Framework:** The preparation and presentation of balance sheet are governed by accounting standards and regulations, such as the generally Accepted Accounting Principles (GAAP) in the U.S. or International Financial Reporting Standards (IFRS) globally. These standards ensure uniformity and comparability across all companies and industries.
- **Snapshot in Time:** The balance sheet presents the financial position of a company at a particular moment, mainly at the end of the fiscal year. Unlike the income statement and cash flow statement, which cover a period, the balance sheet provides a static view.

- **Dual Nature:** The balance sheet is based on the accounting equation, “Assets = Liabilities + Equity”. This equation underlines the dual nature of the balance sheet, where every transaction affects both sides, maintaining the balance.

A balance sheet is structured into three (3) main sections: assets, liabilities, and equity. Assets are what company owns, liabilities are what they owe, and equity represents the owners “claim” after liabilities have been settled. (Investopedia n.d.)

Assets and liabilities on the balance sheet are usually listed in order of liquidity, meaning how quickly they can be converted to cash or need to be paid. Assets can be categorized into two (2) main types:

Current Assets: These are the assets that are expected to be converted to cash, sold, or consumed within the normal operating cycle of the business. Examples include cash and cash equivalents, marketable securities, receivables, inventory, and prepaid expenses.

Non-current Assets (Long-term Assets): These assets are not expected to be converted into cash within the balance sheet date. Non-current assets include property, land, plants and equipment, intangible assets such as patents and copyrights, investments, and tax assets.

Liabilities represent obligations of the company that come from the past transactions or events, the settlement of which may result in the transfer or use of the assets or services. Liabilities are also categorized into two (2) main types:

- **Current liabilities:** These are the obligations that are due to be settled within one year or within the operating cycle of the balance sheet. Examples are account payables, short-term debt, and current portions of long-term debt.
- **Non-current Liabilities (Long-term Liabilities):** These obligations are not due within the balance sheet date. Non-current liabilities include long-term debt, bond payables and deferred tax liabilities.

Equity also known as shareholders equity (in a corporation) or owner equity (in a non-corporate business), represents residual interest in the assets of the entity after deducting liabilities. Components of equity are:

- Issued capital (Shared Capital): This represents the nominal value of shares that have been issued to shareholders.
- Retained earnings: Are accumulated net earnings of the company that have not been distributed to the shareholders as dividends but retained in business for reinvestment in the business to pay off the debts. (Investopedia, n.d.)

1.2.2 The statement of the financial performance – the Income Statement

The income statement also known as profit and loss statement is a financial report that summarizes a company's revenues, expenses, and profitability over a specific period, typically by fiscal quarter or a whole year. It provides an inside information about company's operational efficiency, profitability, and capabilities of revenue generation. Below are the main components of the income statement:

- Revenues: they are the income earned from the company's main operations and other activities that are central to the business. It contains sales revenue, service revenue.
- and revenue from the use of company assets. Revenue is recognized when earned, not received.
- Gross Revenue: Total income from sales before expenses are subtracted.
- Net Revenue: Gross revenue minus returns and discounts.

Cost of Goods Sold (COGS): Represents the direct cost to the production of the goods sold by a company. It also includes cost of the materials and labour directly used to create the product. COGS do not include indirect expenses such as distribution costs and sales force cost.

Gross Profit: Calculated by subtracting COGS from Net Revenue. It allows to see the efficiency of a company in managing its supply chain and production.

Operating Income: Profit from a company's business operations before interest and taxes. It is calculated by subtracting operating expenses from the gross profit.

Non-operating Income and Expenses: These are revenues that are not related to the company's core business operations. Examples are, interest income, interest expense, gains, or losses from the asset sales.

Pre-Tax Income: It is the income before taxes are deducted. Pre-Tax income is calculated by adding or subtracting non-operating income and expenses from the operating income.

Income Tax Expenses: This represents the amount of income tax that company expects to pay for the current fiscal year. It is usually a complex calculation that includes company's legal structure, location, and taxation laws.

Net Income: Is the amount of money left over after all expenses, including taxes that have been deducted from total revenues. It is the amount that company can re-invest, distribute to their shareholders, or use to pay off debts.

The Income Statement provides important information for assessing performance and financial health of the business. Analysts use it to calculate ratios such as gross margin, operating margin, and net profit margin, that helps in comparing companies within the same industry or in evaluating company's financial trends over time.

Gross Margin is an indicator of company's business efficiency and pricing strategy. It shows the percentage of revenue that exceeds the direct cost of producing goods and services. A higher gross margin indicates that a company retains more money on each dollar of sales.

$$\text{Gross Profit Margin} = \frac{\text{Revenue} - \text{Cost of Goods Sold}}{\text{Revenue}} \times 100$$

Figure 1 Gross Profit Margin Formula

Source: CFI (Corporate finance Institute Website)

Operating Margin offers insight into the efficiency of a company's management by showing the proportion of revenue left after paying for production costs like wages and raw material. Higher operational margin suggests that the company is well managed, generating sufficient income from operational activities.

Figure 4 Operating Profit Margin Formula

Source: CFI (Corporate finance Institute Website)

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

Net-Profit Margin is a metric for assessing businesses financial health. It indicates how much net income a company generates from its total revenue. A high net profit margin means that the company is more efficient at converting sales into an actual profit. (Investopedia n.d.)

$$\text{Net Profit Margin} = \frac{(\text{Total Revenue} - \text{Total Expenses})}{\text{Total Revenue}} \times 100$$

Figure 5 Net Profit Margin Formula

Source: CFI (Corporate finance Institute Website)

1.2.3 The cash-flow statement

Cash flow is the information about the net amount of cash and cash equivalents that are transferred into and out of the business.

Cash flow statement is one of the principal financial statements that provides detailed information about where cash or cash equivalents came from (inflows) and how it is spent (outflows) over a specific period. Unlike the income statement, which focuses on revenue

and expenses, the cash flow statements represent the actual cash transactions of the company. The cash flow is divided into three (3) sections:

- **Operating Activities:** This section includes cash receipts from sales of goods and services and cash payments for expenses, including the COGS (cost of goods sold) and operating expenses.
- **Investing Activities:** Cash flow from investing activities involve the purchase and sale of long-term assets and investments, excluding the cash equivalents. This includes cash spent on property, plant, equipment.
- **Financial Activities:** This section associates with raising and repaying capital and returning value to the shareholders. It involves operations from issuing debt and equity and dividends paid to shareholders.

3.3 Financial Analysis

There are many definitions of what financial analysis is and what it is used for. Financial analysis provides an examination of financial statements to determine a business's status and potential for future growth. This analysis is essential for business partners such as investors, financial institutions, and management of the company, enabling them to make decisions regarding investments and strategic planning. By analysing balance sheet, income statement and cash flow statements it reveals insights into businesses capacity to continue operations. (Investopedia, n.d.)

