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FINANCIAL RATIO ANALYSIS IN THE AIRLINE INDUSTRY, CASE FINNAIR AND SCANDINAVIAN AIRLINES

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have been properly referenced and the same paper
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The document length is 9,409 words from the introduction to the end of conclusion.

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TABLE OF CONTENTS

ABSTRACT

The airline industry is constantly affected by externalities. Global recession in 2008-2009 left airlines fighting for their existent. After growth resumed, competition tightened, and low-cost airlines started to dominate the European market. Competitors Finnair and SAS have different strategies, to cope in the high-pressure environment.

The aim of this thesis is to determine can financial ratio analysis be used in the airline industry, do the rule of thumbs apply in the airline industry, and which company, Finnair or SAS, has better financial positions based on liquidity, profitability and activity ratios during the studied period of 2008-2018.

The study finds, by using comparative financial ratio analysis, that Finnair has better financial position based on liquidity, profitability and activity. It was also found, that financial ratio analysis can be used in comparing airline companies, but the existing rule of thumbs for ratios, are not applicable.

Keywords: Airline industry, Financial ratio, Financial ratio analysis.

INTRODUCTION

The airline industry is a major global industry. Airline companies effect globalisation by offering safe and fast transport of people and goods. The growth of the industry started in the 1980's, and the growth is expected to continue for multiple years to come. Even though the industry is growing, traditional airline companies have challenges. The global recession in 2008 to 2009, left airline companies fighting for their existence. When eventually in a few years the industry started to grow again, low-cost airlines started to dominate the European market, and now low-cost airlines have the majority of scheduled flights. (European Commission, 2011) The airline industry is vulnerable to external conditions and is highly depended on fuel prices, labour costs and currency exchange rates. The high vulnerability of airline industry and continuous uncertainty rises interest in analysing the usage and behaviour of traditional financial ratios and traditional financial ratio analysis in the industry. (Stepanyan, 2014)

The main purpose of this thesis is to assess the behaviour and usage of financial ratios and financial ratio analysis in the airline industry. The selected financial ratios are compared with historical ratios and compared to existing rules of thumb of financial ratios, to see if the rules of thumb are applicable in the airline industry. In this thesis the emphasis is on liquidity, profitability and activity ratios. The analysis includes evaluation of the financial ratios through the selected time period and ratios of the case companies compared with each other.

The thesis used quantitative method for data analysis. The data is based on publicly available annual reports and financial statements of selected case companies Finnair and Scandinavian Airlines from years 2008 to 2018. The annual reports are taken from websites of the companies.

Research questions:

1) Can traditional financial ratio analysis be used for companies in the airline industry?
2) Do the rules of thumb for financial ratios work for airline companies?
3) How companies differ in liquidity, profitability and activity based on financial ratios?

This study starts by providing an overview of financial ratios, which are used in the study, and industry specific aspect of the ratios applicable for the airline industry. In the first part advantages and disadvantages of financial ratio analysis are discussed as well. The second part of the study gives and overview of the airline industry, and the external uncertainties effecting performance of the airline companies during the time period of the study 2008 to 2018. Then case companies Finnair and Scandinavian Airlines are introduced. In the third part ratios are calculated for the case companies and compared to historical ratios and the ratios are used to benchmark case companies. Then the last part summarises and concludes analysis.

1. FINANCIAL RATIO ANALYSIS

This chapter aims to introduce the theory and usage of financial ratios and financial ratio analysis. This chapter also introduces the ratios used in this thesis, rule of thumbs for ratios, as well as industry specific aspects of the ratios for companies in airline industry.

1.1. Financial ratios

Financial ratios are mathematical relationship between two values. Ratios are usually expressed as a percentage or as times. Financial ratios are used to evaluate financial statements of companies. Due to extensive amount of financial data, financial ratios are used to summarize financial data and compare companies in a convenient way. Financial ratio is not an answer, but an indicator to a company's operation. Ratios answer the question what happened and not why it happened. Ratios offer significance when they are compared to previous ratios of the same company or other companies in same industry. Ratios can be used to analyse insights into the operations of a company. (Brealey, Myers, Marcus, 2001) Past performance of companies can usually be used as a good indicator for future. Trends of past ratios can be used not only to judge past performance, but they can be used for indicators of future financial positions. (White, Ashwinpaul, Fried, 2014) To determine the overall position and performance of a company, examination of a portfolio of ratios could be used. Using information from more than just one source, can help analysing and drawing conclusions on companies' performance. (Robinson, van Greuning, Henry, Broihahn, 2009) Financial ratio analysis offers significance for understanding financial statements and identifying developments in financial state of a company and identifying developments of positive and negative financial trends. (Rashid, 2018)

There are two types of users of financial ratios and financial ratio analysis, internal and external. Internal users are managers or finance and accounting department. The analysis conducted by internal users is more in depth than external users, as they have access to more current information than outsiders, who have to rely on annual reports. External users are for example creditors,

shareholders, analyst and auditors. External users use existing financial statements, and they are limited to available data. (Hampton, 2011)

1.2. Liquidity Ratios

Liquidity measures how quickly a company can convert its assets into cash. Liquidity analysis measures and analyses companies' ability to meet current obligations. Current obligations are obligations expiring in less than a year. Liquidity ratios measure companies' ability to pay off short-term obligations. In daily operations liquidity management can be achieved through efficient asset use and in the medium term by also managing the structure of liabilities. Level of liquidity needed differs in between industries, and proper analysis of liquidity position needs analysis of historical funding needs, current liquidity position and future funding needs. (Robinson, van Greuning, Henry, Broihahn, 2009) For airlines major part of the Current Liabilities consists of transportation prepayments from customers. Typical for airlines is that most of the customer prepayments are non-refundable, and the liquidity ratios can seem worse because of increased levels of current liabilities. (Morrell, 2007) Other industry specific detail effecting liquidity ratios of airline companies, is that they do not have high inventories, because empty seats cannot be stored. Only inventories come from spare parts. Small inventories make airline industry's Current Asset smaller than for example manufacturing companies. (Vasigh, Rowe, 2019) Quick Ratio and Current Ratio are commonly used as liquidity measures. (Hampton, 2011)

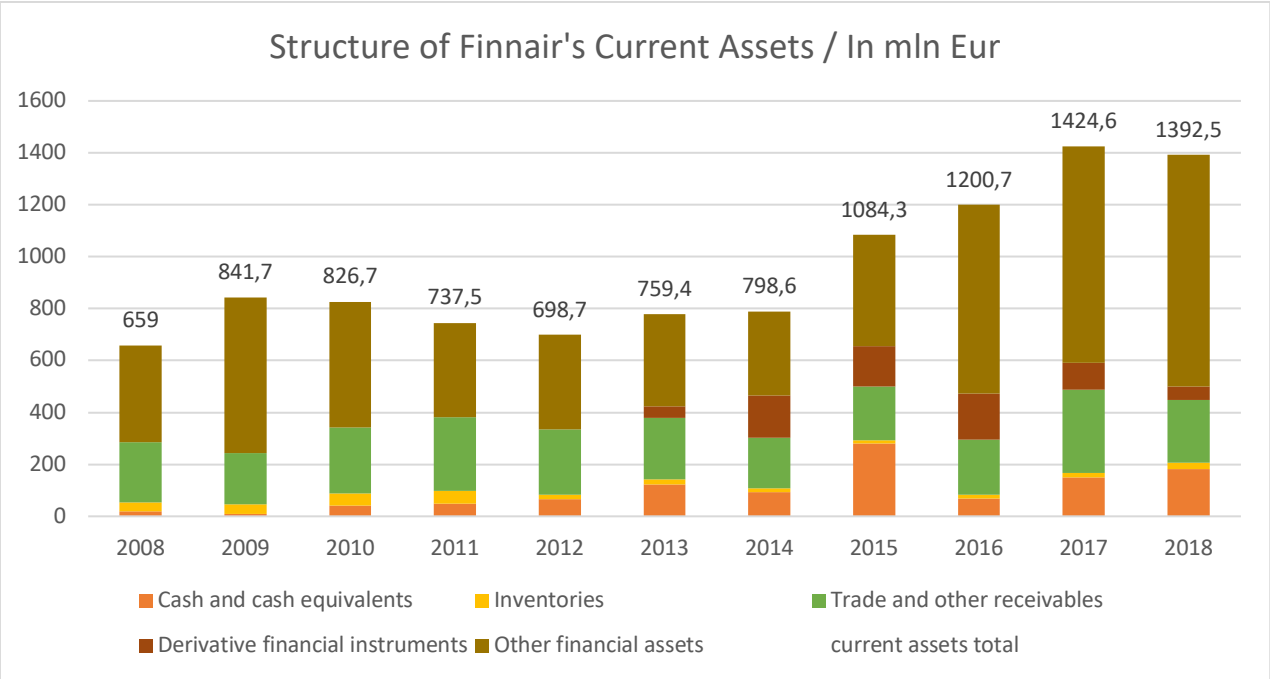

Figure 1: Structure of Finnair's Current Assets 2008-2018

Source: Compiled by the author from data in Appendix 2

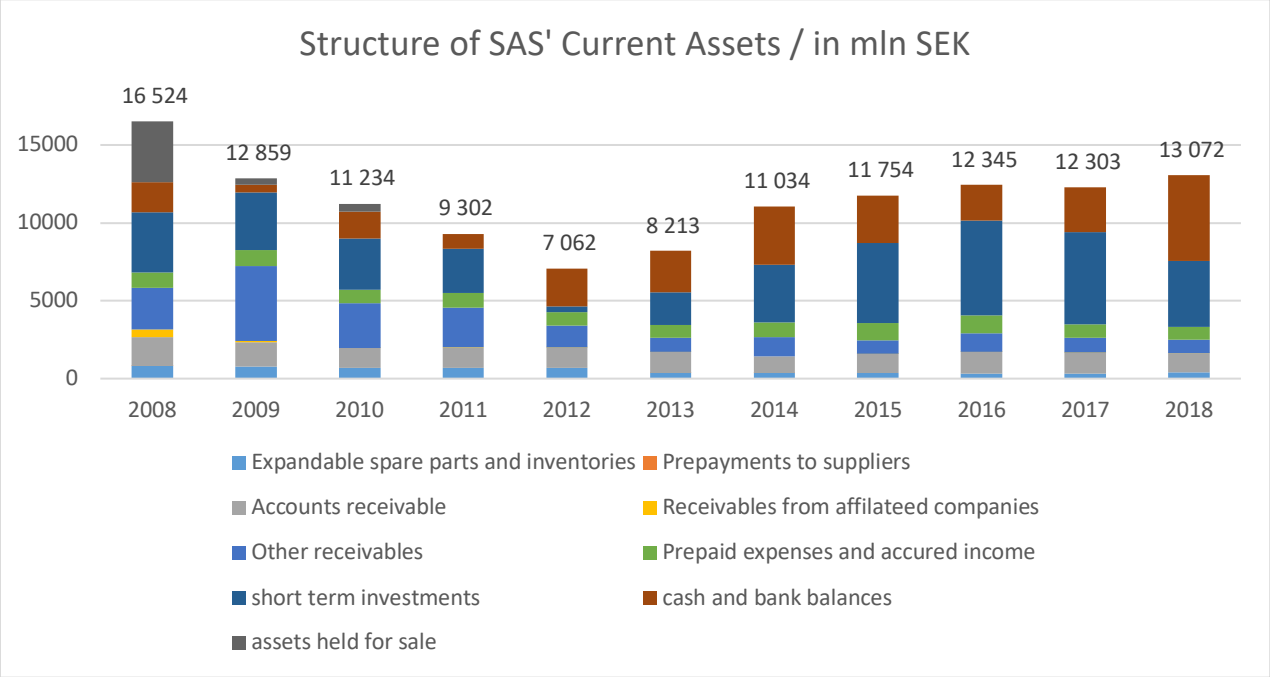

Figure 2: Structure of SAS' Current Assets 2008-2018

Source: Compiled by the author from data in Appendix 4

As seen from Figures 1 and 2, inventories are only a small part of case companies' current assets. Both companies have small inventories, which include mainly spare parts for their aircraft. As

