Master's Thesis

Strategic Analysis and Valuation of Scandinavian Airlines

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Executive Summary

The purpose of this thesis was to explore the opportunities and threats SAS will face in the years to come, and how SAS can capitalize on these to drive long-term value. Subsequently it answers if SAS shares at the end of its 2016 fiscal year was over or undervalued, and why.

The introduction of low cost airlines after the deregulation of the airline industry in the 1990s put great pressure on SAS and other national legacy carriers to transform. SAS been successful in gradually adopting to the new market conditions, which have meant lowering operating cost and ticket prices. But this have not come easy, and SAS have been through numerous crises in the past decade, most notably in 2012 when it came close to bankruptcy.

In the thesis, a strategic analysis is performed to investigate the macro-environmental factors and industry forces face by SAS, and how these will develop in the future. In addition, it identifies SAS key value drivers, and how these give rise to competitive advantage. The thesis moves on to analyse SAS historic profitability in relation to its competitors, this gave rise to important insight on how the industry have changed, and how different airlines have managed their operations to stay competitive. The insights generated from the profitability analysis and strategic analyses laid the foundation for forecasting SAS future performance, and subsequently the valuation of SAS' shares.

The findings of the thesis are that while SAS have been successful in decreasing costs, it is still not operating at the same level of profitability as other network legacy airlines. SAS furthermore faces numerous threats. Among these are the gradual decrease in ownership by the Swedish and Norwegian governments, new environmental regulation, and fluctuations in interest rates and exchange rates. While these could have material impact on SAS profitability, none are as important as fluctuations in fuel prices and SAS ability to further decrease labour costs.

The Scandinavian and global airline market is forecasted to grow at impressive rates. If SAS manages its threats successful, it could very well experience prosperity in the decade to come. Globalisation means increased opportunity in the long-haul segments, while Scandinavia's difficult topography and high income push demand for air travel significantly during times of economic growth.

The observable price of a SAS share as of 31 October 2016 was 15,4 SEK. Using the discounted cash-flow model, as well as multiples, it was found that SAS share was undervalued. However, this rest on the assumption that SAS will be able to keep its current market share, as well as succeed in decreasing labour costs.

Abstract

As the European union gradually deregulated the airline industry during the 1990s to eradicate the *monopolisation of state owned carriers, new forms of airlines entered the market. These low-cost carriers where built on a more flexible cost structure, which meant that they could offer fares for significantly less. These new market conditions proved difficult to manage for Scandinavian Airlines (SAS). As low-cost carriers in Europe started to gain traction, SAS had to fundamentally restructure to lower cost and ticket prices,*

The purpose if this thesis is the valuation of SAS at the end of its fiscal year in 2016. To arrive at the valuation, SAS' historic financial performance and macro-environmental factors, industry forces and SAS internal value drivers have been analysed. SAS have since 2015 created excess value for its stakeholders, mainly due to its success in lowering labour. The future success of SAS depends largely on its ability to continue to lower operating costs to stay competitive in the industry, which is forecasted to grow significantly for the next 20 years. The finding of this thesis is that SAS' shares at the end of its 2016 fiscal were undervalued.

Chapter 1: Problem statement & Methodology

The thesis presents a detailed analysis on the historic and future performance of SAS, which determines the threats and opportunities faced by the airline. It furthermore argues for how SAS can capitalize on the opportunities, and how it can potential the threats. The thesis answers the following question;

"What will drive long-term value creation for SAS in the future, and were SAS' shares fairly priced on 31 October 2016?"

To answer this question numerous sub-questions must be answered, these include;

- What is the current state of the Scandinavian and global airline industry, and how does SAS perform within the industry relative to other airlines?
- What have been the threats and opportunities in the macro-environment and airline industry, and how will these develop in the future?
- What are SAS' operational value drivers and competitive advantage, and what are SAS' weaknesses in relation to its peers and competitors?
- What is the appropriate required rate of return for investors based on SAS risk profile?
- How will SAS' financial performance develop in the future?

1.1 Delimitation

The primary theories and frameworks applied in the thesis will be presented and discussed critically in this chapter. Still, they are the ones most commonly used by practitioner for valuation. It is therefore assumed that the reader has a modest understanding of the theories, and a general understanding of economics.

Investors and other stakeholders generally do not have access to primary data, but rather base their valuation on publically available data. For fair valuation, solely publically available information is used throughout the thesis.

SAS changed its 12-month fiscal calendar year in 2012. Previously I stretched from the beginning to the end of the year, whereas post-2012 the fiscal year constitute 1 November to 31 October. This meant that SAS's financial year was shortened to 10-months in 2012. When SAS operational and financial years post-2012 are discussed throughout the thesis, it refers to the end of respective fiscal year. For example, SAS' operations in 2016 refers to its operations from 1 November 2015 to 31 October 2016. It is important to highlight that fiscal year of airline differ, and when compared no adjustments have been made for the difference in calendar year.

If not otherwise stated, all currencies are denoted in Swedish krona (SEK). As needed other currencies have been converted into SEK based in the exchange rate on 31 October 2016. The exchange rates are shown in figure 1.

Applied exchange rates (SEK per currency)		
US dollar	USD	9,02
Euro	EUR	9,89
British pound	GBP	11,01
Norwegian krona	NOK	1,09
Singapore dollar	SGD	6,48
Turkish lira	TRY	2,91
Emirates dirham	AED	2,46

Figure 1: own creation, source XE 2017

In not otherwise stated SAS refers to SAS Group, which include the airline, as well as affiliates, associates and subsidiaries. The same is true for other airlines discussed in the thesis except for KLM. KLM is part of the KLM-Air France group, in the thesis KLM do not refer to the group, but rather the legal entity "KLM" within the group.

SAS have been through numerous restructuring and the financial crisis had major influence on its operations. It is therefore important the historic period captures these events. The historic period has therefore been set to ten years, from 1 January 2007 to 31 October 2016.

1.2 Research approach

The research method applied in the thesis is founded upon the deductive approach, where pre-existing theories are applied to empirical data to derive to conclusions to answer the problem statement (Research Methodology, 2017)[1]. Both qualitative and quantitative data have been used as sources. It is important to note that the airlines themselves aim to look as attractive as possible, and while the annual reports must meet legislative requirements, how the company presents the

data is to some extent at the directors' disclosure. The non-qualitative data in the annual reports have therefore been avoided to a greatest extent.

Data and analyses from four major institutions that that are influential in the global airline industry have been used extensively. The international Air Transport Association (IATA) (IATA F, 2017), which represents 230 airlines to help formulate policy, Centre for Aviation (CAPA E, 2017), which produce solutions that support strategic decision making, and Airbus and Boeing, the two largest manufacturers of aircrafts in the world. Data from these institutions are considered reliable.

1.3 Structure

The thesis is structured as top-down fundamental analysis, where the value of SAS is determined through the analysis of macro environmental factors, the forces that shape the airline industry and SAS' own historic financial and operational performance (Subramanyam, 2014). Figure 2 illustrates the relationship.

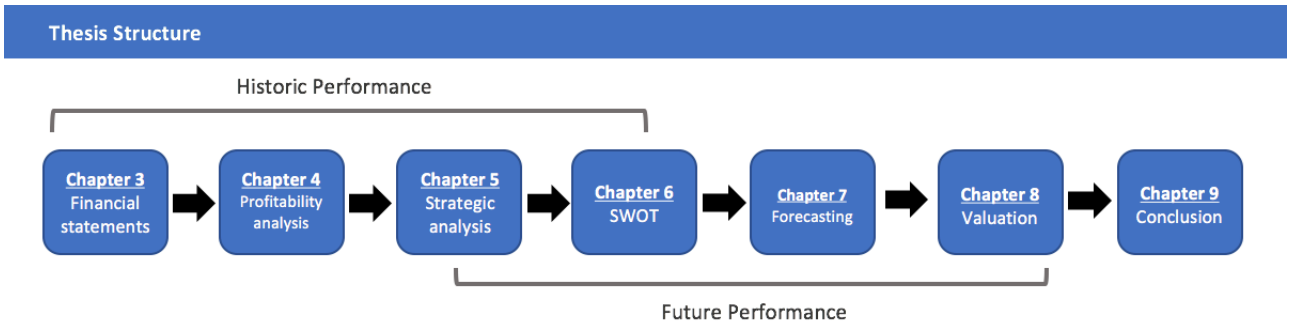


Figure 2: own creation

In **chapter two** the industry and market will be introduced, with a strong focus on Scandinavia. Secondly SAS' history, ownership structure and strategies will be presented. Thirdly the comparison group will be introduced, and the different business models that exist within the group will be discussed and argued for using empirical data on the airlines' historic performance.

Chapter three deals with the reformulation of SAS financial statements, which can be found in their entirety in appendix 2. The comparison groups' statements have been reformulated as well (appendix 3). Based on the reformulated statements, **chapter four** analysis SAS' historic profitability using the Du Pont Model, and compares its performance to other airlines

In **Chapter five** a strategic analysis is performed. The PESTE model will be used to draw vital insights into the macro-environmental factors that have shaped the industry. Porters five forces is used to analyse the industry, and lastly SAS internal value drivers and competitive advantages are determined through a value-chain analysis, which is summarised using the VRIO framework.

Chapter six is a SWOT matrix that summarise the findings in chapter three and four. Based on the previous chapters, pro forma statements are constructed **chapter seven,** which are used to valuate

SAS in **chapter eight**. A sensitivity analysis will furthermore be conducted in chapter eight, before moving on to the conclusion in **chapter nine**.

1.4 Main Theories

This section critically asses the theories applied in the thesis, which is the capital pricing model (CAPM), weighted-average cost of capital (WACC) and discounted cash-flow. PESTE, Porters five forces, value-chain analysis and VRIO will not be discussed as the author argues that they are frameworks that helps to guide research, not theories.

CAPM has been widely criticised as it is founded upon numerous assumptions, which makes CAPM not truly reflect cost of equity. While beta, which represents systematic risk, should vary across time, it is argued that it is too sensitive to the practitioner's choice of data, which gives rise to a measurement problem. This is evident in chapter six when SAS' beta is estimated. To mitigate the problem an average of multiple estimations is used. CAPM furthermore determines required return on a stock relative to a diversified portfolio using an index of highly liquid stocks. Firstly, the index does not perfectly represent the market, and secondly disregards returns on assets outside the stock market. The market risk premium, which is the difference between the return on a diversified market portfolio and risk free rate, is not stable across time, and some have argued that based on empirical evidence it should be lower during economic prosperity (Wahlen et al, 2015). CAPM is despite these drawbacks widely used as it is easy to apply (Petersen & Plenborg, 2012).

In estimating WACC a firm target capital structure should be used, but as many companies do not disclose this (including SAS), it is estimated using its current capital structure (Petersen & Plenborg, 2012). SAS capital structure have changed significantly during the last decade, and new accounting standards on operating leases in 2019 will have material impact on the balance sheet. To combat this SAS' operating leases will be capitalized, and the average capital structure will be used as a proxy for target capital structure. As WACC include required return on equity, it furthermore riddled with the same issues as CAPM.

The DCF approach is the most popular valuation model used by practitioners, and is the main one applied in the thesis. One of the drawbacks of the model is that in the terminal period it constant numerically, in other words, it is a steady-state where everything grows at a constant in perpetuity. While this is an unrealistic assumption, it is argued that what it reflects is that value drivers fluctuate around a mean in perpetuity (Petersen & Plenborg, 2012).

Estimating the terminal period is one of the more troublesome exercises in the thesis. The airline industry is forecasted to experience rapid growth for the next 20 years or more, but as it is growing at a rate considerably higher than GDP, it will eventually decrease. It is difficult to predict 20 years into the future, and doing so adds a large degree of uncertainty. The forecast horizon has therefore been set to ten years, and terminal period have been adjusted since the airline industry will not reach steady state in 10 years.

Chapter 2: SAS & the Airline Industry

2.1 History[2]

SAS was founded in 1946 as a partnership between the Scandinavian governments to handle intercontinental flights to and from Scandinavia. Until the 1980's, it operated as regional monopoly. After the oil crisis in the 1970's SAS was running deficits, and in 1981 the newly appointed CEO saw an opportunity to regain profitability by shifting its strategy to cater to business travellers. During the period, SAS pioneered numerous products that are still offered across the industry today, most notably the introduction of a frequent flyer program. The focus was on high customer service and a wide variety of offerings, which increased profits, but also increased labour costs. This strategy foundation for some of the challenges faced by SAS in today's market, high costs and an inflexible and human capital intensive operating platform.

In the late 1970s, the US the airline industry gradually deregulate the industry to pave the way for new airlines to enter the market (Unnikrishnan 2015). During the 1990s the European union also pushed to dissolve the monopolization of markets by national airlines, and in 1997 most of Europe was deregulated. This meant the entrance of new airlines in Scandinavian and competition for SAS. SAS' operated at loss during the decade due to numerous industry and environmental factors. These factors included increased pressure to lower price, an increase in oil prices after the gulf war, and difficulties in managing labour costs due to long-term established contracts. Globally the airline industry saw significant growth in (RPK), with an annual growth rate of 4 – 6%.

At the turn of the millennium, numerous macro environmental factors influenced the global airline industry, amongst others the burst if the IT bubble, the 9/11 terror attacks, and the SARS epidemic in 2003. The airline industry had for decades almost exclusively experienced annual growth in demand, however, these events significantly decreased passenger volumes. Low-cost carriers (LCCs) which managed to grow despite of market conditions, most notably Ryanair and Norwegian, furthermore created excess supply and pressure to lower prices. This led to massive layoffs and labour strikes for SAS (Lindqvist, 200). Despite continuous cost saving programs, SAS had to issue shares in 2009 and2010 to raise a total of SEK 11 billion to avoid bankruptcy.

SAS' current CEO Rickard Gustafson joined SAS in 2011. In 2012, SAS needed further aid to avoid bankruptcy and was therefore issued a credit facility by the Scandinavian governments which was highly criticised. The EU commission nevertheless deemed the intervention legal (EU Commission, 2014). Since 2015, SAS has operated with positive financial results, which will be further discussed in the profitability analysis. The turnaround can largely be attributed to rigorous cost saving programs, divestment in non-core operating activities, the gradual implementation of a less human capital intensive operating platform and numerous initiatives to create a more flexible cost structure. The decrease in fuel price in recent years have furthermore contributed to SAS' profitability (SAS, 2016). In 2016, SAS was the ninth largest airline in Europe (measured in total passenger volume)

[2] If not otherwise stated, the source is Björnelid 2013

and an important founder, as well as stakeholder, in Star Alliance. The firm operates a fleet of 156 aircrafts, and offers flights to 118 domestic, intra-Europe and cross-continental destinations (SAS, 2016).

2.2 SAS' Ownership Structure[3]

On October 31, 2016 SAS had 57 571 holders of common shares and 7 682 preference shareholders. With a total market capitalization of SEK 8,9 billion, there were 330 082 551 common shares and 7 million preference shares in issue. Since the foundation of the airline, the Scandinavian governments have had close to a 50% or larger ownership in SAS (Lindqvist 2007). However, in 2016, the Swedish and Norwegian governments sold shares in SAS which decreased state ownership by 7pp down to 42,8%. The Swedish industry minister stated that **"**The sale is the first step in a gradual and responsible disposal of the Swedish and the Norwegian state's ownership" (Carlström 2016). Both the Swedish and Norwegian government have previously indicated that they have little interest in owning an airline (Carlström 2016). The Danish government currently has no intention to sell its shares (Ringstrom 2016). The stated reason for the reduction in holdings is that SAS' will be strengthened by a new ownership structure (Carlström 2016). The reduction of state ownership raises numerous concerns, most importantly with regards to the government interventions, that have been necessary in order to avoid bankruptcy in recent decades. This will be further discussed in chapter five.

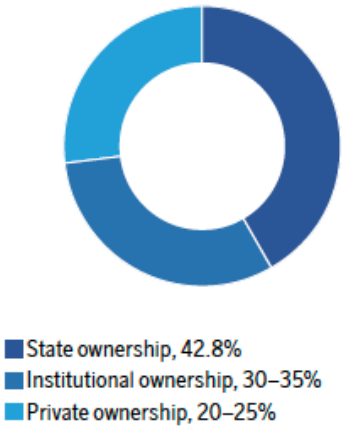


Figure 3: source SAS 2016

[3] If not otherwise stated, the source is (SAS, 2016)

2.3 The Nordic & Global Airline Market

At 90 billion annual journeys, the revenue from the Scandinavian air traffic market was estimated at SEK 100 billion in 2016 (SAS, 2016). SAS sold its Finnish subsidiary Blue 1 in 2015 to Irish based City Jet, which refocussed SAS' strategy towards Scandinavia, rather than northern Europe (ch-aviation 2015). Preferably the data on market share for 2016 would therefore solely include Scandinavia. There is, however, considerably more and higher quality data available on market share in the Nordic region, which will therefore be used to discuss the market. Currently 70% of SAS' revenue is generated in Scandinavian (SAS 2016).

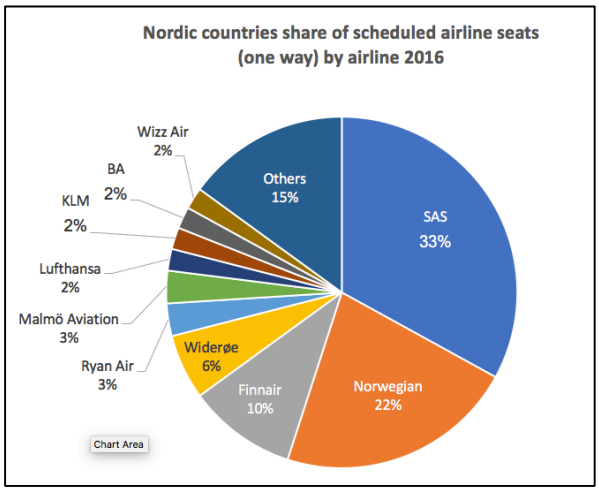


Figure 4: own creation, source CAPA 2016

Figure 4 shows the division of market share in the Nordic region (Sweden, Norway, Denmark & Finland). SAS currently holds 33% of the scheduled airline seats in the Nordic region, followed by Norwegian at 22% and Finnair at 10%. For the last decade LCCs have rapidly expanded in the region, most notably Norwegian, which have captured significant market share. Figure 5 establishes the number of scheduled airline seats from 2006 – 2016 in the region. While Norwegian's capacity has grown by 373% since 2006, as compared to SAS' at 7%. Norwegians' growth has since 2014 levelled off and stayed somewhat flat (CAPA, 2016).

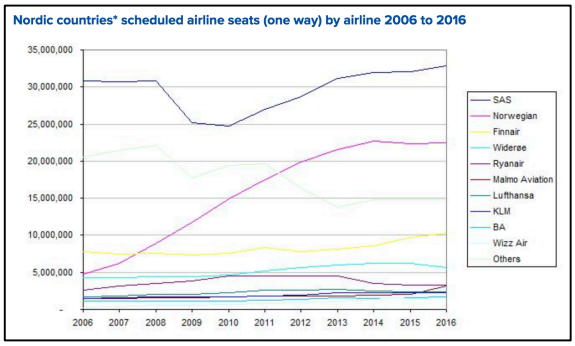


Figure 5: source CAPA 2016

In the domestic markets and market for intra-Nordic flights, SAS is the dominant airline with market shares of 40% and 58% in scheduled flights respectively. However, these markets have been growing significantly slower than the market for international flights (defined as flights to and from the Nordic region), with intra-Nordic flights growing at just 50% of the pace of international flights since 2006 (CAPA 2016). Figure 6 illustrates the geographic distribution of SAS passenger revenue. Approximately 60% of SAS' revenue comes from European and intercontinental routes, which makes capturing opportunities in these segments lucrative in the future.

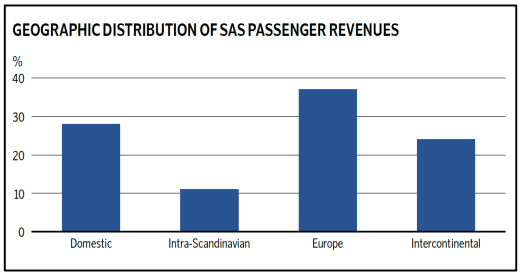


Figure 6: source SAS 2016

When compared to other markets in the developed world, the Nordic market has three considerably unique characteristics. Firstly, After the deregulation of the European market in the 1990s, numerous

national airlines failed in regaining profitability. Smaller national airlines filed for bankruptcy and was bought by larger ones. There was a considerable amount of joint ventures and mergers and acquisitions set up to capitalise on economies of scale. This created three major European legacy airline groups, IAG, the Lufthansa Group, and Air France-KLM. These have furthermore founded and/or invested in numerous LCCs as well in the last decade. The Nordic region is the only in Europe which has three large airlines (SAS, Finnair and Norwegian) that are not owned by any of the groups (CAPA 2016). Although, during the financial crisis in 2008, and subsequently in 2010, there was considerable speculation on whether Lufthansa Group would purchase SAS to save it from financial distress (Lundin 2010 & Kilefors, 2012).

Secondly, due to the region's geography and topography, with long distances between smaller towns , SAS operates a higher portion of domestic flights when compared to other European peers. There is furthermore high demand for routes which cannot profitably be operated with even the smallest Airbus or Boeing aircrafts. Consequently, SAS operates 31 aircrafts that are not manufactured by one of the two major suppliers (included wet-leased aircrafts), which is a relatively high amount in comparison with other European airlines and their fleet size. Thirdly, since 2012 15 LCCs have introduced long-haul flights. These mainly operate in Asia, with Norwegian and Air Canada Rouge being the only LCCs in the developed world to operate a significant number of long-haul routes (CAPA A, 2017). In 2016 SAS' and Norwegian's aircraft fleets were both comprised 10% of wide-body aircrafts (SAS 2016 & NAS 2016). As Norwegian aim to compete primarily on price, it therefore creates further price pressure in the long-haul segment in Scandinavia, which is unprecedented in other developed regions and most developing regions (CAPA A, 2017).

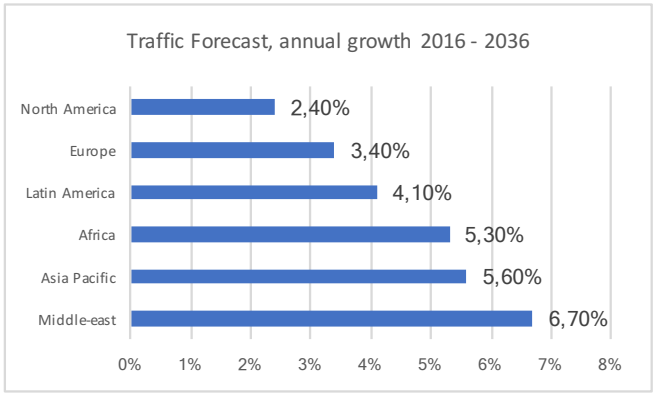


Figure 7: own creation, source Airbus 2016

As SAS operates long-haul intercontinental flights, and short-haul flights across Europe, its market is global. The last decade has been characterised by strong growth in the emerging regions of the world. According to Airbus' forecasts, the global air traffic is expected to grow 4,4% annually for the next 20 years. Nevertheless, the European market is forecasted to grow significantly less, at 3,4% annually, which is the second lowest after the US (figure 7). In 2013, SAS had to discontinue its route to Bangkok after running it for 64 years. Despite high load factor on the route, SAS could not compete with Thai Airways and Norwegian (Citrinot 2013). SAS is thus not solely competing with other Nordic and European airlines, but also global airlines, such as Thai Airways.

2.4 SAS' Strategy

SAS has reformulated its strategies several times since 2000. These have, however, all been focused on cost reductions, strengthening its capital structure and developing its offerings to its primary customer group.

SAS has stayed true to its customer group for the last ten years, and all implemented strategies have focused on frequent travellers, which are the leisure and business travellers with the highest demand on their travel experience (SAS 2007). This has, amongst other things, pushed the continuous development of the loyalty program EuroBonus, its network, and punctuality. Its star alliance membership has been a vital factor in building its network of routes. It has furthermore introduced a wide variety of products and structural changes to simplify and improve the travel experience, and, most recently, the digitalisation of its platform for crew and customers (SAS 2016).

To regain profitability SAS launched the strategy "**core SAS**" in 2009. It aimed to refocus towards the Nordic home market, improve liquidity through the issue of shares to raise SEK 6 billion in capital, and most importantly, to gradually start to divest in non-core operating activities (SAS 2009). Core SAS generated 7,6 billion SEK in total cost savings and decreased unit costs (CASK) by 23% before being replaced by the strategy 4Excellene in the end of 2011 (SAS 2011).

4Excellence further focused on cost reductions, and introduced improvements in offerings to leisure travellers in line with the large increase in the demand from the leisure travel segment. The strategy decreased CASK by 4%, but failed to deliver any real change in SAS' inflexible cost structure and its dependency on external credit facilities to improve liquidity. Nevertheless, the new accounting regulation for pensions furthermore had a profound impact on SAS' equity (discussed in chapter 3). SAS therefore extended its strategy to 4Excellence next generation. The new strategy meant major lay-offs and re-negotiations of collective agreements with all labour unions. SAS furthermore sold much if its non-core operations and assets, which increased liquidity. This partly offset the SEK -13,5 billion negative effect on shareholder equity to an impairment of SEK 7,8 billion due to the new accounting regulation for pensions (SAS 2010 – 2016).

In 2014, SAS introduced its current strategy, which focuses on (SAS 2016);

- Establishing an efficient production platform, which will lower unit costs and further increase flexibility by lowering fixed costs.
- A higher-quality offering to frequent travellers.
- Securing the right human and financial capital.

SAS' strategies for the last decade have been successful in numerous ways.

Unit cost: in 2016 SAS' unit cost had decreased more than 31% since the peek in 2009. A thorough discussion of costs during the previous decade are found in the profitability analysis.

Divesting in non-core operations:

Figure 8 compares SAS' legal structure in March 2008 and January 2017. As can be seen from the figure, SAS have sold nearly all its subsidiaries and holdings in other companies except for a 37,5% stake in Air Greenland. It has furthermore sold much of its ground handling operations.

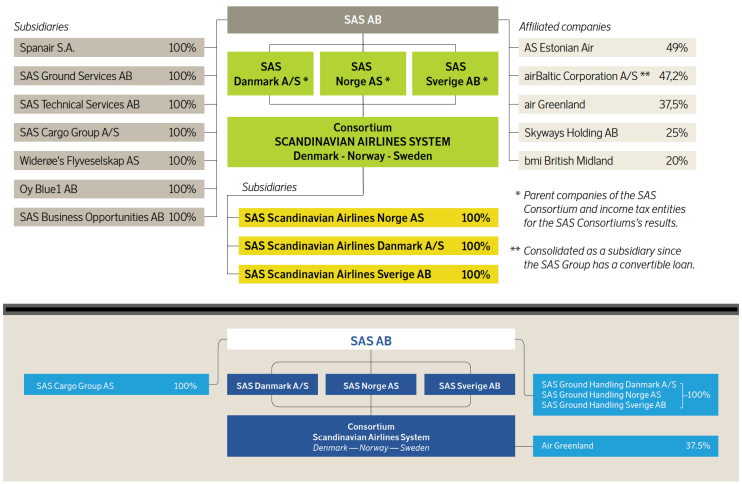


Figure 8: source SAS 2017 & 2016

Employees and payroll expenses: The massive number of layoffs has decreased the full-time equivalent (FTE) employees from 26 500 in 2007 to 10 710 in 2016 (SAS 2016).

Flexible operating platform: SAS has built the largest wet-lease operation in Europe (SAS 2016), where it leases aircrafts, crew and maintenance on a three to six year contract to service routes and timeslots which cannot be profitably operated by an Airbus or Boeing aircraft. SAS has therefore sold all, and not re-leased any of its smaller aircrafts. This enables SAS to quickly adapt to fluctuations in demand (SAS 2016).

Fleet: SAS has grown its wide-body aircraft fleet and increased the number of long-haul destinations and frequency of departures.

2.5 Business Models & Comparison Groups

Comparison Group
NLAs
Finnair
Lufthansa
KLM
Delta
LCCs
Norwegian
Easy Jet
Southwest
Ryan Air
EGAs
Emirates
Turkish Airlines
Singapore Airlines

An airline's business model describes the rational of how it aims to create, deliver and seize value in the airline industry. As the global airline industry was gradually deregulated, new airlines with a considerable different business models entered the market. Most prominent in Europe where the low-cost carriers (LCCs) that could offer passengers significantly lower prices on short-haul flights due to lower operating expenses. This irreversibly changed the market and put pressure on existing network legacy airlines (NLAs) in the developed world to increase efficiency. While LCCs and NLAs operate around the globe, Belobaba et al (2016) argues for the importance of recognising a third; emerging global airlines (EGA). These airlines mainly operate from the Middle-East and Asia, and focus extensively on long-haul traffic. As established in the previous section (2.4), approximately 25% of SAS' revenue in 2016 came from intercontinental flights. This makes EGAs a threat to SAS, and therefore highly relevant for comparison. While there are other business models, such as charter airlines founded by leisure travel groups (Swoboda 2013), LCCs, NLAs and EGAs are the major ones that are shaping, and will further shape the industry in the years to come.

These business models are fundamentally different as they have different value drivers, the most important of which will be outlined this section. To the purpose of discussion eleven airlines have been included in a comparison group. As will be discussed in the following section, four are considered NLAs, four LCCs, and three EGAs. SAS will throughout the thesis be compared to these airlines. NLAs are considered SAS' peers, as they build and capture value by similar means, hence more focus will be given to these when historic performance through multiples and other methods is compared. In chapter 5 a value chain analysis for SAS have been conducted, where its value drives are further discussed.

2.5.1 The Value Drivers of NLAs, LCCs and EGAs[4]

To investigate the comparison group, four value drives have been identified; **1) Legacy, 2) operations & network, 3) service, and 4) sales, distribution channels and fare structure**. The author argues that these are the main drivers that give rise to the differences in business models. To determine which business model each airline operates with, data was collected for each airline to create metrics as a basis for discussion. Data and metrics discussed in this section are to be found in appendix 17.

1) Legacy

All the NLCs in the comparison group have long heritages and were founded as national airlines somewhere between the end of the first world war and near the conclusion of the second world war. LLCs and EGAs were founded after the deregulation of the airline industry, with some of the LCCs entering the market after the 1990s. For a complete list of founding years see appendix 17. There are two outliers, Turkish Airlines and SouthWest Airlines. Turkish Airlines was founded in 1933, however, has been identified as an EGA. The reason is that Turkish Airlines profoundly changed its business model in 2004, which resulted in a double-digit expansion of ASK for the 13 consecutive years (CAPA B 2017). SouthWest Airlines was founded in 1967, before the US started to push for a deregulated market. It is nonetheless regarded as a pioneer of the low-cost carrier business model (AviationKnowledge 2007). As previously touched upon, NLAs have inherited disadvantages in terms of inflexible and human capital intensive operation platforms, which have made it difficult to decrease operating costs to stay competitive in the market. LCCs' and EGAs' lack of legacy has therefore kept them agile in building their operation platforms. NLAs' legacies give rise to some value, most notably airport slots, which will be discussed further in the chapter 5.

[4] If not otherwise stated, the source is respective airline's annual report 2016

2) Operations & Network

At an average of 12 years, NLAs in the comparison group has the highest mean fleet age, which is significantly lower than LCCs and EGAs, which both have a mean age of 7 years. Most notable outlier is Southwest. Due to its longer heritage, it has a mean fleet age of 12 years. A younger fleet results in lower costs due to developments in technology that makes new generation aircrafts 15-20% more fuel efficient. Operating cost is furthermore dependent of composition of fleet. LCCs almost exclusively order their aircrafts from one of the major suppliers Airbus or Boeing. Their fleets are therefore highly homogeneous, which increases operating flexibility and lowers the cost of educating pilots, mechanics and other key personal.

There is a significant difference in the numbers of future deliveries and order options for aircrafts in the comparison group. The number of orders placed by NLAs will grow their fleets by an average of 22%, while LCCs and EGAs fleets will grow more than 45% if orders are materialised. If Norwegian ensures successful delivery of all its orders, it will result in a 68% growth in fleet size. The data include orders and options, and stretch from 2017 to 2020 and beyond. Renewed fleets increases the risk for LCCs and EGAs in the case of economy or industry recessions that stagnate or decrease growth in demand for air traffic. However, it will lower the age of their fleets and increase efficiency and their ability to capitalise on economies of scale.

EGAs in the comparison group have the highest relative number of WB aircrafts, at a mean of 67% WB aircrafts of total fleet, followed by NLCs at 24%. LCCs have almost none. Airbus and Boeing are currently manufacturing narrow-body aircrafts (NB aircrafts) with increased range that can operate long-haul flights (Airbus & Boeing, 2017). However, as of 2016 they had delivered none and it is assumed that it will take years before these aircrafts are widely available in the market. Therefore, as of 2016, only airlines with WB aircrafts could operate long-haul flights which causes numerous implications:

- Cost per available seat kilometre (CASK) per flight go down as distance flown increase. A larger percentage of WB aircrafts relative to total fleet therefore lowers unit production cost per RPK. (discussed in chapter 5)
- EGAs can operate on more aviation mega cities[5]. These are the cities with highest demand for air travels. By reaching more mega cities EGAs capture global connecting traffic flow, which is flights where passengers' final destination is not one of the airlines own hub airports. This strategy is pursued by numerous airlines in the middle east, which connects Europe to Asia. Consequently, Emirates does not operate a single NB aircraft.
- Whilst LCCs in the comparison group do not operate WB aircrafts (except for Norwegian), there has still been significant growth in LCCs with long-haul capabilities, most notably in south-east Asia (CAPA C, 2017). However, it still to be seen if LCCs around the globe will build these capabilities.

[5] Cities with more than 10,000 daily long-haul passengers (flight distance > 2,000nm excluding domestic traffic)

As discussed in section 2.4., Scandinavia as a region is an outlier. While the average fleet of NLAs in the comparison group was composed of 24% WB aircrafts, SAS' percentage of WB aircrafts in relation to fleet was only 10%, which is the same percentage of WB aircrafts Norwegian operates with in its fleet. In Scandinavia, the two largest airlines therefore operate with different business models, but have the same long-haul capabilities.

LCCs generally operate routes within the region they are based, and offers a point-to-point network, which means they transport passengers from A to B. NLAs and EGAs, to an even larger degree, operate in a hub-to-spoke network where passengers occasionally travel to their destination via a hub airport, where they must catch a connecting flight. This increases the number of routes and destinations in NLAs' and EGAs' network considerably (Sabre 2010).

3) Service

NLAs and EGAs offer more services of higher quality and include more free than LCCs. Most fundamental of which is business class, all EGAs and NLAs in the comparison group offer business class, while none of the LCCs do. NLAs have, however, in recent years increasingly started to charge for, amongst other things, meals and check-in luggage. In 2015, SAS introduced the product "SAS go light", which are tickets that mimics the included service of an LCC ticket in that check-in baggage are not included (SAS B, 2015). As LCCs and EGAs have younger fleets, more of their aircrafts have been delivered with extra comforts, such as Wi-Fi capabilities (Seatguru, 2017). This has forced NLAs to retrofit their existing aircrafts at large costs, and many aircrafts have yet to be retrofitted with the same level of features as newer aircrafts.

NLAs and EGAs still offer substantially more services, such as business class and alliance memberships, where frequent flyer miles can be used within the alliances. NLAs and EGAs also offer corporate clients cargo services[6], with some of them operating cargo aircrafts. Numerous NLAs (and few EGAs) furthermore offer other airlines maintenance and ground handling services.