Main components of financial analysis are:

- **Ratio Analysis:** Involves calculating ratios from financial statements to evaluate various calculations of company's operations, including profitability, liquidity, and operational efficiency. These ratios show a quantitative information about company's financial state.

- Analysis of Trends: This approach examines company's financial data over several time to identify trends and irregularities that may impact future performance.
- Comparative Analysis: Comparing ratio analysis results with other competitor companies.
- Cash Flow Analysis: Focuses on inflows and outflows of cash from financial operations.

Financial analysis gives crucial data for several reasons. Mainly, for investment decisions for stakeholders of the company, it helps investors assess profitability of investing to the company, gives information to the creditors, so they can evaluate business's ability to repay its debts and loans. Management highly relies on financial analysis to create strategic decisions, use their resources with efficiency and make plans. While financial analysis provides valuable information for the future, it is never predictable. Analysts must rely on the external factors such as current geopolitical state and economic conditions.

To perform a horizontal and vertical analysis of the balance by looking at the changes in each line item over time (horizontal analysis) and the proportion of each line item relative to a base figure at a point of time.

Horizontal Analysis involves calculating the absolute and percentage changes from one year to the next. To calculate it, first subtraction from the old year to new year's figure must be done to get the absolute change value and divide the absolute change value to the old year's figure to get the percentage change.

$$\begin{aligned} \text{Absolute Change} &= \text{Value in 2022} - \text{Value in 2021} \\ \text{Percentage Change} &= \left(\frac{\text{Absolute Change}}{\text{Value in 2021}} \right) \times 100 \end{aligned}$$

Figure 6 Formula of Horizontal Analysis

Source: CFI (Corporate finance Institute Website)

Vertical analysis simplifies the comparison of financial statements between different companies by highlighting the proportional relationship between account balances. This method enhances the ability to track company's financial performance over time using data across various years.

Formulas for Vertical Analysis:

For Assets:

$$\text{Percentage of Total Assets} = \left(\frac{\text{Line Item Amount}}{\text{Total Assets}} \right) \times 100$$

For Liabilities and Equity:

$$\text{Percentage of Total Liabilities and Equity} = \left(\frac{\text{Line Item Amount}}{\text{Total Liabilities and Equity}} \right) \times 100$$

Figure 7 Formula for Vertical Analysis

Source: CFI (Corporate finance Institute Website)

Return on Assets (ROA) and Return on Equity (ROE) are pivotal financial metrics that offer insight into a company's efficiency from different perspective. ROA measures how effectively company uses its assets to generate profit, it indicates the proficiency with which company turns its investments in assets to an equity. ROE assesses a company's ability to generate profit from shareholder's equity. It reveals how good company can manage money invested by shareholders to grow earnings.

$$\text{ROA} = \left(\frac{\text{Net Income}}{\text{Total Assets}} \right) \times 100$$

Figure 9 Formula for Return on Assets Calculation

Source: CFI (Corporate finance Institute Website)

$$\text{ROE} = \left(\frac{\text{Net Income}}{\text{Shareholders' Equity}} \right) \times 100$$

Figure 8 Formula for Return on Equity Calculations

Source: CFI (Corporate finance Institute Website)

2. Practical Part

The practical part assesses the financial position (based on the balance sheet) and financial performance (based on the income statement – profit and loss account) of the companies Air France KLM and Air Astana for the years 2021-2022 by using selected financial analysis methods.

4.1 Air France KLM

Formed through the merger of the national carrier of France, Air France, and the Dutch Airline KLM in 2004. Air France KLM stands as one of the leading airline conglomerates globally by offering a large network that connects numerous destinations worldwide. Headquarter of the company is in Paris. KLM group is the forefront of the international aviation industry specializing in both passenger and cargo transportation services. It encompasses several brands such as Air France and KLM, and Transavia as a budget -friendly option. As a founding member of Sky Team Alliance, it enhances service by co-sharing and collaborating with partners. The conglomerate operates from Paris-Charles de Gaulle Airport and Amsterdam Airport Schipol, hubs that facilitate their global operations.

Air France is renowned for prioritizing customer satisfaction and leading towards sustainable aviation. Sustainability become one of the main components of the business. Air France KLM is investing in fuel-efficient aircrafts, biofuel and carbon offset programmes, it is not only aligning with global sustainability goals, but it also gives a major financial benefit to the company by reducing the long-term operational cost and enlarging the company value.

Financial analysis of Air France KLM is based on its core statements: the balance sheet, income statement and cash flow statement. These documents provide information about company's liabilities, assets and equity and operational efficiency. Main performance metrics such as return on assets (ROA) and return on equity (ROE) and debt-to-equity ratio are key for evaluating the financial analysis and doing comparison analysis.

The airline industry faces challenges from fuel price rises, changes in costumers demand and tension in geopolitics. Air France financial performance is influenced by these external factors, necessitating adaptive financial strategy. Response of the company to these difficulties are cost-reduction, fleet optimization and strategic alliances reflects company's commitment to maintain stability.

4.1.1 Air France KLM – vertical and horizontal analysis of the balance sheet

Table 1 Horizontal Analysis of Balance Sheet of Air France KLM

Balance Sheet	Horizontal Analysis			
	2021	2022	(€)	(€)
(Euro € in Million)				
Cash and Equivalents	6,658	6,626	-0,032	-0,48%
Accounts Receivables	1,511	1,785	0,274	18,13%
Inventory	5,67	7,23	1,56	27,51%
Total Current Assets	10,729	11,007	0,278	2,59%
Total Assets	30,683	32,305	1,622	5,29%
Accounts Payables	1,85	2,424	0,574	31,03%
Total Current Liabilities	11,726	13,662	1,936	16,51%
Long-Term Debt	2,924	3,318	0,394	13,47%
Total Liabilities	34,499	34,785	0,286	0,83%
Total Equity	3,816	2,48	-1,336	-35,01%

(Source: own processing made by the author, based on the financial statements of the company)

Cash and Equivalents have a slight decrease of 3,2 million Euros, which is a negative change when rounded to the percentage. This indicates company's relatively stable position in its liquidity.

There is an increase of 2,74 million Euros in accounts receivables, which makes 18% rise. This means that Air France had increased its sales or slowed payment collections. Inventory has an 28% rise. Which indicates an increase in demand or less efficient inventory turnover.

The total current assets have modest increase by 3%. This moderately low increase may refer to the fact that assets may have decreased, or they only increased marginally. But the 5% rise in total assets, shows that company is slowly increasing its assets.

Total current liabilities of Air France KLM have increased by 17%, that means that company increased operational expenses or has new short-term debts.

There is a significant decrease in total equity over the year, there is a 35% drop. This is a concerning sign for the company. It may be due to the increased amounts of paid out dividends or revaluing of assets leading to the decrease of retained earnings.

Horizontal analysis of balance sheet for Air France KLM has a purpose of explaining how each item on the balance sheet contributes to the structure of the company.