visible in Figure 1, major part of Finnair's current assets is coming from other financial assets. Other financial assets for Finnair include commercial papers and certificates, money market funds, deposits maturing after 3 months, as well as listed and unlisted shares. For SAS cash and bank balances as well as short term investments take majority of current assets. For SAS short-term investments include treasury bills, deposits, commercial paper and tax deduction account in Norway. 2015 to 2016 Finnair increased other financial assets increased by 14%, eventually increasing their total current assets. After 2016, Finnair has been increasing their other financial assets. The amount of cash and cash equivalents have been changing for Finnair through the years. The lowest balance at the end of a fiscal year was in 2009, when Finnair had 9.2 million euros, whereas the highest balance was in 2015, when Finnair had a cash balance of 280.5 million euros. The lowest total current assets where in 2008, where the balance was at 659 million euros, and highest in 2017 where the balance was 116% higher at 1424.6 million euros. Increase in the biggest portion of Finnair's Current assets, other financial assets, was from 2008 to 2009 by almost 123%.

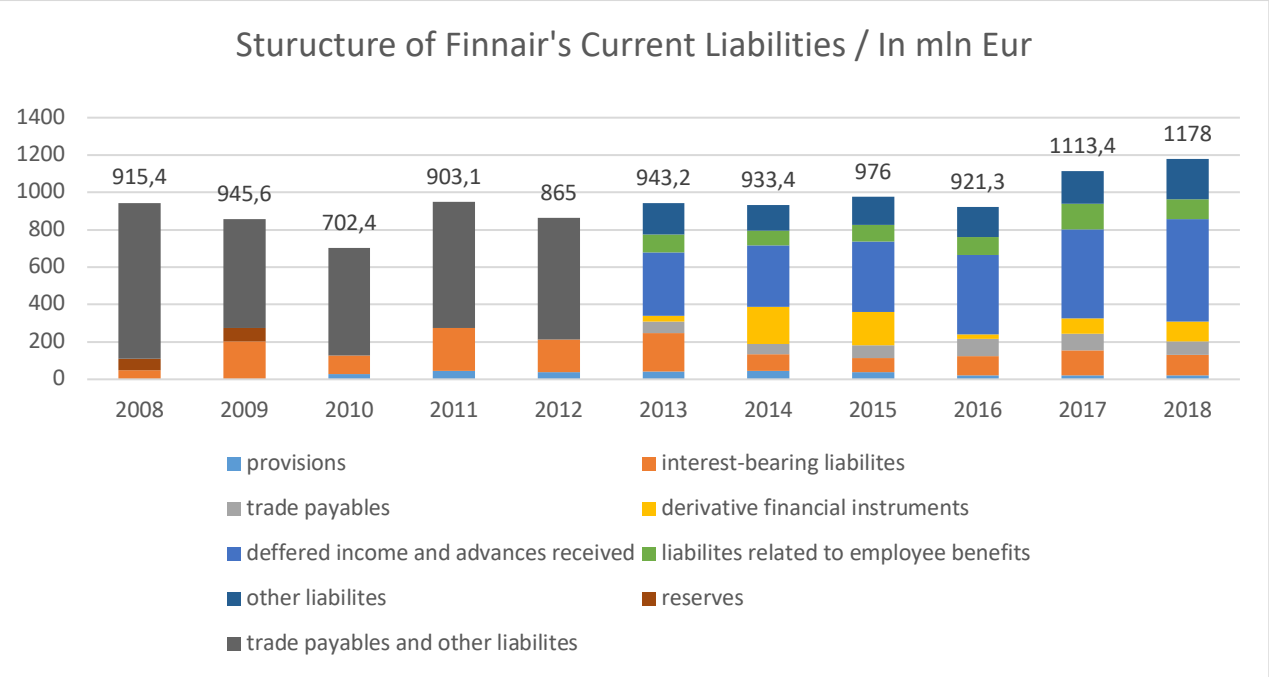

Figure 3: Structure of Finnair's Current Liabilities 2008-2018

Source: Compiled by the author from data in Appendix 2

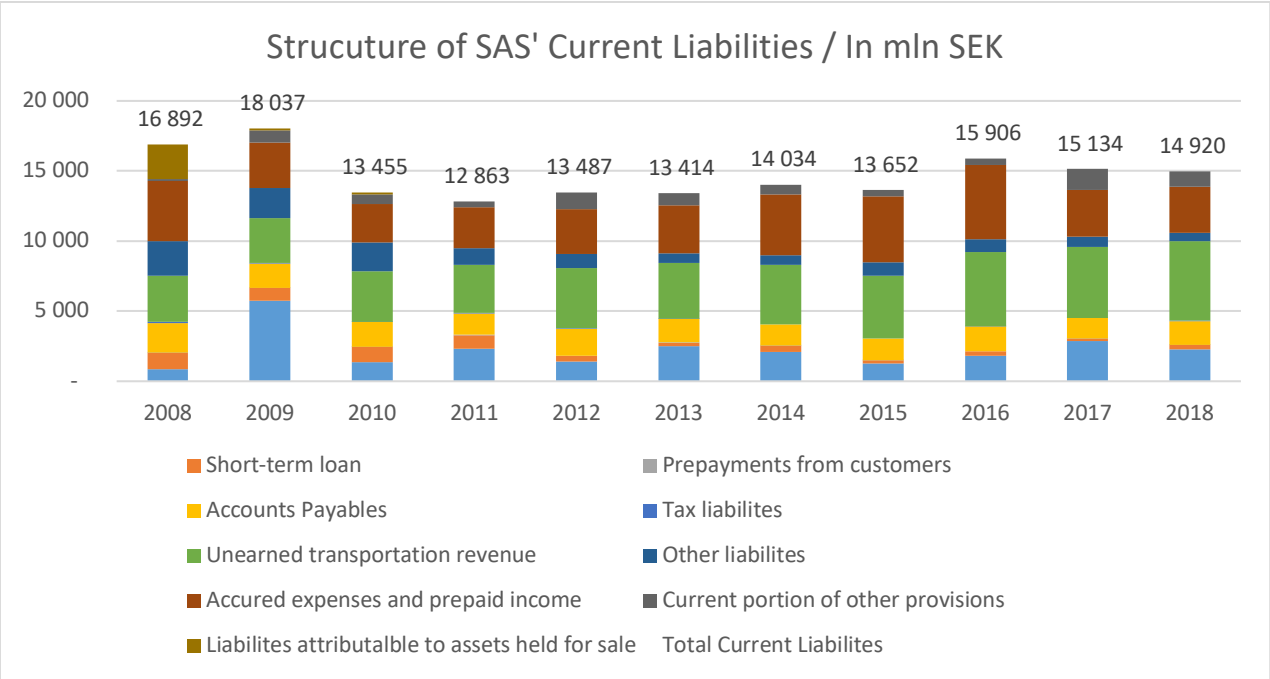

Figure 4: Structure of SAS's Current Liabilities 2008-2018

Source: Compiled by the author from data in Appendix 4

Before 2013, Finnair only listed current income tax liabilities, reserves, interest bearing liabilities and trade payables and other liabilities in their Current Liabilities. After 2013, they changed the format of their balance sheet, and listed provisions, borrowings, trade payables, derivative financial instruments, deferred income and employee benefit related liabilities. Major part of both companies Current Liabilities unearned transportation revenue, as seen from Figures 3 and 4. For Finnair the information on unearned transportation revenue is not listed in balance sheet for years 2008-2012, but the information is available from Notes to the Financial Statements. Because they are not visible in the balance sheet and Figure 3, they are listed in Appendix 5. According to Morrell (2007), most of the customer advances, are non-refundable and thus do not necessarily need a cash obligation, at least for the whole amount. For Finnair the prepayments for transport are 15% to 47% current liabilities and for SAS 18% to 38% of current liabilities. This decreases the liquidity ratios of both companies, as the prepayments are listed in current liabilities.

Current ratio shows the relationship between current assets and current liabilities. It shows how well current assets meet current liabilities, and as well to what extent current liabilities are used to finance current assets. (Blackstaff, 2012) A rule of thumb for good Current Ratio suggest a 2:1 ratio. (White, Ashwinpaul, Fried, 2014). More in depth rules for Current Ratios suggest, that if Current Ratio is over 2.0 it can be considered good, if the ratio is between 1.0-2.0 it is considered

satisfactory and a Current Ratio less than 1.0 is considered poor and can be a signal for liquidity problems. (Yritystutkimus ry, 2017)

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

Figure 5. Current Ratio
Source: Brealey, Myers, Marcus, 2000

As Current Ratio shows how well, company has cash or ability to generate cash to meet short term obligations, excluding prepayments for transportation from current liabilities can be used to calculate adjusted Current Ratio, to get a more accurate view of companies' liquidity. Prepayments for transportation do not require cash obligation, and adjusted Current Ratio shows how well an airline can pay obligations, that actually need cash obligation.

$$Adjusted\ Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities - Prepayments\ for\ transportation}$$

Figure 6: Adjusted Current Ratio
Source: Morrell, 2007

Quick ratio or acid test ratio is a liquidity ratio, where inventory is deducted, as it might be difficult for companies to turn inventories into cash quickly. Quick ratio shows relationship of quick assets to current liabilities, and by excluding inventory, Quick Ratio offers more significant test for company's short-term ability to pay its obligations. A rule of thumb for good Quick Ratio suggest a 1:1 ratio. (White, Ashwinpaul, Fried, 2014) More in depth rules for Quick Ratio suggest that a ratio above 1, is considered good, 0.5 to 1 as satisfactory and below 0.5 as poor. (Yritystutkimus ry, 2017)

$$Quick\ Ratio = \frac{Current\ assets - Inventories}{Current\ Liabilities}$$

Figure 7. Quick Ratio
Source: Brigham, Houston, 2009

Despite the lack of inventories for case companies, and the resulting small difference between Current ratio and Quick ratio, both ratios are selected for the study due to the common usage of both ratios when analysing liquidity. Adjusted Current ratio is selected, as it can give a better view on airline's liquidity.