4) Sales, Distribution Channels and Fare Structure

NLAs' and EGAs' fare structure is diverse. They sell fares directly to passengers through numerous channels, and prices often fluctuate considerably (dynamic pricing). NLAs furthermore sell fares to leisure companies and other actors within the travel industry. LCCs primarily sell their tickets through their website, and while prices fluctuate, it is not to the same degree when compared to NLAs and EGAs. NLAs furthermore sell fares through their alliance, either directly by being one of the providers on a journey with a connecting flight, or indirectly, as passengers with frequent flyer credits can use them across the alliance (Sabre 2010).

[6] Some LCC's offer cargo services, but the operations are so small that they do not state them separately in notes to revenue on the income statements, but rather include them in "other income".

2.5.2 Summary of Business Models

A summary of the value drivers in the business models is presented below. The implications of these differences on the airlines' profitability will be discussed throughout the thesis.

NLAs	LCCs	EGAs
Legacy		
Founded in pre- or post- second world war period.	Entered the market after the deregulation in the 1980s.	Entered the market after the deregulation in the 1980s.
Operation & Network		
Short- and Long- haul flights in a hub-to-spoke network.	Short-haul flights.	Short- and Long-haul flights in a hub-to-spoke network. Significantly larger long-haul operations then NLAs.
Older fleet composed of mix between Airbus, Boeing and other manufacturers.	Older fleet composed of mix between Airbus, Boeing and other manufacturers.	Older fleet composed of mix between Airbus, Boeing and other manufacturers.
NB and WB aircrafts.	NB aircrafts.	Largest portion of WB aircrafts.
Services		
Extensive services, some of which are free of charge. Most notably offer is Business class cabins.	Narrow service offerings for extra charge.	Extensive services, some of which are free of charge. Most notably offer is Business class cabins.
Enterprise offerings such as Cargo and ground handling.	narrow or no enterprise offerings.	Enterprise offerings such as Cargo and ground handling.
Member of global alliance.		Member of global alliance.
Sales, distribution channels and fair structure		
Tickets dynamically priced and sold through multiple channels, including bundles for enterprise customer and partners.	Less dynamic pricing, tickets sold predominantly through website.	Tickets dynamically priced and sold through multiple channels.

Chapter 3: Financial Statements

Chapter two presented SAS as an organisation, its business model and how it has changed its strategy in the past decade. To further discuss and asses SAS historic performance, it is essential to reformulate its financial statements. In doing so it is necessary to distinguish items in the financial statements that correspond to financing activities and operational activities. SAS' operations are what drive long-term value creation and give rise to its competitive advantage, while financing activities are used to finance its operations. What constitutes an operational item or financial item is largely dependent on a company's business model and the industry it operates in (Petersen & Plenborg 2012), which was discussed in relation to SAS in the airline industry in chapter two.

SAS' reformulated balance sheet and income statement are presented in 2. In section 3.2 and 3.3 each item on SAS financial statements are discussed and arguments are presented as to why each item has been classified as operational or financial. Before moving on to reformulation, SAS' accounting quality and policy will be discussed. Three items will be elaborated upon; changes in accounting policy for operational leases, SAS' change in reporting period and subsequent change in pensions, and lastly SAS' issuance of preference shares in 2013.

3.1 Accounting Policies & Accounting Quality

SAS has had stocks listed on stock exchanges since 1920. Its current common share was listed on NASDAQ Nordic in Stockholm, with secondary listings in Copenhagen and Oslo in 2001. SAS was audited by PricewaterhouseCoopers AB in 2016, which concluded that SAS' report had been prepared in accordance with IFRS and presented fairly the financial position of SAS parent company (SAS 2016). Being a publically traded company and an approving audit by a prestigious consultancy firm does not itself assure good accounting quality. It is, however, argued that it is enough evidence to assume that the accounting quality of SAS annual reports is sufficient for reformulating its financial statements. SAS is furthermore a widely-known and analysed company that is frequently covered in media, as it is a large established company that provide vital infrastructure in Scandinavia. It is therefore fair to assume that if the annual report for 2016, published by SAS in February 2017, were to include questionable information or data, it would with a high probability have been discovered, investigated, discussed and reported on by other external stakeholders by the date of submitting this thesis (15 January 2017). While it is assumed that SAS adheres to the rules and standards of applied accounting policies, there are other issues to consider. In the following sections SAS' issue of preference shares in 2014, its change in reporting period in 2012, and the change in standard for operating leases in 2019 will be further discussed.

3.1.1 leases & IFRS 16

Airlines finance aircrafts by purchasing or leasing. There are a currently three different types of leases; finance lease, operating lease and wet-lease. In recent years, the trend has been to purchase less and lease more of the fleet, a trend that is forecasted to continue (The Economist, 2012). With 1900 aircrafts, the world's largest leasing company GE capital Aviation Services is today the largest owner of aircrafts (GECAS 2017).

When purchasing an aircraft, the airline uses either retained earnings or raise capital through debt or equity financing. The aircraft is recorded as an asset in the balance sheet and depreciated using some type of method. The purchase, ownership and use of the aircraft is therefore recorded in the income statement and balance sheet.

Wet-leasing is a contractual undertaking where the airline leases resources to operate on a variable production metric, for example on a production hour basis. This can involve the lease of an aircraft, crew, maintenance and/or fuel to operate a route. SAS wet-leases 22 aircrafts, including crew to operate the aircrafts, but the lessor is responsible for maintenance of the aircrafts. SAS currently has the largest wet-lease operation in Europe (SAS 2016)

Finance and operating leases currently differ substantially regarding how they are reported on financial statements. A lease is recognized as a finance lease when nearly all risk and benefits of the agreement is transferred to the lessee (SAS 2016). On an operating lease most of the risk and reward remain with the lessor (SAS, 2016), and the contracts are usually shorter (Damodaran 1999).

Under a finance lease an asset is recognised as the sum of the present value of future minimum lease payments in the balance sheet, with an offsetting lease liability. In the income statement the asset is depreciated and interest on the lease is recognised. An operational lease is classified as a contingent liability and is therefore recognised in the balance sheet, except for the decrease in cash for the lease payments. In the income statement the company recognises annual lease payments, but depreciation and interest expense (Petersen & Plenborg 2012).

As of January 2019, a new standard for recognising leases for annual reporting purposes will replace the current method. This new standard, IFRS16, aims to consolidate the accounting model for leases in to a single method whereby all leases will be recognised on the balance sheet. Companies will therefore be required to recognise a right-of-use asset and a corresponding lease liability on the balance sheet for operating leases. The lessee will recognise depreciation on the assets and interest on the lease liabilities for all leases (IFRS, 2016). For wet leases the payment for aircrafts will be recognised under the new method, however, any additional service component of the wet lease (such as maintenance or crew) will not be recognised on the balance sheet. (Deloitte 2016).

The problem with the current standard is firstly that it does not capture all lease assets and liabilities on the balance sheet (Petersen & Plenborg 2012), which in turn "biases nearly every financial ratio" (Koller et al, 2010 p. 757) but most significantly understates invested capital. For valuation purposes, the current standard furthermore usually understates operating profit as the lease payments do not include any interest component (financial expense) (Petersen & Plenborg 2012). A study conducted by PWC in February 2016 estimates a 33% median increase in EBIDTA, and a 47% median increase in debt for the airline industry when the new standard is implemented (PWC 2016). However, these medians are not a reliable proxy to determine the effects of capitalized operating leases (COL), as airlines they differ substantially in how they finance their fleets.

figure 9 shows the percentage of owned and leased aircrafts in relation to the total fleet for the airlines in the comparison group in 2016. The number of wet-leases are small compared to operating leases, but are included under operating leases as the airlines generally do not distinguish between them in their annual reports. three conclusions can be drawn from the table. Firstly, the percentage of owned, leased and type of lease for airlines' fleets in the comparison group are not disclosed on all airlines' annual reports. This gives rise to difficulties when comparing airlines, and as all airlines are aware of the change in standard, it begs the question as to why they have not disclosed the information. Secondly, there is a significant difference in how airlines currently acquire and finance their fleets. The extremes are Emirates, which leases 98% of its aircrafts, and Ryanair, which owns 87,4 % of its fleet. It there becomes difficult to compare airlines when the mix of how aircrafts are financed, and leases are classified, differ substantially between airlines. Lastly, the new regulation will increase transparency and, as recognised by SAS, "The standard is expected to have a material impact, since the Group has significant leasing commitments for, inter alia, aircraft and premises" (SAS 2016 p.63).

	# of aircrafts	% owned	% Leased	% leased aircrafts, operating lease	% leased aircrafts, finance lease
NLCs					
SAS	156	31%	69%	ND	ND
Finnair	73	55%	45%	79%	21%
Lufthansa Group	617	91%	9%	32%	68%
KLM	203	25%	75%	62%	38%
Delta	832	77%	23%	66%	34%
Mean NLCs	376	56%	44%	60%	40%
LCCs					
Norwegian	118	59%	42%	ND	ND
Easy Jet	257	74%	27%	93%	7%
South West	723	82%	19%	ND	ND
Ryanair	341	87%	13%	ND	ND
Mean LLCs	301	75%	25%	-	-
EGAs					
Emirates	251	2%	98%	63%	37%
Turkish Airlines	334	ND	ND	ND	ND
Singapore Airlines	173	49%	51%	88%	13%
Mean EGCs	253	26%	74%	75%	25%

Figure 9: own creation of appendix 17, source: annual reports 2016.

Although IFRS 16 allows earlier application, none of the airlines in the comparison group have chosen to do so. However, some recognise the importance of comparability under the current standard and six of airlines in the comparison therefore disclose EBIDTAR, which is obtained by subtracting annual lease payments on operating leases from EBIDTA (Finnair 2016). However, completely disregarding, and neglecting the importance of, operational leases makes for a weak comparison. SAS is the only airline researched that directly states a proxy for capitalized leasing cost, which it estimates at net annual lease cost for aircrafts multiplied by seven for a ten-year historic period (SAS 2016).

In section 3.2 different methods used to capitalize operating leases (transform operating leases into finance leases) in the balance sheet will be discussed and applied to SAS.

3.1.2 Change in financial year and IAS 19 (pensions)

Prior to 2012 SAS matched its fiscal year to a calendar year. In 2012 SAS decided to change its fiscal year to 1st November to 31st October. SAS claim that this was done to match its operational cycle which constitutes two major scheduling periods for flight routes, a summer and a winter program (SAS 2012).

The new accounting standards IAS19 was introduced in November 2013 (IASplus 2013), which had significant effect on SAS equity. The new standard changed the effect of defined-benefits plans statements, whereby all actuarial gains and losses had to be recognised immediately in other comprehensive income, and the accumulative unrecognised gains and losses had to be recognised in shareholder equity. Due to new collective agreements with its employees in 2012, which replaced most defined-benefits plans to defined-contribution plans, SAS mitigated the negative effect of the new standard on equity by SEK 3,4 billion, and decreased pension commitments by 60%. However, the new standard still had a SEK 7,9 billion negative effect on equity. Figure 10 illustrates the new standard's effect on SAS statements. Due to SAS change of calendar, the negative effect of these changes was postponed (SAS 2012).

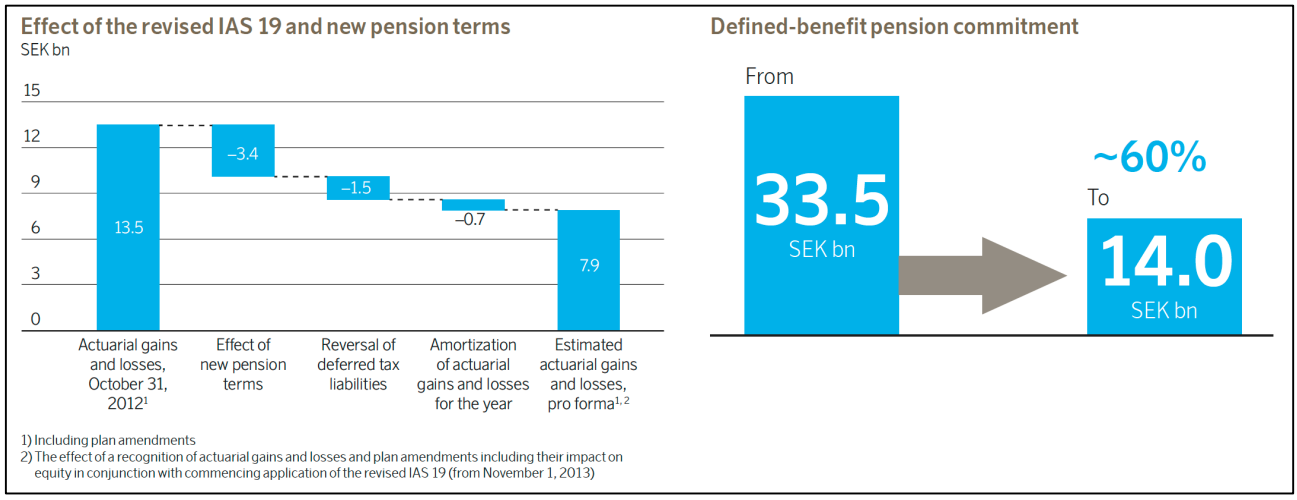


Figure 10: source SAS 2012

For fair comparison in the profitability analysis and throughout the thesis, SAS' 2012 financial statements have been adjusted to reflect a full year of operations. As SAS operates in cycles (summer and winter program) 67% of each line item in SAS' interim report that stretch from 1 November 2012 to 31 January 2013 have been added to 2012's income statement, which reflects two month of additional operation during the winter program. The balance sheet has not been adjusted. The adjustments are found in appendix 4.3. Moving forward only the adjusted calendar year for 2012 will be applied.

3.1.3 Preference shares

The change in calendar year meant that SAS had to recognise the new changes in fiscal year 2014. To combat the negative effect on equity and to raise capital, SAS issued 7 million preference shares at SEK 3,5 billion SEK. As evident in figure 11, the issuance of preference shares had significant impact on SAS total equity.

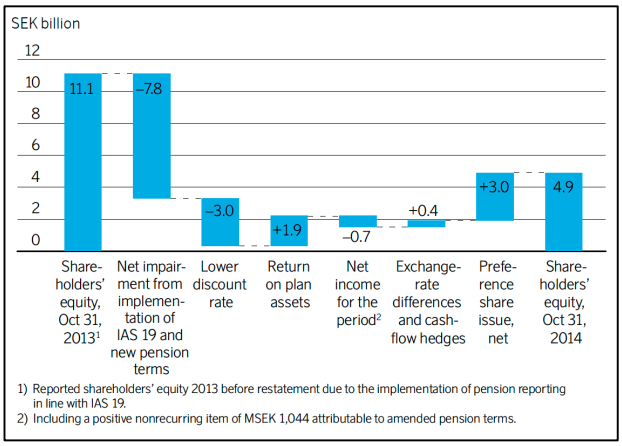


Figure 11: source SAS 2016

In the analytical income balance sheet these preference shares have been classified as interest-bearing debt for two reasons. Firstly, the additional funds generated by the issuance was not used to invest in operating assets, but was almost in its entirety used to decrease long-term debt. Thereby the issuance did not contribute to SAS operations, but was arguably replacing debt with "better debt" (SAS, 2014). Secondly, whether preference shares should be recognised as equity or liability under IAS 32 is to some extent at the discretion of the directors. It is furthermore in some instances permitted to divide the liability component and equity components of preference shares on the balance sheet. According to IAS 32, a financial liability is a contractual obligation to deliver cash or another financial asset. SAS pays dividend on its preference shares in perpetuity, thus it has an obligation to pay cash, just like coupon payments on a bond. SAS however has no obligation to redeem the shares at any point in time, which argues for them being classified as equity. In summary, it is argued by the author that the mandatory dividend and the purpose of the issue (to lower long-term debt) gives credence to the re-classification of the preference shares as financial liabilities.

3.2 SAS' analytical balance sheet

In this section, all items on SAS' balance sheets from 2007 – 2010 will be discussed and classified as either operational or financial.

3.2.1 Operational Assets

The following items are all by their nature necessary for SAS to operate aircrafts. They are therefore classified as operational items.

- **Aircraft** (non-current asset)
- **Spare Engines and spare parts** (non-current asset)
- **Workshop and aircraft servicing equipment** (non-current asset)
- **Other equipment and vehicles** (non-current asset)
- **Expandable spare parts and inventories** (current asset)

Intangible assets: Include goodwill and other assets. Goodwill is by its nature operational, and other assets refers to capitalized system development cost (SAS, 2016), which is also necessary for SAS to operate. Intangible assets are therefore classified as operational.

Land and building: There are no notes for item **"**land and buildings" in the annual report, and is therefore classified as operational (Koller et al 2010).

Prepayments to suppliers: SAS distinguishes between "prepayments relating to tangible assets", which is a non-current asset that relates to prepayments to aircraft suppliers, and "prepayments to suppliers", which is a current asset (SAS, 2016). Prepayment to suppliers is not accompanied by notes. As SAS distinguishes between prepayments to aircraft suppliers and other suppliers, it is assumed that these prepayments are to suppliers not relating to aircrafts, but are still needed for operations and are therefore classified as operational.

Investment in progress: There are no notes on item **"**investment in progress". However, it is stated as a tangible fixed asset in the balance sheet. In the cash-flow statement "investment in progress" is bundled with buildings and equipment. It is therefore assumed to be investments related to SAS core business and are therefore classified as operational.

Accounts receivable and prepaid expenses and accrued income: These are common items that relate to operations, they are therefore classified as operational.

Equity in affiliated companies, receivables from affiliated companies and long-term receivables from affiliated companies: Investment and related income and expenses in affiliates can be regarded as financial or operational. SAS has since 2008 sold much of its shares in affiliates, but looking historically its affiliates have almost exclusively been operating in the airline industry (SAS 2008). SAS' equity in affiliated companies in 2016 constitutes its shares in Air Greenland and Malmö Flygfraktterminal AB. The operations of these affiliates are both associated with airline related activities (SAS, 2016). SAS has furthermore included share of income in affiliated companies under operating income. For these reasons equity in affiliated companies, receivables from affiliated companies and long-term receivables from affiliated companies have been classified as operational.

Prepayments relating to tangible fixed assets: Are prepayments made to Airbus (SAS 2016), and therefore classified as operational.

Differed tax assets (net): Most commonly deferred tax assets arise from tax loss carry forward or assets valued higher in the balance sheet than for tax purposes (Petersen & Plenborg 2012). This can for instance occur when governments use a different method for estimating depreciation than the company (Koller et al 2010). These differences between tax paid and reported tax can arise from financial activities, but SAS does not in detail disclose how these differences occur. Deferred tax assets are therefore classified as operational. Note that from 2013 and onwards deferred tax assets are reported as net value, while prior to 2013 deferred tax assets and liabilities are separated in the balance sheet.

Pension funds (net): Are interest bearing, and could therefore be argued to be a financial item (Petersen & Plenborg 2012). Nevertheless, the airline industry is human capital intensive, and SAS'

largest operating expense is payroll, making labor management vital for its operations. SAS' labor agreements have been a source of major dispute (Source), and the new standard in recognizing pensions had significant impact on SAS pension commitments and equity. An item should be classified as operational if it creates long-term value (Petersen & Plenborg 2012), but also if it is a source of operational disadvantage, like pensions historically have been for SAS. Pension funds are therefore classified as operational, despite the fact that they are interest-bearing.

3.2.2 Operational Liabilities

Accounts payable and tax liabilities: are classified as operational, as they can be "considered as interest free loans" (Petersen & Plenborg, 2010 p. 75)

Unearned transportation revenue: is classified as operational, as it constitutes sold tickets that are still valid but not used (SAS, 2016).

liabilities to affiliated companies: Since equity in affiliated companies was argued to be operational, liabilities to affiliated companies must be classified as operational as well.

Prepayments from customers: are not accompanied by a note, but it is assumed that the item is operational in nature.

Other provisions and current portion of other provisions: Consist of restructuring, loyalty program and other provisions. Restructuring in turn includes cost related to restructuring and provisions for leasing cost linked to unutilized premises. The notes state that the restructuring mainly consists of cost related to restructuring, but do not distinguish numerically between restructuring cost and cost related to unutilized premises. It is therefore assumed that cost related to unutilized premises is low and is therefore disregarded in further discussion. As previously mentioned, SAS has since the 1990s undergone major restructuring to regain profitability in today's airline industry and, as stated by its CEO in the 2016 annual report, plan to take "further structural [actions] aimed at generating considerable impact" (SAS, 2016 p.7). Restructuring is therefore regarded as a necessary part of SAS operations and classified as operational (Petersen & Plenborg 2012). Provisions for SAS' Loyalty program Eurobonds is operational in nature and the sub-category other provisions does not bare any notes, but entails less than 10% of overall other provisions. For these reasons, balance sheets items, other provisions and current portion of other provisions, have been classified as operational.

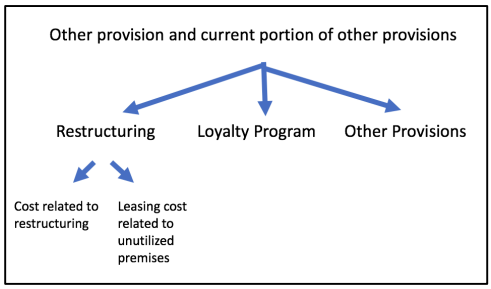


Figure 12: own creation, source SAS 2016

Deferred tax liabilities: As deferred tax assets were determined to be operational, deferred tax liabilities are classified as operational as well.

Accrued expenses and prepaid income: Constitute nine sub-categories (figure 13). All of which are by their nature considered operational.

NOTE 30 ACCRUED EXPENSES AND PREPAID INCOME

	Oct 31, 2016	Oct 31, 2015
Vacation pay liability	1,127	1,089
Other accrued payroll expenses	191	167
Selling costs	390	417
Fuel costs	217	186
Government user fees	296	325
Handling costs	181	165
Provision for maintenance of leased engines	2,238	1,364
Other accrued expenses	666	927
Prepaid income	30	44
Total	**5,336**	**4,684**

Figure 13: source SAS 2016

Other liabilities (current and non-current): Are not accompanied by a note itself. However, SAS reports on interest expense for different items in the financial statement. Interest expense from sub-items categorized as other liabilities are SEK -4 million and SEK -1 million for 2016 and 2015 respectively. Other forms of liabilities under current liabilities and non-current liabilities amount to 1 060 MSEK and 967 MSEK in 2016 and 2015 respectively. It is therefore assumed that most sub-items under the heading of **other liabilities** are operational in nature as the interest expense from these items are low.

3.2.3 Financial Assets

Other holdings of securities: is not accompanied by any notes, and is therefore classified as a financial asset.

Assets held for sale: When the SAS group intends to dispose of a major line of business or geographical area of operations, and is decided upon by management to be classified as discontinued, it is stated as “assets held for sale” in the balance sheet. This item has not been included in the balance sheet since 2010 when SAS divested in its fully owned subsidiaries “Spirit Air Cargo” and “Trust” (SAS2010). This item has been classified as financial since entails discontinued operations, it is not a recurring item since 2010, and for the fact that the disposal of these assets lowered the need for interesting-bearing debt by increasing cash or cash equivalent (Petersen & Plenborg, 2012).

Short-term investments: includes treasury bills and commercial papers, (both of which are categorized as held for trading by SAS), as well as deposits (which is categorized as loans), and tax deduction account in Norway (which is categorized as receivables) (SAS, 2016). The tax deduction account could arguably be classified as operational, but as it represents less then 2% of short-term investments (SAS, 2016), I have decided to classify the full amount of short-term investments as financial.

Cash and bank balances: Are considered operational and financial, and has therefore been divided. Koller et al. (2010) examined the cash holdings of S&P 500 nonfinancial companies over a period of seven years and found that the companies with the smallest cash balances held working cash (operational cash) below 2% of sales. The rest was excess cash and marketable securities,

which is considered financial as it can be used to either pay dividend, buy back of shares or repay debt “without affecting the underlying operations” (Petersen & Plenborg 2016 p.76). The item has therefore been divided. 1% of annual revenue has been subtracted from the item and classified as operational, the rest is classified as financial. Calculations can be found in appendix 4.1.

Other receivables and other long-term receivables: SAS reports on its categorization of financial assets and liabilities from 2011 to 2016 in the format presented below in figure 14. As can be seen, other long-term receivables and other receivables both include categories that could be considered financial and operational.

CATEGORIZATION OF FINANCIAL ASSETS AND LIABILITIES

	Held for trading	Loans and receivables	Financial assets available for sale	Other liabilities	Hedging instruments, derivatives	Non-financial items	Total carrying amount	Total fair value[1]
Oct 31, 2016	*Fair value*	*Amortized cost*	*Fair value*	*Amortized cost*	*Fair value*			
ASSETS								
Other holdings of securities	-	-	3	-	-	-	3	3
Other long-term receivables	-	1,931	-	-	-	400	2,331	2,331
– Interest-rate derivatives	-	-	-	-	-	-	0	0
Accounts receivable	-	1,406	-	-	-	-	1,406	1,406
Receivables from affiliated companies	-	-	-	-	-	1	1	1
Other receivables	-	26	-	-	-	448	474	474
– Fuel derivatives	-	-	-	-	277	-	277	277
– Currency derivatives	68	-	-	-	374	-	442	442
– Interest-rate derivatives	-	-	-	-	-	-	0	0
Short-term investments	3,430	2,637	-	-	-	-	6,067	6,067
Cash and bank balances	2,303	-	-	-	-	-	2,303	2,303
Total	**5,801**	**6,000**	**3**	**0**	**651**	**849**	**13,304**	**13,304**

Figure 14: source SAS2 016 p.89

For the period 2011 – 2016 I have summarized the table above for each year, and divided other long-term receivables and other receivables into two categories; operational and financial. As the methods for reporting other long-term receivables and other receivables are different for year 2006 – 2010, average composition between financial and operational items has been used to divide the items. Calculations are found in appendix 4.2.

3.2.4 Financial Liabilities

The following items are by their nature interest-bearing debt used to finance SAS operations, they are therefore classified as finance items.

- **Subordinated loans (long-term liability)**
- **Bond loans (non-current liability)**
- **Current portion of long-term loans (current liability)**

Short-term loans: Include accrued interest and derivatives (SAS, 2016), both of which are financial in nature and classified as financial.

Liabilities attributable to assets held for sale: Since assets held for sale was classified as financial, liabilities attributable to assets held for sale, are also classified as financial.

Other loans: Consist of finance leases, convertible bonds and other loans (SAS, 2016). These are all financial in nature and the item is therefore classified as financial.

Shareholders' equity: Shareholder require a return on their investments, and shareholder equity is therefore classified as financial. As previously disused, SEK 3,5 billion have been subtracted from equity from 2014 – 2016 due to the reclassification of preference shares as interest-bearing debt (see section 3.1.3). It is also important to highlight that the balance sheet item reflects book value of equity, not market value.

3.3 Capitalized Operating Lease (COL) in the Balance Sheet

As discussed in section 3.1.1, new standards on how operating leases are reported in the balance sheet will have material impact on the airline industry. As shown, Airlines differ substantially in terms of the composition of finance and operating leases used to acquire aircrafts. The new regulation will add transparency and as operating leases will no longer bypass the balance sheet, the true value of assets and liabilities for airlines will be reflected in the statements. It will furthermore make a comparison of the airlines more accurate. For these reasons, SAS' operating leases will be capitalized. There are multiple methods used by different stakeholders to estimate capitalized operating leases. This section will present three mehods and argue for the applied one. Capitalized operating leases will throughout the thesis be shortened to the acronym COL.

3.3.1 Method 1, Multiples

Many analysts, banks and rating agencies use fixed multiples on annual rental expenses to estimate COL. The most common multiple for the airline industry is 8x annual rental expenses (PWC 2016). Moody's uses its highest multiple for the airline industry (Moody's 2006), which was downgraded from x8 to x6 in 2015 (Moody's 2015). SAS is the only airline of the twelve compared that disclose an estimate for COL, it uses a multiple of x7 for these estimations. SAS state that this is the most common multiple used by the capital market (SAS, 2009). The table below compare SAS estimate COL for a ten-year period with multiples of x6 to x8.

Method 1: Capitalized operating leases, multiples

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Leasing costs for aircrafts	2 578	2 282	2 319	1 815	1 560	1 342	1 786	2 127	2 593	2 840
Multiple (Leasing costs for aircraft *multiple)										
x 6	15468	13692	13914	10890	9360	8052	10716	12762	15558	17040
x 7 (used by SAS)	18046	15974	16233	12705	10920	9394	12502	14889	18151	19880
x 8	20624	18256	18552	14520	12480	10736	14288	17016	20744	22720
SAS reported capitalized operating leases	**14462**	**13573**	**13804**	**10318**	**9527**	**10654**	**11970**	**14287**	**17535**	**19754**
Difference between SAS reported capitalised leasing costs and leasing costs for aircrafts * 7 (multiple x7)										
(SEK)	3584	2401	2429	2387	1393	-1260	532	602	616	126
(%)	**25%**	**18%**	**18%**	**23%**	**15%**	**-12%**	**4%**	**4%**	**4%**	**1%**

Figure 15: own creation, source: SAS annual reports

As seen in figure 15, there is a considerable difference in estimated COL when x6 and x8 are applied. It is furthermore important to highlight that there is a variation between SAS reported COL and multiplying annual leasing cost with seven (the multiple which SAS claims it applies). SAS does not comment to explain the difference. The variations have declined considerably from 2010 (23%) to 2016 (below 1%). Reasons for the difference might be:

1. SAS has historically acted as a lessor and leased aircrafts to other companies. SAS' reported COL is denoted at net value, and if the gains from SAS' leased out aircrafts have been subtracted from COL, it would render a lower value than if annual leasing cost for aircrafts on the income statement (which is assumed to not be corrected for gains as a lessor) is multiplied by seven. The argument is strengthened by the fact that SAS has gradually reduced the number of leased out aircrafts for the last ten years (SAS 2007 – 2016).
2. If leasing costs for aircrafts on the income statement include the full cost of wet-leases, such as crew and maintenance, but SAS' COL only include aircrafts for wet-leases.
3. Spainair declared bankruptcy in 2011, an airline which SAS had a 10,9% holding in (SAS 2011). If SAS' estimated COL in 2012 includes losses on aircrafts leased to Spainair, there would be a difference between the multiple and SAS estimates.
4. The negative difference in 2012 may furthermore be explained by SAS' adjustment of calendar year in 2012. If the estimated capitalize leasing cost is adjusted to represent a 12-month calendar, while leasing costs for aircrafts on the income statement only include costs based on a the 10-month calendar year, a negative variation would occur.
5. There are other conclusions that could explain the difference, most notably changes in accounting policies.

3.3.2 Method 2, PV of lease Payments

A common method used by rating agencies is to estimate by computing the PV of minimum required lease payments (Koller et al 2010). The discount rate used is a company's incremental borrowing rate adjusted for its current credit rating (PwC 2010). This method undervalues the asset as it ignores the residual value of the leased asset (Koller et al 2010). The method is therefore a particularly poor proxy for the airline industry, as an aircraft have a long economic life. As the purpose of the thesis is a valuation of SAS, and this method is primarily used by rating agencies and is particularly a bad proxy for capitalizing operating leases on aircrafts, the method will not be applied to estimate SAS capitalized operating lease.

3.3.3 Method 3, The Academic Method

The third method (hence forth named "the academic method") that can be used to estimate COL is an approach presented by Koller et al (2010). The model is founded upon the assumption that the rental expense paid by the lessee must compensate the lessor for the cost of financing the asset and the depreciation of the leased asset on a straight-line basis, until the asset cannot be sold or re-

leased by the lessor, in other words until the asset has no residual value. The formula is presented below, where Kd is the cost of debt. Cost of debt is estimated using the yield of a AA-rated corporate bonds, as the lease is secured by the underlying asset (Koller et al 2010). The right side of the equation represents the lessors cost of acquiring the assets and required return over the assets life. The left side of the equation represents the corresponding rental expense needed to cover the cost of the assets and the lessors' required return. By reformulating the statement the value of the asset can be determined.

$$\text{Rental Expense}_t = \text{Asset Value}_{t-1}\left(k_d + \frac{1}{\text{Asset Life}}\right)$$

Lessee Lessor

$$\text{Asset Value}_{t-1} = \frac{\text{Rental Expense}_t}{k_d + \frac{1}{\text{Asset Life}}}$$

To estimate asset life Liam et al. suggest dividing PPE with annual depreciation (Koller et al 2010). Figure 16 presents SAS' capitalized operating lease using this method. The average estimated asset life of 7,3 years for the period has been used to calculate annual COL. An S&P Swedish investment grade corporate bond index with a 10-year maturity has been used to estimate cost of debt, which is set to 3,46 % (Spindices). As can be seen from the table, using this method SAS annual COL decrease in all but two years. Applying an asset life of 7,3 and a cost of debt of 3,46% is equivalent to a multiple of x5,8, which is considerably lower than the ones used by most practitioners. This method is an attractive one to apply as it is easily calculable, but the findings are questionable.

Method 3: Capitalized operating leases, academic approach

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Leasing costs for aircraft	2 578	2 282	2 319	1 815	1 560	1 342	1 786	2 127	2 593	2 840
Average PP&E*	13 663	13 176	14 226	14 909	14 282	13 536	11 277	8 736	7 996	8 476
Depreciation, amortization and impairment	1 478	1 591	1 845	1 867	2 413	1 426	1 658	1 443	1 466	1 367
Asset Life	9,2	8,3	7,7	8,0	5,9	9,5	6,8	6,1	5,5	6,2
Asset life, average	7,3									
Cost of debt (S&P SWEDEN AA INVESTMENT GRADE CORPORATE BOND INDEX), 10-year maturity	3,6%									
Capitalized operating lease (using method 3)	**14 960**	**13 243**	**13 457**	**10 533**	**9 053**	**7 788**	**10 364**	**12 343**	**15 048**	**16 481**
SAS reported capitalized operating leases	14 462	13 573	13 804	10 318	9 527	10 654	11 970	14 287	17 535	19 754
Variation between method 3 and SAS's reported COL (%)	-3%	2%	3%	-2%	5%	27%	13%	14%	14%	17%
Mean variation 2007 - 2016 (%)	9%									

* Include Balance sheet items - Land and Building - Aircraft - Spare enginees and spare parts - Workshop and aircraft servicing EQ - Other EQ and vehicles

Figure 16: own creation, source: SAS annual reports & Spindices 2017

Asset Life

It is important to note that when estimating asset life over a period, the method is trying to estimate the total depreciation of the aircraft, not the depreciation of the asset over the period of SAS contracted operating lease. An asset life of 7,3 years therefore seems low. In 2015 Avolon found that the average retirement age of aircrafts used by commercial airlines to be 25 years (Avolon 2015). Retirement age of an aircraft is nevertheless considerably longer than depreciation period for two reasons,

1. When determining depreciation rate of an aircraft, the depreciation of all major components is estimated separately. The overall depreciation rate of the aircraft is estimated through a weighted model (IATA B 2016)
2. With the pace of today's development in technologies, determining the useful life and residual value of an aircraft and its components is challenging. A leap in the technology of aircraft engines that save airlines considerable amounts of fuel, lowers the value of older engines considerably. A corresponding decrease in asset life would therefore have to be made when using the academic method (as the equation assumes that the asset is depreciated until there is no residual value).