Vertical Analysis of the balance sheet

Table 2 Vertical Analysis of Balance Sheet of Air France KLM

Balance Sheet	Vertical Analysis			
(Euro € in Millions)	2021		2022	
Cash and Equivalents	22%	6,658	21%	6,626
Accounts Receivables	5%	1,511	6%	1,785
Inventory	18%	5,670	22%	7230
Total Current Assets	35%	10,729	34%	11,007
Total Assets	100%	30,683	100%	32,305
Accounts Payables	6%	1,85	8%	2,424
Other Liabilities	11%	3,369	13%	4,057
Total Current Liabilities	38%	11,726	42%	13,662
Lease Debt	10%	2,924	10%	3,318
Total Liabilities	100%	34,499	100%	34,785
Total Liabilities and Equity	88%	30,683	92%	32,305
Total Equity	12%	3,816	8%	2,48

(Source: own processing made by the author, based on the financial statements of the company)

Cash and Equivalents comprised 22% of total assets in 2021 and had a slight decrease for one (1) percent in 2022. This indicates a stable position in company's liquidity.

Account Receivables also increased from 5% to 6%. This increase suggests that the company extended more credit to its customers or had a slower gain of receivables.

The amount of total assets decreased for one (1) percentage as well. Company is probably shifting its interests to more long-term assets.

As a percentage of total liabilities and equity payables increased from 6% to 8%, meaning that Air France KLM has more short-term obligations to suppliers.

Other liabilities increased from 11% to 13% which indicates an increase in short-time obligations.

Lease debt remained constant at 10% indicating a stability in company's lease obligations.

4.1.2 Air France KLM – horizontal and vertical analysis of the Statement of financial performance (the Income statement)

Table 3: Horizontal analysis of the balance sheet

Horizontal Analysis				
Income Statement				
In million (€)	2021	2022	(€)	(€)
Revenue from ordinary activities	14,315	26,393	12,078	84%
Salaries	5,43	7,289	1,859	34%
EBITDA	7,45	3,615	-3,835	-51%
Amortization, depreciation, and provision	2,371	2,422	0,051	2%
Sales of Aircraft Equipment	1,9	6,6	4,7	247%
Income from operating activities	2,532	1,194	-1,338	-53%
Income from cash and cash equivalents	2	4,1	2,1	105%
Income before tax	3,549	3,42	-0,129	-4%
Income taxes	2,82	3,9	1,08	38%
Net Income	3,294	7,44	4,146	126%

(Source: own processing made by the author, based on the financial statements of the company)

The horizontal analysis of income statement for Air France KLM for period of 2021-2022 reveals significant changes in company's earnings and expenses.

Revenue increased by €12,078 million, which is a drastic 84% increase from a previous year. That is most probably due to the less strict travel restriction in 2022 that the air industry witnessed in years 2020-2021 because of COVID-19. It shows a big growth in company's activities.

There was a 34% increase in salaries. This salary increase might be from various reasons such as hiring more staff members to increasing wages, or both cases.

Amortization, depreciation, and provision expenses does not show a significant change only by 2%. This shows a stable non-cash charges for the company over the years.

On the other hand, there is a huge change in sales of aircraft equipment from €19 million to €66 million which is a 247% increase. This could mean that company has a new strategy of selling their old aircraft to renew their air fleet. Or if consider the accounting side of the process Air France KLM were trying to generate a bigger cash flow.

EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) has a 51% decrease from 2021.

Income from cash and cash equivalents has a big rise by 105%. This suggests a high returns on cash investments of the company.

Vertical Analysis of the Income statement

Table 3 Vertical Analysis of Income Statement of Air France KLM

Vertical Analysis of Income Statement				
(Euro € in Millions)	2021		2022	
Revenue	100%	14,315	100%	26,393
Salaries	38%	5,43	28%	7,289
External Expenses	62%	8,829	62%	16,297
Taxes other than Income taxes	81%	11,6	59%	15,6
EBITDA	25%	3,615	28%	7,45
Amortization, depreciation, provision	17%	2,371	9%	2,422
Sales of aircraft equipment	13%	1,9	25%	6,6
Other non-current income expenses	62%	8,87	25%	6,5
Income from operating activities	18%	2,532	4%	1,149
Income from cash and cash equivalents	14%	2	155%	41
Net cost of financial debt	51%	7,28	20%	5,28
Income before tax	20%	2,82	15%	3,9
Net Income	23%	3,294	28%	7,44

(Source: own processing, made by the author of the thesis, based on the financial statements of the company)

In vertical analysis of Air France KLM, it shows a change in salaries from 38% to 28% which may indicate a change in the company's staff.

On the other side it shows a stable external expense percentage for both years by 62%.

There is a decrease in taxes other than income tax 59% to 81%. This indicates an increase in certain tax obligations of the company or changes in tax regulations.

EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) increased from 25% to 28%, this indicates a good growth in company's operation profitability.

Amortization, depreciation, and provision part shows a decrease from 17% to 9% of revenue, suggesting that these expenses have become a smaller part of total revenue, which may be due to changes in depreciation methods of the company.

There is a huge increase in income from cash and cash equivalents from 14% to 155%, it could reflect a higher interest rate or improvement in managing cash.

Net Income increased from 23% to 28% of revenue, which means that company has improved its profitability in relation to revenue.

4.1.3 Selected ratio analysis of Air France KLM

The selected ratios are ROA (return on assets) and ROE (return on equity)

Table 5 ROA and ROE ratios for Air France

	ROA (Return on Assets)	ROE (Return on Equity)	Shareholder's Equity	Total Assets	Net Income
2021	10,74	86,14	3,824	30,683	3,294
2022	23,03	247,67	3,004	32,305	7,44

Source: own processing, made by the author of the thesis, based on the financial statements of the company)

2021: The ROA is 10.74%, indicating that in 2021, Air France-KLM generated an income of €10.74 for every €100 of assets owned. This is a healthy return suggesting efficient use of assets.

2022: The ROA increased to 23.03%. This substantial increase indicates that the company has become more efficient at generating profit from its assets. The increase could be due to higher profitability, more efficient asset use, or a combination of both.

2021: The ROE is 86.14%, which is quite high and indicates that the company was able to generate €86.14 for every €100 of equity. This suggests that the shareholders' investment is being used very effectively to generate profits.

2022: The ROE further increased to 247.67%. This is an exceptionally high return, implying that the equity is being used even more efficiently to generate income, or it could also suggest that the company has reduced equity, possibly through buybacks or dividends, which can increase the ROE.

The increase in ROA suggests that the company is utilizing its assets more efficiently to generate revenue. Meanwhile, the exceptionally high ROE in 2022 suggests that the shareholders' equity has been extremely effective in generating earnings.

4.2 Air Astana

Air Astana is the flagman air carrier of Kazakhstan, and it stands as an example of a fast-growing airline in a dynamic and evolving market and economy. Air Astana was formed in 2001, since then it has expanded its operations to maintain not only domestic flights but become a significant player in international aviation in its region. The airline financial journey offers rich insights into the strategic initiatives and financial outcomes, within the Central Asian market.