1.3. Profitability Ratios

Profitability means the ability of a company to earn profit. Profitability shows the competitive position of a company in the market. Profitability can also show the quality of management. (Robinson, van Greuning, Henry, Broihahn, 2009) Profitability ratios measure the return earned by a company during a time period, and the ratios reflect results of financing and operating decisions made by a company. Most data used in evaluating performance from operations, come from the income statement, but performance is related to assets used to produce results. (White, Ashwinpaul, Fried D, 2014)

Return on Assets (ROA) shows how well the company is using its assets to produce income. ROA also shows how profitable the assets purchased by a company are. ROA is considered as one of the most important profitability ratios, as ROA relates earnings to investments. For ROA 5% is considered to be decent. Low ROA can be a bad signal for the growth of the company, as assets are not used efficiently for profits. The problem of the ratio is that net income is the return for stake holders, whereas assets can be financed through both owners' equity and debt. (Robinson, van Greuning, Henry, Broihahn, 2009) Return on Assets varies between industries. For capital intensive business like airline industry, average returns are lower. Negative ROA, indicates that an airline is not able to efficiently use its assets and it can result in financial difficulties. (Vashig, Rowe, 2019)

$$Return\ on\ Assets\ (ROA) = \frac{Net\ Income}{Average\ Assets}$$

Figure: 8: Return on Assets (ROA)
Source: White, Ashwinpaul, Fried 2014

Return on Equity (ROE) shows how successful or unsuccessful the company has been at maximising the return to owners' investments. Companies with less capital invested and more debt financing can have higher rates for ROE than, companies using solely equity financing, which is why, for Return on Equity can fluctuate within the industry. An airline with more debt finance, than one with equity financing, can have higher Returns on Equity. (Vashig, Rowe, 2019)

$$Return\ on\ Equity\ (ROE) = \frac{Net\ Income}{Average\ Equity}$$

Figure: 9: Return on Equity (ROE)
Source: Brealey, Myers, Marcus 2001

Operating margin shows profitabiltiy of sales before taxes and financial income or expenses. Operating margin shows efficiency in cost controlling. Operating margin ratio measures the effectivness of sales in creating pre-tax profit. In Operating margin unusual activites, sources of financing or taxes are not taken into an account for. (Vashig, Rowe, 2019) For airlines, operating margin can vary depending on company's depreciation policy, or by changing ownership of aircraft. Lease payments affect operating margin, where as interest payments do not. (Morrell, 2007)

$$Operating\ Margin = \frac{Operating\ Income}{Sales}$$

Figure 10: Operating Margin
Source: Brigham, Houston 2009

Profit margin as a ratio, shows the percentage of each euro or other currency left in the business from sales, after the company has paid its expenses. The profit margin ratio shows how well can the company manage costs in relation to sales. Changes in profit margin are explained by factors affecting revenue and expenses in the Income Statement of a company. (White, Ashwinpaul, Fried, 2014) For companies the goal is to have Profit Margin as high as possible. (Owen, 2013)

$$Profit\ Margin = \frac{Net\ Income}{Sales}$$

Figure 11: Profit Margin
Source: Brealey, Myers, Marcus 2001

Net profit margin takes into account all aspects company's financial structure, which allows comparison between different sized companies. It is common for airlines to experience low or negative ratios. Because of financial gains or losses, Profit Margin and Operating Margin do not necessarily compile. Due to that, it is important to take both ratios into the account. Profit margin allows the comparison of different sized companies as net income is compared to the relation of sales. (Vasigh, Rowe, 2019) This allows for the comparison of Finnair and SAS; despite they are different in sizes and use different currencies.

1.4. Activity ratios

Activity ratios measure how efficiently a company manages its assets. Assets of the company should be used to create profit. If company manages its assets unsuccessfully, performance will

suffer as costs will rise and income decrease. If company is successful in its assets management, company needs less capital, costs are controlled better, and the results and income will be favourable and improve over time, creating better results for the future. (Sherman, 2015)

The Asset Turnover Ratio shows the turnover of all firm's assets. The ratio is used in evaluation the company's ability to use assets in revenue generation. It shows how many euros are generated for sales per every 1 euro spent on assets. (Brealey, Myers, Marcus, 2001) Low Asset Turnover Ratio is a signal of either inefficiency or capital intensity of the business. (Robinson, van Greuning, Henry, Broihahn, 2009) As the ratio differs in between industries, it only offers meaningfulness when compared against companies in the same industry.

$$Asset\ Turnover\ Ratio = \frac{Sales}{Average\ Assets}$$

Figure 12: Asset Turnover Ratio
Source: Brealey, Myers, Marcus 2001

The Average Collection Period measures the quickness of which customers pay their obligations to a company. By examining how fast customers pay obligations, it can be examined how fast a company is generating cash from sales. Low figure indicates efficient collection, and fast cash collection, but it can be a signal of restrictive credit policy, decreasing the number of potential customers. Fast collection period means cash is available faster for the company to pay its own obligation, and the risk of default coming from customers is low. (Brigham, Houston, 2009). (SAS, 2018)

$$Average\ Collection\ Period = \frac{Average\ receivables}{Average\ daily\ sales}$$

Figure 13: Average Collection Period
Source: Brealey, Myers, Marcus 2001

In terms of debt collection, both companies have highest receivables related to trade receivables. Both companies also list trade receivables as potential credit risk, but according to Finnair annual statements, credit risk related to trade receivables is moderate due to diversity in customers. (Finnair, 2018) Both companies have annually recognized losses on trade receivables.

1.5. Advantages of Financial Ratio Analysis

Ratios help in identifying problems or issues in business by showing relations between different figures. (Owen, 2003) Ratios enable evaluation of past performance, assessing current financial positions and getting some understanding of the company's potential future results. Ratios can be used to analyse insights on managements' ability and financial flexibility to gain required amount of cash to grow and meet obligations. (Robinson, van Greuning, Henry, Broihahn, 2009) Financial ratio analysis allows for two main comparisons: comparison of a firm over a period of time and comparison of a firm in the same industry. Financial ratio analysis can be used as one of the most useful tools of financial management as ratios are considered as simple and easy to understand. (Hampton, 2011) Due to the formulas and ratio format, financial ratios also enable cross-firm and industry comparison, as the ratios are proportional. (Vashig, Rowe, 2019)

1.6. Limitations of Financial Ratio Analysis

Ratios help to understand and analyse companies' financial position and their operations, but ratios have their limitations. Users of financial statements should be aware of the limitations, to get more accurate results.

One of the most significant limitation to financial ratios and financial ratio analysis is the data. Financial ratios are calculated from financial statements of a company. If there are mistakes in the financial statements, the ratios will be misleading. Companies can also change how their financial statements look by implementing different techniques to make their financial statements look better. This will also change the ratios for better. Companies might also use different accounting practises. Different depreciation methods or different inventory methods can make the comparison of two companies inaccurate. (Brigham, Houston, 2009)

Both Finnair and Scandinavian Airlines use International Financial Reporting Standards (IFRS). Because of the same standards used by the companies, data should be comparable, and no significant distortion from accounting should affect the ratio analysis. Both companies have their financial statements audited and the auditors' conclusions are positive. This reassures the comparability of the data and the accuracy of financial ratios calculated from the data.

2. OVERVIEW OF THE AIRLINE INDUSTRY

Air transportation is a major global industry. Since the 1980's air traffic has grown globally, and forecasts expect the growth to continue for multiple years to come. Airline industry has a high impact on globalisation through development of world trade and tourism. Fast and safe transport of passengers and cargo, to different places and on Earth contribute to economic, political and social change in the world. Main operators of air transport are commercial airlines. The commercial airlines have a challenging industry to operate in, and the industry is characterised by low profit and high volatility in return. Biggest airline companies are a part of one of three biggest international strategic alliances, and the alliances help companies in them to create bigger international route network in a more cost-efficient way, than through organic growth. (Tugores-Garcia, 2012)

The airline industry is highly depending on changes in oil price and other global uncertainties. For European airlines the exchange rate of Dollar is important, as oil, leasing costs and traffic charges are usually paid for in USD. Other currencies and exchange rate are important as well, as companies operate in multiple countries and sell tickets in multiple currencies. Global uncertainties and situations might change quickly and create unpredictable situations for airline companies, for example due the eruption of a volcano in Iceland and the resulting ash cloud in 2010, 100,000 flights in Europe were cancelled in a week. (Finnair, 2011) The uncertainty and high vulnerability of the industry as a whole rises question for the examination of the behaviour of traditional financial ratio analysis in the airline industry. (Stepanyan, 2014)

During 2008-2018 airline companies faced multiple uncertainties and situation outside their own control. In 2008 the airline industry and the number of flights were at all-time high. EU and the US had negotiated The Open-Skies Agreement, allowing European airlines to fly without restrictions from everywhere in the EU to everywhere in the US. The global recession in 2008 to 2009 left airline companies facing with huge issues, resulting in the biggest yearly fall of flights in multiple decades. The recovery to a sustained growth took multiple years. While airline companies and reaching sustained growth, took years the rise of low-cost flights and carriers

created another problem for traditional airlines. Low-cost airlines now have the majority of scheduled flights. (European Commission, 2011) 2010 showed some signs of recovery until a volcanic eruption and resulting ash cloud from Iceland, forced 100,000 flights in Europe to be cancelled in a week. In 2011 the global airline industry was affected by high fuel prices, and increased capacity in the market. Global economy was decreasing while the competition increased, as the low-cost airlines started to dominate the market. (Finnair 2010, Scandinavian Airlines 2010) In 2011 Japan was hit with and earthquake and resulting tsunami. The earthquake and tsunami and the situation in Japan that followed, decreased demand for flights from Japan to Europe. In Europe political revolutions rocked Egypt and Tunisia, which changed demand for leisure travellers to other destinations. (European Commission, 2012) 2012 was a year of intense competition for European airlines. Record 2.9 billion passengers flew globally. Jet fuel prices were volatile, being major concern for airline's profitability. Weakening of Euro against the US Dollar increased the price for fuel, as leases, fuel and traffic charges are usually paid for in Dollars. Multiple European airline companies went bankrupt in 2012. 2013 was a year of growth in demand. 2014. Was another year of growth in demand. For Finnair, the weakness of Finnish economy decreased demand in the home market. 2015 was another year of growth in the main markets. The growth rate was highest since 2010. Globally airlines had the best profitability, with all-time high operating margins, due to the decrease of fuel prices in 2016 and the fuel prices were on average 44% lower than in 2014. (European Commission, 2016)

2.1. Finnair

Finnair is a Finnish airline and the flag carrier of Finland. Finnair is a network airline specialising in passenger and cargo traffic between Asia and Europe. Finnair offer package tours as well, through Aurinkomatkat-Suntours and Finnair Holidays brands. Finnair's hub is located in Helsinki-Vantaa Airport.