To further investigate the method has been applied to all the twelve airlines in the comparison group, which renders an average asset life of 12,7 (figure 17). Only the average PPE for 2015 and 2016 have been used, and the depreciation for 2016. The results are shown in figure 17. The author argues that the average asset life of 12,7 years is a better proxy as,

Calculationg asset life using PPE*					
	PPE 2015 (SEK)	PPE 2016 (SEK)	Average PPE (SEK)	Dep 2016 (SEK)	PPE/ Dep.
SAS	7 655	8 781	8 218	1 367	6,0
Finnair	812	1 167	989	106	9,3
Lufthansa Group	16 997	16 764	16 881	1 769	9,5
KLM	3 783	3 526	3 655	508	7,2
Delta	23 039	24 375	23 707	1 902	12,5
Norwegian	18 873	22 943	20 908	1 296	16,1
Easy Jet	2 877	3 252	3 065	157	19,5
South West	17 044	15 601	16 323	1 221	13,4
Ryan Air	5 471	6 262	5 866	427	13,7
Emirates	74 000	74 900	74 450	8 000	9,3
Turkish Airlines	11 415	13 476	12 446	860	14,5
Singapore Airlines	13 524	14 144	13 834	1 543	9,0
				Mean asset life	12,7

* As airlines varies on how they report PPE & Depreciation, judgements has been made to determine PPE

Figure 17: source annual reports

1. asset life of 7,3 seems low, but an asset life of 25 is too high.
2. The primary PPE asset of any airline are aircrafts. There are only two major suppliers used by commercial airlines, Boeing and Airbus, and these suppliers produce two major types of aircrafts, NB and WB aircrafts. The PPE assets of airlines are therefore highly comparable as PPE constitute largely the same type of assets.
3. The mix of operating and finance leases between airlines differ substantially. To simply use SAS statements to estimate the asset life of an aircraft held by a lessor leaves room for considerable error. As evident in figure, there is a large difference between airlines when asset life is estimated using this method, with SAS rendering the lowest value of 6,01 years. While this makes the usefulness of the model questionable, it further gives credence to the argument that no single airline should be used to estimate asset life.

Cost of debt on operating leases

In estimating cost of debt, three potential candidates have been identified;

- 3,56% - A 10-year S&P Swedish investment grade corporate bond index.
- 4,65% - A mean of 10-year S&P investment grade corporate bond indexes, each of which corresponds to the induvial index most relevant for the airline in the comparison group. (figure 18).
- 2,21% - SAS mean interest paid on finance leases over the from 2007 to 2016 (figure 19)

Estimating cost of capital using corporate bonds												
	SAS	Finnair	Lufthansa Group	KLM	Delta	Norwegian	Easy Jet	South West	Ryan Air	Emirates	Turkish Airlines	Singapore Airlines
S&P investment grade corporate bond index country:	Sweden	EuroZone	EuroZone	EuroZone	500	Norway	U.K.	500	U.K.	International	International	Singapore
10-year yield	3,56%	4,41%	4,41%	4,41%	5,20%	4,05%	6,77%	5,20%	6,77%	3,88%	3,88%	3,31%
Mean 10-year yield	**4,65%**											

Figure 18: own creation, Spindices 2017

SAS's interest on finance leases*										
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
SAS's Interest rate on finance leases	2,2%	4,0%	1,6%	1,3%	1,5%	1,8%	1,6%	1,5%	3,2%	3,4%
Mean interest on finance lease, SAS	2,2%									

Figure 19: own creation, source: SAS annual reports & Spindices 2017

As shown by formula on page 28, the academic method aim to estimate the lessors cost of debt on the asset. It is therefore argued that the rate must larger than SAS' interest on finance leases. Finance leases transfers nearly all the risk of the contract to the lessee, while an operating lease leaves more risk with the lessor. The lessor needs to be compensated for the added risk. Aircrafts are homogenous products that are leased on a global scale in free markets, it is therefore biased to use Swedish corporate bonds to estimate cost of debt. The cost of debt will therefore be estimated to 4,7 %, which is a mean of investment grade corporate bonds that best corresponds to secure debt in the regions the twelve airlines compared operate in.

3.3.4 The applied method

In summary, the applied method is modified version of the academic method. The estimated asset life is to 12,7 years and a cost of debt at 4,65%. This is the equivalent of using a multiple of x8 on annual leasing costs. This falls within the range of x6 – x8, which is the one used by industry experts to capitalize operating leases. The table shows SAS' COL using the applied method, which are higher than its own estimates (figure 15, p.26).

The applied method for capitalizing operating leases										
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
SAS Leasing costs for aircraft	2 578	2 282	2 319	1 815	1 560	1 342	1 786	2 127	2 593	2 840
Asset life	12,7									
r(col)	4,65%									
Capitalized operating leases (COL)	**20 610**	**18 244**	**18 540**	**14 510**	**12 472**	**10 729**	**14 279**	**17 005**	**20 730**	**22 705**

Figure 20: own creation, source: SAS annual reports

3.4 SAS' analytical income statement

Revenue is divided between traffic revenue and non-traffic revenue. Non-traffic revenue consists of a multitude of items, the largest one is ground handling services. This constitute services provided to other airlines at airports. As was established in chapter 2, NLAs generally offer services to enterprise customer. Non-traffic revenue therefore a part of SAS' business model. Both traffic and non-traffic revenue is therefore part of core operating income for SAS.

Payroll expenses include pensions cost, and as pensions were argued to be operational, it is recognized as an operating cost. **Other operating expenses** only include operational items as shown by the figure 21, the largest of which are jet fuel.

Since Equity in affiliated companies was argued to be operational in the balance sheet, **shares of income in affiliated companies** are an operating item. SAS has furthermore not announced any plans on selling its stakes in its current affiliates.

NOTE 4 OTHER OPERATING EXPENSES

	Nov–Oct 2015–2016	Nov–Oct 2014–2015
Sales and distribution costs	2,372	2,518
Jet fuel	6,449	8,430
Government user fees	4,106	4,087
Catering costs	948	836
Handling costs	2,477	1,998
Technical aircraft maintenance	3,292	2,757
Computer and telecommunication costs	1,382	1,159
Other	3,526	2,773
Total	**24,552**	**24,558**

Figure 21: source & 2016

Sales of shares in subsidiaries, affiliated companies and operations has been classified as a special item. SAS has sold most of its holdings in other companies. Since 2014 the income or expense from sales of shares have been negligible amounts. As special items are defined as expenses and incomes that do not expect to recur in future years (Investopedia 2017), it is special items. It should be noted that shares of income in affiliated companies is measured net after tax. Which means that when calculating EBIT, tax on income in affiliated companies should be removed and added back for NOPAT (Petersen & Plenborg, 2012). This has not been done. There is no straight forward process to calculate the real tax amount paid in on income from affiliates due to, amongst other things, different tax obligations in different countries. The effective tax rate would have had to be estimated, and since the amounts are small (less then 1% of total operating income in 2016) it seems needless.

Income from the sales of aircraft and building could be classified as part of operations or a special item. The item is recurring and it is expected that an airline sells aircrafts and property. This makes the item part of its operations. However, the amounts have fluctuated substantially from year to year, which makes it unusual, this could indicate that it is a special item. It has nevertheless been classified as operational.

On the analytical income statement, I have divided leasing cost for aircrafts into **depreciation on capitalized operating leases** and **Interest expense on capitalized operating leases.** There are multiple methods used by experts to estimate the relationship between depreciation and interest expense, the simplest one was until recently used by Moody's, where by it reclassified one-third of

the lease expense as an interest expense, and the remaining two-third as depreciation (Moody's, 2006). For SAS' analytical income statement, annual interest expense on operating leases have been estimated by multiplying capitalized operating leases in the balance sheet by 4,65%, which was the chosen proxy for the lessors required return on the leased asset found in the previous section. Depreciation have subsequently been calculated as SAS' stated lease cost subtracted by interest expense on capitalized operating lease. The calculation is shown in the figure 22 below.

Capitalized operating leases (COL), analytical income statement										
Capitalized operating lease										
Leasing costs for aircraft	-2 578	-2 282	-2 319	-1 815	-1 560	-1 607	-1 786	-2 127	-2 593	-2 840
r(col)	4,65%									
Capitalized operating lease	**20 624**	**18 256**	**18 552**	**14 520**	**12 480**	**12 853**	**14 288**	**17 016**	**20 744**	**22 720**
Interest expense (COL)	-959	-849	-863	-675	-580	-598	-664	-791	-965	-1 056
Lease depreciation on COL	-1 619	-1 433	-1 456	-1 140	-980	-1 009	-1 122	-1 336	-1 628	-1 784
Leasing costs for aircraft	**-2 578**	**-2 282**	**-2 319**	**-1 815**	**-1 560**	**-1 607**	**-1 786**	**-2 127**	**-2 593**	**-2 840**

Figure 22: own creation, source: SAS annual reports

Income from other holdings of security include capital gains from the sale of shares and participations, Impairment of shares, and dividends. These are all non-operating items. In some years "Impairment of receivables" are included. These are impairment of receivables from entities held as other holdings of securities. For example, When SpainAir declared bankruptcy SAS reclassified its holdings in the airline as other holdings of security. The bankruptcy forced SAS to recognise an impairment of receivables in the amount of 1,5 mSEK, which had significant impact in the income statement in 2010. **Income from other holdings of security** have therefor been divided on the analytical income statement. The impairment of receivables part of the item has been classified as a special item, while the rest is a financial income.

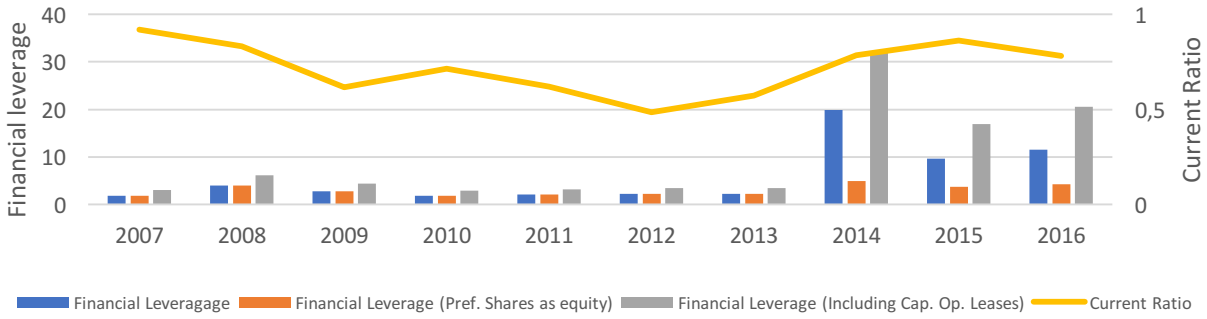
Income from discontinued operations is classified as a special item as it is non-recurring. It has not been stated in the income statement since 2011.

Other comprehensive income constitutes exchange-rate differences on translation of foreign currency, cash-flow hedges and – hedge reserve and re-measurement of defined benefits plans. These are treated as dirty surplus as they bypass the income statement. Exchange-rate differences is not a source of value creation and is outside of SAS' control. While hedging is done to lower risk of adverse price movements (Investopedia B, 2017), it only brings short-term relief. In the long-run assets will follow market price. As previously discussed re-measurement of defined benefits plans arise from the difference in SAS' fair value of plan assets and projected benefit obligations using actuarial estimates (Investopedia C, 2017). These estimated differences changes from period-to-period based on a multitude of factors, and SAS can therefore to a large degree not control this item. The purpose of an analytical income statement is to determine what items give rise to long-term value creation, in other words to identify items that are part of its core operations, and items used to finance these activates (Plenborg & Petersen, 2012). Dirty surplus is to a large degree not controllable by SAS and therefore stated independently of the main analytical statement.

3.5 SAS' Liquidity

Liquidity express to which degree a firm can meet its short- and long-term commitments (Petersen & Plenborg 2012). SAS have had liquidity problems, as it needed to raise capital in 2009 and 2010, and furthermore was granted a credit facility by the Scandinavian governments in 2012 to survive. The figure below shows SAS current ratio, which is a defined as current divided by current liabilities, and express short-term Liquidity risk. A lower larger current ratio is preferable. The table furthermore presents three different financial leverage, the first is total liabilities to equity, for the second one the preferred shares SAS issued in 2014 have been reclassified as equity, and the third one includes the capitalized operating leases as part of debt. A lower financial leverage is preferable. The graph summarises the findings.

Liquidity Analysis	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Current Ratio	0,92	0,83	0,62	0,71	0,62	0,49	0,57	0,79	0,86	0,78
Financial Leveragage	1,84	3,99	2,73	1,90	2,15	2,29	2,21	19,84	9,66	11,57
Financial Leverage (Pref. Shares as equity)	1,84	3,99	2,73	1,90	2,15	2,29	2,21	4,98	3,77	4,27
Financial Leverage (Including Cap. Op. Leases)	3,05	6,10	4,36	2,90	3,16	3,45	3,50	31,94	16,97	20,57



As clearly seen from the illustrations, the reclassification of preference shares has major impact on SAS estimated ability to settle its commitments in the long-run, and capitalised operating leases further push debt significantly upwards. This is troublesome, and come 2019 when airlines will be required to reclassify its leases, it may significantly affect their ability to lend, which is particularly important in a capital-intensive industry. SAS short-term liquidity are in 2016 at the same level it was before the crisis in 2012, which was preferable.

	2011	2012	2013	2014	2015	2016
Financial Leverage						
Finnair	2,13	1,85	2,12	2,67	1,82	1,95
Lufthansa	2,42	2,49	3,82	4,94	3,90	3,53
KLM	3,15	3,42	4,96	943,33	21,03	8,14
Delta	-32,16	-21,91	3,49	5,14	3,90	3,18
SAS	2,15	2,29	2,21	19,84	9,66	11,57
Financial Leverage (Including captitalized operating leases)						
Finnair	2,88	2,53	2,80	3,89	2,91	2,97
Lufthansa	3,15	3,25	4,15	5,46	4,31	3,79
KLM	3,79	4,44	6,46	1194,89	28,18	11,49
Delta	-38,46	-26,04	4,24	6,14	4,78	4,03
SAS	3,16	3,45	3,50	31,94	16,97	20,57

Figure 22a: own creation of appendix 3 source annual reports

Figure 22a compares SAS financial leverages with the NLAs in the comparison group. As seen, SAS have significantly higher ratios then its peers, except for KLM which have had its own "equity crisis" (KLM, annual reports). Despite this there are confidence amongst external stakeholders in

SAS. SAS is rated by rated by three credit-rating agencies. Their rating of SAS in 2016 are sown in the figure. SAS' credit rating has increased significantly in recent years. Moody's rating of SAS was Caa1 in 2012 (Moody's, 2013), but it has gradually been upgraded since then to B1 in 2016 (SAS, 2017).

"We anticipate that SAS' performance will continue to be challenged by the expansion of low-cost competitors, including Norwegian Air Shuttle ASA. However, our forecast of low oil prices for the next two years and SAS' ongoing cost saving initiatives will support a stable operating performance over the next 12-18 months" (Moody's, 2016)

CURRENT CREDIT RATINGS

Credit rating institute	Corporate credit rating	Outlook
Moody's	B1	Stable
Rating and Investment Information	B+	Stable
Standard & Poor's	B+	Stable

These insights are important insights for the forecast in chapter 9.

Chapter 4: Profitability Analysis

This section asses SAS profitability during the last decade through a cross-sectional analysis of the comparison group. The annual statements of the airlines in the group have been reformulated to analytical statements, which are found in appendix 3. All airlines' operating leases have been capitalized using the same method as the one applied for SAS, which was the equivalent of a x8 multiple on leases costs (section 3.3). Leases have thereby been converted into depreciation and interest expense in the income statement.

It is should be noted that for Emirates effective tax rate has been used as they are not subject to corporate tax in Dubai (World.tax, 2017). Using the Du Pont Model, the airlines' ROIC will be decomposed to analyze what has driven profit margins and capital utilizations (Petersen & Plenborg, 2012). All comparisons are conducted before tax to not introduce noise that arise from differences tax regimes. Due to the shortened calendar year in 2012, all passenger traffic data for SAS has been adjusted by a multiplication of 1,2 to convert the 10-month period into an approximation of a 12-month period. If not otherwise stated, the data on NLAs does not include SAS, as SAS' is stated separately. The data collected for the figures in this section are found in the appendix denoted below each figure.

The chosen comparison period is six years, while data that solely relate to SAS are analyzed over ten years. There are numerous reasons for the division in length. The purpose of this section is to gain insights on the development of profitability to assess the future for forecasting purposes in chapters to come. As the market have changed during the last decade with the rapid expansion of LCCs and EGAs, it is argued that the first years in a potential ten-year historic comparison of the airlines renders little important insights to forecasting.

4.1 ROIC

ROIC measures the profitability of operations and express the return on capital invested in operating assets. If ROIC is larger than the required rate of return for stakeholders, a firm creates excess return (Petersen & Plenborg 2012). Figure 23 compares SAS' ROIC after tax and required rate of return (WACC).

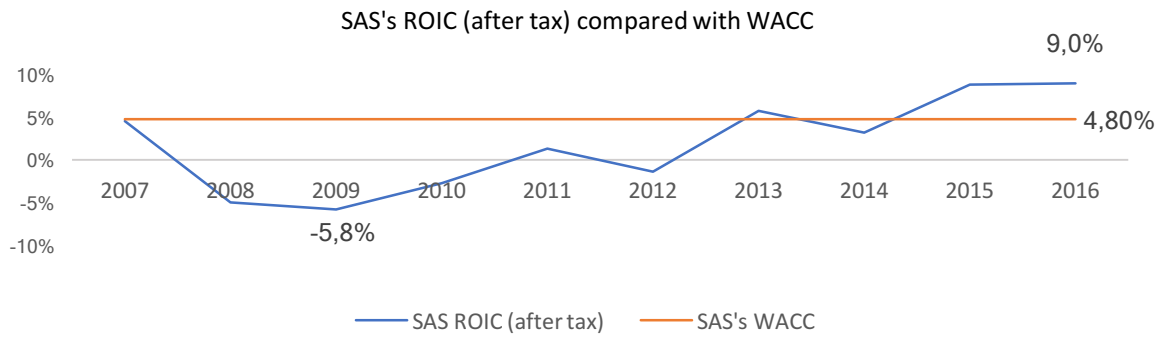


Figure 23: own creation of appendix 5.2, source: SAS annual reports. For WACC calculations see section 8.1

In 2016 SAS ROIC was 9%, which means that for every SEK invested in SAS' operations, it managed to earn a return of 0,09 SEK. This was above SAS WACC of 4,8%, which means that it created excess value for its stakeholders. As is evident by the graph, the financial crisis had major implications for SAS and significantly decreased ROIC to -5,8% in 2009. The new collective agreements in 2012 had material impact on regaining profitability in 2013.

Figure 24 compares SAS' ROIC after tax with the comparison group. At the start of the period SAS ROIC of 3,8% was below the average NLAs'. Since 2013 SAS has largely followed the trend of other NLAs, and in 2016 it operated at 10,6% ROIC. LCCs are on average operating at a significantly higher ROIC, in 2016 the average LCC's was more than twice as high as SAS', while EGAs have decreased their average ROIC during the period and are operating at the lowest ROIC of 4,3%.

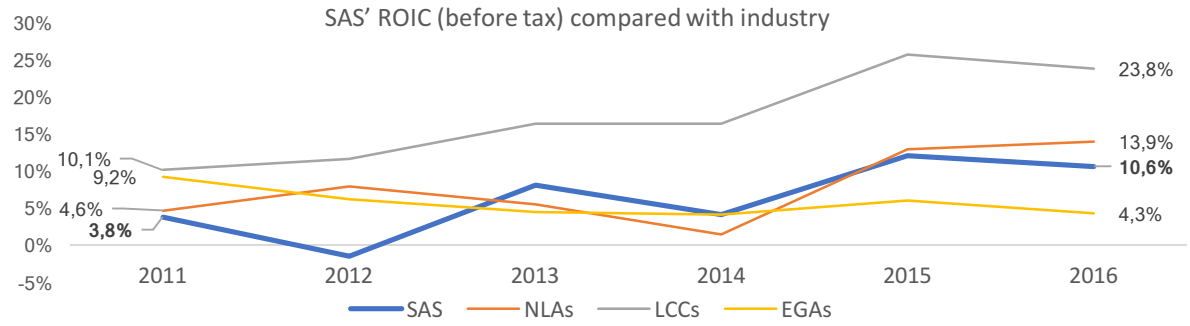


Figure 24: own creation of appendix 5.3, source: annual reports

It is important to note that while LCC's are on average operating at a higher ROIC then SAS, but Norwegian as SAS largest competitor is not. Figure 25 shows SAS' ROIC in relation to Norwegian's. SAS has during the period increased its ROIC, while Norwegian's have decreased. When comparing ROIC there are several factors that must be considered, amongst these are average age of assets and enterprise lifecycle. Norwegian is clearly in its growth stage of its cycle as it is entraining new markets and have ordered 255 aircrafts (including options), as compared to SAS that have ordered 41 (including options) (Appendix 17). During growth firms are structured to handle growth, which is capital intensive and lowers ROIC (Petersen & Plenborg, 2012). Norwegian average age of fleet (3,6 years) is furthermore considerably lower than SAS' (10,9 years). As long as Norwegian is adding a high amount of new aircrafts to its fleet and have not reached a stable level of growth, average age of its fleet will continue to decrease. At the beginning of an assets life its ROIC is below its true return (IRR), which understates ROIC (Petersen & Plenborg, 2012). This means SAS' ROIC and Norwegian's are to some degree not fairly comparable.

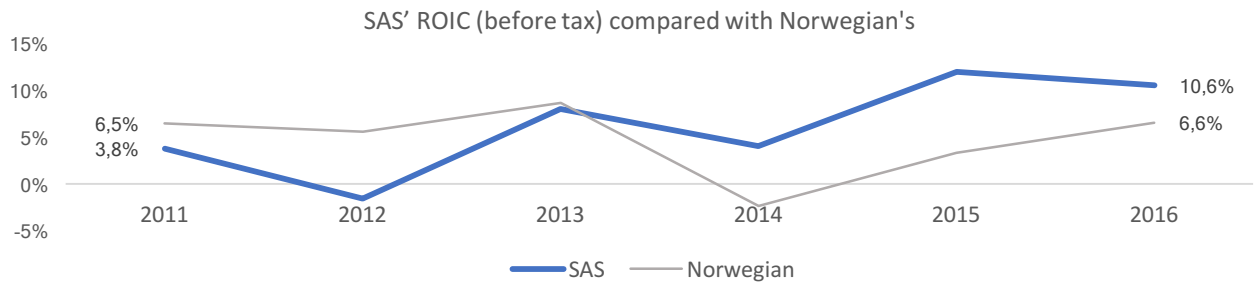


Figure 25: own creation of appendix 5.3, source: annual reports

While ROIC measures overall profitability, it does not explain what drives profits. To investigate, ROIC is decomposed into profit margin and turnover rate (capital utilization). The relationship is shown in the formula below.

$$ROIC = Profit\ margin \times turnover\ ratio$$

4.2 Profit Margin

SAS has significantly increased its profit margin during the period from 3% in 2011 to 7,5% in 2016, and while it was lower than other NLAs' profit margins in 2012, SAS has largely followed the trend of its peers and operated slightly under or above. SAS's profit margin is also lower than the global average reported by IATA (2016). LCCs' in the comparison group are outperforming other airlines with an average profit margin of 16,3%, while EGA's have decreased their average profit margin from 8,9% in 2011, to 6,0% in 2016.

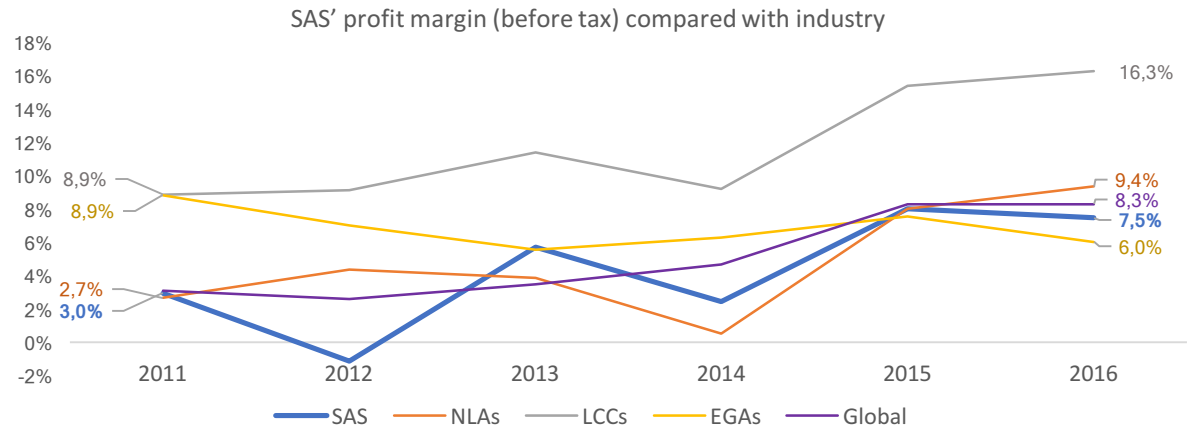


Figure 26: own creation of appendix 5.4, source: annual reports & IATA 2016

Profit margin expresses revenue in relation to expenses, and revenue is a function of volume and price. To further understand SAS' profitability, passenger volume, ticket prices and expenses are investigated.

4.2.1 Revenue drivers

Revenue increase as ticket price or volume increase, Revenue passenger kilometers (RPK) express number of paying passengers multiplied by the distance they are flown in kilometers, and is the standard measurement for passenger volume in the airline industry. For airlines in the comparison group that uses RPM (revenue passenger miles), the data has been converted into kilometers. It is important to note that SAS and other NLAs earn revenue from other sources due to their business model, as was discussed in chapter 2. Nevertheless, in 2016 77% of SAS' revenue stemmed from passengers. All SAS' other revenue was scattered amongst nine other items on the annual report (appendix 7), none of which contributed more than 5% to total revenue. Since the transportation of passenger is the core of SAS operations, other revenue generating activities will not be discussed further.

Volume (RPK)

Figure 27 shows development in RPK (million) for the comparison group and SAS from 2011 to 2016. SAS CAGR in RPK over the period was 4%, while the average of other NLAs was 3%. This has been a contributing factor in increasing SAS profit margin during the period. LCCs and EGAs have significantly outperformed NLA's with a CAGR of 10% and 11% respectively. With their rapid expansion during the last two decades, it is not wonder that they are outperforming NLAs. Airbus forecasts that total global RPK will grow 4,4% annual until 2026 (Airbus, 2016), so while LCCs and EGAs have excelled during the period, there is still possibility for NLAs to capture significant growth of RPK in the future. This will be discussed further in the strategic analysis (chapter 5)

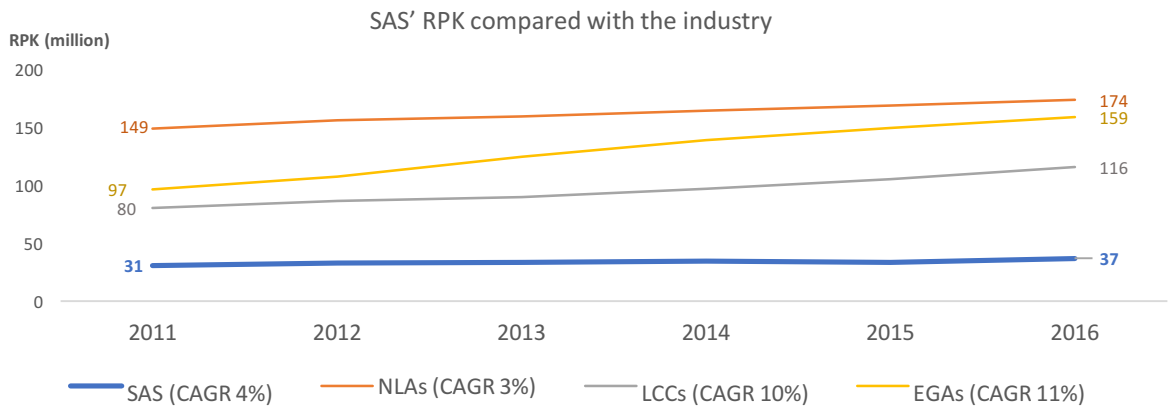


Figure 27: own creation of appendix 5.4, source: annual reports

Ticket price (revenue per RPK)

As a measurement of ticket price, passenger revenue has been divided by RPK. The value express passenger revenue earned per passenger flown one km, an increase therefore means additional revenue per passenger, and therefore an increase in ticket price. As SAS has many short-haul flights compared to other airlines due to Scandinavia's topography, it leads to more time spent on take-offs and landing, during which passengers are flown short distances for a longer period (extensively discussed in chapter 5). An alternative measurement for comparison is to set some benchmark, for example a ticket on a domestic flight that is approximately 500 km long, and compare what each airline charge based on the benchmark. Due to factors such as dynamic pricing, different tax regimes, different airport charges, and considerable differences in network of routes, the author argues that revenue per RPK is a better point of departure for investigating differences in ticket price, and will be used throughout the thesis.

During the period, SAS decreased its ticket prices, but they are still higher than the average for the NLAs in the comparison group. In 2016, its price was 0,82 SEK, which means it earned 0,82 SEK per passenger flown one km. The average of other NLAs was 0,74 SEK in 2016. LCCs and EGAs increased their ticket prices during the period, but in 2016 it where still selling every kilometer considerably cheaper to its passengers, with LCCs earning 0,57 SEK per RPK in 2016. An important insight for forecasting purposes is that prices seems to be converging as EGAs and LCCs prices have increased and NLAs have decreased,

Singapore airlines have been excluded from the data due to difference in accounting quality (appendix 5.6). It does not clearly divide its revenue between passenger revenue and other revenue.

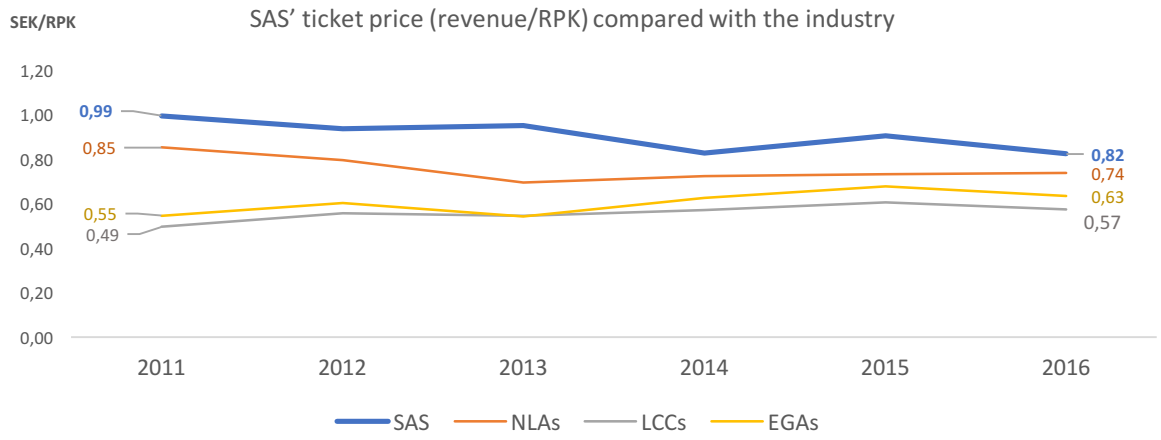


Figure 28: own creation of appendix 5.6, source: annual reports

4.2.2 Cost drivers

Available seat kilometer (ASK) is a measurement of production and express how many km an airline flies its total number of available seat annually. Cost per ASK (CASK, which includes leases and depreciation) is therefore its unit cost per km. With the introduction of LCCs in Scandinavia and numerous macro-environmental crises, one of SAS' main challenges have been to decrease its overall operating cost, as well as to build a more flexible cost structure where a higher portion of cost are variable with production.

Figure 29 compares SAS' CASK with the industry for the period. SAS has significant decreased its unit cost by 23% over the six years from 0,98 SEK/ASK to 0,75S SEK/ASK. Other NLAs decreased theirs 15,48%. SAS numerous restructurings, layoffs and other strategic initiatives aimed to decrease cost have therefore been overall successful. But despite the decrease, SAS is still operating at higher unit cost then other NLAs, which averaged 0,67 SEK/ASK in 2016.

CASK typically decreases with distance of flights as frequency of take-offs and landings decrease (Worldwatch, 2005), as SAS has operate a large portion of short-haul flights due the regions topography (discussed in chapter 5), CASK increase. It is furthermore reasonable to assume that it would decrease with number of flights due to economies of scale. KLM, Delta and Lufthansa in the peer group are considerable larger airlines that all operate a relatively higher portion of WB aircrafts, which are used to operate on long-haul flights (appendix 17). This adds noise to the comparison and may be an alternative factor to why SAS is not closer in CASK to its peers. The author therefore argues that it is not reasonable for SAS to reach the unit cost of other NLAs as long as its strategy is to focus on Scandinavia, and as long as it does not scale significantly. Nevertheless, at over 12% higher unit cost when compared to other NLAs, it stills seems relatively high. Another important insight is that just as with ticker prices, unit cost has converged during the period as LCCs and EGAs unit cost have increased. To further investigate, SAS three largest cost items; payroll expenses, fuel expenses and government user fees, will be discussed. Combined they constitute 59% of SAS total operating cost.

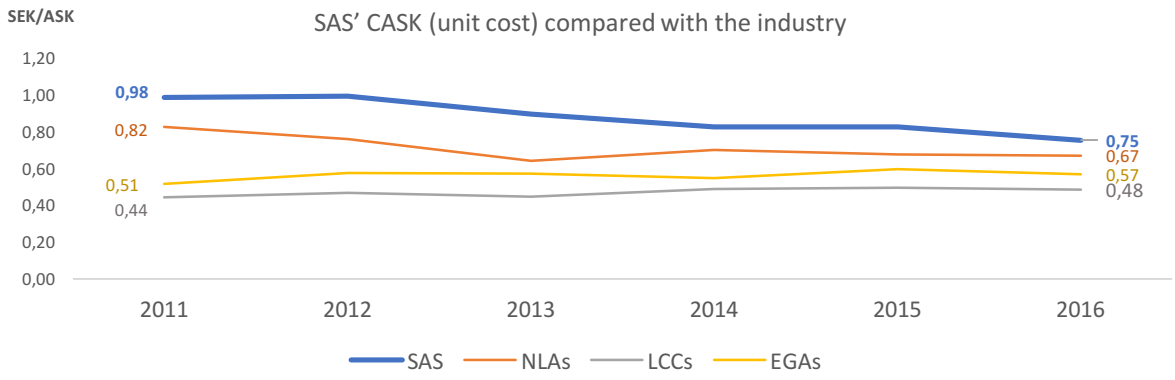


Figure 29: own creation of appendix 5.7, source: annual reports

Payroll expenses

As is evident in figure 30, the introduction of the new labor agreements in 2012 significantly decreased SAS payroll expenses. SAS decreased its payroll expense relative to its ASK by 41% during the period from 0,32 SEK/ASK to 0,19 SEK/ASK, while NLAs decreased their average payroll expenses by 34% to 0,12 SEK/ASK, LCCs and EGAs decreased theirs by 15% and 10% respectively. The successful management of labor cost has been one of the most essential factors for SAS regain profitability, but has also lead to much dispute, criticism and labor strikes (discussed in chapter 5). In 2016 SAS still operated with higher payroll expenses then other airlines.

To combat this SAS has announced the creation of a SAS base in London and Malaga. The aircrafts operated out of these bases will employee labor from within the respective country, which will be paid significantly less then SAS employees that are employed in Scandinavia. This has been the tactic of Norwegian for the last decade, which have set up numerous bases across Europe to operate at large scales from these. Nevertheless, SAS London on Malaga operations will commence in 2017, but only one aircraft per base will be allocated to these. It is assumed that it will take a long-time for SAS to scale these kinds of operations if it aims to do so.