As Kazakhstan's primary airline Air Astana has positioned itself strategically to capitalize on both travel demand in the region and country's unique geographical position serves as a transit hub between Europe and Asia. This positioning is an essential consideration in the financial analysis of the airline, as it affects revenue streams, cost structures and investment decision.

In 2021 Air Astana transported approximately 3,5 million passengers, it was a 59% increase over the year. During 2021, Air Astana transported 12,027 tons of cargo which is 35% higher than a previous year. In 2022, Air Astana made profit of €28 million, revenue amounted approximately €890 million and an average monthly turnover of €1 million.

In 2020, COVID-19 pandemic had a negative impact on the activities of Air Astana. After the quarantine was announced in Kazakhstan on March 14, 2020, company resumed their domestic and international flights only in May and June respectively 2020.

2.2.1 Vertical and Horizontal Analysis of the Balance Sheet for Air Astana

Horizontal analysis of the balance sheet

Table 4 Horizontal Analysis of Balance Sheet of Air Astana

Balance Sheet	Horizontal Analysis			
(*000 USD)	2021	2022	(\$)	(%)
Inventories	51,555	49,175	-2,38	-4,62%
Cash and bank balance	226,357	252,888	26,531	11,72%
Other financial assets	7,383	1,660	-5,723	-77,52%
Total Current Assets	764,323	883,962	119,639	15,65%
Total Assets	1,102,193	1,250,875	148,682	13,48%
Provision for aircraft maintenance	86,456	117,958	31,502	36,44%
Lease Liabilities	580,539	574,211	-6,328	-1,09%
Loans	4,759	4,162	-0,597	-12,54%
Total Current Liabilities	364,84	400,008	35,168	9,64%
Deferred Revenue	57,26	80,152	22,892	39,98%
Total Liabilities	1,038,219	1,098,607	60,388	5,81%
Retained earnings	91,576	169,99	78,414	85,63%
Total Equity	63,974	152,268	88,294	138,02%

(Source: own processing made by the author of the thesis, based on the financial statement of the company)

There was a decrease in inventories by approximately 4.62%, which could indicate better inventory management.

The cash and bank balances increased by 11.72%, suggesting improved liquidity. This increase could be due to enhanced cash management strategies, increased operational cash flows, or accumulation of cash.

An increase of 15.65% in total current assets suggests that the company's short-term financial health has improved, which could be beneficial for future investments.

The total assets grew by 13.48%, which indicates that the company is expanding its resource base and potentially its operational capacity.

The provision for aircraft maintenance increased significantly by 36.44%, which could reflect a larger fleet, increased maintenance costs.

The decrease in loans by 12.54% suggests that the company has paid down some of its debt, which could be a positive sign in financial management.

The total current liabilities increased by 9.64%, which could indicate an increase in short-term financial obligations or operational expenses.

An increase of 5.81% in total liabilities suggests that while the company has taken on more liabilities, it has done so at a safe rate.

The total equity increased by a remarkable 138.02%, which is a strong indicator of the company's improved financial health.

Vertical analysis of the balance sheet

Table 5 Vertical Analysis of balance Sheet of Air Astana

Balance Sheet	Vertical Analysis			
	2021		2022	
(*000 USD)				
Inventories	4,60%	51,555	3,93%	49,175
Cash and bank balances	20,53%	226,357	20,21%	252,888
Other financial assets	0,66%	7,383	0,13%	1,660
Total Current Assets	69,30%	764,323	70,66%	883,962
Total Assets	100%	1,102,193	100%	1,250,875
Provision for aircraft maintenance	8,32%	86,456	10,73%	117,958
Lease Liabilities	55,92%	580,539	52,26%	574,211
Loans	0,45%	4,759	0,37%	4,162
Total Current Liabilities	35,14%	364,840	36,41%	400,008
Deferred Revenue	5,51%	57,260	7,29%	80,152
Total Liabilities	100%	1,038,219	100%	1,098,607
Retained earnings	8,80%	91,576	15,47%	169,990
Total Equity	6,16%	63,974	13,86%	152,268

(Source: own processing, made by the author of the thesis, based on the financial statements of the company)

The proportion of inventories to total assets decreased slightly from 4.60% in 2021 to 3.93% in 2022. This might indicate improved inventory management or a strategic shift in operations that resulted in lower inventory levels.

Cash and bank balances made up a significant portion of the total assets, with a slight decrease from 20.53% in 2021 to 20.21% in 2022. This suggests that the company maintains a strong liquidity position which is essential for financial stability.

The share of total current assets in total assets increased from 69.30% to 70.66%. This indicates an increased focus on assets.

Lease liabilities as a percentage of total assets decreased from 55.92% to 52.26%. This could indicate that the company has paid down some of its lease obligations.

The proportion of loans to total assets has decreased from 0.45% to 0.37%. This reduction in loans relative to total assets could suggest a deleveraging in the company's capital structure.

Total equity as a percentage of total assets has increased dramatically from 6.16% to 13.86%. This is a strong indication of growth in the owners' claim on the company's assets.

2.2.2 Vertical and Horizontal Analysis of the Income statement for Air Astana

Horizontal Analysis of Income Statement

Table 6 Horizontal Analysis of Income Statement of Air Astana

Horizontal Analysis of Income Statement				
Income Statement				
(*000 USD)	2021	2022	(\$)	(%)
Passenger Revenue	715,794	998,12	282,326	39%
Cargo and Mail Revenue	33,57	22,124	-11,446	-34%
Total revenue and other Income	761,838	1,032,382	270,544	36%
Fuel and oil cost	136,558	231,884	95,326	70%
Depreciation and amortization	120,832	135,178	14,346	12%
Aircraft Lease cost	3,662	3,893	0,231	6%
Taxes	2,501	1,427	-1,074	-43%
Total operating expenses	659,665	883,667	224,002	34%
Operating Income	102,173	148,715	46,542	46%
Net Income	36,159	78,414	42,255	117%

(Source: own processing made by the author, based on the financial statements of the company)

Passenger revenue increased by 39% in 2022, indicating a significant recovery or growth in the company's core business, which could be due to increased flight capacity.

Conversely, cargo and mail revenue saw a decrease of -34% in 2022. This decline may reflect a strategic shift, a reduction in cargo capacity or demand.

Total revenue and other income grew by 36%, suggesting robust growth across the company's total operations, despite the decline in cargo and mail operations.

Fuel and oil costs increased by 70% in 2022, which may be attributed to rising oil prices due to the global conflicts.

Depreciation and amortization expenses increased by 12%, which could be due to recent investments in new aircraft or other capital assets.

Aircraft lease costs experienced a marginal increase of 6% in 2022. This slight increase suggests stable leasing costs.

Taxes decreased by -43%, which could be due to changes in tax legislation from the government strategy.

Operating income increased significantly by 46%, which indicates improved operational profitability.