Finnair is one of the oldest still operating airlines in the world, as it was founded in 1923 as Aero O/Y. The beginning of Finnair was characterised by small scale operations, as there were no airports in Finland until 1936. First airplane landed on snow in the winter and on water during summer. First flight was used to travel post to Tallinn from Helsinki. Later the plane was used to operate between Helsinki and Stockholm in co-operation with Swedish airline ABA. During the Winter War in 1939-1940, Helsinki was considered as two dangerous, and flights to Stockholm

were operated from Vaasa. After the World War II, the majority of shares were transferred to the Finnish government, and next years were characterised by growth. The name was then later changed to Finnair in 1960, to attract international customers. Finnair is one of the 13 airlines in the OneWorld alliance. (Finnair, 2020) Finnair is considered one of the most punctual and safest airlines in the world. In 2012, according to statistic Finnair was the safest airline. (Finnair, 2012)

Finnair's strategy has been focusing on the Asian markets. This strategy is depended on Helsinki's geographical position between Europe and Asia, which allows Finnair to offer the fastest connections between Asia and Europe. Competitive advantage comes from location, as many flights between European destinations and Asian cities fly over Finland. Finnair's vision is to offer unique Nordic experience for its passengers. Mission is to offer fastest connections via Helsinki and best network from home markets. With the strategy Finnair wants to become becoming the leading airline of Nordic region. Demand for travel has increased in Asia, and it has made it possible for Finnair to open new destinations and adding additional flights.

Finnair is a national airline, as the company is partly owned by the Finnish Government. Legislation forces the Finnish Government to own more than half of the Finnair Plc's shares, and decreasing the ownership to below 50%, would need revision on the Parliament's decision. Other owners of Finnair are public entities, financial institutions and households, as Finnair is publicly listed in the Nasdaq Helsinki Large Cap list. (Finnair 2008-2018)

Table 1. Information of Finnair in fiscal year ending in 2018

	Number of employees	Amount of aircraft	Routes
Finnair	6,462	57 + 24	>130

Source: Compiled by the Author from Finnair Annual Report 2018

As of 31.12.18, Finnair had 6,462 employees overall. Fleet consisted of 57 aircraft and 24 aircraft, which are leased to Nordic Regional Airlines (Norra). Norra operates Finnair's short haul flights. Norra is a joint venture between Danish Air Transport, owning 60%, and Finnair owning 40% of the company. In 2018, Finnair flew to more than 130 destinations. (Finnair, 2018)

2.2. Scandinavian Airlines

SAS is an airline founded in 1946 and the flag carrier of Sweden and Denmark, and is the leading airline in Scandinavia, with hubs in Copenhagen, Oslo and Stockholm. SAS is a part of the Star Alliance, which allows SAS to fly customers to 1300 destinations across the world.

SAS was formed in 1946 from 3 companies, Det Danske Luftfartselskab A/S (DDL), Danish parent company founded in 1918, AB Aerotransport (ABA), Swedish parent company founded in 1924, Det Norske Luftfartselskap A/S (DNL) Norwegian parent company founded in 1927. In 1946 the first intercontinental flight from Stockholm to New York is operated. SAS is the first airline to fly polar route from Copenhagen to Los Angeles in scheduled service in 1957. In 1960 SAS opened its first hotel, and started opening more, and in 1980, the first hotel opened outside Scandinavia. In 1965 SAS was the first airline to begin electronic reservation system. SAS continued growing and expanding until 1990, but in 1990 SAS started selling a number of subsidiaries. (SAS Group, 2020)

SAS' strategy differs from Finnair's. SAS' is focusing on winning Scandinavia's frequent travellers, and make life easier for them with safety, punctuality and care. According to SAS over 2 million Scandinavians are making more than 5 trips in a year, and they represent 70% of all ticket sales. SAS offers the most departures to frequent travellers from and within Scandinavia, and SAS' loyalty programme EuroBonus had 5.6 million members at the end of fiscal year 2018. SAS' other strategy is to create an efficient and sustainable operating model, with fuel efficient aircraft, use of biofuel and eventually going towards hybrid and fully electric aircraft. (SAS Group, 2020)

The company is partly owned by the Swedish and Danish government. At the end of fiscal year 2018, Swedish and Danish governments represent 29% of votes. Voting rights by country, had 40% of the votes in Sweden, 28% in Denmark, 5% in Norway and 26% other, which majority of registered in the US. SAS is publicly traded in Denmark, Sweden and Norway. (Scandinavian Airlines, 2008-2018)

Table 2. Information of SAS in fiscal year ending in 2018

	Number of employees	Amount of aircraft	Routes
SAS	10,146	157	>280

Source: Compiled by the Author from SAS Annual Report 2018

As of 31.10.18, SAS had an overall of 10,146 employees. Fleet of SAS consisted of 157 aircraft on over 280 routes. (Scandinavian Airlines, 2018)

2.3. Finnair and SAS as competitors

Both Finnair and SAS are a part of Global Airline Alliances. The reasons for alliances are a wider network and increased profitability by enabling international connecting traffic. Due to their alliances, both companies have expanded their network and possible destinations. (Tugores-Garcia, 2012) As SAS is part of the biggest alliance, Star Alliance, the impact of shared routes is bigger than for Finnair.

Aviation is a vital part of infrastructure in the Nordic region. Finnair and SAS are competitors due to their close geographical distance. Both companies operate flights from the Nordic countries to Europe, Asia and America. Both companies offer flights from competitors' countries and hubs, making it possible to connecting passengers to travel through their hubs using their airlines or Alliance network.

As of right now, Finnair strategy is focusing on mainly the Asian market, and connecting Asian passengers between Europe and Asia. SAS started flying to Asia before Finnair, but now Finnair is operating more flights to Asia than SAS. While Finnair focuses on the Asian market, SAS is focusing on frequent travellers in the Nordic countries. SAS considers Finland, as one of their Nordic home markets, and makes it possible for Finnish travellers to connect from multiple Finnish airports to SAS' main hubs and access their network or the global StarAlliance network. SAS is able to offer more destinations and departures than Finnair. (Finnair, Scandinavian Airlines 2018) Their strategic differences make it worthy to analyse differences of their financial performance after the global economic crisis in 2008-2009.

3. FINANCIAL RATIO ANALYSIS FOR FINNAIR AND SAS

The airline industry the business environment is under constant change, the behaviour of traditional financial ratios and financial ratio analysis in the specific industry needs evaluation. In this Chapter the selected financial ratios named in Chapter 1 for Finnair and Scandinavian Airlines from years 2008 to 2018 are evaluated and compared.

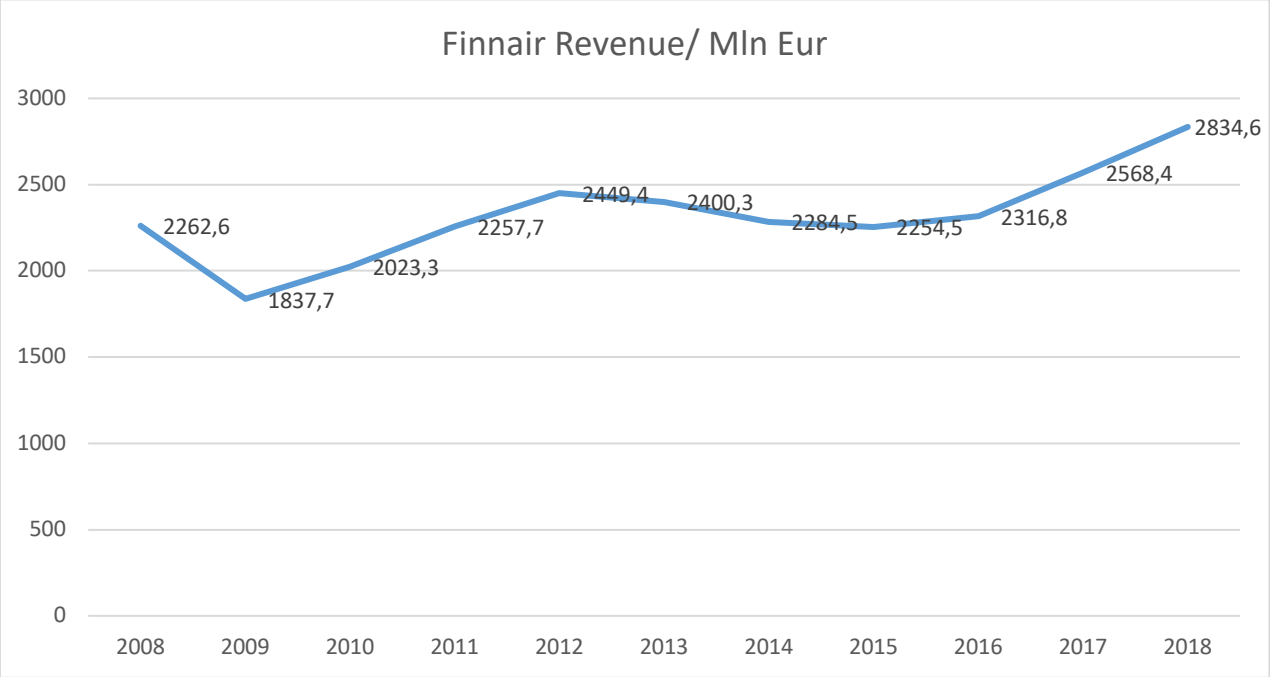

Figure 14. Finnair revenue 2008-2018

Source: Finnair Annual Reports; compiled by the author based on data from Appendix 1