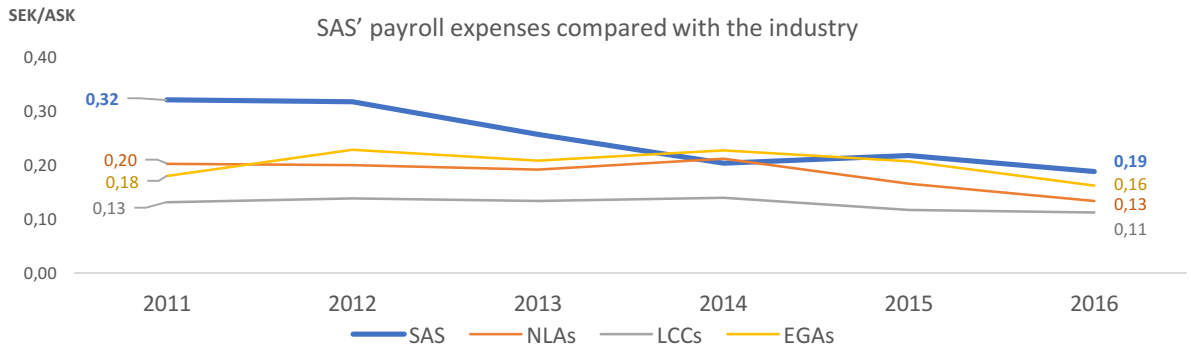


Figure 30: own creation of appendix 5.8, source: annual reports

Fuel expenses

Fuel is SAS' second largest annual expense, in 2016 it amounted to 19,3% of total operating cost. Figure 31 shows SAS and the comparison group's annual fuel expense in relation to ASK, which express fuel cost in SEK for transporting one available seat one km. It furthermore shows the development in jet kerosene price during the period, which have significantly decreased.

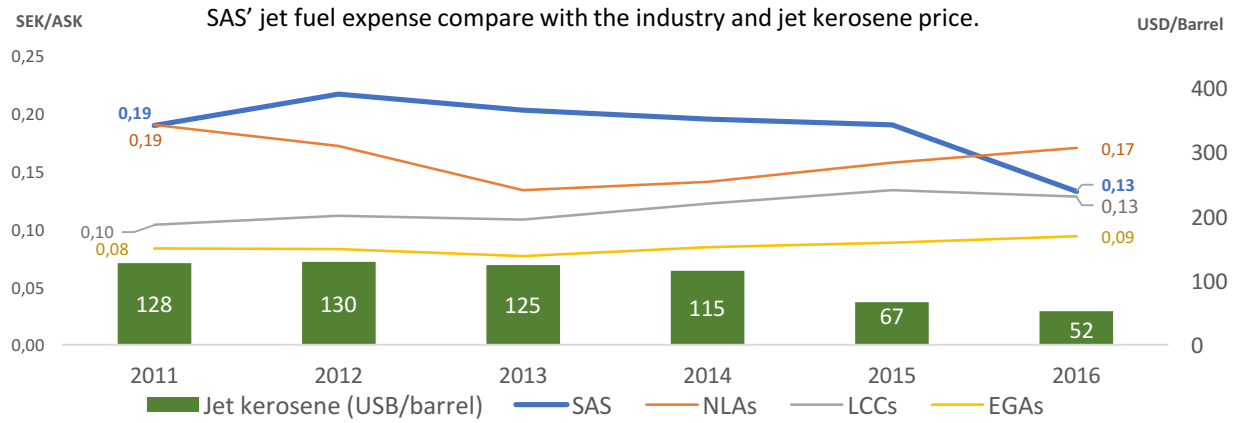


Figure 31: own creation of appendix 5.9, source: annual reports & IATA 2016

There are two important insights that can be derived from development of jet fuel costs. SAS' fuel expense is moving with the trend in cost for jet kerosene, while comparison group are largely moving against the trend. There are numerous of factors that could explain this counterintuitive trend.

1. Airlines hedge jet fuel costs at different intervals and for different volumes. SAS policy is to hedge 40-80% of anticipated volumes for the coming 12 months (SAS, 2016). KLM hedge for 24 months (KLM, 2016) while Delta hedged its jet fuel cost for the remainder of 2016 and 2017 in March 2016 (Delta, 2016). Both airlines have significantly higher fuel expense per ASK when compared to SAS (appendix 5.9). As the price of fuel have decreased, a longer hedging horizon means an airline may have not have gained the benefits of lower fuel prices in 2015 and 2016.
2. Airlines keep jet fuel in inventory, a larger inventory of fuel prior to 2015 would mean larger fuel expense in 2015 and possibly 2016.
3. Difference in reporting and accounting quality likely have some impact on the data. Lufthansa for example include "lubricants" under fuel expenses (Lufthansa, 2016).

For these reasons, the author argues that the average fuel expense per ASK for the period makes for a better comparison between the airlines. Figure 32 summarize the averages.

Average jet fuel expense per ASK, 2011 - 2016			
SAS	**NLA**	**LCC**	**EGA**
0,23 SEK	0,19 SEK	0,15 SEK	0,1 SEK

Figure 32: own creation of appendix 5.9, source: annual reports

When investigating the averages, a different picture arises. SAS average fuel expense is considerably higher at a cost of 0,23 SEK per ASK. As previously stated, operating cost increase as flight distance decrease. On short haul flights as much as 25% of fuel consumption is used during take-off (Worldwatch 2005). Approximately 40 % of SAS' revenue in 2016 came from domestic or intra-Scandinavian flights, which are mostly flights very short flights. EGAs business model on the

other hand focus heavily on long-haul flights, and as is evident by the figure, EGA's have the smallest average fuel expense for the period. SAS' and other NLAs' alliance memberships are founded on the hub-and-spokes model, which increase amount of take-off and landings as passengers must often catch connecting flights to reach their final destination. LCCs point-to-point network indicates that they operate with fewer take-offs and landings, as a result they operate with lower fuel expenses.

Another important factor is the number of seats on an aircraft. LCC's do not offer business class, and often offers less leg space for an economy class ticket. This means that they can fit more seats on a similar aircraft then SAS, which lowers fuel expense per ASK. The mean age of an airlines' fleet furthermore affects fuel costs, as new generation aircrafts consume 15 – 20% less fuel (SAS, 2016). This is further discussed in chapter 5.

In summary, SAS is outperformed other NLAs on fuel expense per ASK in 2016, and SAS' fuel expenses have declined as the price for jet kerosene has declined. However, due to numerous factors such as hedging of fuel cost, fuel inventory and difference in accounting policies, a comparison of fuel must be conducted on the average across a period. During the period, SAS had higher fuel expenses per ASK then other airlines. There are numerous explanations for the this, which include Scandinavia's topography, the hub-and-spoke network model, different seat configurations in similar aircrafts and the mean age of the airlines' fleets.

Government user fees

SAS is subject to numerous government fees and taxes. It, amongst other things, pays fees for landings, take-offs and when flying through different countries' airspaces. It is therefore problematic to find what drives these costs, as SAS are subject to these fees from all countries it operates on and flies over. There also no code of conduct on how to report these fees and airlines uses different methods. Figure 33 shows SAS' government user fees as a percentage of total operating income. As can be seen by the figure, it has remained fairly stable for the last 10 years, and since 2014 it has almost been completely stable at 10,4% of core operating income. The Swedish government have proposed to add a flight tax in 2018 (Regeringen, 2017), which would affect these values, this will be discussed in more detail in the strategic analysis (chapter 5). it is nonetheless an important insight that these fees have been stable in relation to operating income when forecasting.

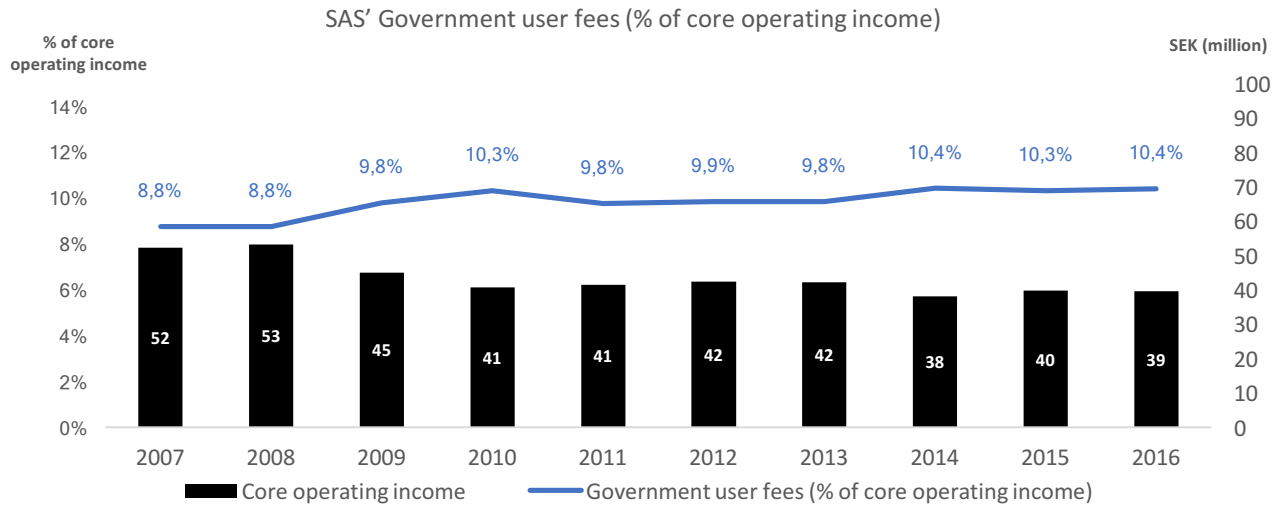


Figure 33: own creation of appendix 5.10, source: annual reports

Other expenses

All annual cost except payroll expenses, fuel expenses and government user fees have been collected into one container. The container includes "Shares of income in affiliated companies" and "Income from sales of aircrafts and buildings". Figure 34 shows these cost as a percentage of total operating income. As these costs originate from different activities in the organization that have their individual drivers, they will not be discussed in-depth. As can be seen from the graph these costs have been fairly stable in relation to total operating income for the last decade.

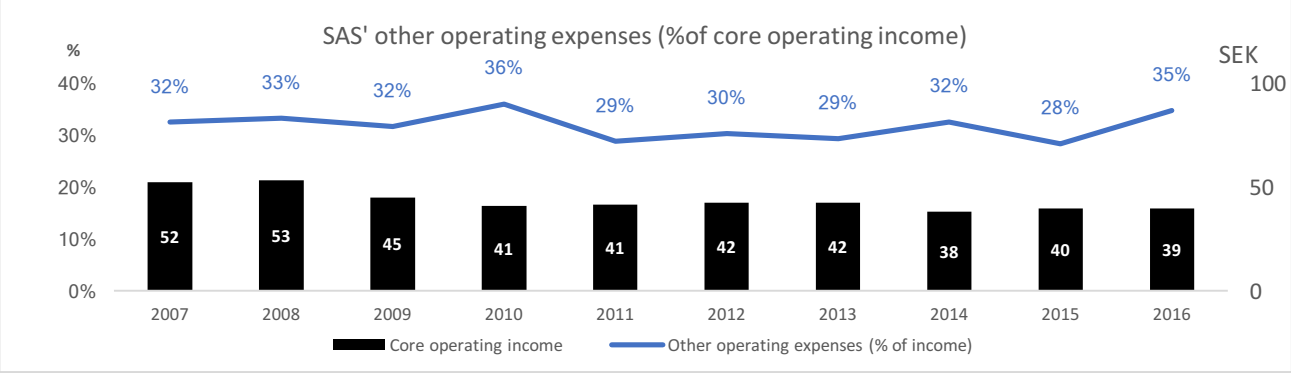


Figure 34: own creation of appendix 5.11, source: annual reports

Summary of profit margin

SAS increased its profit margin before tax from 3% in 2011 to 7,5% in 2016, it however dropped significantly in 2012. SAS is currently operating at a profit margin (before tax) below other NLAs in the comparison group and IATA's estimated global profit margin. Contributing factors to SAS increase in profit margin includes higher RPKs, lower labour expenses and lower fuel expenses. LCCs are significantly outperforming other airlines on profit margin, and have especially successful

in increasing RPK. SAS and other NLAs have lowered their ticket prices, while LCCs and EGAs have increased theirs. It therefore seems ticket prices are converging.

4.3 Turnover rate of invested capital

The second factor of ROIC in the Du Pont model is turnover rate of invested capital, which express how well a company manages to utilize its invested capital (Petersen & Plenborg 2012). As shown in figure 35, SAS turnover rate has been somewhat stable across the period and amounted to 1,41 in 2016. This means that each SEK investment in operating assets generated a sale of 1,41 SEK, or alternatively, capital was tied up for 255 days. Except for 2014, SAS turnover rate is almost equal to the average of LCC, with EGAs falling far behind, and other NLAs slightly outperforming SAS. However, LCCs are investing heavily in expansions of their fleets, which all things being equal, increase invested capital and lowers turnover ratio. When taking this into regard LCCs are outperforming SAS as their turnover rate is almost equal to SAS, despite heavy investments.

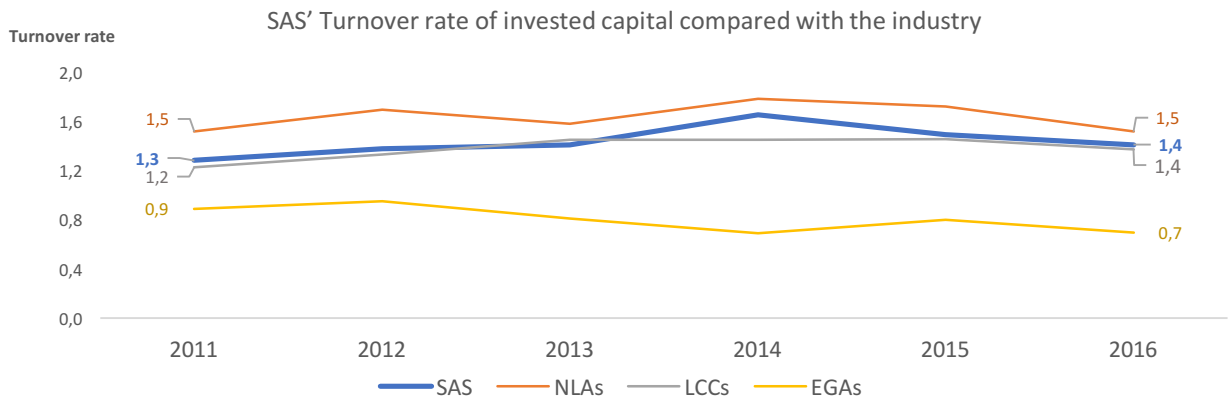


Figure 35: own creation of appendix 5.12, source: annual reports

4.4 Summary of profitability analysis

The financial crisis had a significant impact on SAS ROIC, and LCCs put pressure on other airlines throughout the period to lower ticket price. By successfully decreasing operational expenses, SAS could decrease its ticket prices to stay competitive and grow in passenger volumes (RPK). The main contributor to this was the new collective agreements with labor unions and continuous management of human capital to lower payroll expense. The steep decline in fuel prices have also had material impact. SAS has also managed to utilize its capital at same level it did before the financial crisis. In 2015 and 2016 SAS operated with ROIC higher than its WACC, which meant it created excess return for stakeholders. In terms of other airlines SAS is operating close to the same level of profitability as other NLAs, while LCCs are significantly outperforming, and EGAs are underperforming. Figure 36 shows SAS ROIC, profit margin and turnover rate of capital.

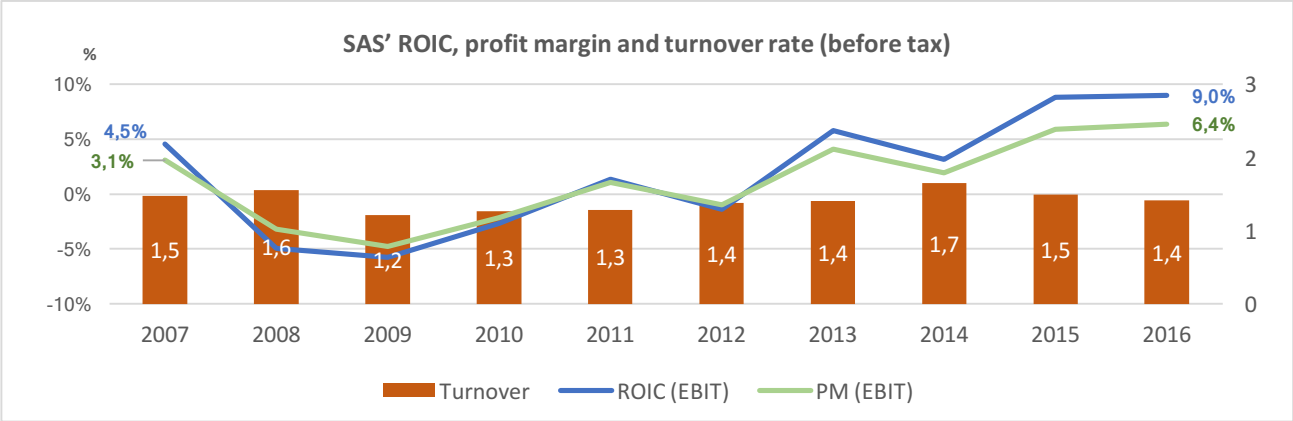


Figure 36: own creation of appendix 5.13, source: annual reports

Chapter 5: Strategic Analysis

This chapter present a strategic analysis of SAS to gain vital insights into the macro-environment and industry it operates in, as well as how SAS can use it core capabilities to compete given these conditions. This chapter firstly put forth a PESTE analysis of the broader macro-environment to identify key factors that greatly influence the Scandinavian and global airline industry. The chapters move on to define the structure of the airline industry and how competitive interactions are shaped within in it using Porters five forces. Lastly SAS resources and capabilities that potentially give rise to competitive advantage will be discussed.

5.1 PESTE

5.1.1 Political factors

Historically political factors have been the most important once to shape the airline industry into its current state. The gradual deregulation of the market by states enabled LCCs and EGAs to enter the market (Björnelid 2013). This profoundly and irreversibly changed the market and put pressure on NLAs to transform, and as demonstrated in the profitability analysis (chapter 4), NLAs are in numerous ways still combating their heritage.

The sale of shares by the Norwegian and Swedish government in 2016 meant that SAS became less then 50% state owned for the first time in its history. The Swedish and Norwegian government intention to sell more shares in the future could lead to both opportunity and concerns for SAS. The Governments' incentives to own an airline is questionable, as their priorities may not be to maximize shareholder value. SAS has 10 000 employees in 2016 (SAS, 2016), and furthermore provides valuable infrastructure in Scandinavia. While SAS is no longer forced by the governments to operate certain routes to broaden infrastructure (Björnelid 2013), the governments still have a strong bargaining power. Decreased state ownership might therefore gain SAS more autonomy, even though it officially operates fully autonomously today.

Government ownership of an airline in a free market has been wildly criticized, and it has been questioned whether it distorts competition (Radio Sweden, 2010). Not the least between 2009 and 2012, when SAS gained government aid to avoid bankruptcy. Nevertheless, SAS have historically gotten financial aid when it was needed and potentially lenders may in the future therefore require more collateral and higher interest as the company's risk for bankruptcy may increase as state ownership increases. The author therefore argues that overall state ownership has been a positive factor for SAS, and as it decreases it may bring about predicaments.

Other important political factors that affect the airline industry ate tax regulations and government fees, which was 12% of SAS' total operating expense in 2016. In 2015, the Norwegian government introduced a 88 NOK flight-tax on all tickets. The tax was heavily criticized by airlines and IATA (Mikalsen 2015). The Swedish government proposed a similar tax in 2016 in the amount of 430 SEK on all long-distance return tickets. While the tax is criticized by airlines, a poll made by a prominent

environmental organization showed that 70% of respondents were optimistic towards the new tax (Sydsvenskan 2016). As the profit margins are small, it is likely that the taxes will force SAS to increase ticket prices.

Other political concerns for the airline industry are political conflicts and terrorist attacks. After the 9/11 terrorist attacks in 2001, global growth in passenger volumes decreased significantly (World Bank B 2017). The recent terrorist attacks across Europe, including the terrorist attacks in Paris in 2015, has however not had material impact on global passenger volumes.

5.1.2 Economic factors

GDP growth and passenger volume

Historically the demand for air travel has been greatly correlated with world economic growth. Figure 37 shows world GDP growth and growth in global air traffic passenger demand from 2005 to 2016. While GDP have grown 2,8% annually over the period, passenger demand has grown 2,1 times as much at 5,8% annually (appendix 8.2). A regression analysis determined a correlation of 0,84 (appendix 8.1). Therefore, understanding economic growth gives vital clues into forecasting volume of passengers, and when forecasting the portion of SAS' passenger revenue that does not come from Scandinavia, global GDP growth will be the cornerstone,

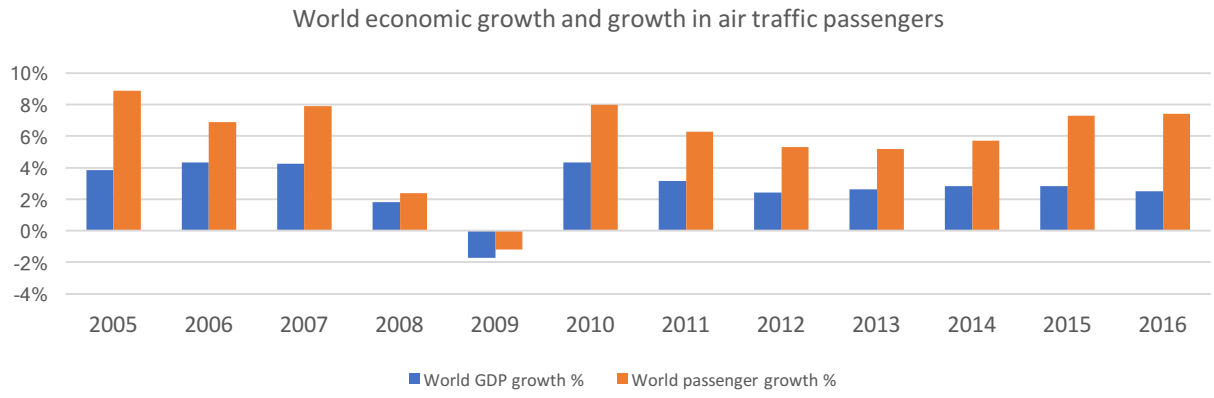


Figure 37: own creation of appendix 8, source: World Bank 2017 and IATA 2016

In 2016, 70% of SAS' passenger revenue came from Scandinavia. Figure 38 shows GDP growth and growth in passenger traffic in Scandinavia and the respective countries. Passenger numbers where collected from Eurostat and is defined as passengers onboard, which include all passengers on board an aircraft upon landing or taking of at a Swedish, Norwegian or Danish airport. The data is not a faultless proxy for RPK. It includes both revenue and non-revenue passengers (Eurostat B 2017), it is furthermore not a true representation of SAS' Scandinavian market, as it does not perfectly represent Scandinavians or people residing in the region. Many airlines use the capitals in Scandinavia as hubs in their hub-and-spoke network, particularly Copenhagen airport which is

forecasted by Airbus to become a “mega aviation city”[7] in 2026. While the data so it is not a faultless proxy, it was the best data found for Scandinavian passenger volumes during research. It should furthermore be noted that the data for Scandinavia as a region does not consider the relative size of each of the three counters GDP and airline market but is rather a non-weighted average of Sweden, Norway and Demarks GDP growth and growth in passenger volumes. This will be adjusted when forecasting in chapter 7.

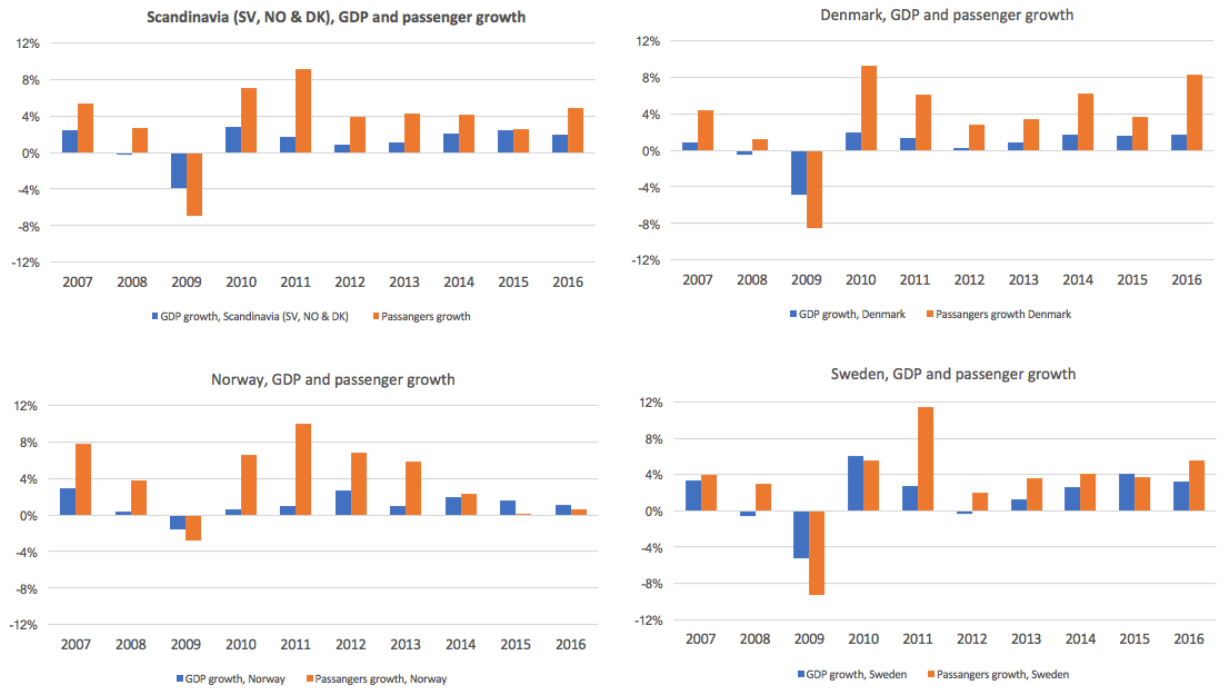


Figure 38: own creation of appendix 9, source: Eurostat 2017 and IMF 2017

Scandinavian economic growth and growth in passenger volume is correlated, and just as when comparing global data, growth in passenger volume is higher than growth in GDP, with the exceptions of a few years in some of the countries. The only year with negative growths was during the financial crisis. Figure 39 shows CAGR in GDP and passenger volume, as well as the “GDP-to-passenger factor” (how many times larger passenger volume growth was in relation to GDP growth)

Growth rates in Scandinavia, 2010 - 2016			
	CAGR GDP	passenger volume	GDP to passenger factor
World	**2,80%**	**5,80%**	**2,1**
Denmark	1,3%	5,6%	4,2
Norway	1,4%	4,5%	2,7
Sweden	2,8%	5,1%	2,2
Scandinavia	**1,8%**	**5,1%**	**2,8**

Figure 39: own creation of appendix 9, source: Eurostat 2017, IMF 2017, World Bank 2017

As argued throughout the thesis, the Scandinavian airline industry have changed rapidly in the last decade. To reflect the most recent market trends, and not add the negative effects of the financial crisis to the analysis, data from 2010 to 2016 in Scandinavia will mainly be discussed and used for forecasting purposes. As shown in figure 39, Scandinavia’s passenger volumes grew 2,8 times more than GDP from 2011 to 2016, which is more than globally where the

[7] Ddefined as cities with more than 10000 daily flights at distances greater then 2000 nautical miles

difference was 2,1 times more growth in passengers compared to GDP growth. The author argues that the larger difference in passenger growth relative to GDP growth in Scandinavia can mainly be attributed to two factors, Scandinavia's high-incomes and its topography.

Scandinavia enjoys a high level of economic prosperity. It is fair to assume that below a certain level of income people and businesses priorities other activities rather than flying. As disposable income increase, a part of peoples and businesses income becomes available for air travel. A 1% increase in GDP in Argentina or Afghanistan increases income, but that income is not used for air travel as the living standards are lower. In Scandinavia, the propensity to fly (annual trips by air per capita) in 2016 was 2,13 in Sweden, 2,65 in Denmark and 4,65 in Norway, as compared to Argentina where it was only 0,38, and Afghanistan, where it was only 0,04 (Airbus, 2016). The rapid growth in passenger volume in South-East Asia (Airbus 2016) furthermore gives credence to the argument, as living standards are increasing rapidly on the continent, which means more households' income are available for air travel. Secondly, the topography in Scandinavia makes other travel alternatives inefficient and time consuming, which increases the demand for flights (SAS 2016).

Norway's propensity to fly in 2016 was more than twice as high when compared to Sweden, and almost twice as high when compared to Denmark. Norway Is the country in Scandinavia with the most difficult topography, with high mountains and the lowest quality of land based infrastructure. The fact that Norwegians flies significantly more than Swedes and Danes gives credence to the argument that Scandinavia's topography place a part in passenger volume growth.

Denmark had the lowest annual GDP growth in Scandinavia from 2010 to 2016, but the highest annual growth in passenger volumes. One explanation for Denmark's passenger growth is Copenhagen airport. It is the region's most important airport, and as previously mentioned, is estimated to become a mega aviation city in the next decade. It is therefore a vital part in SAS' and other airlines' hub-and-spoke network. Denmark's passenger volumes are therefore also driven by GDP growth in the rest of Scandinavia and Europe. Figure 49 shows the division of nationality of passengers that flew from and to Copenhagen airport in 2016. Only 56% of passengers that flew from Copenhagen Airport was of Scandinavian decent.

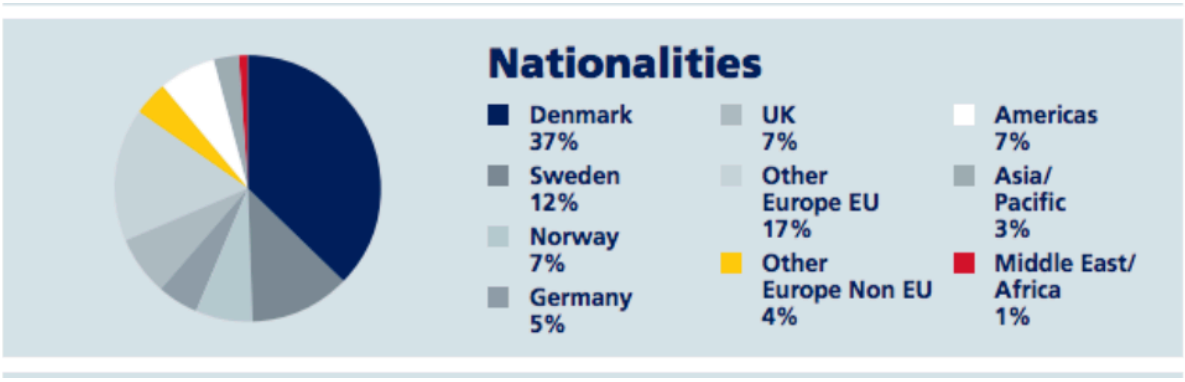


Figure 40: source, CPH 2017

Appendix 9 presents regression analyses of each countries' individual annual GDP growth and passenger growth from 2007 – 2016 to determine the degree of correlation. A orrelations of 0,92

and 0,62 was found for Denmark and Sweden respectively. However, for Norway a correlation of 0,28 was found. The significantly lower correlation in Norway is clearly visible when one compares the graphs in figure 38 (p. 49). This is not unexpected due to Norway's topography. As there are less reliable and efficient alternatives to travel throughout the country, Norwegians travelers are resilient to change in GDP. This is interesting in terms of Norwegian and its rapid expansion. Could there be a better market to set up a new airline, then one where passenger volume grows despite changes in GDP? This would lower the risk significantly. While it is an interesting thought, it will not be discussed further since the focus of this thesis is SAS.

Oil prices

SAS jet fuel expense was 19% of total operating expenses in 2016, which makes the development of price in jet kerosene prices an important driver of profitability. Figure 41 shows the development in the price of crude oil (USD/barrel), Jet kerosene (USD/barrel) and SAS fuel expense relative to ASK for the last decade. As demonstrated, the price of jet kerosene is highly dependent on the price of crude oil. Approximately 10% of crude oil in US is at the end of a supply chain used to power aircrafts (Petro Industry News 2014). Using regression analysis, a correlation of 0,98 was found between trend in crude oil and jet kerosene price (appendix 10.2). On average the price of Jet kerosene was 18,2% higher than that of crude oil during the period (appendix 10.1).

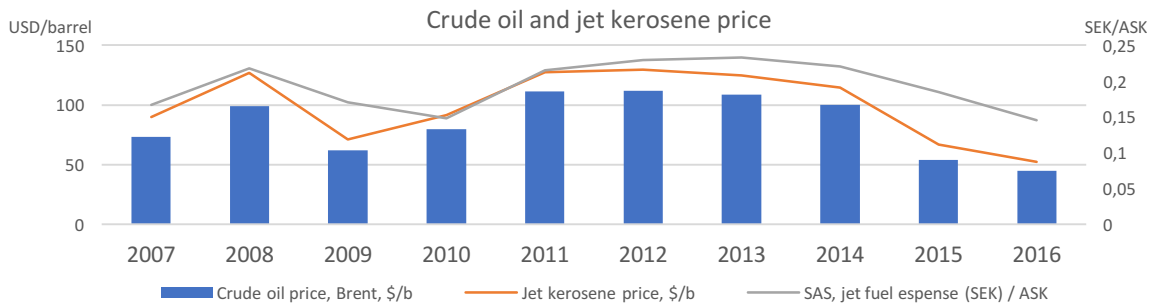


Figure 41: own creation of appendix 10.1, source: IATA 2016 and SAS, 2016

Since 2014 the price of fuel has more than halved, which has had material impact on SAS' operating cost. There are three main reasons for the recent volatility and lower prices for oil (Amadeo 2017).

1. OPEC reduced output, which meant that US production of shale oil and alternative fuel increased significantly, giving rise to excess surplus.
2. Global demand for oil grew more slowly than anticipated.
3. Oil is paid in USD. Most oil-exporting countries therefore peg their currency to USD. The increase in the value of USD in 2014 and 2015 therefore lowered the price of oil for exporting countries.

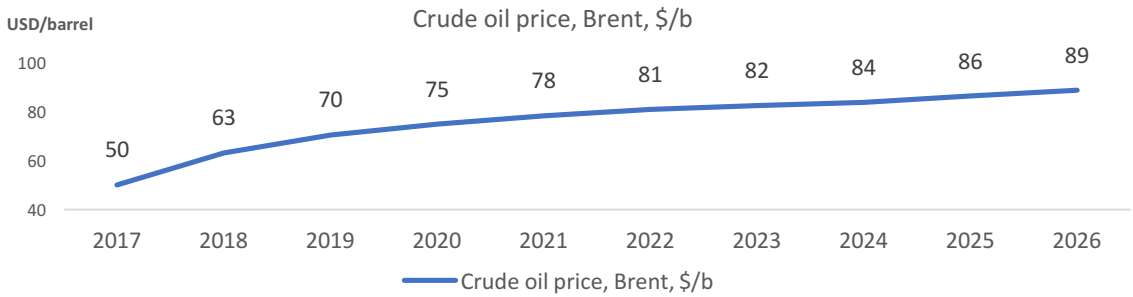


Figure 42: own creation of appendix 10.3, source: EIA 2017

While SAS hedging of fuel prices lowers the short-term risk of price fluctuations, the long-term development of the price of crude oil will be the main driver of SAS' fuel expenses. Figure 42 shows the US Energy Information Administration's (EIA) long term predictions on the price for one barrel of crude oil in USD. It predicts that by 2027 the price will increase to almost 90 USD/barrel. While this will put pressure on SAS' operating expenses, in the long-run it will do so for its competitors as well, regardless of difference in hedging policy between airlines. These are important insights in forecasting SAS' future fuel expense.

Currency risk and interest rate risk.

SAS is exposed to both currency and interest rate risk, and uses derivatives to combat both. Figure 43 shows SAS revenue and expenses in different currencies. Fluctuations in in SEK, NOK and USD have great impact on SAS operations and the historical low repo rate in Sweden have weakened the Swedish crown, while the lower oil prices have led to the weakening of the NOK in 2016 (SAS, 2016).