Net income increased by a remarkable 117%, reflecting a improvement in the company's bottom line. This impressive growth in net income could be due to overall revenue growth or most likely due to the cost optimization.

Vertical Analysis of the Income Statement

Table 7 Vertical Analysis of Income Statement

Vertical Analysis of Income Statement				
Income Statement				
(*000 USD)	2021		2022	
Passenger Revenue	93,96%	715,794	96,68%	998,12
Cargo and Mail Revenue	4,41%	33,57	2,14%	22,124
Total revenue and other Income	100%	761,838	100%	1,032,382
Fuel and oil cost	17,92%	136,558	22,46%	231,884
Depreciation and amortization	15,86%	120,832	13,09%	135,178
Aircraft Lease cost	0,48%	3,662	0,37%	3,893
Taxes	0,33%	2,501	0,13%	1,427
Total operating expenses	86,59%	659,665	85,59%	883,667
Operating Income	13,41%	102,173	14,40%	148,715
Net Income	4,75%	36,159	7,59%	78,414

Source: (own processing made by the author of the thesis, based on the financial statements of the company)

Passenger revenue accounted for a significant portion of total revenue, although it decreased from 93.96% in 2021 to 96.68% in 2022. This indicates an increased reliance on passenger revenue as a primary income source, possibly due to improved market conditions due to the cancelling some COVID-19 restrictions.

The fuel and oil costs increased from 17.92% in 2021 to 22.46% in 2022. This substantial increase highlights the impact of fuel prices on the company's cost structure and may reflect higher market prices.

Depreciation and amortization costs decreased from 15.86% to 13.09% of total revenue, suggesting that these non-cash expenses have become a smaller part of the company's expenses.

Aircraft lease costs remained relatively stable, showing a minor decrease from 0.48% in 2021 to 0.37% in 2022. This indicates that lease expenses have not significantly grown.

2.2.3 Selected financial ratios for Air Astana

Table 8 Ratio Analysis of Air Astana

	ROA (Return on Assets)	ROE (Return on Equity)	Shareholder's Equity	Total Assets	Net Income
2021	69,12	-	-	1,102,193	761,838
2022	82,53	-	-	1,250,875	1,032,382

(Source: own processing made by the author of the thesis, based on the financial statements of the company)

There is a lack of shareholder's equity data due to the company's previous government owned status until the end of 2023. That means that Return on Equity (ROE) cannot be calculated for these years.

ROA in 2021 of \$69,12 suggests that Air Astana was able to generate a return of \$69,12 for every \$100 of assets it owned in 2021. This amount indicates that the company was using its assets effectively to generate earnings.

ROA in 2022 increased to \$82,53 for every \$100 of assets, indicating further improvement. This increase could be due to the higher customer demand in 2022 due to recovery from COVID-19 restrictions or it could indicate a cost reduction of the company.

3. Results and Discussion

5.1. Assessment of the financial position and performance of the chosen companies

The financial analyses of Air France KLM and Air Astana through horizontal and vertical analysis, as well as ROA and ROE calculation methods for fiscal year of 2021-2022 highlighted profound impact of the COVID-19 pandemic on the aviation sector. Both airlines have experienced significant declines in profitability during the year of 2021, a direct consequence of the travel restrictions during the pandemic.

The findings from both airlines reflect a strategic pivot of focusing on core operations and optimizing cost structure. However, these strategies reflect individual circumstances of each airline, Air Astana is taking more conservative approach to cost management compared to Air France KLM's aggressive asset turnover strategy.

Horizontal Analysis of year over year comparison of both companies balance sheet and income statement shows that had substantial erosion during 2021 but could increase their financial results till the end of 2022. This analysis underscores temporal financial distress experienced by the airlines.

Vertical Analysis provided insight into the composition of the airline finance, revealing strategic expense management in response to the shortfall of the revenue. Both Air France KLM and Air Astana undertook significant cost cutting measures, this aimed to cushion the financial blow by improving operational efficiency and preserving liquidity.

The findings from this analysis extend beyond the performance of Air Astana and Air France KLM, offering broader insights into the resilience and adaptability of the aviation sector. Moreover, the pandemic has underscored importance of financial agility and the need for airlines to maintain risk management. As industry moves towards recovery, the lessons learned from this period could inform future strategies to enhance financial resilience and operational flexibility.

6. Conclusion

The aim of this bachelor thesis was to assess the financial position and performance of the chosen companies in the aviation industry: Air France KLM and Air Astana, by analyzing the company's financial statements with focus on the representation and changes of the reported assets, liabilities, expenses, and revenues for the period of 2021 – 2022.

The financial position is represented by the balance sheet (reporting assets, equity, and liabilities), the financial performance is represented by the income statement (reporting expenses, revenues, and profit). The ROA (return on assets) and ROE (return of equity) were calculated.

The quantitative analysis, which included financial ratio analysis, horizontal and vertical analysis of financial reports indicates that both airlines experienced significant profit decline during the pandemic. However, through aggressive cost-cutting measures and strategic adjustments they showed signs of financial recovery in 2022.

Overall, the study concludes that Air Astana and Air France have demonstrated resilience in the face of the pandemic's financial impacts. Both companies managed to adapt their financial operations to mitigate the effects.

The financial data from 2021 and 2022 suggests that both Air Astana and Air France have made considerable strides in recovering from the pandemic. Air Astana's strategy appeared to focus on enhancing its core passenger service revenue while maintaining cost discipline, particularly in reducing expenses where it was possible.

Meanwhile, Air France increased sales of aircraft equipment, which may refer to liquidation of assets or restructuring the fleet in effort to stabilize finances.

Still, there is a huge path to full financial recovery for the airlines, including fluctuating demand and global uncertainties, strategic measures that were implemented in those years (2021-2022) have laid path for future potential growth. As the industry continues to evolve Air France and Air Astana must stay vigilant, continuing to innovate. Air Astana's financial narrative shows calculated conservatism and an agile response mechanism, while Air France represents bold restructuring and strategic reorientation.

Limitations of the research

The analysis was mainly performed using the data from 2021-2022 period, which may not capture a long-term trend for the company. This thesis relied on information from annual reports, that did not include same internal data for both companies, as well as they lack some internal data such as internal cost management measures.

Comparing a regional carrier and international European airline involves differences in market conditions and strategies.

Lastly, this research can also be used by other researcher to their future works.