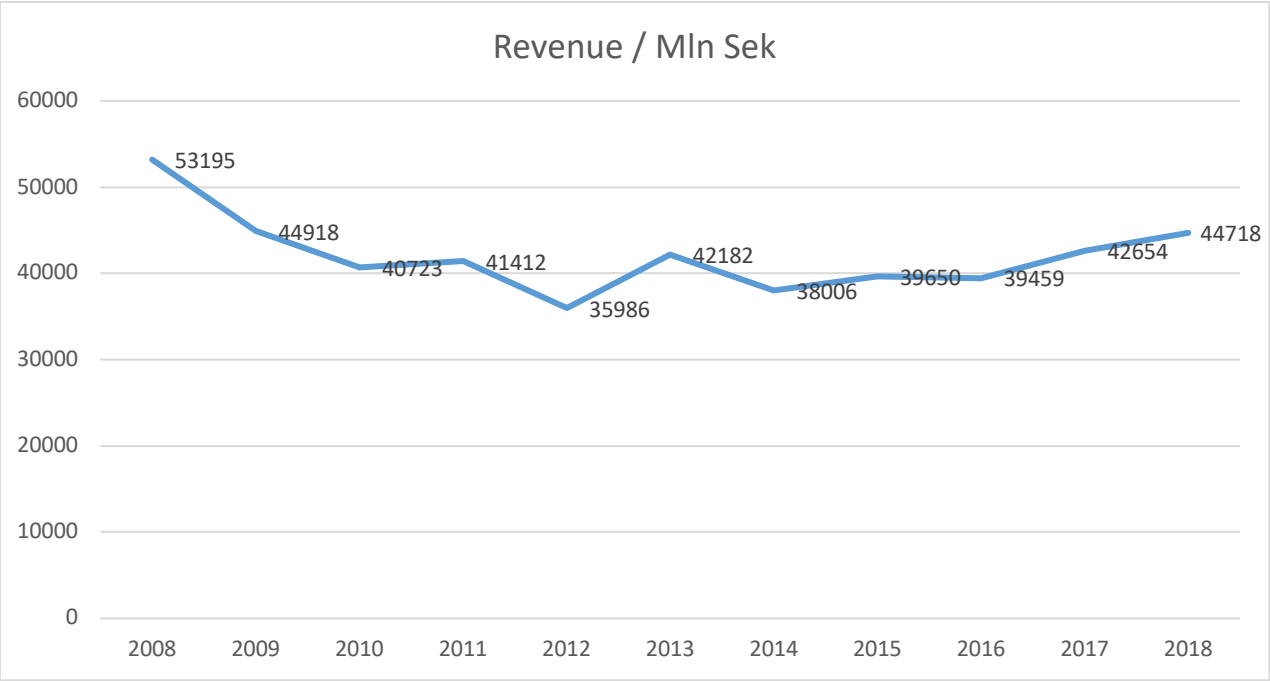

Figure 15. SAS Revenue 2008-2018

Source: SAS Annual Reports; compiled by the author based on data from Appendix 3

In terms of revenue, SAS has not been able to grow above the levels of before the global economic crisis of 2008-2009. The global recession decreased the revenue for SAS, and they have not been able to reach the level of 2008 since as Figure 15 shows. For Finnair the revenue also decreased due to the recession of 2008-2009, but Finnair was able to recover and increase their revenue over the level of 2008 in the year 2012, mostly due to their new strategy focusing on Asian market. 2018 Finnair had increased their revenue from the level of 2008 by 25%. For Finnair 2018, was the year of highest revenue, as seen in Figure 14. SAS' in 2018 had revenue 16% less than they had in the year 2008. Even though 2018 saw decrease of 16% compared to the level of 2008, the decrease was even bigger over the years, as 2018 SAS had 3rd highest revenues during the selected time period. Excluding the lowest year of 2012, where SAS changed their accounting period, and the revenue is not from a full year, their lowest revenues came in 2015. In 2015 the revenue is 29% less than in the year 2008. For revenue SAS has been slowly recovering from the high years of 2008 and have been able to grow their revenue every year since the low of 2015, whereas Finnair has been able to grow from 2009 and achieve levels higher than in 2008, mostly due to their change in strategy to focus on the Asian market. SAS changed their accounting period from January to December to January to October in 2012, so the accounting period is shorter for 2012, and longer from 2013. Finnair has been able to grow their revenues mostly due to their Asian strategy, whereas SAS is struggling with intense competition, and has to focus on strengthening competitiveness.

3.1. Liquidity ratio analysis

The selected financial ratios for liquidity ratio analysis were Current ratio and Quick ratio. Both Current Ratio and Quick Ratio have rule of thumbs, that can be used to determine if they are applicable for the case companies in the airline industry. The rules of thumb for Quick Ratio and Current Ratio can be used to analyse the level of liquidity of case companies. Current Ratio and Quick Ratio are analysed as a portfolio of ratios, as they have similar components, to analyse where the possible changes come from.

Table 3. Liquidity ratios of Finnair 2008-2018

Finnair	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Current Ratio	0.72	0.89	1.18	0.82	0.81	0.81	0.86	1.11	1.30	1.28	1.18
Adjusted Current Ratio	0.89	1.03	1.43	1.02	1.06	1.26	1.32	1.80	2.42	2.23	2.21
Quick Ratio	0.68	0.85	1.11	0.76	0.79	0.78	0.84	1.10	1.29	1.26	1.16

Source: Finnair Annual Reports; author's own calculations based on data from Appendices 2 and 5

Table 4. Liquidity ratios of SAS 2008-2018

SAS	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Current Ratio	0.98	0.71	0.83	0.72	0.52	0.61	0.79	0.86	0.78	0.81	0.88
Adjusted Current Ratio	1.22	0.87	1.14	0.99	0.77	0.87	1.13	1.28	1.17	1.22	1.41
Quick Ratio	0.93	0.67	0.78	0.67	0.47	0.59	0.76	0.84	0.76	0.79	0.85

Source: SAS Annual Reports; author's own calculations based on data from Appendix 4

Because of the structure of current assets, and little inventory in Finnair's and SAS' balance sheet, the difference between Current Ratio and Quick Ratio is marginal. For both companies the ratios move in a similar direction, if Current Ratio decreases so does the Quick Ratio, because of the small difference in the ratios.

For the selected time period, both companies have Current Ratios signalling for liquidity problems. SAS has had a Current Ratio less than 1.0 for the whole time period selected, as seen from Table 4. They have not been able to achieve a satisfactory Current Ratio once. It means that per 1 SEK in short-term obligations, they have less than 1 SEK, in their Current Assets to cover them with. Because of the small amount of inventory, their Quick Ratio is satisfactory for 9 out of 10 times in the selected time period. Especially 2012, when the Current Ratio was 0.52 and Quick Ratio 0.47, both poor, the signal for possible future liquidity problems is eminent. Finnair has had 5 years where their Current Ratio is less than 1.0, while their Current Ratio is poor, their Quick Ratio is satisfactory, due to the same fact of little inventory, as the table 3 suggests. The last 4 years of the selected time period, Finnair has been able to maintain a satisfactory Current Ratio of over 1.0, and for the future Finnair has smaller liquidity risk, because of better liquidity ratios, than SAS.

The adjusted Current ratio shows better current ratios for both companies, as a big part of current liabilities is excluded from the calculation. With adjusted current ratio, Finnair has had a ratio of over 2.0 3 times, and a ratio of under 1.0 just once, in 2008. This means that Finnair has had a satisfactory liquidity 7 out of 11 times, and a good ratio 3 out of 11 times. SAS has had an adjusted Current ratio less than 1.0 4 times, when they were not able to achieve a Current ratio of over 1.0 once. The adjusted Current ratio signals satisfactory ratio and satisfactory liquidity 7 out of 11 times. The adjusted Current ratio shows that the case companies' liquidity is actually better than Current ratio shows.

Finnair has had the better financial position in terms of liquidity. Their Current Ratio has been better than SAS' since 2010. Finnair also has been able to increase their Current Ratio beyond the level of 1.0, achieving satisfactory Current Ratio, something SAS has been unsuccessful at. This is mostly due to increase in other financial assets. After 2012, SAS has improved their Current ratio, mostly due to increase in cash and bank balances and short-term investments. Due to small inventories, the difference between Current Ratio and Quick Ratio is marginal for both companies. Because of that and the fact, that Finnair has achieved better Current Ratios for the period in question, their Quick Ratio is also better than SAS'. Also, the adjusted Current Ratio has been

better for Finnair. According the ratios Finnair has maintained overall better liquidity compared to SAS, after 2008.

3.2. Profitability ratio analysis

The Profitability ratios selected for the analysis are Return on Assets (ROA), Profit Margin and Return on Equity (ROE). They are analysed as a portfolio as the ratios have same components.

Table 5. Profitability ratios of Finnair 2008-2018

Finnair	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ROA (%)	-	-4.5	-3.6	-1.0	0.5	1.0	-4.0	4.6	3.7	6.3	5.2
ROE (%)	-	-12.7	-10.3	-2.8	1.5	3.1	-13.7	14.4	10.7	18.1	14.8
Operational Margin (%)	-2.3	-6.7	-0.7	-3.9	1.4	0.5	-1.6	1.1	5.0	8.8	7.3
Profit Margin (%)	-1.8	-5.5	-4.3	-1.0	0.5	1.0	-3.6	4.0	3.7	6.6	5.3

Source: Finnair Annual Reports; author's own calculations based on data from Appendices 1-2

Table 6. Profitability ratios of SAS 2008-2018

SAS	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ROA (%)	-	-17.8	-18.8	-16.4	-12.0	2.3	-7.5	8.4	11.0	9.3	12.5
ROE (%)	-	-26.1	-17.5	-12.6	-8.4	1.6	-9.0	17.0	21.4	16.3	20.7
Operational Margin (%)	-1.4	-6.9	-4.8	1.6	-0.8	3.3	0.4	5.6	4.8	5.1	5.6
Profit Margin (%)	-1.9	-5.8	-5.6	-4.1	-2.7	0.4	-1.9	2.4	3.3	2.7	3.6

Source: SAS Annual Reports; author's own calculations based on data from Appendices 3-4

Table 7. Profitability industry averages of commercial airlines

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operational Margin	-0.2	0.4	4.9	3.1	2.6	3.5	4.6	8.6	8.5	7.7	6.8
Profit Margin	-4.6	-1.0	3.1	1.3	0.9	1.5	1.8	5.0	4.8	5.0	3.4

Source: IATA (2014 and 2019)

For Finnair the Profit Margin and ROA are the same 4 out of 10 times. For the other 6 times, the values of the two ratios are similar, For SAS the difference between Profit Margin and ROA is bigger, but for both companies they move in the same direction. Finnair's average assets have been similar to the amount of revenue they generate, explaining the similarities in two ratios.

The Profit Margin shows in percentage, how many Euros for Finnair or Swedish Krona for SAS are left from sales in the company, after expenses are paid for. Both companies have problems with profitability. The first 4 years of the time period, both companies have negative Profit Margin. During that time the airline industry was recovering from the global recession of 2008-2009. In 2012 Finnair had positive ratios for Profit Margin, ROA and ROE, despite high fuel prices and weakening of Euro against the US Dollar. 2014 was again a year of negative ratios for both companies. SAS' accounting period changed back to a year, and Finnair had problems in their home market of Finland, as the Finnish economy was weakening, resulting in negative Profit Margin, ROA and ROE. The last 4 years of the time period, both companies have positive Profit Margin, ROA and ROE. 2015 was a year of low fuel costs, increasing the profitability of airline industry. Finnair had in 2015 the 3rd highest Profit Margin during the selected time period. For SAS the decreased fuel costs resulted in a year of positive ratios, and it launched growth and years of positive ratios for the reminder of the time period.

Both companies start the time period with negative operational margin and profit margin, mostly due to global recession and resulting decrease in demand. In 2011, SAS was able to maintain a positive operational margin, mostly due to their cost saving strategy, where unit costs were declined 23% from the level of 2008. Finnair also implemented a cost saving strategy mid 2011, but it effected their profitability ratios in 2012. After 2012 Finnair was able to maintain a positive operational margin and profit margin for every year except for 2014, where weakness in the

Finnish economy decreased demand from Finnair's home market. For the last 3 years, Finnair mainted a better Operting margin and Profit margin than SAS.