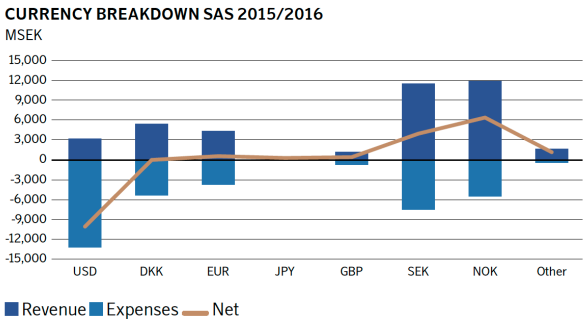


Figure 43: source SAS, 2016

Figure 44 shows the development in Swedish repo rate, yield on a Swedish and Norwegian 10-year government bond, and yield on a 10-year US treasury bill. The low interest rates and yields have driven cost of debt down. Since the airline industry is capital intensive, a small increase in interest rates have material impact.

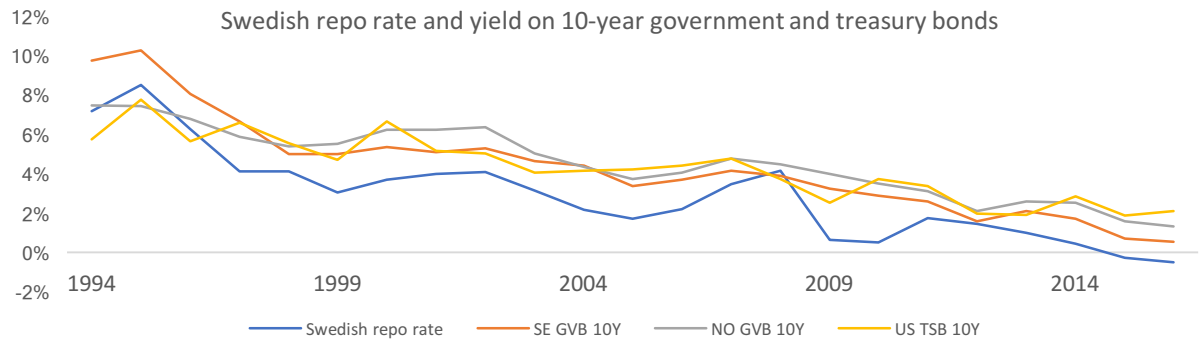


Figure 44: own creation of appendix 13, source: Norges Bank 2017, Multpl 2017, Riksbank 2017, Riksbank B 2017

While exchange rates and interest rate are important factors that affect SAS, they will not be discussed further for three reasons. Firstly, the effect of fluctuations in currencies will already be somewhat incorporated when forecasting fuel prices. Secondly, the risk of increased interest rates is incorporated in the estimation of required return (WACC) (Chapter 8). Thirdly, SAS manages these risk by hedging.

5.1.3 Social factors

Globalization is an important factor, and have been the main driver for the large increase in demand for air travel across continents. Airbus estimates that Africa, the Middle-East and Asia-pacific will experience significantly higher growth in RPK then the rest of the world (Airbus, 2016). This give rise to both threats and opportunities for European airlines. SAS might find it more difficult to compete on long-haul routes in the future due to the expansion of existing airlines and new airlines in these developing regions. Nevertheless, it also brings about opportunity. Finnair have expanded its WB aircraft fleet, and as part of its core strategy it aims to connect not just Finland, but all of Europe to Asia (Finnair 2016 p.3), so some NLAs are currently exploiting the opportunity. SAS has opened 4 new long-haul routes in 2 years, and increased number of flights to long-haul destinations to further capture the trend (SAS, 2015 & 2016).

Leisure travels is the segment that have grown the most in recent years, and is forecasted to do so in the future. In Scandinavia, it has grown 8% annually since 2010, while business travels have grown 1-2% (SAS, 2016). This introduce a challenge as leisure travelers are more price sensitive which lowers margins. The disproportional growth in this segment is one of the factors that have driven the success of LCCs and the need for SAS to significantly lower prices.

5.2.4 Technical factors

Technological developments have brought about both increased efficiency and profitability for the airlines, as well as additional comfort the passengers. Today's commercial aircraft are less noisy, faster, have longer range and often include capabilities such as Wi-Fi and entertainment systems. The most prominent development in aircraft technology are aerodynamic and engine technology. Both of which have lowered fuel consumption. In the last ten years, it is estimated that aircrafts have become up to 20% more fuel efficient (IATA C 2017). While this is a positive development, it is to some extent a source of disadvantage for NLAs as their fleets are almost twice as old on average (appendix 17). As LCCs and EGAs expand rapidly the difference in average age of fleet will only increase when compared to NLAs.

SAS has in recent years digitalized large part of its operations to gain efficiency and increase the quality of its services. It has amongst other things built a new website and all cabin crew now use iPads to increase efficiency in their work. The author however argues that it is questionable if these initiatives will bring about lower cost or add additional value that could translate into increased ticket prices. There is a case to be made for SAS need to implement these changes, due to risen expectations of passengers. It will possibly therefore only add costs.

5.2.5 Environmental factors

Between 1980 and 2005 emission of CO2 from air traffic grew more than 80%. Since then growth has leveled since aircrafts have become more fuel efficient. Emission are therefore not increasing at the same rate as passenger volumes. Still, with the rapid forecasted increase in demand for air travel there are real environmental concerns.

All European airlines are currently included in the EU Emissions Trading System, which follow the directives from The International Aviation Organization (ICAO) on environmental regulation for the global airline industry (EU Commission 2017). As part of the regulation airlines must pay emissions rights for the effect it has on the atmosphere. In 2016 SAS emissions right fees amounted to 88 million SEK (SAS 2016). From 2020, the new global regulations CORSIA (Carbon Offsetting Scheme for International Aviation) will gradually replace the old one (IATA D 2017). The effect this will have on emissions fees for airlines are still not clear (SAS 2016).

Other environmental concerns for the airline industry are, amongst others, epidemics and natural disasters. Except for the SARS epidemic in 2003 (where annual passenger growth was close to zero), these factors have not had any material impact on growth in global passenger volumes (World Bank B 2017). Nonetheless, on regional and state level they do threaten profitability. During the 2005 tsunami in Thailand SAS operated on Bangkok. The event obviously decreased profitability on the route for some time.

5.2 Porters five forces

Porter argues that an industry's structure, and how competitors interact within it, are largely determined five forces. By applying the framework one can therefore determine the attractiveness of and industry. These will be discussed in this section.

5.2.1 New entrants

Government regulation and policy can often be a substantial barrier to entry (Porter 2008). Before the deregulation almost all airlines in Europe were fully or partially state owned. This created a barrier, and the heritage is arguably still a barrier. SAS state aids in 2009 – 2012 are just some of many instances where European NLAs have gotten aid to avoid bankruptcy. Despite these government interventions, LCCs and EGAs still managed to grow rapidly.

As the industry is highly capital intensive it creates a barrier to entry. In 2014, the smallest Airbus cost 71,9 Million USD, while the largest one cost 414 million USD (Ingham D 2014). This may be one of the reasons for the lack of WB aircrafts in LCCs' fleets across Europe, with the notable exception of Norwegian. As LCCs becomes more established in the market they may be able to raise the capital need to start operating long-haul, which is a potential future treat to NLAs. However, RyanAir as the first major LCC in Europe, have not entered the long-haul market, which brings some hope for the future for NLAs. The industry is furthermore labor intensive, and requires labor with specific skills, such as mechanics and pilots. This adds a barrier to entry, particularly in Scandinavia where labor is highly unionized.

One of the largest barriers to entry is the current system of allocating landing and take-off slots at airports, also known as grandfather rights. In accordance with IATA regulation an airline can keep a slot if it is utilized at least 80% the previous years. Many of these slots have been kept by NLAs since before the deregulation. When there are free slots available IATA reallocate them at no cost, and 50% are supposed to be allocated for new airlines to use the airport. However, since 2008 it has been allowed to trade slots, with one at Heathrow airport being traded for as much as 75 Million USD. At Heathrow airport only 0,4% of slots have therefore been allocated to new entrants by IATA in recent years. It is estimated that established airlines in Europe earn 2,1 billion USD every year due to the increased prices they can charge for tickets during times with high demand. In Asia and the US there is currently talk of changing the standard, which could have a large impact on European airlines' operating expenses and lower barrier to entry (The Economist, 2017).

Other barriers to entry include alliance memberships, the know-how of established airlines and education of highly specialized labor. Most entrants in Europe are therefore not new startups, but rather M&As, low-cost subsidiaries of NLAs.

5.2.2 Substitutes

According to research made by Frost & Sullivan in 2016, the market for global web-conferencing service is expected to grow at a CAGR of 8,4% until 2020 (Jain, 2016). This may put downward pressure on the growth for in business travels. However, as the segment for leisure travel is growing considerably faster, it mitigates the threat of video-conferencing on the industry.

Other substitutes include other forms of physical transportations such as car, busses and trains. There is currently plans of building high-speed train rails between Sweden three largest cities, which would decrease the travel time to down to 2,5 hours between the destinations (Trafikverket, 2017). While domestic routes for SAS constitute 30% of its revenue (SAS 2016), railway construction are expensive and take a long time to complete. While new rails might put pressure on volume and price on specific routes, it will not have material impact on SAS overall profitability due to the regions topography.

5.2.3 Buyers bargaining power

There is a difference between the purchasing power of business and leisure travellers. As individuals, Leisure travellers have low bargaining power as the volume they purchase (a flight ticket) has no material impact on the airline's revenue (Porter 2008). Also in the short-term leisure travellers as a group have little bargaining power. ASK and other operational factors are planned and set by the airlines on an annual basis or even longer. Supply is thereby fixed in the short-term. nonetheless, as a group and over they have significant bargaining power. The rapid growing segment of leisure travellers are price sensitive, which makes it difficult for airlines to add value through diversification of its services. With an abundance of price comparison websites, such as Momondo, there is considerable transparency and the switching cost is therefore low.

Frequent flyer programs, and the possibility to use them across an alliance, creates some switching cost and incentive for passengers to be loyal. In 2016 SAS had 4,7 million Eurobonus members, with a step annual growth in the number of members (SAS 2016). SAS strong focus on frequent flyers as part of its core strategy therefore combat the low switching cost somewhat, but it is mostly valuable for business travellers. Business travellers have lower bargaining power as they demand more and are less price sensitive. Due to large corporate contracts with airlines they do however possess relatively high bargaining power, as these contracts bring with them large volumes in one transaction (Porter 2008).

5.2.4 Bargaining power of suppliers

There are four main suppliers for airlines in the industry; aircraft manufacturers, airports, labour unions and fuel suppliers. There are only two aircraft manufacturers with the capabilities required to supply most commercial airline, Airbus and Boeing. This gives them bargaining power. The training of pilots, mechanics and other personal in different aircraft types are also expensive, which makes

switching cost high. SAS currently aims to only operate airbus in the future. Homogeneity of fleet was one of the value drivers identified for LCCs in chapter 2.

Boeing and Airbus are on the other hand in fierce competition. The high cost, long production time and significant R&D cost to produce an aircraft means that even the loss of small purchases leads to significant loss. They are also under heavy regulatory pressure in terms of environment and safety, which puts downwards pressure on their profit margin. The size of an aircraft also means that inventory is expensive. This makes the turnover of sales important and puts downward pressure on their bargaining power.

Airports that commercial airlines can operate on are scarce in Europe. Large cities, such as London, have multiple airport, but most (such as the Scandinavian capitals) only have one major airport. Airport fees also constitute a significant portion of airlines' operating expense. As previously mentioned, government fees (which include airport charges) was 12% of SAS' total operating cost in 2016. For these reasons the EU adopted a common framework in 2009 which regulate airport charges and discriminating behaviour (EU Commission B,2017).

Scandinavia is characterised by high degree of labour unionization. In 2016 70%, 67% and 52% of employees were members of labour unions in Sweden, Denmark and Norway respectively (worker-participation.eu A, B & C 2017). This is significantly higher than the EU average of 23% (worker-participation.eu D 2017). This have given employees considerable bargaining power, and led to many labour strikes by SAS employees. In 2016 more than 220 flights were cancelled due to a strike by Swedish pilots (Thornéus, 2016). This cost SAS approximately 80 million SEK in 2016 (Omni, 2016). Despite the labour unions power, SAS has been successful in renegotiating its employees' collective agreements, and as demonstrated in the profitability analysis, SAS has lowered its payroll expense significantly in recent years.

While jet fuel suppliers have some bargaining power, in the PESTE analysis it was established that the price of jet kerosene largely follows the price of crude oil, which means jet fuel prices are mainly affected by macro-economic factors, not bargaining power of the suppliers.

5.2.5 Competitive rivalry in industry

The degree of competitive rivalry in an industry are mainly shaped by five factors, competitor balance, industry growth rate, portion of fixed cost, high exit barriers and low switching cost due to lack of possibility to differentiate (Johnson et al, 2014).

Competitor balance has changed in the last decade. Rivalry increases with the number of large competitors, often resulting in price wars (Johnson et al, 2014), which is what has characterised the commercial aviation industry. As Norwegian has gained market share, SAS has had to lower prices and cost to stay competitive.

As previously shown, **there has been significant growth** in passenger volume in the last decade, which is a trend that is forecasted to continue. This lowers rivalry in the industry (Johnson et al,

2014). However, there has also been significant growth in the number of commercial airlines, and as globalisation increase it is reasonable to assume that there will be more rivalry on international flights, especially to and from high growth regions Asia, Middle-East and Africa.

The airline industry is **characterised by high fixed cost** and large capital investments. This increase the rivalry in the industry as airlines must keep up the volume of passengers to cover costs, which NLAs have largely done by cutting prices to combat LCCs.

Due to considerable investments and the vitality of the infrastructure airlines provide, **the exit barriers for airlines are high**. This increase rivalry as players will not drop out at the first sign of trouble (Johnson et al, 2014).

Airlines try to differentiate, and can do so to some degree, particularly for business travellers. Nevertheless, the larger growth in the leisure market means that there is a **limited ability to differentiate.** This lower switching cost and increase rivalry (Johnson et al, 2014).

5.2.6 Summary of Porter's Five Forces

The industry after the deregulation has gradually become riddled with fierce competition, which has forced NLAs to transform to the new market conditions**. The barrier to entry is argued to be moderate to high,** mainly due to the high capital required to operate, the difficulty for new entrants to acquire attractive airport slots, and the presence of established alliances. Despite this, the last decades have been characterised by a large quantity of new entrants into the market. Still, there is a limit on how many new airlines that will be introduced in Scandinavia for the foreseeable future, if any. The threat is rather new airlines in other regions gaining market share in Scandinavia, especially on long-haul flights to and from developing regions.

While three is a threat of substitute from the enhancement of video technology and high speed trains, there still exist a high demand for air travel, especially in Scandinavia due to its difficult topography. **The threat of substitutes is therefore argued to be low.**

The transparency of prices through search engines, the price sensitivity in the high growing segment of leisure travel, and the low switching cost **makes the bargaining power of passengers high**.

The industry is characterised by significant long-term contract with multiple stakeholders, which makes bargaining with suppliers difficult if demand fluctuates in the short-term. There are only two aircraft manufacturers that can handle the capabilities required for commercial airlines, but these are in fierce competition. Airports that commercial airlines can operate on are furthermore scarce in Europe. The high degree of unionization amongst labour is arguably one of the larger threats to airlines, this is particularly the case in Scandinavia. SAS and other European airlines has still managed to significantly cut labour costs. **The bargaining power of suppliers are for these reasons considered moderate to high**.

Suppliers' and passengers' bargaining power have created significant rivalry in the industry for the last two decades. While there is significant growth, airlines have high fixed, and with the entrance of

new airlines it has been one of the primary drives that have forced NLAs to rethink their business models. There will however always be high fixed cost in the industry and limited ability to differentiate as passengers are price sensitive. **In summary, the competition in the industry is argued to be high.**

5.3 Internal analysis (Value Chain Analysis and VRIO)

The purpose of this section is to identify what gives rise to competitive advantage for SAS. It will analyse SAS internal activities and identify what creates value in the organisation, where it is created, if SAS is exploiting that value, and if it can it be easily copied by competitors? In doing this a value-chain analysis will firstly be performed, and secondly a VRIO analysis will act as a summary of the section.

5.3.1 Value Chain Analysis

In 1985 porter developed a model which identifies the key activities that companies perform, how these are related, and how these create value (IfM, 2017). He argues that activities should be divided into primary activities, which is directly concerned with the creation and delivering of the service, and supporting activities, which help to improve the effectiveness or efficiency of primary activities (Johnson et al, 2014). Figure 45 shows the identified activates for SAS. Many of these activities have previously been discussed, and to not repeat the argumentation is therefore brief.

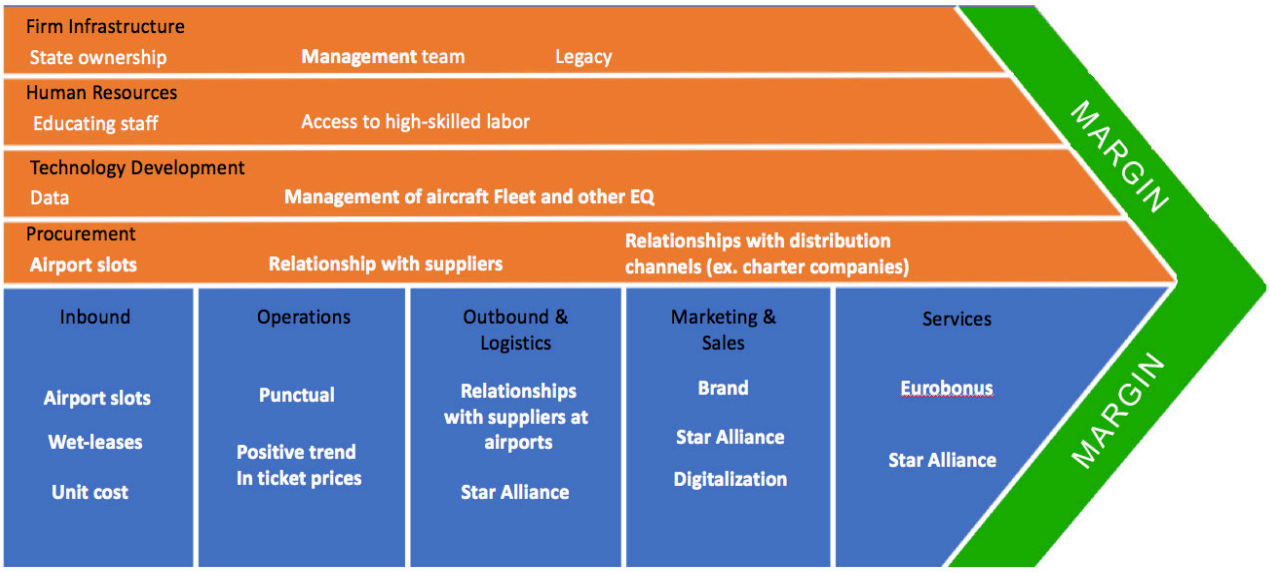


Figure 45: own creation

Support Activities

Firm Infrastructure: The governments state ownership, SAS' management team and its legacy are all factors that supports SAS' operations. The state ownership adds value in that it brings stability and confidence to the airline in the public sphere, as well as potential aid in financial distress. It is also likely that government ownership adds access to vital resources, even though SAS officially operates in autonomy of the governments. As already discussed, government ownership may be reduced further in the future.

The management team lead by Rickard Gustafson is another source of value. Mr. Gustafson had extensive experience when joining SAS, and has succeeded in transforming SAS to the point where it todays operate with ROIC above WACC, which means it creates excess return. The CEO recently got an annual salary increase of 2,4 million SEK (Hagnestad, 2017). Although criticised by the labour unions, the board evidently deems him valuable.

SAS legacy has both been a source of disadvantage and advantage. As argued thought the thesis, it has amongst other things meant that SAS has inherited an unsustainable cost structure. But is has put in place vital operational advantages, such as SAS relationship with the Scandinavian airports and Star Alliance.

Human resource management: Training pilots and other human resources are expensive. Licensing one pilot for an aircraft cost approximately 30000 GBP (Flightdeckfriend.com, 2017), The training of mechanics and other personal directly involved with the aircrafts are expensive as well, and the required skills are specific. SAS has over 70 years of experience in the management and education of personal. SAS also have access to labour with extensive experience, despite massive lay-offs since the de-regulation.

Technology development: SAS has access to the data required to operate an airline. Throughout its history, it has collected both quantitative and qualitative data that helps it operate as efficiently as possible. It also has the know-how to operate highly technical machinery, such as the aircrafts and ground handling equipment.

Procurements: SAS has through its history built up relationships with its key suppliers, which was identified and discussed in the industry analysis. In an industry where there is a low quantity of key suppliers, it is vital to have good relationships with these. As previously mentioned, one of the more valuable procurements in the industry are airport slots, which SAS has acquired throughout its extensive history.

Primary activities

Inbound Logistics: As the thesis is only based on public data it is difficult to assess whether SAS uses its inputs in an efficient way. SAS' increase in wet-lease contracting may be an important step in building a flexible operating platform. SAS is furthermore contracted by large leisure travel agents in Scandinavia to operate on their destinations. Revenue from charter contacts amounted to 5,9% of total traffic passenger revenue in 2016 (SAS, 2016). SAS increase in operating flexibility in terms

of cost, and lower unit cost, can also be attributed to a more efficient management of inbound logistics.

Operations: SAS operating platform enabled them to be the most punctual airline in Europe from 2009 – 2011, and are still aiming for high degree of punctuality (SAS, 2016). Punctuality is important for business travellers, as well as for all NLAs in general as they operate in a hub-and-spoke network with a large number of connecting flights. Its recent effort to digitalize internal processes has also brought with it increased efficiency in managing it operations.

Outbound logistics: SAS relationships and contracts with key stakeholders at airports are a source of value, especially since SAS sold most its own ground handling operations in 2013 (Weiss, 2013). This include aircrafts hangars, maintenance of aircrafts, and catering and other consumables that need to be loaded before a flight. SAS membership in Star Alliance and relationship with travel agencies aids SAS in distribution of its services, which is highly valuable.

Marketing and sales: SAS has been part of negative media coverage, not the least during its many labour strikes. Despite this, SAS is a strong and is a well-established brand in, which is used in its advertising and communications with passengers. Its alliance membership furthermore adds marketing and sales opportunity. SAS recent digitalization enhancements are an opportunity to increase marketing and sales.

Service: Through its frequent flyer program SAS identifies loyal customers and reward them with services such as upgrades on flights, lounges and flexibility in rebooking. Its alliance membership furthermore adds extra services of a larger network.

5.3.2 VRIO

To what degree the capabilities and resources from the activities found in the value chain analysis gives rise to sustained competitive advantages will be presented using the VRIO framework. For each resource, it will be questioned whether is valuable? is it rare amongst competitors? Is it hard or costly to imitate? And is the organisation geared toward exploiting the resource or capability? If a resource ot capability meet all requirements it can provide competitive advantage.

As argued thought the thesis, SAS' market is both global and Scandinavian. In a global market, it is questionable if any of SAS' resources or capabilities are rare or difficult to imitate. For the purposes of the analysis only actors that operate in Scandinavia will therefore be considered when answering these questions.

Figure 46 summarise the analysis. Resources and capabilities that gives rise to sustainable competitive advantage for SAS are its relationships with suppliers, grandfather rights at airports, star alliance membership, the SAS brand, and frequent flyer program (Eurobonus). Its state ownership and legacy are sources of competitive advantage, but as discussed throughout the thesis, they are also sources of disadvantage, particularly SAS legacy.

VRIO					
Resource/Capability	Valuable	Rare	Difficult to imitate	Exploited	Competitive implications
State Ownership	Yes and No	Yes	Yes	Yes	Competitive advantage and possibly disadvantage
SAS Management	Yes	Yes	Not in the long-run		Temporary competitive advantage
Legacy	Yes and No	Yes	Yes	Yes	Competitive advantage and disadvantage
Quantitative and qualitative data, and general know-how of operations	Yes	Yes	Not in the long-run.		Temporary competitive advantage
Processes in training of pilots and in the maintenance of aircrafts and other equipment	Yes	Yes	Not in the long-run.		Temporary competitive advantage
Relationship with suppliers	Yes	Yes	Yes	Yes	Sustained competitive advantage
Relationship with Distribution channels	Yes	Yes	Not in the long-run		Temporary competitive advantage
Grandfather rights	Yes	Yes	Yes	Yes	Sustained competitive advantage
Wet-lease contracts and contracts with travel agencies	Yes	Yes	Not in the long-run		Temporary competitive advantage
Positive developments in towards a flexible cost structure and lower unit cost	Yes	No			No competitive advantage
High degree of punctuality	Yes	Yes	Not in long-run		Temporary competitive advantage
Star Alliance membership and Eurobonus	Yes	Yes	Yes	Yes	Sustained competitive advantage
Long-term relationships and contracts with stakeholders at airports around the globe	Yes	Yes	Not in long-run		Temporary competitive advantage
SAS Brand	Yes	Yes	Yes	Yes	Sustained competitive advantage
Digitalization of production platform and passenger journey	Yes	No			No competitive advantage
Eurbonus (Frequent flyer program)	Yes	Yes	Yes	Yes	Sustained competitive advantage

Figure 46: own creation

Chapter 6: SWOT

The financial statement analysis, profitability analysis and strategic analysis have shed light on SAS historic performance and given vital insights for forecasting in the following chapter. These insights have been summarised in the SWOT table below. It highlights SAS' strengths and weaknesses, as well as threat and opportunities in the industry and macro environment.

SWOT	
Strengths	**Weaknesses**
Government ownership	Government ownership
Grandfather rights	High average age of fleet
Star alliance membership	Higher unit costs then peers and competitors.
Eurobonus frequent flyer program	Higher ticket prices then peers and competitors
Digitalized operating platform and passenger journey	High degree of labour unionization
Well-known brand name	
Relationships with suppliers in an industry characterised by few suppliers.	
Opportunities	**Threats**
The gradual sale of more shares by the Norwegian and Swedish governments	The gradual sale of more shares by the Norwegian and Swedish governments
High growth rate in passenger volume, especially the segment for leisure travel.	Forecasted increase in fuel prices
Growth in passenger volume in Norway not closely correlated to GDP	New and increased flight taxes in Norway and Sweden
Copenhagen forecasted to become a mega aviation city	New CO2 regulation CORSIA
Globalisation and growth in developing markets	Enhancements in video conferring
Scandinavia's high level of economic prosperity and income per capita	Political unrest, terrorist attacks and environmental disasters
Scandinavia's topography	Interest rate increase and exchange rate fluctuations
	High growth, entrance of new airlines and expansion of existing airlines in developing markets
	Further regulation in a highly-regulated market
	inability to add significant value through differentiation for leisure travellers

Figure 47: own creation

Chapter 7: Forecasting

In the following chapter, SAS' pro forma statements will be forecasted. The forecast rest on the historic insights from the profitability analysis, where financial value drivers where analysed, and the strategic analysis, where strategic value drivers, the macro-environment and industry was discussed. There are numerous methods for designing pro forma statements, one of which is the line-item approach. Using this method all items on the statements are forecasted separately. In this thesis, most items will be forecasted by using the sales-driven approach, hence most items are forecasted directly or indirectly relative to passenger revenue. Some items, such as jet fuel expense, will be forecasted independently of passenger revenue.

Koller et al. (2010) states that the forecasting period should long enough for the company to reach a steady state, where it grows at a constant rate and earns a constant return on capital. This is challenging in terms of SAS. As discussed in the strategic analysis, passenger volumes have been growing significantly more than GDP for the past decade, and as will be presented in the forecast, it is expected to continue to do so until at least 2031, and probably longer. A forecasting period of ten years will be applied in the thesis, but it is assumed that it SAS will not reach a steady-state by 2026. The assumptions for the terminal period will therefore be fundamentally different then for 2026, to not overvalue SAS.

7.1 Revenue

While SAS earns revenue from other activities then passengers, the transportation of passengers is its core business. In 2016 85% of traffic revenue, and 90% of total revenue, came from passengers (SAS 2016). The focus of this section will therefore be to forecast SAS passenger revenue, while other revenues will be forecasted as a percentage of passenger revenues. Growth in passenger revenue is a function of growth in total passenger volume (RPK), any change in SAS' market share, and change in ticket prices. The relationship is shown in the formula below. Each of these components will be discussed in detail, as deriving solid revenue figures is vital in a sales-driven forecasting approach. The complete calculation of passenger revenue based on the assumptions in this section are found in appendix 15.1.

$$Passenger\ revenue\ growth = \ (growth\ passanger\ volume\,[RPK] \times \triangle\, market\ share) \times \triangle\, ticket\ price$$

In the strategic analysis, a strong correlation between growth in passenger volume and GDP was established. An exception is Norway where Norwegians propensity to fly and growth rates seems resilient to change in economic growth. 70% of SAS' revenue stems from Scandinavia. SAS does not disclose how it defines "Scandinavia". Is it people living in Scandinavia, Scandinavian citizens or some other definition? Despite the ill-defined term, 70% of SAS revenue will be forecasted using Scandinavian GDP as a benchmark, while the remaining 30% will be forecasted using global GDP.

7.1.1 Growth in Scandinavian traffic (RPK)

In forecasting the Scandinavian part of SAS revenue two facts are important to highlight. Firstly, the goal is to forecast growth in RPK, secondly, it is not necessarily people that travel in Scandinavia which the forecast tries to estimate. If a passenger flies from Dubai to London with a connecting flight in Copenhagen, the passenger is not part of SAS' potential RPK growth in Scandinavia. As previously established, each Scandinavian country have experienced different historical growth rates, and as such it is necessary to forecast each countries RPK growth separately and add then add them together to get a fair representation of Scandinavian RPK.

Firstly, the relative size of the Scandinavian airline markets must be estimated, secondly the relationship between GDP growth and RPK growth must be established in each country, and thirdly forecasted GDP growth in each country must be estimated, lastly these factors must be weighted and added to derive a forecasted RPK growth in Scandinavia.

The relative size of each Scandinavian market has been determined using population data and propensity to fly (flights per capita) (Airbus, 2016). Only data from 2016 have been collected, and the relative size of each market is assumed to stay constant during the forecast and terminal period. In the strategic analyses, there was nothing to indicate that the relative propensity to fly would change significantly between the countries in the future. Differences in population growth is also argued to be minimal.

Figure 48 shows the calculation. Intuitively these numbers seem reasonable. Norway is much smaller then Sweden, but has a higher propensity to fly, which makes it the largest market. Denmark has a slightly higher propensity to fly, but is a significant smaller country then Sweden, it therefore the smallest market.

Relative market size, Scandinavia

	Sweden	Norway	Denmark
A. Population 2016 (000)	9903	5233	5731
B. Propensity to fly, trips per capita (2016)	2,1	4,6	2,7
A * B	21105	24312	15201
Total market size (000)	60618		
Weighted market size	**35%**	**40%**	**25%**

Figure 48: own creation, source Airbus 2016 & World Bank C

In the strategic analysis, a "passenger growth to GDP growth factor" was introduced, which is a multiplier that express the higher CAGR in passenger volume when compared to annual GDP growth. This multiplier is hence forth known as the RPK-to-GDP factor. The data used as a proxy for RPK in chapter 5 was Eurostat's "passenger onboard", which is not a faultless proxy as it includes non-revenue passengers, and passengers that fly in Scandinavia but that or not considered potentials for RPK growth in Scandinavia.

As a network hub, only 56% of passengers of passengers passing through Copenhagen airport was of Scandinavian nationality. While it is reasonable to assume that some of the foreigners should be included in estimating RPK growth in Denmark, the historic CAGR in RPK have been multiplied by 0,6 to compensate for non-revenue

Passenger to GDP factor

	CAGR GDP (2010 - 2016)	CAGR RPK (2010 - 2016	Adjusted CAGR	Passenger GDP factor (adjusted)
Sweden	1,2%	5,0%	3,0%	2,5
Norway	1,5%	4,2%	3,3%	2,2
Denmark	2,2%	5,0%	4,0%	1,8
Scandinavia	1,7%	4,8%		

Figure 49:own creation, source IMF 2017 & Eurostat 2017

passengers in the data, and passengers that are not driven by Danish GDP growth. There is a lack of similar data for other airports, but at Oslo, Stockholm and other airports throughout the region it is assumed that the percentage of Scandinavian travellers are significantly higher as they are not hubs. Sweden and Norway's historical CAGR in RPK have therefore been multiplied by 0,8. Figure 49 shows the forecasted "RPK-to-GDP factor" using these assumptions.

Figure 51 shows forecasted RPK growth in Scandinavia. GDP forecast are based on IMF's estimates, which are only available until 2022 (IMF 2017). From 2023 to 2026 the averages from 2017 to 2022 have been applied. Each country's estimated GDP growth have been multiplied by its "RPK-to-GDP factor" to capture the larger growth in RPK relative to GDP, and the countries RPK have thereafter been added together relative to their market size to arrive at Scandinavian RPK growth.

Forecasted RPK growth, Scandinavia

Forecasted GDP Growth (IMF)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Sweden	3,1%	2,4%	2,1%	2,0%	1,8%	1,7%	2,2%	2,2%	2,2%	2,2%
Norway	1,4%	1,6%	1,9%	1,9%	1,8%	1,9%	1,8%	1,8%	1,8%	1,8%
Denmark	1,9%	1,8%	1,8%	1,9%	1,8%	1,8%	1,8%	1,8%	1,8%	1,8%

	Sweden	Norway	Denmark
Weighted market size	35%	40%	25%
RPK-to-GDP factor	1,8	2,2	2,5

Annual RPK growth = GDP growth * weidghted market size * RPK-to-GDP factor

Forecasted RPK growth, Scandinavia

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Sweden	1,9%	1,5%	1,3%	1,3%	1,1%	1,1%	1,4%	1,4%	1,4%	1,4%
Norway	1,2%	1,4%	1,6%	1,6%	1,6%	1,6%	1,5%	1,6%	1,6%	1,6%
Denmark	1,2%	1,1%	1,1%	1,2%	1,1%	1,1%	1,1%	1,1%	1,1%	1,1%
Scandinavia	**4,3%**	**4,0%**	**4,1%**	**4,1%**	**3,8%**	**3,8%**	**4,0%**	**4,0%**	**4,0%**	**4,0%**

CAGR RPK, Scandinavia 2017 - 2026	**4,02%**

Figure 51: own creation source IMF 2017 & Eurostat 2017

Based on these forecasts CAGR in RPK will be 4,02% in Scandinavia from 2017 to 2026. It was established that Norway's growth in RPK is not highly correlated with GDP, which is troublesome when forecasting based on economic growth. There are however no indications from experts that say growth will level of or decrease in the future, and in the strategic analysis it was established that Norway largely followed the passenger trends in Scandinavia (see figure 38, p. 49). The estimated RPK growth for Norway will therefore be applied to the forecast.

Figure 51 shows different experts forecast for RPK growth in Europe from 2016 – 2030, and from 2031 and beyond (Airbus and Boeing estimates are from 2036 and beyond). For reasons outlined in the strategic analysis, such as topography and income levels in Scandinavia, the author

Long-term forecasts, RPK Europe

	2016 - 2030	2031 -
ITF High	4,7%	3,2%
ACI & Boeing		3,7%
ITF Base	3,6%	2,86%
IATA		2,5%
ITF Low	2,2%	2,0%
Airbus	3,9%	2,9%
Average	**3,6%**	**2,9%**

Figure 51: own creation, source Airbus 2016, Boeing 2016, IATA G 2017 & ITF 2017

argues that the higher forecasted CAGR for RPK of 4,02% in Scandinavia from 2017 – 2026, in comparison to Europe's estimate of 3,6% from 2016 – 2030, are valid. In the very long-term RPK growth will decrease and gradually decline towards GDP growth as the market enters a mature stage, this will however take decades. Due to lack of data from experts on Scandinavia, RPK growth in the terminal period (for both global and Scandinavian RPK growth) will be set 2,86%, which is the one forecasted for Europe by experts in figure 51.