7. References

1. **DUBE, Katiano**, et al. “COVID-19 Pandemic and Prospects for Recovery of the Global Aviation Industry.” *Journal of Air Transport Management*, vol. 92, no. 92, May 2021, p. 102022, doi.org/10.1016/j.jairtraman.2021.102022. [Online]
2. **FRIEDLOB, George T., and Lydia L. F. Schleifer**. *Essentials of Financial Analysis*, John Wiley & Sons, 3 Feb. 2003, ISBN-10: 0471228303, ISBN-13: 97800471228301.
3. **GRANT, Mitchell**. “Vertical Analysis: The Basics.” *Investopedia*, 28 Mar. 2022, www.investopedia.com/terms/v/vertical_analysis.asp. [Online]
4. **HORRIGAN, James O**. “A Short History of Financial Ratio Analysis.” *The Accounting Review*, vol. 43, no. 2, 2020, pp. 284–294, www.jstor.org/stable/243765. [Online]
5. **GUDMUNDSON, Sveinn Vidar**. “Mergers vs. Alliances: The Air France-KLM Story.” *Papers.ssrn.com*, 2018, <https://dx.doi.org/10.2139/ssrn.2142915>. [Online]
6. **LUMBANTOBING, Wolfgang**, et al. “Apply Horizontal Analysis and Vertical Analysis to Financial Statements Based on IFRS.” *International Journal of Mechanical Engineering*, vol.7, no.1,2022, www.kalaharijournals.com/resources/IJME_Vol7.1_720.pdf. [Online]
7. **NGUYEN, An**. *Financial Recovery of Aviation Businesses during the COVID-19 Economic Recession*. 2021. <https://www.theseus.fi/handle/10024/509895> [Online]
8. **NICKOLAS, Steven**. “How Does Ratio Analysis Make It Easier to Compare Different Companies?” *Investopedia*, 23 June 2019, www.investopedia.com/ask/answers/032315/how-does-ratio-analysis-make-it-easier-compare-different-companies.asp. [Online]

9. **FURHMANN, Ryan.** "The Basics of a Financial Analysis Report." *Investopedia*, 2019, www.investopedia.com/articles/investing/032113/basics-financial-analysis-report.asp. [Online]
10. **TULOVILA, Alicia** "Horizontal Analysis." *Investopedia*, 14 Dec. 2022, www.investopedia.com/terms/h/horizontalanalysis.asp. [Online]
11. **SADVAKASSOVA, K. G., NURGAZINA, A. M., NURMAGAMBETOVA, A. Z., & KASSENOVA, G. E.** (2022). "Analysis of Financial Performance and Sustainability in Kazakhstan Aviation Industry in Pandemic." *Scientific journal «Вестник НАН РК»*, (1), 61-68.
12. **RENOLD, Manuel, JOVANNA Kuljanin, and MILICA Kalic.** "The comparison of financial performance of airlines with different business model operated in long-haul market." *Transportation Research Procedia* 43 (2019): 178-187.
13. **STAROVA, Marta.** "Accounting Theory - Lectures and Seminars.", *Česká zemědělská univerzita v Praze* vol.1, 2017. ISBN: 978-80-213-2745-0.

List of pictures, tables, graphs, and abbreviations

List of pictures

Figure 1 Gross Profit Margin Formula	18
Figure 2 Operating Profit Margin Formula.....	19
Figure 3 Net Profit Margin Formula	19
Figure 4 Formula of Horizontal Analysis	21
Figure 5 Formula for Vertical Analysis	22
Figure 7 Formula for Return on Equity Calculations	22
Figure 6 Formula for Return on Assets Calculation	22

List of tables

Table 1 Horizontal Analysis of Balance Sheet of Air France KLM.....	24
Table 2 Vertical Analysis of Balance Sheet of Air France KLM	26
Table 4 Vertical Analysis of Income Statement of Air France KLM	28
Table 6 Horizontal Analysis of Balance Sheet of Air Astana.....	32
Table 7 Vertical Analysis of balance Sheet of Air Astana	33
Table 8 Horizontal Analysis of Income Statement of Air Astana	35
Table 9 Vertical Analysis of Income Statement	37
Table 10 Ratio Analysis of Air Astana	38

Appendix – financial statements of the companies

Consolidated statement of profit or loss for the year ended 31 December 2022

'000 USD	Notes	2022	2021	2020
Revenue and other income				
Passenger revenue	7	998,120	715,794	358,413
Cargo and mail revenue	7	22,124	33,570	24,561
Other income	7	12,138	7,846	11,033
Gain from sale and leaseback transaction	7	-	4,628	6,257
Total revenue and other income		1,032,382	761,838	400,264
Operating expenses				
Fuel and oil costs*		(231,884)	(136,558)	(89,212)
Employee and crew costs**	8	(148,907)	(116,265)	(87,130)
Depreciation and amortization	12	(135,178)	(120,832)	(101,035)
Engineering and maintenance	8	(125,891)	(94,582)	(43,198)
Handling, landing fees and route charges	8	(84,933)	(70,097)	(47,225)
Passenger service	8	(80,321)	(60,894)	(36,565)
Selling costs	8	(33,254)	(25,075)	(17,093)
Insurance		(8,317)	(8,050)	(6,176)
IT and communication costs		(5,743)	(4,575)	(4,223)
Consultancy, legal and professional services		(4,258)	(3,392)	(3,254)
Aircraft lease costs	8	(3,893)	(3,662)	(3,401)
Property and office costs		(2,483)	(2,641)	(2,425)
Taxes		(1,427)	(2,501)	(4,158)
Impairment loss on trade receivables		(394)	(113)	(117)
Other operating costs		(16,784)	(10,428)	(24,366)
Total operating expenses		(883,667)	(659,665)	(469,578)
Operating profit/(loss)		148,715	102,173	(69,314)
Finance income	9	6,995	2,405	1,427
Finance costs	9	(39,254)	(47,066)	(36,076)
Foreign exchange loss, net		(15,065)	(12,522)	(12,673)
Profit/(loss) before tax		101,391	44,990	(116,636)
Income tax (expense)/benefit	10	(22,977)	(8,831)	22,703
Profit/(loss) for the year		78,414	36,159	(93,933)
Basic and diluted earnings/(loss) per share (in USD)	20	4,613	2,127	(5,525)

JOINT STOCK COMPANY AIR ASTANA
Consolidated statement of financial position as at 31 December 2022