Both companies are below the industry average level in operational margin, meaning their operations are less profitable than their competitors, except 2017 and 2018 when Finnair is above the industry average in operational margin. Expenses can be higher than competitors as, the salary expenses are high in the Nordic countries, and both companies list salary expenses and fuel expenses as the main expenses of their operations. Other airlines have similar fuel costs, but salary costs are depending on country or region. During the selected time period both companies have implemented cost cutting strategies, but especially SAS is below industry averages despite effective cost cutting. Globally airlines were able to maintain a positive operational margin already in 2009 after the global economic crisis, whereas despite cost cutting strategies for Finnair it took 4 years and for SAS 3 years.

For the time period, Finnair has positive Profit Margin, ROA and ROE six times, while SAS has had positive five times. SAS has higher values for ROA, meaning assets owned by the company are used more efficiently than Finnair's assets, but Finnair has been able to achieve positive ratios more times than SAS. For ROE, SAS has the highest highs, but also the lowest lows. Finnair has been able to make return for their owner's investments six times, compared to SAS' five times. In general Finnair has been more profitable, as the ratios have been positive more times than the ratios for SAS.

3.3. Activity ratio analysis

The activity ratios selected for the study are Average collection period and Asset turnover.

Table 8. Activity ratios of Finnair 2008-2018

Finnair	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average collection period	-	40.0	50.6	45.6	37.9	32.4	31.4	33.8	42.5	42.0	16.4
Asset turnover	-	0.82	0.83	0.95	1.07	1.08	1.12	1.15	1.01	0.95	0.97

Source: Finnair Annual Reports; author's own calculations based on data from Appendices 1-2

Table 9. Activity ratios of SAS 2008-2018

SAS	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average collection period	-	47.3	35.6	34.2	25.6	20.9	21.2	19.9	24.0	20.4	17.4
Asset turnover	-	1.05	0.97	1.02	0.95	1.33	1.35	1.33	1.27	1.33	1.34

Source: SAS Annual Reports; author's own calculations based on data from Appendices 3-4

For both companies, receivables mostly consist of trade receivables. Both companies have credit losses, and with shorter collection period, SAS is better at mitigating the risk. Only 2 times, Finnair has had a shorter collection period than SAS, meaning SAS is better at debt collection, and able to pay their own obligations faster. As liquidity has been concern for both companies, long collection period only makes liquidity worse. SAS has tightened their credit policy, as the average collection period was at the highest in 2009, and lowest in 2018. This can be due to change in customers or change in the credit terms. Finnair's highest average collection period was in 2010, at over 50 days. This can mean, that Finnair has looser credit policy, but it might also signal for problems in turning sales into cash and paying for own obligations. Whereas SAS has a trend of shorter collection period, Finnair's change in collection period from 2017 to 2018 is drastic, over 25 days. In 2018 Finnair had the shortest collection period in 16.4 days, but before 2018 the shortest collection period Finnair had was over 30 days. Despite longer collection periods, and potential problems in turning cash, Finnair has been able to maintain better liquidity ratios than SAS.

Activity ratios measure how efficiently a company is using its assets. If assets are not used efficiently, performance suffers, and costs will increase. Airline companies have large amounts of assets, as aircrafts are expensive. The Asset Turnover ratio shows how many Euros are generated by per 1 Euro in invested in assets. Asset turnover for both companies is low, mostly due to the amount of assets needed for operations. Best Asset turnover is for SAS in 2014, for when per SEK, 1.35 SEK was generated as sales. As Finnair has lower Asset turnover than SAS, Finnair's assets are not used efficiently, or at least not as efficiently as SAS'. SAS has increased their Asset Turnover, but SAS has decreased their assets from the high times of 2008. In 2013 SAS had the lowest assets during the selected time period and they are 38% lower than in the year 2008, when they had the highest assets. As their sales have decreased, assets have been decreasing as well, and the ratio is better of it. Finnair has increased their assets, and sales through the selected time period. Despite SAS decreasing assets and Finnair increasing, SAS is more efficient in their usage of assets, and the trend for Asset turnover is increasing, and efficiency becoming better and better. Finnair is in 2018 more efficient than in 2008, but in 2018, their Asset turnover is less than 1.0, and they have been able to maintain a ratio of over 1.0 through years 2012-2016.

In terms of activity, SAS is better in using assets, and in debt collection, when comparing ratios between companies, SAS has been able to maintain a trend of higher Asset turnover and shorter average collection period, whereas for Finnair both ratios fluctuate more.

4. FINDINGS

The time period was characterised by externalities effecting profitability of the case companies. During the first 4 years, both companies had the highest revenues in 2008, because of resulting recovery from the global recession. 2010 Finnair was able to increase their revenue by 10%, while SAS had a decrease in revenue by 9%, compared to 2009. During the year, SAS had to cancel 5,000 flights, due to the eruption of a volcano in Iceland and the resulting ash cloud. Next year the oil prices increased expenses and decreased profit. 2012 Intense competition, high oil prices, weakening of Euro against US dollar, bankrupted multiple European airlines and effected profits of SAS and Finnair. 2014 weakness in Finnish economy decreased Finnair's revenue and profit. The last years of the time period saw growth for demand for both companies and their profits.

The Profit Margin and the Operating margin of the companies show that the companies are not highly profitable, and the operating expenses are high. Highest expenses are from fuel and staff expenses. Both companies use currencies different than the US dollar, Finnair uses Euro and SAS uses Swedish Krona. Lease payments, fuel and traffic chargers are usually paid for in Dollars, and exchange rates can increase the expenses coming from the for Finnair and SAS. Fuel prices can be volatile, and prime example is when in 2016 on average fuel was 44% cheaper than in 2014. Because of the volatility of expenses and currencies related to the expenses, cost management has been hard for both companies, which the low Operating and Profit margin suggest, despite cost-saving strategies. Both companies have had positive margins for the last 4 years of the study, and Finnair has been able maintain ratios higher than SAS.

Finnair has had better financial position in terms of liquidity as well during the selected time period. Current Ratio and Quick Ratio are better, than SAS'. According to the rules of Current ratio, SAS is having signals for liquidity problems, with their less than 1.0 Current ratio. The adjusted Current ratio was calculated to exclude non-refundable prepayments listed in the Current Liabilities. The adjusted Current ratio shows better liquidity for both companies than Current ratio and SAS has been able to achieve an adjusted Current ratio of over 1.0 multiple times. Finnair has

maintained a higher ratio for, Current ratio, Quick ratio and adjusted Current ratio than SAS, meaning Finnair is more liquid.

Activity wise, SAS is better. Their asset usage is more efficient, and their debt collection times are shorter. With higher Asset turnover, SAS is able to generate more sales per money invested in assets, and in capital and asset heavy industry, efficiency is important. Through the years SAS has been able to maintain a trend of more efficiency and their Asset turnover have been increasing. With their lower Average Collection period, SAS has cash on hand faster to pay their own obligations. Despite lower Collection period and more efficient asset use, Finnair has been able to maintain a more liquid and profitable position, and increase their revenue beyond the level of 2008, which SAS has not succeeded.

The usage of financial ratio rules in the airline industry was also analysed in this thesis. For Return on Assets, Finnair has been only able to achieve the decent 5% rate twice. As the ROA has Net Income divided by Average Assets, the ROA's for the company are low, as Net Income is low, and amount of Assets is high. Low ROA can be used as a signal for unsuccessful use of assets, and bad sign for growth, as assets are not used efficiently. Despite the low ROA for Finnair, Finnair's revenues have been increasing during the time period, after the recovery from 2008-2009 global financial crisis. For SAS, the last four years of the selected time period so ROA's over 5% as well as growth in revenues, but the growth has been slower than for Finnair. For SAS Profit Margin has been weaker than for Finnair, but SAS has decreased the amount of assets by 19.5% from the years 2008, where the amount of assets SAS had in its balance sheet was the highest. Finnair has in 2018 32% higher balance sheet value of assets than in the year 2008. For the last four years, SAS has maintained a relatively similar Net Profit, while decreasing their assets, and using the assets more efficiently, explaining the growth in ROA. The rule of 5% to grow, does not necessarily work for airline industry, as Finnair has been growing despite lower values for ROA.

In terms of liquidity ratios, both Finnair and SAS do not achieve Current Ratios high enough for the suggested 2:1 rule of thumb. Less than 1.0 Current Ratio is a poor Current Ratio and can be a signal for liquidity problems. For the selected 10 years, SAS has had a poor Current Ratio 10 out of 10 times. According to the rules of Current Ratios SAS has signals liquidity problems. Finnair has had better Current Ratio, between poor and satisfactory for the time period, but still they don't come close to the 2:1 rule of thumb. Due to the small inventory Quick Ratios are similar to Current Ratios. The Quick Ratio rule of thumbs of 1.0, is not achieved by SAS once, which again shows

liquidity problems for SAS. Finnair for the years, they have achieved a Current Ratio over 1.0, achieves a Quick Ratio over 1.0 as well, due to the small inventories. Current Ratios are far from the suggested 2.0 rule of thumb, but Quick Ratios are over 1.0 for Finnair, every time the Current Ratios are over 1.0, as the inventories are for Finnair between 7% to 1% for the whole current assets, and for SAS between 10% to 3%. Because the difference between Current ratio and Quick ratio is highly marginal, the rules suggest poor liquidity in terms of Current ratio, but better in terms of Quick ratio. The adjusted Current ratio shows better liquidity for both companies than Current ratio. The adjusted Current Ratio works better for airline companies, due to the structure of their Current liabilities.

Rule of thumbs for Current Ratio or ROA are not applicable for case companies. For the liquidity ratios the case companies show liquidity problems and signals for trouble for future operations. Both companies are still operating, despite the showing of poor ratios. Big part of the Current Liabilities is deferred income. Customers are paying in advance, and the prepayments are in Current Liabilities. For Finnair deferred incomes has been between 35% and 47% of total Current Liabilities. For SAS the figure is between 18% to 38% of Current Liabilities is from customer prepayments. Adjusted Current ratio excluded the prepayments from current liabilities and showed better ratios and more accurate liquidity position for both companies.

CONCLUSION

Despite growing of demand, traditional airlines like Finnair and SAS are under distress from external uncertainties. European market is under extensive competition and low-cost airlines are dominating the market. Operations are costly, and expenses are high and due to the high vulnerability to oil prices and currency exchange rates amount expenses are changing and are out of the companies' control. Airline companies are characterised by low profitability and low liquidity. Their business is capital intensive and expenses are high. The purpose of the study was to examine the usage of ratios and ratio analysis in the airline industry and calculate ratios and compare Finnair and SAS, based on their Annual reports for the years 2008-2019.