7.1.2 Growth in Global volume (RPK)

The remaining 30% of SAS' passenger revenue is not from Scandinavia. Figure 52 shows IMF's GDP growth estimates until 2026 (averages have been used from 2023 – 2026). In the strategic analysis, it was established that the global RPK-to-GDP factor was 2,1 in the historic period globally. Using these assumptions CAGR in RPK from 2017 – 2026 is 6,09%.

These estimates are considerably higher than some industry experts'. Airbus estimate that global RPK will grow by 4,9% annually for the next ten years 4,9% (Airbus, 2016), while Boeing estimates 4,7% global growth in annual RPK (Boeing, 2016). 30% of SAS RPK in the forecast horizon will therefore be forecasted as an average of Airbus and Boeing, which is 4,8%. **The terminal period is set to 2,86% (see previous paragraph)**

World RPK growth		
RPK-to-GDP factor	2,1	
	Global GDP Growth (IMF)	RPK growth
2017	3,1%	6,5%
2018	3,3%	7,0%
2019	3,3%	7,0%
2020	3,3%	7,0%
2021	3,2%	6,7%
2022	3,2%	6,7%
2023	3,2%	6,8%
2024	3,2%	6,8%
2025	3,2%	6,8%
2026	3,2%	6,8%
Forecasted CAGR, RPK (2017 - 2026)	6,8%	

Figure 52: own creation of appendix 8.2, source: World Bank 2017, IMF 2017, & IATA 2016

7.1.3 Market Share

In terms of market share there are two important factors. Firstly, SAS forecasted market share in the different Scandinavian countries must be estimated, Secondly SAS' market share in Scandinavia and globally must be estimated. Since 2013 SAS does not disclose geographical distribution of its RPK in Scandinavia. Figure 53 shows SAS share of departures from primary Scandinavian airports in 2016 (SAS 2016). As illustrated, share of departures are almost equal across the airports. It is therefore assumed that SAS market share in each country is the same in the forecasting and terminal period.

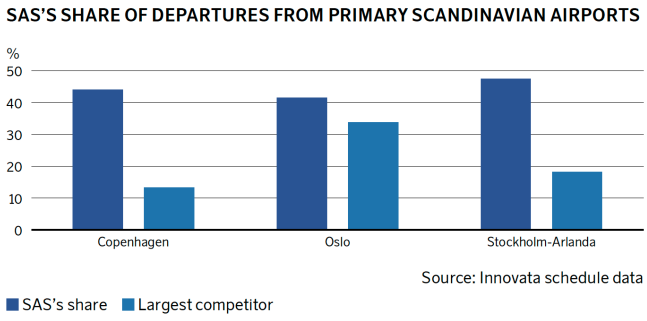


Figure 53: source SAS 2016

After more than a decade of expansion in Scandinavia, Norwegians growth in market share have stagnated in Scandinavia (figure 5, p. 9). SAS market share have grown in recent years, but from 2014 remained stable (figure 5, p.9). However, the difference in number of aircrafts ordered (or order options) between SAS and Norwegian are troublesome. Norwegian has ordered 255 aircrafts (including options), while SAS has ordered 41 (including options) (appendix 17). Nevertheless, Norwegian operates out of multiple bases globally, and it is reasonable to assume that most of the orders will be operated out of those. As previously mentioned, SAS has announced that it will start to operate out of London and Malaga from 2017 (SAS, 2016), but these are small operations in relation to overall production. While this could have material impact on revenue if SAS rapidly expands these kinds of operations in the forecasting horizon, it is expected that SAS core strategy will be to keep operating most its production from Scandinavia. In the forecasting and terminal period, it is assumed that SAS' will increase RPK as the market grows, but it will not capture any additional market shares in Scandinavia. Market share is therefore constant.

Globally there are numerous threats to SAS' market shares, especially in the long-haul segment. The rapid growth in the developing world have driven the expansion of new airlines in these regions. While it is a threat, most SAS passenger traffic stems from short-haul flights. Rapid growth in the developing world also give rise to opportunity for SAS to expand its long-haul operations, which mitigates the threat. SAS' global market share is therefore assumed to stay constant during the forecasting and terminal period.

7.2.3 Total passenger volume

Based on these forecasts, the CAGR in RPK for SAS in the forecast period will be 4,26% (assuming 70% RPK in Scandinavia, and 30% globally), while in the historic period it was 1,23% (appendix 15). As argued throughout the thesis. SAS was in crisis numerous time during the last decade, but as it has now re-captured it market share and market outlook are preferable, the higher CAGR in RPK during the forecast period seems valid.

7.2.4 Ticket prices

As a proxy for ticket price, passenger revenue divided by RPK was used in in the profitability analysis to express SEK earned per passenger flown one km. As discussed, prices in the industry seems to be converging. SAS has succeeded in operating at ROIC above required return despite considerable reduction in ticket prices, While LCCs and EGAs have slightly increased their prices in recent years. SAS ticket prices are however higher then peers and competitors in the comparison group. In 2016 SAS earned 0,82 SEK per passenger flown a kilometre, while other NLAs earned 0,74 SEK (figure 28, p.39)

It is forecasted that SAS will gradually start closing the gap between it and other NLAs in terms of ticket price in the forecast period to 0,75 SEK/RPK in 2026. Other NLAs will however continue to

push prices as well and drop below their current level 0,74 SEK/RPK, so there will still be a considerable gap between SAS and other NLAs. In the terminal period, it is forecasted that SAS' ticket prices will not change. As previously stated, SAS has numerous macro-environmental factors that SAS cannot control, which will keep its costs higher. This includes a high degree of labour unionization in Scandinavia and topography, which increases portion of short-haul flights. SAS will therefore likely not be able to fully close the gap between it and other NLA's with its current strategy and operations.

The prices must furthermore be adjusted for inflation. Forecasted inflation rates until 2022 have been collected from IMF (IMF 2017), from 2023 and in the terminal period average rate from 2017 to 2023 have been used. Ticket prices have been adjusted by the average forecasted inflation rate in Scandinavia.

Complete calculations of passenger revenue are found in appendix 15.1.

7.2.5 Core operating income

SAS other traffic have been forecasted as a percentage of passenger revenue. As is evident in figure 55, SAS non-traffic revenue (as a percentage of passenger revenue) have gradually declined for the last ten years from 22% in 2007, to 12% in 2016. SAS strategy have been to increasingly focus on its core business (SAS 2016), and in the forecast period it is therefore assumed that non-traffic revenue relative to passenger revenue will decrease from 12% to 8% in 2026. In the terminal period, it is estimated to stay constant at 8%. Complete calculations are found in appendix 15.2.

Other traffic revenue is set to 18% of passenger revenue, which was the relationship in 2016. Average of the historic period have not been used due to SAS major restructuring in the historic period.

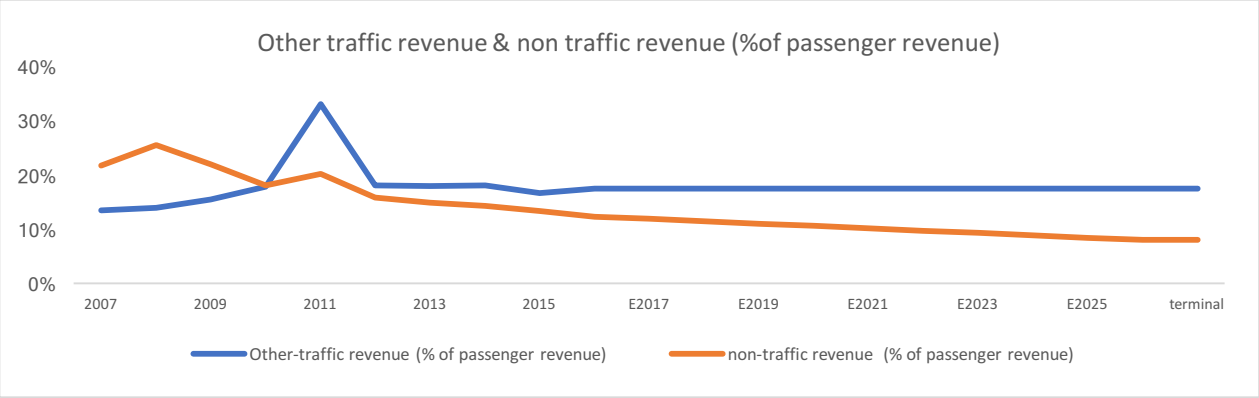


Figure 55: own creation of appendix 16, source SAS annual reports

7.2 Expenses

7.2.1 Payroll expense

As discussed in the profitability analysis, SAS has significantly decreased its payroll expense relative to ASK in the last decade to 0,19 SEK/ASK In 2016, it was however still higher than other airlines' in the comparison group (figure 30, p.41). SAS' CEO states in the 2016 annual report that;

"we need to do even more. We are therefore planning further structural actions aimed at generating a considerable impact. The first step is to establish a new organizational structure to create increased ownership, smaller and faster units, and greater transparency. We will thereby be able to implement further efficiency enhancements, over and above the reduction of 1,000 full-time employees (FTEs) in our administration by measures including outsourcing" (SAS, 2016 p.7)

In the forecasting period, it is therefore estimated that SASs payroll expense in relation to ASK will gradually decrease to 0,16 SEK/ASK by 2026 in equal compounded increments. In the terminal period, it is assumed to stay constant at 0,16 SEK/ASK. For reasons previously stated (amongst others labour unionization in Scandinavia), it is assumed that SAS will operate with higher labour costs then other NLAs in the terminal period.

In 2016 payroll expense was 23% of core operating income. Payroll expense will be forecasted as a percentage of income, but factor in the decrease in payroll expense in relation to ASK. The relationship is shown in formula below. The complete calculations are found in appendix 15.3.

$$Payroll\ \exp ense = \%\ of\ total\ core\ operatin\ income \times \triangle (payroll \exp ense / ASK)$$

7.2.2 Fuel Expense

SAS hedges 40 – 80% of its fuel expense annually for the upcoming 12 months. In the forecasting period, monthly fluctuations in the price of jet kerosene are therefore disregarded. As discussed in the strategic analysis, the price of Jet kerosene is highly correlated with price of crude oil, and SAS' fuel expense follows these fluctuations. It was furthermore established that during the historic period the mark-up on jet kerosene in relation to crude oil was on average 18,2%. In the forecast period, it is estimated that there is a perfect correlation between growth in SAS fuel expense and growth in crude oil price. Jet fuel expense will therefore not be forecasted relative to operating income.

Newer aircrafts are 15 -20% more fuel efficient than older once (SAS, 2016), fore forecasting purposes it is therefore estimated that new generation aircrafts are 15% more fuel efficient. SAS currently operate 156 aircrafts, and SAS are expecting gradual delivery of 37 new aircrafts until 2021, which amounts to 7,4 aircrafts per year.

As SAS are forecasted to expand and capture growth in passenger volume in the forecast period, the new orders will not just replace older aircrafts, but it is assumed that approximately 67% will be used to expand SAS' fleet, while the rest will replace older aircrafts. Based in the assumptions it is estimated that SAS fleet will grow by 5 aircrafts per year in the forecast period, which puts the total

fleet at 163 aircrafts by 2026, 74 of which are new generation aircrafts (=7.4*10), and 89 of which are older aircrafts (=163 -74). This means that SAS Fleet will be larger, hence fuel expense will increase, but newer aircrafts will slightly mitigate and decrease fuel expense.

Based on the above assumption, SAS' annual jet fuel expense will be calculated using the following formula. Note that to calculate the saving from new aircrafts the total amount delivered per year (7,3 aircrafts) are divided by 0,85 as they are 15% more fuel efficient. 2,3 is thereafter subtracted as only 5 aircrafts will increase SAS' fleet size, the other 2,3 will be used to replace older aircrafts.

$$Annual\ Fuel\ \exp ense = fuel\ \exp ense_{(t-1)} \times \triangle\ crude\ oil\ price \times \frac{Fleet_{(t-1)} + (7,3 \times 0,85) - 2,3}{Fleet_{(t-1)}}$$

EIA predict that from 2051 and beyond fuel expenses will increase 3% annually. In the terminal period, fuel expenses are therefore forecasted to increase by 3% annually due to increases in oil prices, but SAS will manage to decrease fuel expense by 0,5% annually due to new aircraft orders. Fuel expenses will therefore grow 2,5% in the terminal period. Complete calculations are shown in appendix 15.4

7.2.3 Government user fees and other operating expenses

As shown in the profitability analysis, government user fees increase during the historic period from 8,8% to 10,4% in relation to core operating income. However, since 2014 government user fees have been almost stable at 10,4% in relation to core operating income. While there is a possibility that the Swedish government might increase flight tax in Sweden, it is still assumed that the relationship between government user fees and core operation income will stay stable at 10,4% in the forecasting period and terminal period. It is not certain that the Swedish government will implement the changes, and if it does it is questionable if it would have any material impact as the accounting item include more than taxes by the Scandinavian governments. Calculations are found in appendix 15.5.

Other operating expenses (including Shares of income in affiliated companies and Income from the sales of aircraft and building) amounted to 31,7% of core operating income on average in the historic period. These items have therefore been calculated as 31,7% of core operating income in the forecasting and terminal period. Calculations are found in appendix 15.5.

7.3 Balance sheet items & Depreciation

All balance sheet items have been forecasted relative to another item, as it is forecasted that they will follow expected level of activity. They will therefore directly or indirectly be forecasted as a percentage of core operating income. To determine the relationship, the average from 2007 to 2016 have been applied. Figure 57 summarise the forecasting method. From 2017 to 2021 the item will start move towards the historical average, and reach steady state in 2020. Depreciation and

capitalized operating leases have been calculated using the same method. A landscape version of figure 57 is found in appendix 15.5

Value drivers, balance sheet & depreciation	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
											gradual increase or decrease					steady state					
NWC as % of revenue	-20,1%	-17,7%	-17,5%	-21,1%	-18,1%	-20,4%	-19,0%	-21,3%	-22,1%	-25,5%	-24,6%	-23,7%	-22,9%	-22,0%	-21,1%	-20,3%	-20,3%	-20,3%	-20,3%	-20,3%	-20,3%
Average historic period	-20,3%																				
Non-current operating assets as % of core operating income	50,1%	49,8%	64,1%	70,2%	70,2%	67,8%	59,8%	43,0%	42,3%	44,1%	46,1%	48,1%	50,1%	52,1%	54,1%	56,1%	56,1%	56,1%	56,1%	56,1%	56,1%
Average historic period	56,1%																				
Non-current operating liabilites as % core operating income	1,7%	2,1%	5,6%	5,6%	4,2%	4,9%	3,6%	5,9%	5,5%	5,3%	5,2%	5,0%	4,9%	4,7%	4,6%	4,4%	4,4%	4,4%	4,4%	4,4%	4,4%
Average historic period	4,4%																				
NIBD as % of Invested capital (exclucding cap. op. leases)	-16%	46%	38%	19%	37%	38%	29%	77%	51%	52%	49,4%	46,9%	44,5%	42,0%	39,5%	37,1%	37,1%	37,1%	37,1%	37,1%	37,1%
Average historic period	37,1%																				
Capitalized operating lease as % of net non-current operating assets	82%	72%	71%	55%	46%	48%	60%	121%	142%	149%	137,9%	127,2%	116,5%	105,9%	95,2%	84,5%	84,5%	84,5%	84,5%	84,5%	84,5%
Average historic period	84,5%																				
Depreciation, amortization and impariment as % of net non-current operating assets	-5,8%	-6,3%	-7,0%	-7,1%	-8,8%	-6,4%	-7,0%	-10,3%	-10,0%	-8,9%	-8,7%	-8,5%	-8,4%	-8,2%	-8,0%	-7,8%	-7,8%	-7,8%	-7,8%	-7,8%	-7,8%
Average historic period	-7,8%																				
Depreciation on capitlized operating leases as % of capitalized operating	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%

Figure 57: own creation of appendix 16, source SAS annual reports

7.4 Interest rate, net financial expenses, capitalized operating leases and tax rate

A cost of debt of 5,1% is determined in chapter 8 as part of the WACC estimation (8.1.5)**.** This is the interest rate that will be applied in the forecast and terminal period. Net financial expenses (excluding interest expense on capitalized operating lease) have in turn been forecasted as the average of last years and current years NIBD, multiplied by the interest rate.

Interest expense on capitalized operating leases have been set to the required return on capitalized operating leases (4,65%), multiplied by capitalized operating leases, which was determined in chapter 3 (3.3.4). In 2013 Sweden decreased its corporate tax rate to 22%, it is assumed that it will stay constant during the forecast and terminal period as there are no indications that it will change.

Chapter 8: Valuation

8.1 Weighted-average cost of capital

Weighted average cost of capital (WACC) express the required rate of return for investors (Petersen & Plenborg, 2012). As operating leases are separate form of debt financing, the required return on this type of capital need to be factored into the model (Koller et al, 2014). WACC is therefore adjusted to the following formula. WACC will decrease as COL (capitalized operating lease) is added, since a higher potion of the capital structure will be debt.

$$WACC = \frac{NIBD}{(NIDB + E + COL)} \times r_d \times (1-t) + \frac{COL}{(NIDB + E + COL)} \times r_{col} \times (1-t) + \frac{E}{(NIDB + E + COL)} \times r_e$$

8.1.1 Capital structure

SAS' capital structure has been volatile for the last decade. As shown in figure 58, the new accounting standard for pensions which was introduced in 2012 had material impact and decreased the debt-to-equity ratio from 0,76 in 2012 to 0,42 in 2013. Capitalizing operating leases have an even greater impact, as total debt-to-equity becomes increase from 0,42 to 0,84 (COL+D). SAS do not disclose its target capital structure, nor does it discuss what its intends for the near future. In January 2017 Daomdaran investigated 38 airlines in Europe and found their average capital structure to be 0,53 equity and 0,47 debt (not adjusted for COL) (Damodaran D 2017). SAS' average capital structure from 2007 to 2016 are close to his estimates, and will therefore be used to estimate WACC.

SAS capital structure												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average 2007 - 2016
Excluding capitalized operating leases												
E/(D+E)	1,21	0,46	0,59	0,69	0,26	0,24	0,58	0,48	0,64	0,65	0,58	0,52
D/(D+E)	-0,21	0,54	0,41	0,31	0,74	0,76	0,42	0,52	0,36	0,35	0,42	0,48
Including operating leases												
E/(D+E+COL)	0,43	0,20	0,28	0,29	0,12	0,10	0,25	0,16	0,19	0,17	0,22	0,19
D/(D+E+COL)	-0,07	0,23	0,20	0,13	0,33	0,31	0,18	0,18	0,10	0,09	0,17	0,17
COL/(D+E+COL)	0,65	0,57	0,52	0,58	0,55	0,59	0,56	0,66	0,71	0,75	0,61	0,64

Figure 58: own creation based on appendix 2, Source SAS annual reports

8.1.2 Risk-free interest rate

The risk-free rate is the rate of return an investor can expect without taking on any risk. The best estimate for the rate would be the return on a portfolio with no systematic risk (zero beta) (Petersen & Plenborg 2012). To be considered risk-free there should be no default risk, no risk of reinvestment (Shannon & Grabowski 2010) and regard inflation (Koller et al 2010). For practical reasons a long-term government bond denoted in the same currency as the cash flow intended to discount is therefore more commonly used as a proxy for the rate. Ideally a government bonds that matches each annually projected cash-flow should be used (Petersen & Plenborg 2012). However, in the thesis, SAS terminal period is assumed constant. Using a long-term bond matches the assumption

of perpetual ongoing concern, and furthermore introduce less noise in terms of short-term fluctuations (Shannon & Grabowski 2010).

A 10-year Swedish government bond is applied in the thesis as it is the longest bond available. As discussed in the strategic analysis, interest rates and yields are at historically low levels. The central bank of Sweden presents yields dating back to 1987, and there is not a single period where the yield has been as low as the current (Riksbank C 2017). It has also stated that it recognises that the prospect for global economic activity is uncertain, and monetary policy may change soon (Riksbank 2016). In 2014 Ernest & Young researched the implications on volatile yields in Europe and proposed methods to adjust for the volatility, one of which was taking the average yield over a period (EY 2015). The average quarterly yield from 2007 to 31 October 2016 have therefore been used to estimate risk-free interest rate, which amounts to 2,4%, the data and calculations can be found in appendix 14. **Risk-free interest rate is therefore set to 2,4%.**

8.1.3 Beta

Beta measures systematic risk, which is the relative risk of SAS in relation to the market (Petersen & Plenborg, 2012). Preferably beta should be determined by future stock prices, but as it is not available other methods are applied. One method entails in-depth analysis of the companies operational and financial risk. However, these estimates are highly subjective. The method applied in this thesis is estimating beta based on historic data combined with estimates by experts. SAS is a long trading company with highly liquid shares, which makes the estimations easier (Petersen & Plenborg 2012). Nevertheless, there are a considerably instability in beta across time. Two beta estimations have been made for this thesis. They were estimated using monthly returns for the past five years, and compared to the return on the OMX Stockholm 30 index, which is an index comprised of 30 highly liquid stocks on the Stockholm stock exchange, and the S&P500 index. The data and result of the regression analyses are found in appendix 11.

Beta estimations	
Reuters	1,63
Financial times	1,63
Beta estimates, 5 years OMX 30	1,34
Beta estimates, 5 years S&P 500	1,02
Damodaran	0,87
Average	**1,30**

Figure 59: own creation, source Damodaran 2017, Reuters 2017, Financial times 2017 & Yahoo Finance 2017 (based on appendix 11)

Three expert estimations of SAS' beta have furthermore been taken into consideration in estimating beta. Figure 59 summarises the finding. There is a considerable difference between the estimations. To mitigate the measurement problem an average of the two estimates done for this thesis and the experts' estimations will be used to determine WACC**. Beta is therefore set to 1.3**

8.1.4 Market risk premium

The market risk premium is the difference between what an investor expects from an investment in a diversified portfolio and a risk-free investment (Shannon & Grabowski, 2010). The market risk

premium is the expected return on the day of the valuation, and therefore considerable judgment must be made in estimating it. Some practitioners solely rely on historical data, while others use different methods of forecasting to estimate. There is little consensus on the method that should be used, and the true level of risk premium. (Petersen & Plenborg 2012)

Fernandez. Et al (2016) conducted a survey in which they asked professors, analysts and manager on what market risk premium they applied for different countries. They attained 72 answers for Sweden, with an average of 5,2%. Out of the 71 countries in the survey, Sweden shared the lowest standard deviation with only two other countries. Damodaran estimated the equity risk premium of Sweden at 5,71% in January 2017 (Damodaran B, 2017). The market risk for the thesis is set to the average of Fernandez et al. and Damodaran's estimates, at 5,46%. **The market risk premium is therefore 5,46%**

Market risk premium	
Fernandez et al	5,20%
Damodaran	5,71%
Average	**5,46%**

Figure 60: source Damodaran B 2017 & Fernandez et al. 2016

8.1.5 Cost of debt

Cost of debt is the lenders required rate of return on debt, which is the risk-free interest rate and a premium paid for the risk of the debt. The following formula states the relationship, which estimates cost of debt adjusted for tax. Credit spread is the company specific risk (Petersen & Plenborg, 2012).

$$r_d = (r_f + r_s) * (1 - t)$$

r_d = Required rate of return on net interest bearing debt (NIBD)
r_f = Risk-free interest rate
r_s = Credit spread (Risk premium on debt)
t = Corporate tax rate

To estimate the cost of debt for SAS the interest rate paid by it on subordinated loans, bond loans, finance leases, convertible bonds and other loans from 2013 – 2017 have been collected and weighted in relation to total debt. These are long-term in nature and are therefore argued to be valid estimates for the forecasting period. A summary of the findings a presented in figure 62, and complete calculations can be found in appendix 12. SAS interest rate on long-term loans have decreased, which is to be expected as the credit rating have risen, and the return on a 10-year Swedish government bond have fallen (which is the proxy for risk-free interest rate) There are two main reasons for not including the whole period from 2007 in the calculation.

SAS's cost of debt	
	SAS's weighted interest on subordinated loans, bond loans and other loans
2013	5,7%
2014	5,3%
2015	4,6%
2016	4,8%
average 2013 - 2016	**5,1%**

Figure 62: source SAS 2016

1. The changes in accounting standards on pensions in 2012 significantly changed the capital structure of SAS.

2. It was presented in chapter 3 that SAS credit ratings have increased significantly since 2012. It is there assumed that the credit spread was considerably higher prior 2012.

It should be noted that book values have been used instead of market values for bond loans to estimate the weight for the different loans in year 2013 – 2016, as SAS do not disclose the fair value for this period on this type of debt. Preferably all estimates should have been based on market values as they reflect the real opportunity cost for lenders (Petersen & Plenborg, 2012). The average interest rate of 5,1% will be the one applied to estimate WACC. **Cost of debt is therefore set to 5,1%**

SAS WACC

The findings in this section and the calculation of WACC are summarised in figure 63. The cost of debt on capitalized operating leases is 4,65%, which was determined and discussed in chapter 3.

WACC					
Return on Equity		Cost of debt		Cost of debt on capitalized operating leases	
rf	2,40%	rd	5,10%	rcol	4,65%
Beta	1,3	t	22,00%	t	22,00%
rm-rf	5,46%				
re	**9,44%**	**rd**	**3,98%**	**rcol**	**3,63%**
Capital Structure					
E/(D+E)	0,52				
D/(D+E)	0,48				
Ajdusted for capitalized operating leass			WACC	6,82%	
E/(D+E+COL)	0,19		**WACC adjusted**		
D/(D+E+COL)	0,17				
COL/(D+E+COL)	0,64		**for**	**4,80%**	

Figure 63: own creation

Damodaran estimated the cost of capital for the European airline industry at 5,72% in January 2017 (Damodaran C, 2017). In 2016 IATA estimated the cost of capital at 6,9% for the global airline industry (IATA D, 2016). It is assumed that Daomodaran and IATA does not take COL into account, so WACC excluding capitalized operating leases are comparable to their estimates. While the WACC for the thesis is slightly higher than Damodaran's estimates, it is almost the same as IATA's estimate. **WACC is therefore set to 6,82% (excluding capitalized operating leases), and 4,8% (including capitalized operating leases)**

8.2 DCF and sensitivity analysis

The calculate the fair value of one SAS share on 31 October 2016, the discounted cash flow approach have been applied. Based on the forecasts that was established in chapter 7, the annual free cash-flow for SAS (FCFF) haven been determined and discounted using WACC to determine SAS' enterprise value (EV). NIBD (including capitalized operating leases) have thereafter been subtracted from the EV to estimate market value of equity (MVE). On 31 October 2016, there where 300,08 million common shares outstanding. The valuation is summarised in figure 64.

Pro Forma cash flow statement																					
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
NOPAT		1 509	-5 509	-2 056	-891	-671	-133	1 437	707	2 313	2 505	2 709	1 588	1 148	1 074	1 158	1 384	1 678	2 023	2 253	2 539	2 773
Depreciation COL		1 619	1 433	1 456	1 140	980	1 009	1 122	1 336	1 628	1 784	1 838	1 873	1 891	1 889	1 861	1 807	1 895	1 987	2 083	2 184	2 263
Depreciation, non-current assets		1 478	1 591	1 845	1 867	2 413	1 710	1 658	1 443	1 466	1 367	1 485	1 604	1 727	1 855	1 984	2 117	2 220	2 328	2 440	2 558	2 651
△ NWC			1 107	1 551	-732	1 072	-1 145	658	-92	-672	-1 285	-161	-127	-120	-105	-71	-53	-520	-545	-568	-594	-470
Net investment (net non-current assets)			1 711	2 739	1 882	3 436	1 009	-1 281	-8 164	2 000	2 049	3 171	3 380	3 647	3 918	4 157	4 444	3 547	3 719	3 888	4 073	3 850
Investment in cap. op leases			-935	1 752	-2 892	-1 060	1 382	2 556	4 064	5 356	3 760	2 530	2 320	2 126	1 865	1 502	1 114	3 016	3 163	3 306	3 464	3 276
Free cash flow for firm (FCFF)			**-4 368**	**-4 797**	**3 858**	**-726**	**1 339**	**2 283**	**7 678**	**-1 277**	**1 132**	**492**	**-507**	**-887**	**-859**	**-585**	**-197**	**-249**	**2**	**150**	**338**	**1 031**
Valuation																					
WACC												4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	
Discount factor												0,95	0,91	0,87	0,83	0,79	0,75	0,72	0,69	0,66	0,63	32,25
g terminal period	2,86%											469	-462	-771	-712	-463	-149	-179	1	98	212	33 251
PV of FCFF in forecast horizon	**-1 956**																					
PV of FCFF terminal period	**33 251**																					
Enterprise value	**31 295**																					
NIBD 2016 (inc. capitalized op. leases)	25 443																					
Estimated market value of equity	**5 852**																					
Common shares (million)	330,08																					
Estimated share price 31 Oct 2016	**17,73**																					
Observable share price 31 Oct 2016	15,30																					

WACC					
re	9,50%	**rf**	**2,40%**	E/(D+E+COL)	0,19
rd	5,10%	Beta	1,30	D/(D+E+COL)	0,17
rcol	4,65%	rm-rf	5,46%	COL/(D+E+COL)	0,64
		t	22%		

Figure 64: own creation

Based the estimated WACC and forecast put forth in the thesis, the fair value of one share was 17,73 SEK. The observable common share price on 31 October 2016 was 15,3 SEK (Yahoo Finance, 2017), which indicates that it was undervalued. However, the estimated fair value rest on the assumptions put forth in the thesis, which must be critically assessed through a sensitivity analysis. However firslty it is note worthy that SAS FCFF are negative for most years in the forecast period negative, and the present value od SAS FCFF in the forecast period is negative.

In appendix 15,4 SAS fuel expense are forecasted. From 2017 to 2022 the growth in jet fuel expenses are considerably more than in the terminal period due to large increases in forecasted crude oil price, with the largest growth is in 2018 at 26,3%. SAS is furthermore forecasted to gradually decrease labour cost during the period, and it will not reach the forecasted level until 2026. This means that SAS NOPAT will at first decrease, its operating cost will be high due to increases in fuel price and it will invest in assets to the point where FCFF is negative, but will reap those benefits later in the terminal period. As seen in figure 64, FCFF starts to become positive in year 2024. As previously discussed, SAS' liquidity is a concern. Its credit rating are much higher now than in 2012, but giving these developments it is likely it could decrease, which would increase lending costs and furthermore threaten its ability to settle its commitment.

Figure 65 presents a sensitivity analysis on the growth rate in the terminal period and WACC. There is a large difference in share price when the terminal growth rate moves 0,5%. As discussed throughout the thesis, the industry has experience significantly higher growth in RPK then GDP, and while it is forecasted by experts to continue for two decades or more, a small difference will have great impact on SAS' share price. It was also assumed that SAS will keep its current market share, both in the Scandinavian region and on the 30% of its business that stem from global travellers. Nevertheless, there exists a real threat that SAS will not be able to keep its markets shares, particularly in the long-haul segment as the developing

Sensetivity Analysis, growth rate and WACC					
		Growth rate, terminal period			
		Pesimistic		Base	Optimistic
		1,86%	**2,36%**	**2,86%**	**3,36%**	**3,86%**
Pestimistic	**5.80%**	-25,50	-24,16	-22,36	-19,82	-15,97
	5.30%	-14,09	-10,95	-6,53	0,16	11,51
Base	**4.80%**	1,44	7,92	17,73	34,36	68,68
	4.30%	23,63	36,85	59,25	105,49	256,82
Optimistic	**3.80%**	57,64	86,35	145,61	339,54	-2698,74

Figure 65: own creation

world are experiencing higher growth, which have increased the number of airlines with long-haul capabilities in the developing world.

The estimated share price is more sensitive to changes in WACC then it is to changes in terminal growth. As presented in the methodology section, there are numerous difficulties in estimating beta. To combat the problem an average of experts and estimates made by the author was used, but the estimations differed significantly, and as seen in figure 65, a small percentage change in WACC have a large impact. Interest rate are furthermore at historic low in Sweden. Still the average yield for the last ten years was used to estimate beta, which increased it from 0,16% (the yield in Q3 2016) to 2,4%, which is much more.

It was determined in the profitability analysis that SAS payroll expense per ASK was considerable higher than other airlines' (see figure 30, p. 41), even though SAS have managed to decrease it significantly in the historic period to 0,19 SEK/ASK in 2016. It was forecasted that SAS would gradually close the gap between it and other NLAs in the comparison group, which on average operated at 0,13 SEK/ASK in 2016. Figure 66 shows a sensitively analysis on change in payroll expense per ASK. It is important to highlight that values for every scenario are not just changed for the terminal period, but rather is modelled so that SAS will gradually throughout the forecast period decrease its payroll expense per ASK at a compounded rate until the terminal period. Figure 67 shows the difference forecasts. As illustrated, a small increase in the forecast have a large impact on share price. Still, other NLAs in the comparison group are operating at even lower payroll expenses per ASK then in the sensitivity analysis. Factors like the strong labour unionization in Scandinavia is therefore a considerable concern for SAS moving forward.

Sensetivity analysis, payroll expense	Pesimistic		Base		Optimistic
SAS will reach () payroll expense/ASK in terminal period	0,18	0,17	0,16	0,15	0,14
Share price	-199,40	50,90	17,73	86,49	155,38

Figure 66: own creation

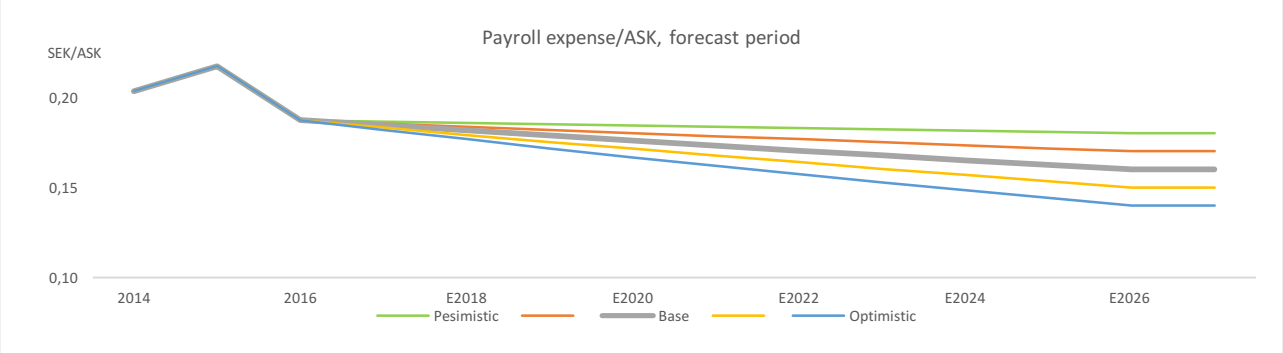


Figure 67: own creation

Lastly a sensitivity on analysis on jet fuel expense are presented in figure 68. It was forecasted that SAS jet fuel expense would perfectly follow the development of price for jet

Sensetivity analysis, jet fuel expense	Pesimistic		Base		Optimistic
Growth in jet fuel expense, terminal period	3,50%	3%	2,50%	2%	1,50%
Share price	5,94	11,68	17,73	23,78	29,82

Figure 68: own creation

kerosene, which was estimated by EIA to grow at 3% annually in the terminal period. However, SAS would manage to combat this somewhat due to new aircrafts that are more fuel efficient, so the terminal value was set to 2,5%. As seen in figure 68, a 0,5% change in the assumption yields a considerable difference, but not even close to the level as to when payroll expense change.