'000 USD		31 December	31 December	31 December
	Notes	2022	2021	2020
ASSETS				
Non-current assets				
Property, plant and equipment	11	817,585	722,200	705,112
Intangible assets		1,553	1,528	1,646
Prepayments	15	15,517	16,299	12,353
Guarantee deposits	13	29,520	17,974	20,410
Deferred tax assets	10	18,487	2,711	8,771
Trade and other receivables	16	1,300	3,611	3,285
		883,962	764,323	751,577
Current assets				
Inventories	14	49,175	51,555	46,371
Prepayments	15	21,011	26,534	15,386
Income tax prepaid		8,978	2,630	3,266
Trade and other receivables	16	21,307	14,134	10,220
Other taxes prepaid	17	8,378	7,709	15,166
Guarantee deposits	13	3,516	1,568	5,814
Cash and bank balances	18	252,888	226,357	201,354
Other financial assets	19	1,660	7,383	-
		366,913	337,870	297,577
Total assets		1,250,875	1,102,193	1,049,154
EQUITY AND LIABILITIES				
Equity				
Share capital	20	17,000	17,000	17,000
Functional currency transition reserve		(9,324)	(9,324)	(9,324)
Reserve on hedging instruments, net of tax		(25,398)	(35,278)	(44,686)
Retained earnings		169,990	91,576	55,417
Total equity		152,268	63,974	18,407
Non-current liabilities				
Loans	24	4,162	4,759	53,004
Lease liabilities	25	574,211	580,539	572,322
Provision for aircraft maintenance	22	117,958	86,456	45,537
Employee benefits		2,268	1,625	1,559
		698,599	673,379	672,422
Current liabilities				
Loans	24	7,934	57,527	111,009
Lease liabilities	25	158,593	146,354	132,340
Deferred revenue	21	80,152	57,260	38,112
Provision for aircraft maintenance	22	71,685	40,710	37,533
Trade and other payables	23	81,405	62,989	39,331
Other financial liabilities		239	-	-
		400,008	364,840	358,325
Total liabilities		1,098,607	1,038,219	1,030,747
Total equity and liabilities		1,250,875	1,102,193	1,049,154

Balance Sheet of Air Astana

Source (Official Website of the company: https://airastana.com/Portals/2/About-Us/Corporate-Governance/Financial-Statements/2022/FS_AA_USD_2022_signed.pdf?ver=2023-04-17-055047-143)

5.2.2 Consolidated statement of recognized income and expenses

Period from January 1 to December 31	Notes	2022	2021
(in € millions)			
Net income for the period		744	(3,294)
Cash flow hedges and cost of hedging			
Effective portion of changes in fair value hedge and cost of hedging recognized directly in other comprehensive income	29.6	857	541
Change in fair value and cost of hedging transferred to profit or loss	29.6	(1,002)	(272)
Exchange difference resulting from the translation		4	3
Deferred tax on items of comprehensive income that will be reclassified to profit or loss	13.2	34	(72)
Total of other comprehensive income that will be reclassified to profit or loss		(107)	200
Remeasurements of defined benefit pension plans		410	772
Fair value of equity instruments revalued through OCI		(6)	(2)
Deferred tax on items of comprehensive income that will not be reclassified to profit or loss	13.2	(41)	(77)
Total of other comprehensive income that will not be reclassified to profit or loss		363	599
Total of other comprehensive income, after tax		256	799
Recognized income and expenses		1,000	(2,495)
— Equity holders of Air France - KLM		984	(2,495)
— Non-controlling interests		16	-

The accompanying notes are an integral part of these consolidated financial statements.

The Income Statement of Air France KLM

Source: Official Website of the company (https://www.airfranceklm.com/sites/default/files/2023-02/2022_12_AFKLM_Financial_statements_and_notes_as_of_December%2031_2022.pdf)

5.2.3 Consolidated balance sheet

Assets	Notes	December 31, 2022	December 31, 2021
<i>(in € millions)</i>			
Goodwill	15	225	222
Intangible assets	16	1,337	1,235
Flight equipment	17	10,614	10,466
Other property, plant and equipment	17	1,375	1,402
Right-of-use assets	19	5,428	5,148
Investments in equity associates	20	120	109
Pension assets	21	39	-
Other non-current financial assets	23	1,184	951
Non-current derivative financial assets	37	262	143
Deferred tax assets	13.4	714	278
Total non-current assets		21,298	19,954
Other current financial assets	23	620	484
Current derivative financial assets	37	327	469
Inventories	24	723	567
Trade receivables	25	1,785	1,511
Other current assets	26	847	966
Cash and cash equivalents	27	6,626	6,658
Assets held for sale	28	79	74
Total current assets		11,007	10,729
Total assets		32,305	30,683

The accompanying notes are an integral part of these consolidated financial statements.

The Balance Sheet of Air France KLM
Source: Official Website of the company (https://www.airfranceklm.com/sites/default/files/2023-02/2022_12_AFKLM_Financial_statements_and_notes_as_of_December%2031_2022.pdf)

Consolidated balance sheet (continuation)

Liabilities and equity	Notes	December 31, 2022	December 31, 2021
<i>(in € millions)</i>			
Issued capital	29.1	2,571	643
Additional paid-in capital	29.2	5,217	4,949
Treasury shares	29.3	(25)	(25)
Perpetual	29.4	933	3,151
Reserves and retained earnings	29.5	(11,700)	(12,542)
Equity attributable to equity holders of Air France-KLM		(3,004)	(3,824)
Non-controlling interests	29.7	524	8
Total equity		(2,480)	(3,816)
Pension provisions	30	1,634	1,939
Non-current return obligation liabilities and provisions for leased aircrafts and other provisions	31	4,149	4,055
Non-current financial liabilities	32	9,657	11,274
Non-current lease debt	33	3,318	2,924
Non-current derivative financial liabilities	37	21	25
Deferred tax liabilities	13.4	1	1
Other non-current liabilities	36	2,343	2,555
Total non-current liabilities		21,123	22,773
Current return obligation liabilities and provisions for leased aircrafts and other provisions	31	740	885
Current financial liabilities	32	896	1,215
Current lease debt	33	834	825
Current derivative financial liabilities	37	83	46
Trade payables		2,424	1,850
Deferred revenue on ticket sales		3,725	2,644
Frequent flyer programs	35	900	888
Other current liabilities	36	4,057	3,369
Bank overdrafts	27	3	4
Total current liabilities		13,662	11,726
Total liabilities		34,785	34,499
Total equity and liabilities		32,305	30,683

The accompanying notes are an integral part of these consolidated financial statements.

The Balance Sheet of Air France KLM
Source: Official Website of the company (https://www.airfranceklm.com/sites/default/files/2023-02/2022_12_AFKLM_Financial_statements_and_notes_as_of_December%2031_2022.pdf)

Table 9 Horizontal Analysis of Balance Sheet of Air France KLM

Balance Sheet	Horizontal Analysis			
(Euro € in Million)	2021	2022	(€)	(€)
Cash and Equivalents	6,658	6,626	-0,032	-0,48%
Accounts Receivables	1,511	1,785	0,274	18,13%
Inventory	5,67	7,23	1,56	27,51%
Total Current Assets	10,729	11,007	0,278	2,59%
Total Assets	30,683	32,305	1,622	5,29%
Accounts Payables	1,85	2,424	0,574	31,03%
Total Current Liabilities	11,726	13,662	1,936	16,51%
Long-Term Debt	2,924	3,318	0,394	13,47%
Total Liabilities	34,499	34,785	0,286	0,83%
Total Equity	3,816	2,48	-1,336	-35,01%

(Source: own processing made by the author, based on the financial statements of the company)