The first research question was "Can traditional financial ratio analysis be used for companies in the airline industry?" Use of financial ratio analysis seemed to be useful for comparing Finnair and SAS. Activity, profitability and liquidity were under analysis. SAS was able to maintain a better Asset Turnover Ratio, and shorter Collection Period, but still Finnair had the better overall financial position, by being more profitable and more liquid, despite SAS having better ratios in terms of activity. Usage of adjusted Current ratio for analysing liquidity, showed better financial position for companies, in terms of liquidity and the ratio could be used in analysing airline companies. Understanding the field of industry, and the industry specific aspects of the ratios, helps benchmarking companies in the airline industry. In conclusion, traditional financial ratio analysis can be used when benchmarking airline companies.

The second research question was "Do the rules of thumb for financial ratios work for airline companies?" The Rules of thumbs in evaluation were rules for Current ratio, Quick ratio and Return on Assets. Based on the ratio analysis for case companies, the Rules of Quick Ratio and Current Ratio do not work for airline industry. In terms of rules for Current Ratios, both companies had signal for liquidity problems, which can be a negative signal for future operations. Finnair was able to achieve satisfactory Current ratios 5 out of 11 times, and the other times Current ratio was poor. For SAS the Current Ratio was poor for the whole time period, and possibility of liquidity

problems eminent according to the rules. Because of the smallness of inventories for both companies, Quick Ratios gave almost similar values to Current Ratios. The rules for Quick Ratio showcase smaller values for acceptable values, and while Current Ratio is poor Quick Ratio could have been on the satisfactory level, for the case companies. The adjusted Current ratio shows better values for companies' liquidity, when excluding prepayments for transportation from Current liabilities. For ROA the rule of thumb suggested a ratio of at least 5%, or growth of the company would be difficult. Finnair was able to grow their revenue, despite ROA not achieving the suggested level of 5%, except for the last 2 years of the selected time period. SAS had negative ROA 6 out of 10 times, but when it was positive, it was over 5%, but their growth in terms of revenue was not as fast paced than for Finnair. The rules of thumb are not applicable for the case companies.

The last research question "How companies differ in liquidity, profitability and activity based on financial ratios?" SAS had better ratios in terms of activity, while Finnair had better ratios on liquidity and profitability. Overall Finnair had better financial positions, and they were able to grow their revenue beyond the level of the global economic crisis in 2008, which SAS could not achieve, during the selected time period.

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APPENDICES

Appendix 1. Income Statement of Finnair 2008-2018

(in millions of euros)

Years	2008	2009	2010	2011	2012	2013
Turnover	**2262.6**	**1837.7**	**2023.3**	**2257.7**	**2449.4**	**2400.3**
Other operating income	27.1	20.1	47.4	11.0	43.0	18.8
Employee benefit expense	-541.0	-487.9	-446.2	-447.0	-439.2	-381.3
Fuel	-567.9	-450.3	-431.7	-555.2	-670.3	-689.9
Lease payments	-82.6	-74.4	-63.1	-69.9	-66.2	-57.5
Other rental payments	-69.3	-81.4	-71.6	-45.1	-41.8	-152.0
Fleet material and overhauls	-96.1	-113.3				-125.8
Traffic charges	-188.5	-171.1	-211.6	-188.5	-226.0	-222.3
Ground handling and catering expenses	-146.6	-130.2	-172.9	-195.8	-224.3	-257.3
Expenses for tour operations	-138.9	-131.1	-120.0	-131.2	-96.8	-89.4
Sales and marketing expenses	-103.9	-77.2	-83.7	-93.3		-72.9
Depreciation and impairment	-110.2	-132.8	-118.7	-130.6	-130.7	-140.7
Other expenses	-298.4	-164.5		-117.0	-105.8	-218.1
Operating profit	**-52.1**	**-124.0**	**-13.3**	**-87.8**	**-35.5**	**-11.9**

Appendix 1. Income Statement of Finnair 2008-2018 Continuation

in millions of euros n

Years	2008	2009	2010	2011	2012	2013
Financial income	22.1	8.9	6.5	9.0	7.9	42.6
Financial expenses	-26.7	-18.7	-26.3	-30.6	-25.5	-19.7
Profit before taxes	**-56.4**	**-133.7**	**-33.0**	**-111.5**	**16.5**	**26.8**
Income taxes	14.6	31.8	24.0	10.2	-4.7	-3.9
Profit for the financial year	**-41.8**	**-101.9**	**-87.5**	**-22.8**	**11.8**	**22.9**

Source: Finnair Annual reports 2008-2018

Appendix 1. Income Statement of Finnair 2008-2018 continuation

In millions of euros

Years	2014	2015	2016	2017	2018
Turnover	**2284.5**	**2254.5**	**2316.8**	**2568.4**	**2834.6**
Other operating income	18.3	15.7	75.5	77.0	73.7
Employee benefit expense	-344.5	-353.2	-362.5	-423.3	-433.4
Fuel	-660.4	-595.5	-491.5	-472.2	-581.0
Lease payments	-78.8	-99.3	-109.5	-136.9	-155.0
Other rental payments	-159.7	-159.4	-167.4	-157.9	-154.9
Fleet material and overhauls	-119.4	-118.9	-147.3	-165.7	-169.1
Traffic charges	-230.9	-258.5	-262.8	-266.5	-300.8
Ground handling and catering expenses	-251.8	-250.3	-258.9	-252.2	-256.9
Expenses for tour operations	-76.7	-79.6	-87.8	-100.5	-113.4
Sales and marketing expenses	-65.3	-74.0	-76.9	-85.8	-92.4
Depreciation and impairment	-134.3	-108.1	-105.8	-129.2	-151.1
Other expenses	217.4	-219.3	-266.6	-285.1	-330.9
Operating profit	**-36.5**	**23.7**	**116.2**	**224.8**	**207.5**

Source: Finnair Annual reports 2008-2018

Appendix 1. Income Statement of Finnair 2008-2018 Continuation

in millions of euros

Years	2014	2015	2016	2017	2018
Financial income	3.5	1.3	1.0	-0.3	2.9
Financial expenses	-26.9	-9.7	-11.5	-13.4	-16.0
Profit before taxes	**-99.1**	**113.3**	**105.8**	**211.1**	**188.6**
Income taxes	16.5	23.6	-20.6	-41.7	-37.9
Profit for the financial year	**-82.5**	**89.7**	**85.1**	**169.7**	**150.7**

Source: Finnair Annual reports 2008-2018

Appendix 2. Balance sheet of Finnair 2008-2018

In millions of euros

Years	2008	2009	2010	2011	2012	2013
Intangible assets	48.1	46.1	38.6	32.3	25.2	19.3
Tangible assets	1272.1	1469.0	1406.6	1468.2	1362.6	1309.8
Investments in associated and joint ventures	6.1	8.3	7.6	13.7	12.3	8.2
Loan and other receivables	21.5	20.5	13.6	32.1	33.1	20.5
Deferred tax assets	57.5	42.0	48.0	75.2	77.6	65.8
Non-current assets total	**1405.5**	**1585.9**	**1514.4**	**1621.5**	**1511.1**	**1423.6**
Cash and cash equivalents	18.3	9.2	41.5	49.5	67.0	122.9
Inventories	35.1	36.8	47.5	48.9	17.1	19.9
Trade and other receivables	231.8	197.5	252.3	283.3	251.1	237.1
Derivative financial instruments						43.6
Other financial assets	373.8	598.2	485.4	353.8	363.5	355.9
Current assets total	**659.0**	**841.7**	**826.7**	**737.5**	**698.7**	**759.4**
Assets held for sale	*19.4*	*19.4*	*70.7*	*0*	*31.9*	*17.7*
Assets Total	**2038.9**	**2447.0**	**2411.8**	**2357.0**	**2241.7**	**2200.6**

Source: Finnair Annual reports 2008-2018

Appendix 2. Balance sheet of Finnair 2008-2018 continuation

In millions of euros

Years	2014	2015	2016	2017	2018
Intangible assets	18.4	9.5	12.4	15.5	20.4
Tangible assets	897.8	811.6	1166.5	1422.1	1526.6
Investments in associated and joint ventures	4.9	2.6	2.5	2.5	3.3
Loan and other receivables	9.2	8.7	7.4	5.6	4.3
Deferred tax assets	33.8	9.1	0	0	0
Non-current assets total	**961.1**	**841.5**	**1188.7**	**1445.7**	**1554.7**
Cash and cash equivalents	93.4	280.5	69.4	150.2	180.9
Inventories	14.7	11.8	14.9	17.2	25.1
Trade and other receivables	194.0	208.5	211.9	319.8	242.2
Derivative financial instruments	163.7	155.8	176.6	104.5	52.1
Other financial assets	322.8	427.7	727.9	833.0	892.2
Current assets total	**798.6**	**1084.3**	**1200.7**	**1424.6**	**1392.5**
Assets held for sale	*122.4*	*124.5*	*139.3*	*16.7*	*0.1*
Assets Total	**1885.1**	**2050.3**	**2528.7**	**2887.1**	**2947.3**

Source: Finnair Annual reports 2008-2018

Appendix 2. Balance sheet of Finnair 2008-2018 continuation

In millions of euros

Years	2008	2009	2010	2011	2012	2013
Deferred tax liabilities	120.6	99.1	103.3	98.5	94.9	72.6
Interest-bearing liabilities	26.1	637.4	677.7	516.0	413.5	410.9
Pension obligations	6.1	0	2.5	0	0.5	10.6
Provisions			72.6	86.9	82.3	69.3
Other liabilities						
Non-Current liabilities total	**387.8**	**736.5**	**856.1**	**701.4**	**591.2**	**563.4**
Provisions			27.8	46.0	38.2	40.5
Interest-bearing liabilities	48.5	201.8	98.5	229.9	174.2	207.5
Trade payables	-	-	-	-	-	61.6
Derivative financial instruments	-	-	-	-	-	29.1
Deferred income and advances received	-	-	-	-	-	340.8
Liabilities related to employee benefits	-	-	-	-	-	94.7
Other liabilities	-	-	-	-	-	169.0
Reserves	61.5	73.0				
Trade payables and other liabilities	834.1	582.2	575.8	672.2	650.4	
Current liabilities total	**915.4**	**945.6**	**702.4**	**903.1**	**865.0**	**943.2**
Liabilities related to assets held for sale					*2.2*	*2.3*
Minority interest	1.1	0.9				
Share Capital	75.4	75.4	75.4	75.4	75.4	75.4
Other equity	674	777.2	771.1	676.4	709.2	615.7
Equity total	**750.5**	**853.5**	**853.3**	**752.5**	**785.5**	**691.8**