8.3 Multiples

Before concluding the thesis, SAS is valuated in relation to its peers using multiples. While it is an attractive approach as it is simple to conduct, it rests on the assumption that the airlines are perfectly comparable (Petersen & Plenborg 2012). The valuation is based on the multiple EV/EBIDTAR. EV/EBIDTAR is the most common multiple used to value airlines since it excludes rental expenses (Zucchi, 2015). As discussed in chapter 3, the relative number of aircrafts on operating lease differ greatly between airlines, to include rental expenses would therefore make them less comparable. Depreciation and amortization, as well as operating expenses are also mostly non-cash items (Zucchi, 2015). The multiple furthermore does not take capital structure into account (Koller et al, 2010). Figure 69 shows the calculation, and figure 70 presents the valuation.

Multiples

	Year end	Shares at year end	Share price at year end	Market cappitalizatio n	NIBD	Capitalized operating leases	Cash and cash equivalents	Enterprise value	EDIDTAR	EV/EBIDTAR
Lufhansa	2016-12-31	468 800 000	12	5 776	**5 010**	1 448	489	11 745	1 458	8,06
Delta	2016-12-31	730 770 638	49	35 947	**4 815**	10 400	2 424	48 737	10 226	4,77
Finnair	2016-12-31	128 136 115	4	516	-356	876	48	989	271	3,65
SAS	2016-10-31			8 900	2 723	22 720	1 908	32 435	6 106	5,31

Mean NLAs	5,49
Harmonic Mean NLAs	**4,94**
Mean SAS	5,31

$$EV = \frac{Market\ cap + NIBD + cap.op.leases + pref.stock - cash\ and\ cash\ equivalents}{EBIDTAR}$$

Figure 69: own creation, source annual reports & Yahoo Finance

The chosen airlines for comparison are the NLAs in the comparison group excluding KLM. The reason for not including KLM is that it is traded on the stock exchange under the group KLM-Air France. Under the assumption that SAS should be traded at the multiple of peers, it indicates that SAS is even more undervalued then when the DCF approach was used. Figure 71 compares the valuations and the observed price. Nevertheless, the airlines are not perfectly comparable. They are of considerable different size, operate in different regions, are subject to different tax regimes, and the list goes own. The author argues that the multiples may not be useful as a stand-alone valuation due to the comparison issue, it does however add credence to the findings in the DCF approach as it also conclude that SAS is undervalued.

SAS's share price based on relative valuation	
Multiple (NLAs)	4,94
EBIDTAR	6 106
EV	30 147
Cash and cash equivalents	1 908
Capitalized Operating Leasses	22 720
NIDB	2 723
MVE	6 612
Common shares (million)	330
Share price	**20,03**

Figure 70: own creation

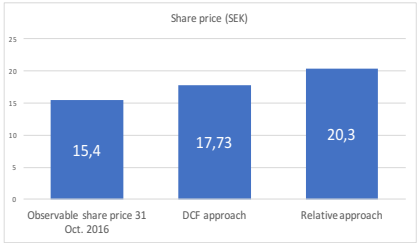


Figure 71: own creation

Chapter 7: Conclusion

The thesis set out to answer the following problem statement: “What will drive long-term value creation for SAS in the future, and where SAS’ shares fairly priced on 31 October 2016?”

SAS gradually adopted to its new market conditions, which are characterised by significant pressure to lower price to stay competitive against LCCs. SAS have therefore had to lower its operating cost, which it has succeeded in doing the past decade, al be it not without experiencing a major crisis in 2012. The labour agreements signed in 2012 lowered SAS primary cost, payroll expense, which was desperately needed. But the work on decreasing operating cost must continue. Especially since the leisure travel segment is forecasted to grow much more then business travels, and these passengers are more price sensitive.

SAS is still operating with higher costs then other NLAs, but. SAS will probably not reach the costs of other NLAs in Europe due to Scandinavia’s topography, which is characterised by a large portion of short-haul flights, but it must start to close the gap. Although there exist numerous threats that are largely uncontrollable by SAS, such as new fees on CO2 emissions, flight taxes by the Scandinavian governments, and exchange rate fluctuations, the impact of these will be small compared to future fuel and labour costs. As shown in the sensitivity analysis, fuel costs are forecasted to rise, which will put pressure on SAS costs, especially in the next decade.

Labour costs is the expense that is most important for SAS to manage, and will have a great impact on SAS moving forward. But this is difficulty in a region characterised by a high degree of labour unionization. SAS’ have furthermore increased its long-haul operations, and intend to further to capture global market opportunity. But rapid expansion by LCCs and EGAs from developing regions puts pressure on SAS, as these can operate with lower labour costs.

The Swedish and Norwegian governments intention to sell their stakes in SAS furthermore pose a threat, as it may decrease SAS’ ability to acquire attractive debt, which is needed for new investments. Especially if fuel cost rise as rapidly as predicted. Nevertheless, SAS’ credit rating has increase during the last decade, which brings hope for the future.

In conclusion, long-term value creation for SAS will be driven by careful management of operating costs, especially labour costs, and subsequently the decrease of ticket prices and/or to operate with higher margins to successfully compete in the high growing Scandinavian and global airline market.

In valuating SAS both the DCF and relative valuation indicates that SAS shares was undervalued in 31 October 2016. One reason for this could be the uncertainty in the airlines markets ability to significantly outgrow GDP, especially in the develop world. It could furthermore be the uncertainty in SAS ability to decrease operating cost in the future and its liquidity in the years to come. Despite this, **the thesis final conclusion is that SAS’ share was undervalued on 31 October 2016.**

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Appendix 1: SAS's financial statements

Source is SAS's annual reports, for tax rates source is KPMG 2016

1.1 SAS Income statement

SAS Income statement										
SEK mil	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Year end	2007-12-31	2008-12-31	2009-12-31	2010-12-31	2011-12-31	2012-10-31	2013-10-31	2014-10-31	2015-10-31	2016-10-31
Revenues	52 251	53 195	44 918	40 723	41 412	35 986	42 182	38 006	39 650	39 459
Payroll expenses	-17 271	-18 153	-17 998	-13 473	-13 092	-11 584	-11 451	-9 181	-9 622	-9 105
Other operating expenses	-29 669	-31 791	-25 912	-25 210	-23 741	-22 105	-25 442	-25 122	-24 558	-24 552
Leasing costs for aircraft	-2 578	-2 282	-2 319	-1 815	-1 560	-1 342	-1 786	-2 127	-2 593	-2 840
Depreciation, amortization and impairment	-1 478	-1 591	-1 845	-1 867	-2 413	-1 426	-1 658	-1 443	-1 466	-1 367
Shares of income in affiliated companies	9	-147	-258	12	28	32	25	30	37	39
Income from the sales of shares in subsidiaries, affiliated companies and operations.	0	0	429	-73	0	400	-371	6	0	-7
Income from the sales of aircraft and building	41	4	-97	-239	12	-247	-118	-16	777	265
Operating income	**1 305**	**-765**	**-3 082**	**-1 942**	**646**	**-286**	**1 381**	**153**	**2 225**	**1 892**
Income from other holdings of securities	5	0	0	-263	-1 469	0	1	-43	-300	1
Financial income	787	654	304	186	224	96	50	102	124	91
Financial expenses	-1 045	-933	-645	-1 041	-1 030	-1 055	-999	-1 130	-632	-553
Income before tax	**1 052**	**-1 044**	**-3 423**	**-3 060**	**-1 629**	**-1 245**	**433**	**-918**	**1 417**	**1 431**
Tax	-286	28	803	799	-58	260	-254	199	-461	-110
Net income for the year from continuing operations	**766**	**-1 016**	**-2 620**	**-2 261**	**-1 687**	**-985**	**179**	**-719**	**956**	**1 321**
Income for discontinued operations	-130	-5 305	-327	43	0	0	0	0	0	0
Net income for the year	**636**	**-6 321**	**-2 947**	**-2 218**	**-1 687**	**-985**	**179**	**-719**	**956**	**1 321**
Other Comprehensive income										
items that may later be reversed to net income										
Exchange-rate differences in translation of foreign	75	-336	27	-121	127	-29	-244	86	-177	212
Cash-flow hedges – hedging reserve, net after tax	79	-1 848	970	469	-445	-263	-23	325	928	107
Changes in holdings in subsidiares							-1			
Items that will not be reversed to net income:										
Revaluations of defined-benefit pension plans	0	0	0	0	0	0	0	-1 222	75	-1627
Total other comprehensive income, net after tax	**154**	**-2184**	**997**	**348**	**-318**	**-292**	**-268**	**-811**	**826**	**-1308**
Total comprehensive income	790	-8 505	-1 950	-1 870	-2 005	-1 277	-89	-1 530	1 782	13
Comprehensive income for the year attributable to:										
Non-controlling interests	-1	-57	0	0	0	0	2	17	0	0
Parent Company shareholders	**789**	**-8 562**	**-1 950**	**-1 870**	**-2 005**	**-1 277**	**-87**	**-1 513**	**1 782**	**13**
Earnings per share (SEK)	**3,87**	**-6,26**	**-1,44**	**-7,79**	**-5,13**	**-2,99**	**4,12**	**-3,03**	**1,84**	**2,94**

1.2 SAS Balance sheet

SAS Balance sheet

SEK mil	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Year end	######	2008-12-31	2009-12-31	2010-12-31	2011-12-31	2012-10-31	2013-10-31	2014-10-31	2015-10-31	2016-10-31
ASSETS										
Fixed assets										
Intangible assets	1 226	1 092	1 296	1 414	1 693	1 922	1 802	1 905	1 798	1 923
Tangible fixed assets										
Land and buildings	568	513	439	375	491	353	241	243	560	527
Aircraft	10 766	11 037	13 087	12 652	11 866	11 220	8 795	7 535	7 095	8 254
Spare engines and spare parts	1 211	1 185	1 299	1 393	1 367	1 349	147	76	31	48
Workshop and aircraft servicing equipment	226	220	161	90	76	110	117	85	101	93
Other equipment and vehicles	308	318	192	130	123	117	105	128	137	105
Investment in progress	172	232	158	118	66	34	21	71	190	33
Prepayments relating to tangible fixed assets	185	627	238	24	155	160	251	763	1 482	2 135
Total tangiable fixed assets	**13 436**	**14 132**	**15 574**	**14 782**	**14 144**	**13 343**	**9 677**	**8 901**	**9 596**	**11 195**
Financial fixed assets										
Equity in affiliated companies	1 063	622	358	294	317	325	352	395	421	398
Long-term receivables from affiliated companies	170	0	0	0	0	0	0	0	0	0
Other holdings of securities	5	5	234	23	23	23	292	273		3
Pensionfunds,net	9 496	9 658	10 286	10 512	11 355	12 232	12 507	3 778	4 368	2 615
Deferred tax asset	690	921	1 159	1 187	1 340	597	536	1 111	375	854
Other long-term receivables	577	410	729	2 379	1 011	1 250	2 249	1 928	1 951	2 331
Total financial fixed assets	**12 001**	**11 616**	**12 766**	**14 395**	**14 046**	**14 427**	**15 936**	**7 485**	**7 118**	**6 201**
Total fixed assets	**26 663**	**26 840**	**29 636**	**30 591**	**29 883**	**29 692**	**25 613**	**18 291**	**18 512**	**19 319**
Current assets										
Expendable spare parts and inventories	849	819	758	678	705	687	359	342	345	312
Prepayments to suppliers	1	1	0	0	0	0	2	8	0	0
Total current assets	**850**	**820**	**758**	**678**	**705**	**687**	**361**	**350**	**345**	**312**
Current receivables										
Accounts receivable	1 951	1 851	1 581	1 277	1 275	1 311	1 376	1 067	1 249	1 406
Receivables from affiliated companies	510	479	92	3	6	3	1	0	2	1
Other receivables	2 637	2 661	4 780	2 901	2 574	1 399	866	1 263	867	1 193
Prepaid expenses and accrued income	1 070	1 009	1 058	839	934	873	858	937	1 093	1 153
Total current receivables	**6 168**	**6 000**	**7 511**	**5 020**	**4 789**	**3 586**	**3 101**	**3 267**	**3 211**	**3 753**
Cash and cash equivalents										
Short-term investments	7 308	3 872	3 691	3 281	2 842	366	2 080	3 703	5 151	6 067
Cash and bank balances	1 583	1 911	498	1 762	966	2 423	2 671	3 714	3 047	2 303
Assets held for sale	6 198	3 921	401	493	0	0	0	0	0	0
Total Cash and cash equivalents	**15 089**	**9 704**	**4 590**	**5 536**	**3 808**	**2 789**	**4 751**	**7 417**	**8 198**	**837**
Total current assets	**22 107**	**16 524**	**12 859**	**11 234**	**9 302**	**7 062**	**8 213**	**11 034**	**11 754**	**12 435**
TOTAL ASSETS	**48 770**	**43 364**	**42 495**	**41 825**	**39 185**	**36 754**	**35 628**	**29 325**	**30 266**	**31 754**
SHAREHOLDERS' EQUITY AND LIABILITIES										
Shareholders' equity										
Share capital	1 645	1 645	6 168	6 612	6 612	6 612	6 613	6 754	6 754	6 776
Other contributed capital	170	170	170	337	337	337	337	494	327	327
Reserves	1 466	-718	279	627	309	17	-230	181	932	1 251
Retained earnings	13 849	6 215	4 772	6 862	5 175	4 190	4 367	-2 549	-1 674	-2 328
Total shareholders' equity attributable to Parent Company shareholders	**17 130**	**7 312**	**11 389**	**14 438**	**12 433**	**11 156**	**11 087**	**4 880**	**6 339**	**6 026**
Non-controlling interests	19	0	0	0	0	0	16	27	0	0
Total shareholders' equity	**17 149**	**7 312**	**11 389**	**14 438**	**12 433**	**11 156**	**11 103**	**4 907**	**6 339**	**6 026**
Long-term liabilities										
Subordinated loans	693	953	919	974	1 019	978	956	1 003	1 104	1 157
Bond loans	2 079	2 212	0	1 503	2 809	2 763	2 641	2 713	2 184	2 183
Other loans	3 936	10 535	6 809	6 866	6 179	5 260	5 054	4 419	4 807	4 390
Deffered tax liabilities	3 755	2 988	2 832	2 303	2 154	1 013	938	0	0	0
Other provisions	691	2 138	2 131	2 143	1 673	1 967	1 361	2 088	1 992	2 089
Other liabilities	120	334	378	143	55	130	161	161	188	3
Total long-term liabilities	**11 274**	**19 160**	**13 069**	**13 932**	**13 889**	**12 111**	**11 111**	**10 384**	**10 275**	**9 822**
Current liabilities										
Current portion of long-term loans	1 615	872	5 742	1 383	2 309	1 403	2 517	2 082	1 264	1 827
Short-term loans	421	1 189	907	1 073	997	411	231	462	229	320
Prepayments from customers	20	7	13	16	24	0	16	4	22	0
Accounts payable	2 108	2 068	1 738	1 749	1 540	1 929	1 689	1 499	1 528	1 755
Liabilities to affiliated companies	94	0	0	0	0	0	0	0	0	0
Tax liabilities	5	110	27	22	18	32	36	0	0	21
Unearned transportation revenue	3 842	3 299	3 227	3 598	3 453	4 292	3 932	4 244	4 482	5 318
Current portion of other provisions	190	148	852	657	428	1 186	855	709	479	457
Other liabilities	1 580	2 460	2 110	2 070	1 160	1 033	722	679	964	872
Accrued expenses and prepaid income	5 149	4 274	3 264	2 755	2 934	3 201	3 416	4 355	4 684	5 336
Liabilities attributable to assets held for sale	5 323	2 465	157	132	0	0	0	0	0	0
Total Current Liabilities	**20 347**	**16 892**	**18 037**	**13 455**	**12 863**	**13 487**	**13 414**	**14 034**	**13 652**	**15 906**
TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES	**48 770**	**43 364**	**42 495**	**41 825**	**39 185**	**36 754**	**35 628**	**29 325**	**30 266**	**31 754**

Appendix 2: SAS's analytical statements

Source is SAS's annual reports, for tax rates source is KPMG 2016

2.1 SAS Analytical Income statement

SAS Analytical income statement										
SEK mil	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Year end	2007-12-31	2008-12-31	2009-12-31	2010-12-31	2011-12-31	2012-12-31 (ADJUSTED)	2013-10-31	2014-10-31	2015-10-31	2016-10-31
Passenger revenue	38 601	38 103	32 674	29 939	26 998	31 635	31 739	28 710	30 496	30 371
Other traffic revenue	5 222	5 331	5 056	5 369	8 951	5 732	5 708	5 190	5 073	5 337
non-traffic revenue	8 428	9 761	7 188	5 415	5 463	5 017	4 735	4 106	4 081	3 751
Core operating income	**52 251**	**53 195**	**44 918**	**40 723**	**41 412**	**42 384**	**42 182**	**38 006**	**39 650**	**39 459**
Payroll expenses	-17 271	-18 153	-17 998	-13 473	-13 092	-13 728	-11 451	-9 181	-9 622	-9 105
Jet fuel expense	-8 104	-9 637	-7 685	-6 601	-7 769	-9 394	-9 046	-8 806	-8 430	-6 449
Government user fees	-4 574	-4 662	-4 399	-4 198	-4 042	-4 175	-4 154	-3 962	-4 087	-4 106
Other operating expenses	-16 991	-17 492	-13 828	-14 411	-11 930	-12 616	-12 242	-12 354	-12 041	-13 997
Shares of income in affiliated companies	9	-147	-258	12	28	23	25	30	37	39
Income from the sales of aircraft and building	41	4	-97	-239	12	-252	-118	-16	777	265
Core operating cost	**-46 890**	**-50 087**	**-44 265**	**-38 910**	**-36 793**	**-40 141**	**-36 986**	**-34 289**	**-33 366**	**-33 353**
	0	0	0	0	0	0	0	0	0	0
Core operating EBIDTAR	5 361	3 108	653	1 813	4 619	2 243	5 196	3 717	6 284	6 106
	0	0	0	0	0	0	0	0	0	0
Depreciation on capitalized operating leases	-1 619	-1 433	-1 456	-1 140	-980	-1 009	-1 122	-1 336	-1 628	-1 784
Depreciation, amortization and impairment	-1 478	-1 591	-1 845	-1 867	-2 413	-1 710	-1 658	-1 443	-1 466	-1 367
Core operating EBIT	**2 264**	**84**	**-2 648**	**-1 194**	**1 226**	**-476**	**2 416**	**938**	**3 190**	**2 955**
Corporation tax	-286	28	803	799	-58	389	-254	199	-461	-110
Tax shield, net financial expenses	-339	-316	-313	-466	-357	-447	-355	-402	-383	-334
Tax allocated to special items	-36	-1 485	27	-8	-385	104	-82	-6	-7	-2
Tax on EBIT	**-662**	**-1 773**	**517**	**325**	**-800**	**46**	**-690**	**-209**	**-851**	**-445**
Core NOPAT (exc. Special items)	**1 602**	**-1 689**	**-2 132**	**-869**	**426**	**-430**	**1 726**	**729**	**2 339**	**2 510**
Special items	-130	-5 305	102	-30	-1 482	401	-371	-28	-33	-7
Tax on special items	36	1 485	-27	8	385	-104	82	6	7	2
NOPAT (inc. Special items)	**1 509**	**-5 509**	**-2 056**	**-891**	**-671**	**-133**	**1 437**	**707**	**2 313**	**2 505**
	0	0	0	0	0	0	0	0	0	0
Net financial expenses	-1 212	-1 128	-1 204	-1 793	-1 373	-1 719	-1 612	-1 828	-1 740	-1 517
Tax on net financial expense	339	316	313	466	357	447	355	402	383	334
Net earnings (before minory interest and other comprehensive income)	**636**	**-6 321**	**-2 947**	**-2 218**	**-1 687**	**-1 405**	**179**	**-719**	**956**	**1 321**
	0	0	0	0	0	0	0	0	0	0
Dirty surplus (other comprehensive income)	154	-2 184	997	348	-318	-329	-268	-811	826	-1 308
Comprehensive income for the year attributable to	-1	-57	0	0	0	0	2	17	0	0
Total proifit to majority interest	**789**	**-8562**	**-1950**	**-1870**	**-2005**	**-1734,33**	**-87**	**-1513**	**1782**	**13**

2.2 SAS Analytical Income statement, tax allocation & capitalized operating leases

Tax allocation, income statement										
SEK mil	2007	2008	2009	2010	2011	2012 (ADJUSTE	2013	2014	2015	2016
Tax rate	**28%**	**28%**	**26%**	**26%**	**26%**	**26%**	**22%**	**22%**	**22%**	**22%**
Net financial expenses & Tax Shield										
Income from other holdings of securities (financial)	5	0	0	-263	13	0	1	-9	-267	1
Interest expense on capitalized operating leases	-959	-849	-863	-675	-580	-598	-664	-791	-965	-1 056
Financial income	787	654	304	186	224	101	50	102	124	91
Financial expenses	-1 045	-933	-645	-1 041	-1 030	-1 222	-999	-1 130	-632	-553
Financial expense (exc. COL)	**-258**	**-279**	**-341**	**-855**	**-806**	**-1121**	**-949**	**-1028**	**-508**	**-462**
Net financial expenses	**-1212,02**	**-1127,9**	**-1203,67**	**-1793,18**	**-1373,32**	**-1718,68**	**-1612,39**	**-1828,24**	**-1739,6**	**-1517,48**
Tax shield, net financial expenses	**-339,364**	**-315,813**	**-312,954**	**-466,227**	**-357,063**	**-446,857**	**-354,726**	**-402,214**	**-382,711**	**-333,846**
Special items										
Income from the sales of shares in subsidiaries, affiliated companies and	0	0	429	-73	0	400	-371	6	0	-7
Income from other holdings of securities (operational)	0	0	0	0	-1 482	1	0	-34	-33	0
Income for discontinued operations	-130	-5 305	-327	43	0	0	0	0	0	0
Special Items	**-130**	**-5305**	**102**	**-30**	**-1482**	**400,6667**	**-371**	**-28**	**-33**	**-7**
Tax on special items	**36,4**	**1485,4**	**-26,52**	**7,8**	**385,32**	**-104,173**	**81,62**	**6,16**	**7,26**	**1,54**
Special items after tax	**-93,6**	**-3819,6**	**75,48**	**-22,2**	**-1096,68**	**296,4933**	**-289,38**	**-21,84**	**-25,74**	**-5,46**
Capitalized operating lease										
Leasing costs for aircraft	-2578	-2282	-2319	-1815	-1560	-1606,67	-1786	-2127	-2593	-2840
Rcol	4,65%									
Capitalized operating lease	**20624**	**18256**	**18552**	**14520**	**12480**	**12853,33**	**14288**	**17016**	**20744**	**22720**
Interest expense (capitalized operating leases)	-959	-849	-863	-675	-580	-598	-664	-791	-965	-1 056
Lease depreciation	-1 619	-1 433	-1 456	-1 140	-980	-1 009	-1 122	-1 336	-1 628	-1 784
Leasing costs for aircraft	**-2578**	**-2282**	**-2319**	**-1815**	**-1560**	**-1606,67**	**-1786**	**-2127**	**-2593**	**-2840**
Other comprehensive income, net after tax (Dirty Surplus)										
Exchange-rate differences in translation of foreign	75	-336	27	-121	127	-26	-244	86	-177	212
Cash-flow hedges – hedging reserve	79	-1848	970	469	-445	-304	-23	325	928	107
Changes in holdings in subsidiares	0	0	0	0	0	0	-1	0	0	0
Revaluations of defined-benefit pension plans	0	0	0	0	0	0	0	-1 222	75	-1 627
Total other comprehensive income, net after tax	**154**	**-2184**	**997**	**348**	**-318**	**-329,333**	**-268**	**-811**	**826**	**-1308**

2.3 SAS Analytical balance sheet, assets

SAS Analytical Balance Sheet, assets										
SEK mil	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Year end	########	2008-12-31	2009-12-31	2010-12-31	2011-12-31	2012-12-31 (ADJUSTED)	2013-10-31	2014-10-31	2015-10-31	2016-10-31
Current operating assets										
Expendable spare parts and inventories	849	819	758	678	705	687	359	342	345	312
Prepayments to suppliers	1	1	0	0	0	0	2	8	0	0
Accounts receivable	1 951	1 851	1 581	1 277	1 275	1 311	1 376	1 067	1 249	1 406
Receivables from affiliated companies	510	479	92	3	6	3	1	0	2	1
Other receivables (operational)	1 256	1 268	2 277	1 382	869	799	591	669	314	448
Prepaid expenses and accrued income	1 070	1 009	1 058	839	934	873	858	937	1 093	1 153
Operational cash (1% of revenue)	506	529	449	411	414	360	422	380	397	395
Total current operating assets	**6 143**	**5 955**	**6 215**	**4 590**	**4 203**	**4 033**	**3 609**	**3 403**	**3 400**	**3 715**
Current operating liabilties										
Prepayments from customers	20	7	13	16	24	0	16	4	22	0
Accounts payable	2 108	2 068	1 738	1 749	1 540	1 929	1 689	1 499	1 528	1 755
Unearned transportation revenue	3 842	3 299	3 227	3 598	3 453	4 292	3 932	4 244	4 482	5 318
Tax Liability	5	110	27	22	18	32	36	0	0	21
Current portion of other provisions	190	148	852	657	428	1 186	855	709	479	457
Other liabilities (current)	1 580	2 460	2 110	2 070	1 160	1 033	722	679	964	872
Accrued expenses and prepaid income	5 149	4 274	3 264	2 755	2 934	3 201	3 416	4 355	4 684	5 336
Deffered tax liabilities	3 755	2 988	2 832	2 303	2 154	1 013	938	0	0	0
Total current operating liabilities	**16 649**	**15 354**	**14 063**	**13 170**	**11 711**	**12 686**	**11 604**	**11 490**	**12 159**	**13 759**
Net working capital (NWC)	**-10 506**	**-9 399**	**-7 848**	**-8 580**	**-7 508**	**-8 653**	**-7 995**	**-8 087**	**-8 759**	**-10 044**
Non-current operating assets										
Intangible assets	1 226	1 092	1 296	1 414	1 693	1 922	1 802	1 905	1 798	1 923
Land and buildings	568	513	439	375	491	353	241	243	560	527
Aircraft	10 766	11 037	13 087	12 652	11 866	11 220	8 795	7 535	7 095	8 254
Spare engines and spare parts	1 211	1 185	1 299	1 393	1 367	1 349	147	76	31	48
Workshop and aircraft servicing equipment	226	220	161	90	76	110	117	85	101	93
Other equipment and vehicles	308	318	192	130	123	117	105	128	137	105
Investment in progress	172	232	158	118	66	34	21	71	190	33
Prepayments relating to tangible fixed assets	185	627	238	24	155	160	251	763	1 482	2 135
Equity in affiliated companies	1 063	622	358	294	317	325	352	395	421	398
Long-term receivables from affiliated companies	170	0	0	0	0	0	0	0	0	0
Pension funds, net	9 496	9 658	10 286	10 512	11 355	12 232	12 507	3 778	4 368	2 615
Deferred tax asset	690	921	1 159	1 187	1 340	597	536	1 111	375	854
Other long-term receivables (operational)	96	69	122	398	203	301	332	236	233	400
Total non-current operating assets	**26 177**	**26 494**	**28 795**	**28 587**	**29 052**	**28 720**	**25 206**	**16 326**	**16 791**	**17 385**
Non-current operating Liabilities										
Other liabilities (non-current)	120	334	378	143	55	130	161	161	188	3
Other provisions	691	768	2 131	2 143	1 673	1 967	1 361	2 088	1 992	2 089
Liabilities to affiliated companies	94	0	0	0	0	0	0	0	0	0
Total non-current operating liabiltites	**905**	**1 102**	**2 509**	**2 286**	**1 728**	**2 097**	**1 522**	**2 249**	**2 180**	**2 092**
Net non-current assets	**25 272**	**25 392**	**26 286**	**26 301**	**27 324**	**26 623**	**23 684**	**14 077**	**14 611**	**15 293**
Invested capital (exc. COL)	**14 766**	**15 993**	**18 438**	**17 721**	**19 816**	**17 970**	**15 689**	**5 990**	**5 852**	**5 249**
Capitalized operating lease (COL) operations	**20 624**	**18 256**	**18 552**	**14 520**	**12 480**	**12 853**	**14 288**	**17 016**	**20 744**	**22 720**
Invested Capital (adjusted for COL)	**35 390**	**34 249**	**36 990**	**32 241**	**32 296**	**30 823**	**29 977**	**23 006**	**26 596**	**27 969**

2.3 (Cont'd) SAS Analytical balance sheet, equity and liabilities

SAS Analytical Balance Sheet, equity and liabilities										
SEK mil	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Year end	######	2008-12-31	2009-12-31	2010-12-31	2011-12-31	2012-12-31 (ADJUSTED)	2013-10-31	2014-10-31	2015-10-31	2016-10-31
Total shareholders' equity	**17 149**	**8 682**	**11 389**	**14 438**	**12 433**	**11 156**	**11 103**	**1 407**	**2 839**	**2 526**
Current Financial liabilities										
Current portion of long-term loans	1 615	872	5 742	1 383	2 309	1 403	2 517	2 082	1 264	1 827
Short-term loans	421	1 189	907	1 073	997	411	231	462	229	320
Liabilities attributable to assets held for sale	5 323	2 465	157	132	0	0	0	0	0	0
Total current Financial Liabilties	**7 359**	**4 526**	**6 806**	**2 588**	**3 306**	**1 814**	**2 748**	**2 544**	**1 493**	**2 147**
Non-current financial Liabilities										
Preference shares	0	0	0	0	0	0	0	3 500	3 500	3 500
Subordinated loans	693	953	919	974	1 019	978	956	1 003	1 104	1 157
Bond loans	2 079	2 212	0	1 503	2 809	2 763	2 641	2 713	2 184	2 183
Other loans	3 936	10 535	6 809	6 866	6 179	5 260	5 054	4 419	4 807	4 390
Total non-current financial liabilties	**6 708**	**13 700**	**7 728**	**9 343**	**10 007**	**9 001**	**8 651**	**11 635**	**11 595**	**11 230**
Total Financial Liabilities	**14 067**	**18 226**	**14 534**	**11 931**	**13 313**	**10 815**	**11 399**	**14 179**	**13 088**	**13 377**
Financial assets										
Other holdings of securities	5	5	234	23	23	23	292	273	3	3
Other long-term receivables (financial)	481	341	607	1 981	808	949	1 917	1 692	1 718	1 931
Other receivables (financial)	1 381	1 393	2 503	1 519	1 705	600	275	594	553	745
Short-term investments	7 308	3 872	3 691	3 281	2 842	366	2 080	3 703	5 151	6 067
Cash and bank balances	1 077	1 382	49	1 351	552	2 063	2 249	3 334	2 651	1 908
Assets held for sale	6 198	3 921	401	493	0	0	0	0	0	0
Total financial assets	**16 450**	**10 914**	**7 485**	**8 648**	**5 930**	**4 001**	**6 813**	**9 596**	**10 076**	**10 654**
Net interest-bearing debt (NIBD)	**-2 383**	**7 312**	**7 049**	**3 283**	**7 383**	**6 814**	**4 586**	**4 583**	**3 012**	**2 723**
Capitalized operating lease (COL) financial	**20 624**	**18 256**	**18 552**	**14 520**	**12 480**	**12 853**	**14 288**	**17 016**	**20 744**	**22 720**
Invested Capital (adjsuted for COL)	**35 390**	**34 250**	**36 990**	**32 241**	**32 296**	**30 823**	**29 977**	**23 006**	**26 595**	**27 969**

Appendix 3: Comparison group's analytical statements

The source for all analytical statements in appendix 3 is respective airline's annual reports. For Corporate tax rates the source is KPMP 2016.