Table 10 Vertical Analysis of Balance Sheet of Air France KLM

Balance Sheet	Vertical Analysis			
(Euro € in Millions)	2021		2022	
Cash and Equivalents	22%	6,658	21%	6,626
Accounts Receivables	5%	1,511	6%	1,785
Inventory	18%	5,670	22%	7230
Total Current Assets	35%	10,729	34%	11,007
Total Assets	100%	30,683	100%	32,305
Accounts Payables	6%	1,85	8%	2,424
Other Liabilities	11%	3,369	13%	4,057
Total Current Liabilities	38%	11,726	42%	13,662
Lease Debt	10%	2,924	10%	3,318
Total Liabilities	100%	34,499	100%	34,785
Total Liabilities and Equity	88%	30,683	92%	32,305
Total Equity	12%	3,816	8%	2,48

(Source: own processing made by the author, based on the financial statements of the company)

Table 3: Horizontal analysis of the balance sheet

Horizontal Analysis				
Income Statement				
In million (€)	2021	2022	(€)	(€)
Revenue from ordinary activities	14,315	26,393	12,078	84%
Salaries	5,43	7,289	1,859	34%
EBITDA	7,45	3,615	-3,835	-51%
Amortization, depreciation, and provision	2,371	2,422	0,051	2%
Sales of Aircraft Equipment	1,9	6,6	4,7	247%
Income from operating activities	2,532	1,194	-1,338	-53%
Income from cash and cash equivalents	2	4,1	2,1	105%
Income before tax	3,549	3,42	-0,129	-4%
Income taxes	2,82	3,9	1,08	38%
Net Income	3,294	7,44	4,146	126%

(Source: own processing made by the author, based on the financial statements of the company)

Table 11 Vertical Analysis of Income Statement of Air France KLM

Vertical Analysis of Income Statement				
(Euro € in Millions)	2021		2022	
Revenue	100%	14,315	100%	26,393
Salaries	38%	5,43	28%	7,289
External Expenses	62%	8,829	62%	16,297
Taxes other than Income taxes	81%	11,6	59%	15,6
EBITDA	25%	3,615	28%	7,45
Amortization, depreciation, provision	17%	2,371	9%	2,422
Sales of aircraft equipment	13%	1,9	25%	6,6
Other non-current income expenses	62%	8,87	25%	6,5
Income from operating activities	18%	2,532	4%	1,149
Income from cash and cash equivalents	14%	2	155%	41
Net cost of financial debt	51%	7,28	20%	5,28
Income before tax	20%	2,82	15%	3,9
Net Income	23%	3,294	28%	7,44

(Source: own processing, made by the author of the thesis, based on the financial statements of the company)

Table 5 ROA and ROE ratios for Air France

	ROA (Return on Assets)	ROE (Return on Equity)	Shareholder's Equity	Total Assets	Net Income
2021	10,74	86,14	3,824	30,683	3,294
2022	23,03	247,67	3,004	32,305	7,44

Source: own processing, made by the author of the thesis, based on the financial statements of the company)

Table 12 Horizontal Analysis of Balance Sheet of Air Astana

Balance Sheet	Horizontal Analysis			
(*000 USD)	2021	2022	(\$)	(%)
Inventories	51,555	49,175	-2,38	-4,62%
Cash and bank balance	226,357	252,888	26,531	11,72%
Other financial assets	7,383	1,660	-5,723	-77,52%
Total Current Assets	764,323	883,962	119,639	15,65%
Total Assets	1,102,193	1,250,875	148,682	13,48%
Provision for aircraft maintenance	86,456	117,958	31,502	36,44%
Lease Liabilities	580,539	574,211	-6,328	-1,09%
Loans	4,759	4,162	-0,597	-12,54%
Total Current Liabilities	364,84	400,008	35,168	9,64%
Deferred Revenue	57,26	80,152	22,892	39,98%
Total Liabilities	1,038,219	1,098,607	60,388	5,81%
Retained earnings	91,576	169,99	78,414	85,63%
Total Equity	63,974	152,268	88,294	138,02%

(Source: own processing made by the author of the thesis, based on the financial statement of the company)

Table 13 Vertical Analysis of balance Sheet of Air Astana

Balance Sheet	Vertical Analysis			
	2021		2022	
(*000 USD)				
Inventories	4,60%	51,555	3,93%	49,175
Cash and bank balances	20,53%	226,357	20,21%	252,888
Other financial assets	0,66%	7,383	0,13%	1,660
Total Current Assets	69,30%	764,323	70,66%	883,962
Total Assets	100%	1,102,193	100%	1,250,875
Provision for aircraft maintenance	8,32%	86,456	10,73%	117,958
Lease Liabilities	55,92%	580,539	52,26%	574,211
Loans	0,45%	4,759	0,37%	4,162
Total Current Liabilities	35,14%	364,840	36,41%	400,008
Deferred Revenue	5,51%	57,260	7,29%	80,152
Total Liabilities	100%	1,038,219	100%	1,098,607
Retained earnings	8,80%	91,576	15,47%	169,990
Total Equity	6,16%	63,974	13,86%	152,268

(Source: own processing, made by the author of the thesis, based on the financial statements of the company)

Table 14 Horizontal Analysis of Income Statement of Air Astana

Horizontal Analysis of Income Statement				
Income Statement				
(*000 USD)	2021	2022	(\$)	(%)
Passenger Revenue	715,794	998,12	282,326	39%
Cargo and Mail Revenue	33,57	22,124	-11,446	-34%
Total revenue and other Income	761,838	1,032,382	270,544	36%
Fuel and oil cost	136,558	231,884	95,326	70%
Depreciation and amortization	120,832	135,178	14,346	12%
Aircraft Lease cost	3,662	3,893	0,231	6%
Taxes	2,501	1,427	-1,074	-43%
Total operating expenses	659,665	883,667	224,002	34%
Operating Income	102,173	148,715	46,542	46%
Net Income	36,159	78,414	42,255	117%

(Source: own processing made by the author, based on the financial statements of the company)

Table 15 Vertical Analysis of Income Statement

Vertical Analysis of Income Statement				
Income Statement				
(*000 USD)	2021		2022	
Passenger Revenue	93,96%	715,794	96,68%	998,12
Cargo and Mail Revenue	4,41%	33,57	2,14%	22,124
Total revenue and other Income	100%	761,838	100%	1,032,382
Fuel and oil cost	17,92%	136,558	22,46%	231,884
Depreciation and amortization	15,86%	120,832	13,09%	135,178
Aircraft Lease cost	0,48%	3,662	0,37%	3,893
Taxes	0,33%	2,501	0,13%	1,427
Total operating expenses	86,59%	659,665	85,59%	883,667
Operating Income	13,41%	102,173	14,40%	148,715
Net Income	4,75%	36,159	7,59%	78,414

Source: (own processing made by the author of the thesis, based on the financial statements of the company)

Table 16 Ratio Analysis of Air Astana

	ROA (Return on Assets)	ROE (Return on Equity)	Shareholder's Equity	Total Assets	Net Income
2021	69,12	-	-	1,102,193	761,838
2022	82,53	-	-	1,250,875	1,032,382

(Source: own processing made by the author of the thesis, based on the financial statements of the company)