Appendix 2. Balance sheet of Finnair 2008-2018 continuation

In millions of euros

Years	2014	2015	2016	2017	2018
Deferred tax liabilities	0	0	32.7	73.9	73.5
Interest-bearing liabilities	377.7	271.0	617.3	586.2	561.0
Pension obligations	25.3	4.4	31.9	6.4	17.0
Provisions	52.1	55.7	63.6	79.0	91.3
Other liabilities	22.1	15.8	4.9	1.1	4.8
Non-Current liabilities total	**437.3**	**346.9**	**750.4**	**746.7**	**747.6**
Provisions	44.2	38.3	22.2	21.1	21.1
Interest-bearing liabilities	89.9	75.2	100.4	132.4	108.4
Trade payables	56.2	67.5	94.4	90.7	72.6
Derivative financial instruments	198.5	180.5	25.2	81.3	107.1
Deferred income and advances received	327.9	374.8	424.6	475.3	548.9
Liabilities related to employee benefits	79.7	91.0	93.4	139.2	105.6
Other liabilities	137.1	148.7	161.1	173.4	214.2
Current liabilities total	**933.4**	**976.0**	**921.0**	**1113.4**	**1178.0**
Liabilities related to assets held for sale				*11.2*	
Minority interest					
Share Capital	75.4	75.4	75.4	75.4	75.4
Other equity	438.3	652.0	781.6	910.3	946.2
Equity total	**514.3**	**727.5**	**857.0**	**1015.7**	**1021.7**

Appendix 3. Income statement of SAS 2008-2018

in millions of Swedish krona

Years	2008	2009	2010	2011	2012	2013
Revenue	**53195**	**44918**	**40723**	**41412**	**35986**	**42182**
Payroll expenses	-18153	-17998	-13473	-13092	-11584	-11451
Other operating expenses	-31791	-25912	-25210	-23741	-22105	-25442
Leasing costs for aircraft	-2282	-2319	-1815	-1560	-1342	-1786
Depreciation, amortization	-1591	-1845	-1867	-2413	-1426	-1658
Share of income in affiliated companies	-147	-258	12	28	32	25
Income from the sale of shares in subsidiaries and affiliated companies		429	-73		400	-371
Income from the sale of aircraft and building	4	-97	-239	12	-247	-118
Operating Income	**-765**	**-3082**	**-1942**	**646**	**-286**	**1381**

Source: SAS Annual reports 2008-2018

Appendix 3. Income Statement of SAS 2008-2018 continuation

In Million Swedish Krona

Years	2008	2009	2010	2011	2012	2013
Income from other holdings of security	-	-	-263	-1469	-	1
Net financial items	-279	-341	-855	-806	-959	-949
Income before tax	**-1044**	**-3423**	**-3060**	**-1629**	**-1245**	**433**
Tax	28	803	799	-58	260	-254
Net Income for the period	**-1016**	**-2620**	**-2261**	**-1687**	**-985**	**179**

Source: SAS Annual reports 2008-2018

Appendix 3. Income Statement of SAS 2008-2018 continuation

In Million Swedish Krona

Years	2014	2015	2016	2017	2018
Revenue	**38006**	**39650**	**39459**	**42654**	**44718**
Payroll expenses	-9181	-9622	-9105	-9205	-9441
Other operating expenses	-25122	-24558	-24552	-27489	-28347
Leasing costs for aircraft	-2127	-2593	-2840	-3116	-3156
Depreciation, amortization	-1443	-1466	-1367	-1634	-1763
Share of income in affiliated companies	30	37	39	4	35
Income from the sale of shares in subsidiaries and affiliated companies	6	0	-7	-21	-4
Income from the sale of aircraft and building	-16	777	265	995	479
Operating Income	**153**	**2225**	**1892**	**2187**	**2521**

Source: SAS Annual reports 2008-2018

Appendix 3. Income Statement of SAS 2008-2018 continuation

In Million Swedish Krona

Years	2014	2015	2016	2017	2018
Income from other holdings of security	-43	-300	1	1	0
Net financial items	-1028	-508	-462	-463	-480
Income before tax	**-918**	**1417**	**1431**	**1725**	**2041**
Tax	199	-461	-110	-576	-452
Net Income for the period	**-719**	**956**	**1321**	**1149**	**1589**

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018

In Millions of Swedish Krona

Years	2008	2009	2010	2011	2012	2013
Intangible assets	1092	1296	1414	1693	1922	1802
Land and buildings	513	439	375	491	353	241
Aircraft	11037	13087	12652	11866	11220	8795
Spare engines and spare parts	1185	1299	1393	1367	1349	147
Workshop and aircraft servicing equipment	220	161	90	76	110	117
Other equipment and vehicles	318	192	130	123	117	105
Investment in progress	232	158	118	66	34	21
Prepayments relating to tangible fixed assets	627	238	24	155	160	251
Equity in affilated companies	622	358	294	317	325	352
Other holdings of securities	5	234	23	23	23	292
Pension funds, net	9658	10286	10512	11355	12232	12507
Deferred tax assets	921	1159	1187	1340	597	536
Other long-term receivables	410	729	2379	1011	1250	2249
Total non-current assets	26840	29636	14395	29883	29692	27415

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018 continuation

In Millions of Swedish Krona

Years	2008	2009	2010	2011	2012	2013
Expandable spare parts and inventories	819	758	678	705	687	359
Prepayments to suppliers	1	0	0	0	0	2
Accounts receivable	1851	1581	1277	1275	1311	1376
Receivables from affilaited companies	479	92	3	6	3	1
Other receivables	2661	4780	2901	2574	1399	866
Prepaid expenses and accuresd income	1009	1058	839	934	873	858
Short term investments	3872	3691	3281	2842	366	2080
Cash and cash balances	1911	498	1762	966	2423	2671
Assets held for sale	3921	401	493	0	0	0
Total Current Assets	**16524**	**12859**	**11234**	**9302**	**7062**	**8213**
Total Assets	**43364**	**42495**	**41825**	**39185**	**36754**	**35628**

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018 continuation

In Millions of Swedish Krona

Years	2008	2009	2010	2011	2012	2013
Share capital	1645	6168	6612	6612	6612	6613
Other contributed capital	170	170	337	337	337	337
Reservers	-718	279	627	309	17	-230
Retained earnigns	6215	4772	6862	5175	4190	4367
Non-controlling interest	0	0	0	0	0	16
Total Owners' Equity	**8682**	**11389**	**14438**	**12433**	**11156**	**11103**
Subordinated loans	953	919	974	1019	978	956
Bond loans	2212	0	1503	2809	2763	2641
Other loans	10535	6809	6866	6179	5260	5054
Deferred tax liability	2988	2832	2303	2154	1013	938
Other provisions	768	2131	2143	1673	1967	1361
Other liabilites	334	378	143	55	130	161
Total Long-Term Liabilites	**17790**	**13069**	**13932**	**13889**	**12111**	**11111**

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018 continuation

In Millions of Swedish Krona

Years	2008	2009	2010	2011	2012	2013
Current portion of long-term loans	872	5742	1383	2309	1403	2517
Short-term loan	1189	907	1073	977	411	231
Prepayments from customers	7	13	16	24	0	16
Accounts payable	2068	1738	1749	1540	1929	1689
Tax liabilites	110	27	22	18	32	36
Unearned transportation revenue	3299	3227	3598	3453	4292	**3932**
Other liabilites	2460	2110	2070	1160	1033	722
Accured expenses and prepaid income	4274	3264	2755	2934	3201	3416
Current portion of other provisions	148	852	657	428	1186	855
Liabilites attributable to assets held for sale	2465	157	132	0	0	0
Total Current liabilites	**16892**	**18037**	**13455**	**12863**	**13487**	**13414**
Total Owner's equity and liablities	**43364**	**42495**	**41825**	**39185**	**36754**	**35628**

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018 continuation

In Millions of Swedish Krona

Years	2014	2015	2016	2017	2018
Intangible assets	1905	1798	1923	1581	1498
Land and buildings	243	560	527	549	500
Aircraft	7535	7095	8254	7900	8767
Spare engines and spare parts	76	31	48	57	92
Workshop and aircraft servicing equipment	85	101	93	88	73
Other equipment and vehicles	128	137	105	95	102
Investment in progress	71	190	33	16	48
Prepayments relating to tangible fixed assets	736	1482	2135	1987	2658
Equity in affilated companies	395	421	398	374	417
Other holdings of securities	273	3	3	3	3
Pension funds, net	3778	4368	2615	4871	4025
Deferred tax assets	1111	375	854	219	174
Other long-term receivables	1928	1951	2331	2512	2770
Total non-current assets	**18291**	**18512**	**19319**	**20252**	**21127**

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018 continuation

In Millions of Swedish Krona

Years	2014	2015	2016	2017	2018
Expandable spare parts and inventories	342	345	312	321	401
Prepayments to suppliers	8	0	0	0	0
Accounts receivable	1067	1249	1406	1363	1219
Receivables from affilaited companies	0	2	1	2	1
Other receivables	1263	867	1193	931	866
Prepaid expenses and accuresd income	937	1093	1153	850	829
Short term investments	3703	5151	6067	5932	4232
Cash and cash balances	3714	3047	2303	2904	5524
Assets held for sale	0	0	0	0	0
Total Current Assets	**11034**	**11754**	**12345**	**12303**	**13072**
Total Assets	**29325**	**30266**	**31754**	**32555**	**34199**

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018 continuation

In Millions of Swedish Krona

Years	2014	2015	2016	2017	2018
Share capital	6754	6754	6776	6776	7732
Other contributed capital	494	327	327	327	327
Reservers	181	932	1251	1274	1261
Retained earnigns	-2549	-1674	-2328	-319	-2052
Non-controlling interest	27	0	0	0	0
Total Owners' Equity	**4907**	**6339**	**6026**	**8058**	**7268**
Subordinated loans	1003	1104	1157	1067	1161
Bond loans	2713	2184	2183	386	3040
Other loans	4419	4807	4390	4088	3291
Deferred tax liability	0	0	0	361	359
Other provisions	2088	1992	2089	3461	4044
Other liabilites	161	188	3	0	116
Total Long-Term Liabilites	**10384**	**10275**	**9822**	**9363**	**12011**

Source: SAS Annual reports 2008-2018

Appendix 4. Balance Sheet of SAS 2008-2018 continuation

In Millions of Swedish Krona

Years	2014	2015	2016	2017	2018
Current portion of long-term loans	2082	1264	1827	2868	2272
Short-term loan	462	229	320	166	328
Prepayments from customers	4	22	0	11	13
Accounts payable	1499	1528	1755	1448	1675
Tax liabilites	0	0	21	32	32
Unearned transportation revenue	4244	4482	5318	5064	5681
Other liabilites	679	964	872	712	582
Accured expenses and prepaid income	4355	4684	5336	3334	3309
Current portion of other provisions	709	479	457	1499	1082
Liabilites attributable to assets held for sale	0	0	0	0	0
Total Current liabilites	**14034**	**13652**	**15906**	**15134**	**14920**
Total Owner's equity and liablities	**29325**	**30266**	**31754**	**32555**	**34199**

Source: SAS Annual reports 2008-2018

Appendix 5. Deferred income and advances received for Finnair 2008-2018

In millions of euros

Years	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Deferred Income and advances received	172.5	127.6	123.8	178.5	204.6	340.8	327.9	374.8	424.6	475.3	548.9

Source: Finnair Annual reports 2008-2018

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