3.1 Finnair

Finnair, analytical income statement EUR mil.	2011	2012	2013	2014	2015	2016
Turnover	2258	2449	2400	2285	2255	2317
Work used for own purposes and capitalized	3	2	3	0	0	0
Other operating income	11	43	20	18	85	76
Core operating income	**2272**	**2494**	**2423**	**2303**	**2340**	**2392**
Staff costs	-477	-439	-384	-345	-353	-363
Fuel costs	-555	-670	-690	-660	-596	-492
Other rents	-128	-124	-152	-160	-159	-167
Aircraft materials and overhaul	-122	-165	-161	-119	-119	-147
Traffic charges	-212	-226	-222	-231	-259	-263
Ground handling and catering expenses	-196	-224	-257	-252	-250	-259
Expenses for tour operations	-131	-97	-89	-77	-80	-88
Sales and marketing expenses	-93	-74	-73	-65	-74	-77
Other expenses	-245	-242	-218	-217	-219	-267
Share of results in associates and joint ventures	-2	-1	-4	-3	0	0
Core operating cost	**-2161**	**-2263**	**-2251**	**-2129**	**-2109**	**-2122**
Core operating EBIDTAR	**111**	**231**	**172**	**174**	**231**	**271**
Depreciation and amortisation	-131	-131	-122	-134	-108	-106
Depreciation on capitalized operating lease	-44	-42	-36	-49	-62	-69
Core operating EBIT	**-64**	**59**	**13**	**-10**	**61**	**96**
Income taxes	24	-5	1	17	-24	-21
Tax shield, net financial expenses	-12	-10	0	-11	-9	-10
Tax on special items	0	0	1	7	-20	-12
Tax on EBIT	**12**	**-15**	**3**	**13**	**-52**	**-43**
Core NOPAT (exc. Special items)	**-52**	**44**	**16**	**3**	**8**	**53**
Special items after tax	0	0	-6	-43	117	73
NOPAT (inc. Special items)	**-52**	**44**	**10**	**-40**	**126**	**126**
Net financial expenses	-48	-42	2	-53	-45	-51
Tax shield, net financial expenses	12	10	0	11	9	10
Net earnings after tax	**-88**	**12**	**11**	**-82**	**90**	**85**

Finnair, tax allocation for income statement	2011	2012	2013	2014	2015	2016
Corporate tax rate, Finland	**26%**	**25%**	**25%**	**20%**	**20%**	**20%**
Special Items						
Fair value changes in derivatives and changes in exchange rates of fleet overhauls			22	-44	-12	32
Items affecting comparability					110	29
non-reccuring items			-27	8		
Special Items			**-5**	**-36**	**98**	**61**
Tax on special items	0	0	-1	-7	20	12
Special items after tax	**0**	**0**	**-6**	**-43**	**117**	**73**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-26	-25	-21	-29	-37	-41
Financial income	9	8	43	4	1	1
Financial expenses	-31	-26	-20	-27	-10	-12
Net financial expenses	**-48**	**-42**	**2**	**-53**	**-45**	**-51**
Tax shield, net financial expenses	-12	-10	0	-11	-9	-10
Capitalized operating lease (multiple x8)						
Aircraft operating lease costs	-70	-66	-58	-79	-99	-110
Capitalized operating lease	559	530	460	630	794	876
Interest expense on capitalized operating lease	-26	-25	-21	-29	-37	-41
Depreciation on capitalized operating lease	-44	-42	-36	-49	-62	-69
Aircraft operating lease costs	**-70**	**-66**	**-58**	**-79**	**-99**	**-110**

Finnair, analytical balance sheet EUR mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Intangible assets	32	26	19	18	10	12
Tangible assets	1468	1363	1293	898	812	1167
Investments in associates and joint ventures	14	12	8	5	3	3
Deferred tax assets	75	78	0	34	9	0
Total non-curent assets	**1589**	**1478**	**1320**	**955**	**833**	**1181**
Current assets						
Inventories	49	17	20	15	12	15
Trade and other receivables	283	251	237	194	209	212
Operational cash (1% of revenue)	24	23	20	18	23	22
Total current assets	**357**	**291**	**277**	**227**	**243**	**249**
Non-interest-bearing debt						
Deferred tax liabilities	99	95	3	0	0	33
Pension obligations	0	1	11	25	4	32
Provisions (non-current)	87	82	69	52	56	64
Other liabilities** (current)	272	169	169	137	149	161
Other liabilities*** (non-current)	0	0	25	22	16	5
Provisions (current)	46	38	41	44	38	22
Trade payables	60	70	62	56	68	94
Deferred income and advances received	225	288	341	328	375	425
Liabilities related to employee benefits	70	104	95	80	91	93
Total non-interest-bearing debt	**859**	**848**	**815**	**745**	**796**	**929**
Capitalized operating leases	**559**	**530**	**460**	**630**	**794**	**876**
Invested capital	**1647**	**1451**	**1242**	**1068**	**1074**	**1377**
Total shareholders' equity	**753**	**786**	**678**	**514**	**728**	**857**
Interest bearing liability						
Interest-bearing liabilities (non-current)	516	414	386	338	271	617
Interest-bearing liabilities (current)	230	174	208	90	75	100
Derivative financial instruments	0	19	29	199	181	25
Liabilities related to assets held for sale	0	2	2	0	0	0
Total interest bearing liability	**746**	**608**	**624**	**626**	**527**	**743**
Interest bearing assets						
Loan and other receivables	32	33	21	9	9	7
Derivative financial instruments	0	0	44	164	156	177
Other financial assets	354	364	336	333	428	728
Adjusted cash and bank balances	25	44	103	75	258	48
Assets held for sale	0	32	18	122	125	139
Total Interest bearing assets	**411**	**473**	**520**	**703**	**975**	**1099**
Capitalized operating leases	**559**	**530**	**460**	**630**	**794**	**876**
Invested capital	**1647**	**1451**	**1242**	**1068**	**1074**	**1377**

3.2 Lufthansa

Lufthansa group, analytical income statement EUR mil.	2011	2012	2013	2014	2015	2016
Traffic revenue	23 779	24 793	14 818	14 569	15 314	14 063
Other revenue	4 955	5 342	432	335	355	1 146
Core operating income	**28 734**	**30 135**	**15 250**	**14 904**	**15 669**	**15 209**
Changes in inventories and work performed by entity	139	113				
Other operating income	2 324	2 785	1 939	1 810	2 582	1 649
Cost of materials and services	-10 455	-13 110	-6 485	-6 905	-7 217	-6 933
Aircraft fuel and lubricants	-6 276	-4 836	-4 836	-4 836	-3 176	-2 847
Staff costs	-6 678	-7 052	-2 703	-2 573	-2 827	-2 855
Other operating expenses	-4 536	-4 125	-2 579	-2 800	-3 724	-2 765
Core operating cost	**-25 482**	**-26 225**	**-14 664**	**-15 304**	**-14 362**	**-13 751**
Core operating EBIDTAR	**3 252**	**3 910**	**586**	**-400**	**1 307**	**1 458**
Depreciation, amortisation and impairment	-1 722	-1 839	-380	-383	-458	-428
Depreciation on capitalized operating lease	-475	-477	-114	-144	-148	-114
Core operating EBIT	**1 055**	**1 594**	**92**	**-927**	**701**	**916**
Taxes	-157	-72	-219	-99	1 060	-346
Tax shield, net financial expenses	-200	-192	-206	-195	-433	0
Tax on special items	63	-38	-364	-283	-216	-178
Tax on EBIT	**-294**	**-302**	**-789**	**-577**	**411**	**-524**
Core NOPAT (exc. Special items)	**760**	**1 292**	**-698**	**-1 504**	**1 113**	**392**
Special items after tax	-277	168	1 595	1 234	944	776
NOPAT (inc. Special items)	**483**	**1 460**	**898**	**-270**	**2 057**	**1 169**
Net financial expenses	-680	-649	-697	-657	-1 455	1
Tax shield, net financial expenses	200	192	206	195	433	0
Group profit after tax	**4**	**1 003**	**407**	**-732**	**1 034**	**1 169**

Lufthanse Group, tax allocation for income statement	2011	2012	2013	2014	2015	2016
Corporate tax rate, Germany	**29,5%**	**29,6%**	**29,6%**	**29,7%**	**29,7%**	**29,8%**
Special Items						
Result from equity investments	91	63	1 231	951	728	598
Result of equity investments accounted for using the	-20	31				
Profit/loss from discontinued operations	-285	36				
Special Items	**-214**	**130**	**1 231**	**951**	**728**	**598**
Tax on special items	-63	38	364	283	216	178
Special items after tax	**-277**	**168**	**1 595**	**1 234**	**944**	**776**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-282	-283	-68	-85	-87	-67
Net interest	-288	-318	-418	-503	-1 237	94
Impairment on investments and current securities	-110	-48	-211	-69	-131	-26
Net financial expenses	**-680**	**-649**	**-697**	**-657**	**-1 455**	**1**
Tax shield, net financial expenses	-200	-192	-206	-195	-433	0
Capitalized operating lease (multiple x8)						
Rental and maintenance expenses	-757	-760	-182	-229	-235	-181
Capitalized operating lease	6 056	6 080	1 456	1 832	1 880	1 448
Interest expense on capitalized operating lease	-282	-283	-68	-85	-87	-67
Depreciation on capitalized operating lease	-475	-477	-114	-144	-148	-114
Rental and maintenance expenses	**-757**	**-760**	**-182**	**-229**	**-235**	**-181**

Lufthansa Group, analytical balance sheet EUR mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Intangible assets	1 568	1 575	157	371	352	339
Aircraft	11 838	11 592	4 895	4 999	5 032	4 933
Property, plant and other equipment	2 980	2 958	102	98	106	103
Financial investments (include aircrafts)	2 204	2 445	11 101	12 096	12 911	14 702
Total non-current assets	18 590	18 570	16 255	17 564	18 401	20 077
Current assets						
Inventories	639	620	65	95	88	77
Other receivables and other assets			2 101	1 508	1 450	1 384
Trade receivables (2011 & 2012 include other	3 578	3 437	488	605	426	448
Effective income tax receivables	101	128				
Prepaid expenses	151	171	35	36	45	51
Deferred tax assets	69	57			1 139	1 077
Net assets from pension obligations			293	536	48	489
Operational cash (1% of revenue)	287	301	153	149	157	152
Total current assets	**4 825**	**4 714**	**3 135**	**2 929**	**3 353**	**3 678**
Non-interest-bearing debt						
Provisions for pensions and similar obligations	2 076	2 165	2 072	2 159	2 460	2 652
Tax provisions			136	137	63	275
Other provisions	1 497	1 396	2 508	3 186	4 338	4 416
Obligations in respect of unused flight documents			2 645	1 770		
Payables to affiliated companies			2 897	3 821	4 371	5 447
Trade payables	4 231	4 227	497	457	362	428
Deferred tax liabilities	242	364				
Advance payments received, deferred income and other non-fnancial liabilities	2 096	2 095				
Total non-interest-bearing debt	**10 142**	**10 247**	**10 755**	**11 530**	**11 594**	**13 218**
Capitalized operating lease	**6 056**	**6 080**	**1 456**	**1 832**	**1 880**	**1 448**
Invested capital	**19 329**	**19 117**	**10 091**	**10 795**	**12 040**	**11 985**
Total shareholders' equity	**8 298**	**8 044**	**4 415**	**3 490**	**4 543**	**5 527**
Interest bearing liability						
Bonds			1 600	1 250	1 750	1 000
Liabilities to banks (Include bonds for 2011 & 2012)	6 910	6 424	1 068	1 014	954	1 673
Other liabilities	3 069	2 650	3 426	3 437	3 408	3 631
Liabilities related to assets held for sale	0	716				
Total Interest bearing liability	**9 979**	**9 790**	**6 094**	**5 701**	**6 112**	**6 304**
Interest bearing assets						
Securities	3 530	3 111	1 077		250	805
Adjusted cash and bank balances	1 149	586	798	228	245	489
Assets held for sale	110	686				
Derivatie financial instruments	215	414				
Total Interest bearing assets	**5 004**	**4 797**	**1 875**	**228**	**495**	**1 294**
Capitalized operating lease	**6 056**	**6 080**	**1 456**	**1 832**	**1 880**	**1 448**
Invested capital	**19 329**	**19 117**	**10 091**	**10 795**	**12 040**	**11 985**

3.3 KLM

KLM, analytical income statement EUR mil.	2011	2012	2013	2014	2015	2016
Other revenues	2 671	2 842	2 819	2 774	2 762	2 686
Passanger transport revenue	6 233	6 631	6 869	6 869	7 143	7 114
Core operating income	**8 904**	**9 473**	**9 688**	**9 643**	**9 905**	**9 800**
External expenses	-3 697	-3 044	-3 095	-3 190	-3 470	-3 525
Employee compensation and benefit expense	-2 177	-2 321	-2 404	-2 451	-2 774	-2 860
Other income and expenses	-4	-26	-139	-111	298	182
Fuel	-2 067	-3 102	-2 941	-2 894	-2 694	-1 994
Core operating cost	**-7 945**	**-8 493**	**-8 579**	**-8 646**	**-8 640**	**-8 197**
Core operating EBIDTAR	**959**	**980**	**1 109**	**997**	**1 265**	**1 603**
Depreciation and amortisation	-547	-517	-507	-539	-527	-508
Depreciation on capitalized operating lease	-128	-195	-189	-178	-222	-260
Core operating EBIT	**284**	**268**	**413**	**280**	**516**	**835**
Income tax -expense/benefit	3	13	-48	-253	-42	-69
Tax shield, net financial expenses	-69	-55	-43	-78	-113	-63
Tax on special items	2	27	15	-157	-9	-2
Tax on EBIT	**-64**	**-15**	**-75**	**-488**	**-164**	**-134**
Core NOPAT (exc. Special items)	**219**	**253**	**337**	**-208**	**352**	**701**
Special items after tax	-10	-133	-76	784	43	8
NOPAT (inc. Special items)	**209**	**120**	**261**	**576**	**394**	**709**
Net financial expenses	-278	-219	-171	-313	-454	-253
Tax shield, net financial expenses	69	55	43	78	113	63
Group profit after tax	**1**	**-44**	**133**	**341**	**54**	**519**

KLM, tax allocation for income statement	2011	2012	2013	2014	2015	2016
Corporate tax rate, Netherlands	**25%**	**25%**	**25%**	**25%**	**25%**	**25%**
Special Items						
Other non-current income and expenses	-11	-95	-51	676	71	3
Share of results of equity shareholdings	3	-11	-10	-49	-37	3
Special Items	-8	-106	-61	627	34	6
Tax on special items	-2	-27	-15	157	9	2
Special items after tax	**-10**	**-133**	**-76**	**784**	**43**	**8**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-76	-115	-112	-105	-132	-154
Gross cost of financial debt	-162	-157	-157	-145	-135	-116
Income from cash and cash equivalents	39	29	30	29	21	16
Other financial income and expense	-79	24	68	-92	-208	1
Net financial expenses	**-278**	**-219**	**-171**	**-313**	**-454**	**-253**
Tax shield, net financial expenses	-69	-55	-43	-78	-113	-63
Capitalized operating lease (multiple x8)						
Aircraft operating lease costs	-204	-310	-301	-283	-354	-414
Capitalized operating lease	1 632	2 480	2 408	2 264	2 832	3 312
Interest expense on capitalized operating lease	-76	-115	-112	-105	-132	-154
Depreciation on capitalized operating lease	-128	-195	-189	-178	-222	-260
Aircraft operating lease costs	**-204**	**-310**	**-301**	**-283**	**-354**	**-414**

KLM, analytical balance sheet EUR mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Property, plant and equipment	4 405	4 182	3 999	3 672	3 526	3 783
Intangible assets	183	218	254	292	308	343
Other non-current assets	95	88	108	215	282	317
Deferred income tax assets	37	40	61	365	214	119
Pension assets	3 209	3 459	2 454	1 409	1 773	1 462
Total non-current assets	**7 929**	**7 987**	**6 876**	**5 953**	**6 103**	**6 024**
Current assets						
Other current assets	165	80	121	127	281	224
Inventories	236	204	202	193	161	193
Trade and other receivables	856	887	872	896	845	964
Operational cash (1% of revenue)	27	28	28	28	28	27
Total current assets	**1 284**	**1 199**	**1 223**	**1 244**	**1 315**	**1 408**
Non-interest-bearing debt						
Other non-current liabilities	119	206	167	301	267	171
Deferred income	210	186	158	145	162	204
Deferred income tax liabilities	369	338	84			
Provisions for employee benefits	149	163	389	401	399	474
Other provisions	412	484	506	526	547	593
Trade and other payables	1 624	1 784	1 805	1 785	1 750	1 983
Other current liabilities	64	44	68	529	632	66
Deferred income	685	825	875	897	922	1 017
Provisions for employee benefits	48	48	45	42	32	28
Current income tax liabilities	4					
Other provisions	44	39	43	179	264	163
Total non-interest-bearing debt	**3 728**	**4 117**	**4 140**	**4 805**	**4 975**	**4 699**
Capitalized operating lease	**1 632**	**2 480**	**2 408**	**2 264**	**2 832**	**3 312**
Invested capital	**7 117**	**7 549**	**6 367**	**4 656**	**5 275**	**6 045**
Total shareholders' equity	**2 558**	**2 441**	**1 611**	**9**	**396**	**988**
Interest bearing liability						
Loans from parent company	387	476	491	288	288	288
Finance lease obligations	1 795	1 796	1 683	1 429	1 481	1 365
Other financial liabilities	1 476	1 424	1 077	1 182	1 184	1 208
Loans from parent company	150	60	-	233	105	-
Finance lease obligations	284	322	263	341	209	395
Other financial liabilities	239	152	344	212	87	85
Total Interest bearing liability	**4 331**	**4 230**	**3 858**	**3 685**	**3 354**	**3 341**
Interest bearing assets						
Investments accounted for using the equity method	85	113	105	58	24	22
Other financial assets	203	204	210	174	277	365
Other financial assets	86	78	247	260	194	28
Adjusted cash and bank balances	1 030	1 207	948	810	812	1 181
Total Interest bearing assets	**1 404**	**1 602**	**1 510**	**1 302**	**1 307**	**1 596**
Capitalized operating lease	**1 632**	**2 480**	**2 408**	**2 264**	**2 832**	**3 312**
Invested capital	**7 117**	**7 549**	**6 367**	**4 656**	**5 275**	**6 045**

3.4 Delta Airlines

Delta Airlines, analytical income statement USD mil.	2011	2012	2013	2014	2015	2016
Total passenger revenue	30 257	31 807	32 942	34 954	34 782	33 777
Cargo	1 027	990	937	934	813	668
Other	3 831	3 873	3 894	4 474	5 109	5 194
Core operating income	**35 115**	**36 670**	**37 773**	**40 362**	**40 704**	**39 639**
Contracted services	-1 642	-1 566	-1 665	-1 749	-1 848	-1 991
Salaries and related costs	-6 894	-7 266	-7 720	-8 120	-8 776	-10 034
Passenger commissions and other selling expenses	-1 682	-1 590	-1 603	-1 700	-1 672	-1 710
Aircraft fuel and related taxes	-9 730	-10 150	-9 397	-11 668	-6 544	-5 133
Landing fees and other rents	-1 281	-1 336	-1 410	-1 442	-1 493	-1 490
Profit sharing	-264	-372	-506	-1 085	-1 490	-1 115
Passenger service	-721	-732	-762	-810	-872	-907
Restructuring and other items	-242	-452	-402	-716	0	0
Aircraft maintenance materials and outside repairs	-1 765	-1 955	-1 852	-1 828	-1 848	-1 823
Other	-826	-764	-629	-930	-1 083	-971
Regional carrier expense	-5 470	-5 647	-5 669	-5 237	-4 241	-4 311
Miscellaneous, net	-44	-27	-21	-216	-164	72
Core operating cost	**-30 561**	**-31 857**	**-31 636**	**-35 501**	**-30 031**	**-29 413**
Core operating EBIDTAR	**4 554**	**4 813**	**6 137**	**4 861**	**10 673**	**10 226**
Depreciation and amortization	-1 523	-1 565	-1 658	-1 771	-1 835	-1 902
Depreciation on capitalized operating lease	-691	-691	-691	-691	-754	-816
Core operating EBIT	**2 340**	**2 557**	**3 788**	**2 399**	**8 084**	**7 508**
Income Tax (Provision) Benefit	85	-16	8 013	-413	-2 631	-2 263
Tax shield, net financial expenses	-524	-488	-504	-424	-371	-349
Tax on special items	104	124	0	107	0	0
Tax on EBIT	**-335**	**-380**	**7 509**	**-729**	**-3 002**	**-2 612**
Core NOPAT (exc. Special items)	**2 006**	**2 177**	**11 297**	**1 670**	**5 082**	**4 896**
Special items after tax	-365	-435	0	-375	0	0
NOPAT (inc. Special items)	**1 640**	**1 742**	**11 297**	**1 295**	**5 082**	**4 896**
Net financial expenses	-1 310	-1 221	-1 261	-1 059	-927	-872
Tax shield, net financial expenses	524	488	504	424	371	349
Group profit after tax	**854**	**1 009**	**10 540**	**659**	**4 526**	**4 373**

Delta Airlines, tax allocation for income statement	2011	2012	2013	2014	2015	2016
Corporate tax rate, US	**40%**	**40%**	**40%**	**40%**	**40%**	**40%**
Special Items						
Loss on extinguishment of debt	-68	-118		-268		
Amortization of debt discount, net	-193	-193				
Special Items	**-261**	**-311**	**0**	**-268**	**0**	**0**
Tax on special items	-104	-124	0	-107	0	0
Special items after tax	**-365**	**-435**	**0**	**-375**	**0**	**0**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-409	-409	-409	-409	-446	-484
Interest expense, net	-901	-812	-852	-650	-481	-388
Net financial expenses	-1 310	-1 221	-1 261	-1 059	-927	-872
Tax shield, net financial expenses	**-524**	**-488**	**-504**	**-424**	**-371**	**-349**
Capitalized operating lease (multiple x8)						
Aircraft rent	-1 100	-1 100	-1 100	-1 100	-1 200	-1 300
Capitalized operating lease	8 800	8 800	8 800	8 800	9 600	10 400
Interest expense on capitalized operating lease	-409	-409	-409	-409	-446	-484
Depreciation on capitalized operating lease	-691	-691	-691	-691	-754	-816
Aircraft rent	**-1 100**	**-1 100**	**-1 100**	**-1 100**	**-1 200**	**-1 300**

Delta Airlines, analytical balance sheet USD mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Goodwill	9 794	9 794	9 794	9 794	9 794	9 794
Identifiable intangibles net	4 751	4 679	4 658	4 603	4 861	4 844
Deferred income taxes net			4 992	4 320	4 956	3 077
Property and equipment net	20 223	20 713	21 854	21 929	23 039	24 375
Total non-current assets	34 768	35 186	41 298	40 646	42 650	42 090
Current assets						
Accounts receivable	1 563	1 693	1 609	2 297	2 020	2 064
Fuel inventory	168	619	706	534	379	519
Expendable parts and supplies inventories net	367	404	357	318	318	372
Deferred income taxes net	461	463	1 736	3 275		
Prepaid expenses and other	1 250	1 344	852	733	915	836
Operational cash (1% of revenue)	303	318	329	350	348	338
Total current assets	**4 112**	**4 841**	**5 589**	**7 507**	**3 980**	**4 129**
Non-interest-bearing debt						
Air traffic liability	3 480	3 696	4 122	4 296	4 503	4 626
Accounts payable	1 600	2 293	2 300	2 622	2 743	2 572
Accrued salaries and related benefits	1 367	1 680	1 926	2 266	3 195	2 924
Frequent flyer deferred revenue	1 849	1 806	1 861	1 580	1 635	1 648
Taxes Payable	594	585				
Fuel card obligation	318	455				
Pension postretirement and related benefits	14 200	16 005	12 392	15 138	13 855	13 461
Frequent flyer deferred revenue	2 700	2 628	2 559	2 602	2 246	2 278
Deferred income taxes, net	2 028	2 047				
Other accrued liabilities	1 549	1 128	2 250	2 127	1 306	1 632
Total non-interest-bearing debt	**29 685**	**32 323**	**27 410**	**30 631**	**29 483**	**29 141**
Capitalized operating lease	**8 800**	**8 800**	**8 800**	**8 800**	**9 600**	**10 400**
Invested capital	**17 995**	**16 504**	**28 277**	**26 322**	**26 747**	**27 478**
Total shareholders' equity	**-1 396**	**-2 131**	**11 643**	**8 813**	**10 850**	**12 263**
Interest bearing liability						
Current maturities of long-term debt and capital leases	1 944	1 627	1 547	1 216	1 563	1 131
Hedge derivatives liability			146	2 772	2 581	688
Long-term debt and capital leases	11 847	11 082	9 795	8 561	6 766	6 201
Other noncurrent liabilities	1 419	1 649	1 711	2 128	1 891	1 832
Total Interest bearing liability	**15 210**	**14 358**	**13 199**	**14 677**	**12 801**	**9 852**
Interest bearing assets						
Short-term investments	958	958	959	1 217	1 465	487
Hedge margin receivable			3	925		
Hedge derivatives asset			585	1 078	1 987	393
Restricted cash	305	375				
Other noncurrent assets	1 002	1 092	1 303	1 010	1 428	1 733
Adjusted cash and bank balances	2 354	2 098	2 515	1 738	1 624	2 424
Total Interest bearing assets	**4 619**	**4 523**	**5 365**	**5 968**	**6 504**	**5 037**
Capitalized operating lease	**8 800**	**8 800**	**8 800**	**8 800**	**9 600**	**10 400**
Invested capital	**17 995**	**16 504**	**28 277**	**26 322**	**26 747**	**27 478**

3.5 Norwegian

Norwegian, analytical income statement NOK 1000	2011	2012	2013	2014	2015	2016
Revenues	10 528 720	12 841 191	15 511 218	19 540 039	22 483 544	25 950 554
Other income	3 471	17 851	68 326	0	7 603	103 971
Core operating income	**10 532 191**	**12 859 042**	**15 579 544**	**19 540 039**	**22 491 147**	**26 054 525**
Aviation fuel	-3 093 514	-3 740 508	-4 707 203	-6 321 053	-5 184 475	-5 052 906
Operating expenses	-3 895 745	-4 358 001	-5 378 999	-7 193 131	-8 441 321	-10 129 579
Payroll	-1 836 194	-2 068 202	-2 478 294	-3 208 987	-3 433 703	-3 971 412
Other operating expenses	-472 908	-534 335	-733 319	-1 049 577	-1 263 185	-1 519 111
Other losses/gains - net	305 720	-336 385	502 148	-583 751	-474 150	576 553
Share of profit (loss) from associated company	19 518	32 840	46 597	57 631	103 441	212 801
Core operating cost	**-8 973 123**	**-11 004 591**	**-12 749 070**	**-18 298 868**	**-18 693 393**	**-19 883 654**
Core operating EBIDTAR	**1 559 068**	**1 854 451**	**2 830 474**	**1 241 171**	**3 797 754**	**6 170 871**
Depreciation, amortization and impairment	-293 950	-385 244	-529 825	-748 138	-1 133 287	-1 295 825
Depreciation on capitalized operating lease	-521 031	-648 671	-806 600	-1 159 250	-1 389 922	-1 784 687
Core operating EBIT	**744 087**	**820 536**	**1 494 049**	**-666 217**	**1 274 545**	**3 090 359**
Income tax	-44 416	-166 535	-115 817	557 284	171 114	-373 353
Tax shield, net financial expenses	-161 713	-55 260	-295 867	-259 424	-323 867	-395 506
Tax on special items	0	0	0	0	0	0
Tax on EBIT	**-206 129**	**-221 795**	**-411 684**	**297 860**	**-152 753**	**-768 859**
Core NOPAT (exc. Special items)	**537 958**	**598 742**	**1 082 365**	**-368 357**	**1 121 792**	**2 321 499**
Special items after tax	0	0	0	0	0	0
NOPAT (inc. Special items)	**537 958**	**598 742**	**1 082 365**	**-368 357**	**1 121 792**	**2 321 499**
Net financial expenses	-577 547	-197 356	-1 056 669	-960 829	-1 199 507	-1 582 026
Tax shield, net financial expenses	161 713	55 260	295 867	259 424	323 867	395 506
Group profit after tax	**122 124**	**456 645**	**321 563**	**-1 069 762**	**246 152**	**1 134 980**

Norwegian, tax allocation for income statement NOK 1000	2011	2012	2013	2014	2015	2016
Corporate tax rate, Norway	28%	28%	28%	27%	27%	25%
Special Items						
Special Items	0	0	0	0	0	0
Tax on special items	0	0	0	0	0	0
Special items after tax	**0**	**0**	**0**	**0**	**0**	**0**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-308 636	-384 244	-477 795	-686 690	-823 329	-1 057 172
Net financial items	-268 911	186 888	-578 874	-274 139	-376 178	-524 854
Net financial expenses	-577 547	-197 356	-1 056 669	-960 829	-1 199 507	-1 582 026
Tax shield, net financial expenses	**-161 713**	**-55 260**	**-295 867**	**-259 424**	**-323 867**	**-395 506**
Capitalized operating lease (multiple x8)						
Aircraft lease	-829 667	-1 032 915	-1 284 395	-1 845 940	-2 213 251	-2 841 859
Capitalized operating lease	6 637 336	8 263 320	10 275 160	14 767 520	17 706 008	22 734 872
Interest expense on capitalized operating lease	-308 636	-384 244	-477 795	-686 690	-823 329	-1 057 172
Depreciation on capitalized operating lease	-521 031	-648 671	-806 600	-1 159 250	-1 389 922	-1 784 687
Aircraft lease	**-829 667**	**-1 032 915**	**-1 284 395**	**-1 845 940**	**-2 213 251**	**-2 841 859**

Norwegian, analytical balance sheet NOK 1000	2011	2012	2013	2014	2015	2016
Non-current assets						
Intangible assets	236 216	237 774	225 270	206 826	206 675	198 260
Deferred tax assets	2 069	4 293	28 517	518 915	593 626	241 499
Aircraft, parts and installatons on leased aircraft	3 869 159	5 579 757	7 526 707	12 527 932	18 507 706	22 571 775
Equipment and fixtures	31 991	58 476	72 972	83 687	79 508	88 361
Buildings	9 525	9 525	14 966	252 236	285 674	283 236
Investment in associate	82 091	116 050	164 575	223 594	328 127	609 110
Prepayment to aircraft manufacturers	2 126 954	2 844 359	2 514 882	4 102 664	5 939 281	7 156 303
Total non-current assets	**6 358 005**	**8 850 234**	**10 547 889**	**17 915 854**	**25 940 597**	**31 148 544**
Current assets						
Inventory	81 994	68 385	74 135	82 851	104 141	102 465
Trade and other receivables	1 072 497	1 096 558	1 623 079	2 173 522	2 550 716	3 013 978
Operational cash (1% of revenue)	105 287	128 412	155 112	195 400	224 835	259 506
Total current assets	**1 259 778**	**1 293 355**	**1 852 326**	**2 451 773**	**2 879 692**	**3 375 949**
Non-interest-bearing debt						
Pension obligation	151 187	0	127 821	201 883	134 516	107 379
Provision for periodic maintenance	81 865	175 306	412 737	835 480	1 177 513	1 376 465
Deferred tax	134 646	301 042	443 991	169 851		
Trade and other payables	1 230 935	1 564 955	1 949 693	2 680 445	2 862 566	3 881 684
Air traffic settlement liabilities	1 208 326	1 739 681	2 566 519	2 965 427	4 014 428	4 666 212
Tax payable	488	0	2	2 211	32 123	7 650
Other long term liabilities	0	0	0	0	80 338	85 166
Total non-interest-bearing debt	**2 807 447**	**3 780 984**	**5 500 763**	**6 855 297**	**8 301 484**	**10 124 556**
Capitalized operating lease	**6 637 336**	**8 263 320**	**10 275 160**	**14 767 520**	**17 706 008**	**22 734 872**
Invested capital	**11 447 672**	**14 625 925**	**17 174 612**	**28 279 850**	**38 224 813**	**47 134 809**
Total shareholders' equity	**1 945 588**	**2 420 651**	**2 749 826**	**2 108 251**	**2 965 312**	**4 048 975**
Interest bearing liability						
Borrowings	2 682 888	4 166 854	5 736 896	9 950 228	16 543 405	18 706 062
Financial lease liability	15 485	10 853	6 860	3 227		
Derivative financial instruments	0	0	0	0	0	27 939
Short term part of borrowings	1 551 918	1 349 359	768 401	3 330 387	3 041 388	4 768 813
Derivative financial instruments	539	190 356	0	458 958	782 523	86 306
Total Interest bearing liability	**4 250 830**	**5 717 422**	**6 512 157**	**13 742 800**	**20 367 316**	**23 589 120**
Interest bearing assets						
Derivative financial instruments	242 790	0	37 389	0	0	353 246
Financial assets available for sale	0	10 172	11 158	0	0	0
Financial lease asset	27 882	24 562	21 242	19 234	0	0
Financial assets available for sale	2 689	2 689	82 689	82 689	82 689	82 689
Derivative financial instruments	0	0	0	0	0	114 476
Other receivables	113 061	135 562	199 036	421 060	501 811	623 606
Adjusted cash and bank balances	999 659	1 602 483	2 011 014	1 815 739	2 229 325	2 064 141
Total Interest bearing assets	**1 386 081**	**1 775 468**	**2 362 528**	**2 338 722**	**2 813 825**	**3 238 158**
Capitalized operating lease	**6 637 336**	**8 263 320**	**10 275 160**	**14 767 520**	**17 706 008**	**22 734 872**
Invested capital	**11 447 673**	**14 625 925**	**17 174 615**	**28 279 849**	**38 224 811**	**47 134 809**

3.6 Easy Jet

Easy Jet, analytical income statement GBP mil.	2011	2012	2013	2014	2015	2016
Seat revenue	2 733	3 794	4 194	4 462	4 616	4 587
Non-seat revenue	719	60	64	65	70	82
Core operating income	**3 452**	**3 854**	**4 258**	**4 527**	**4 686**	**4 669**
Fuel	-917	-1 149	-1 182	-1 251	-1 199	-1 114
Crew	-407	-432	-454	-479	-505	-542
Ground operations	-923	-955	-1 078	-1 107	-1 122	-1 267
Navigation	-285	-280	-294	-307	-313	-336
Maintenance	-179	-203	-212	-212	-229	-237
Selling and marketing	-102	-104	-101	-103	-102	-107
Royalty	-4	0	0	0	0	0
Other costs	-171	-200	-226	-245	-276	-296
Core operating cost	**-2 988**	**-3 323**	**-3 547**	**-3 704**	**-3 746**	**-3 899**
Core operating EBIDTAR	**464**	**531**	**711**	**823**	**940**	**770**
Depreciation	-83	-97	-102	-106	-125	-157
Amortisation of intangible assets	-7	-8	-10	-12	-13	-12
Depreciation on capitalized operating lease	-68	-60	-64	-78	-72	-65
Core operating EBIT	**306**	**366**	**535**	**627**	**730**	**536**
Tax charge	-23	-62	-80	-131	-138	-68
Tax shield, net financial expenses	-16	-12	-13	-10	-9	-8
Tax on special items	0	0	0	0	0	0
Tax on EBIT	**-39**	**-74**	**-93**	**-141**	**-147**	**-76**
Core NOPAT (exc. Special items)	**267**	**292**	**442**	**486**	**584**	**460**
Special items after tax	0	0	0	0	0	0
NOPAT (inc. Special items)	**267**	**292**	**442**	**486**	**584**	**460**
Net financial expenses	-62	-49	-57	-46	-44	-41
Tax shield, net financial expenses	16	12	13	10	9	8
Group profit after tax	**221**	**255**	**398**	**450**	**548**	**427**

Easy Jet, tax allocation for income statement GBP mil.	2011	2012	2013	2014	2015	2016
Corporate tax rate, UK	**26%**	**24%**	**23%**	**21%**	**20%**	**20%**
Special Items						
Special Items	0	0	0	0	0	0
Tax on special items	0	0	0	0	0	0
Special items after tax	**0**	**0**	**0**	**0**	**0**	**0**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-41	-35	-38	-46	-42	-38
Interest receivable and other financing	9	11	5	11	9	10
Interest payable and other financing	-30	-25	-24	-11	-11	-13
Net financial expenses	-62	-49	-57	-46	-44	-41
Tax shield, net financial expenses	**-16**	**-12**	**-13**	**-10**	**-9**	**-8**
Capitalized operating lease (multiple x8)						
Aircraft dry leasing	-109	-95	-102	-124	-114	-103
Capitalized operating lease	872	760	816	992	912	824
Interest expense on capitalized operating lease	-41	-35	-38	-46	-42	-38
Depreciation on capitalized operating lease	-68	-60	-64	-78	-72	-65
Aircraft dry leasing	**-109**	**-95**	**-102**	**-124**	**-114**	**-103**

Easy Jet, analytical balance sheet GBP mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Goodwill	365	365	365	365	365	365
Other intangible assets	86	91	102	113	127	152
Property, plant and equipment	2 149	2 395	2 280	2 542	2 877	3 252
Investment in associates	0	0	0	0	0	0
Deferred tax assets		0	0	0	0	0
Other non-current assets	63	57	185	152	130	121
Total non-current assets	**2 663**	**2 908**	**2 932**	**3 172**	**3 499**	**3 890**
Current assets						
Trade and other receivables	165	241	194	200	206	217
Operational cash (1% of revenue)	27	38	42	45	46	46
Total current assets	**192**	**279**	**236**	**245**	**252**	**263**
Non-interest-bearing debt						
Trade and other payables	916	1 021	1 093	1 110	495	564
Unearned rev.	0	0	0	0	619	568
Current tax liabilities	9	29	58	53	43	21
Maintenance provisions	45	59	81	79	61	53
Non-current deferred income	59	46	68	62	47	35
Maintenance provisions	177	141	171	147	165	235
Deferred tax liabilities	179	198	144	186	176	237
Total non-interest-bearing debt	**1 385**	**1 494**	**1 615**	**1 637**	**1 606**	**1 713**
Capitalized operating lease	**872**	**760**	**816**	**992**	**912**	**824**
Invested capital	**2 342**	**2 453**	**2 369**	**2 772**	**3 057**	**3 264**
Total shareholders' equity	**1 705**	**1 794**	**2 017**	**2 172**	**2 249**	**2 712**
Interest bearing liability						
Borrowings	155	129	87	91	182	92
Derivative financial instruments	52	26	60	87	368	275
Borrowings	1 145	828	592	472	322	664
Derivative financial instruments	27	24	41	23	101	49
Total Interest bearing liability	**1 379**	**1 007**	**780**	**673**	**973**	**1 080**
Interest bearing assets						
Derivative financial instruments	24	21	13	36	44	154
Loan notes	11	10	7	4	0	0
Restricted cash	33	29	12	9	6	7
Derivative financial instruments	83	73	17	53	128	268
Restricted cash	90	130	0	23	6	0
Money market deposits	300	238	224	561	289	255
Adjusted cash and bank balances	1 073	607	971	379	604	668
Total Interest bearing assets	**1 614**	**1 108**	**1 244**	**1 065**	**1 077**	**1 352**
Capitalized operating lease	**872**	**760**	**816**	**992**	**912**	**824**
Invested capital	**2 342**	**2 453**	**2 369**	**2 772**	**3 057**	**3 264**

3.7 Southwest Airlines

SouthWest Airlines, analytical income statement USD mil.	2011	2012	2013	2014	2015	2016
Passenger	14 754	16 093	16 721	17 658	18 299	18 594
Freight	139	160	164	175	179	171
Special revenue adjustment					172	
Other	765	835	814	772	1 170	1 660
Core operating income	**15 658**	**17 088**	**17 699**	**18 605**	**19 820**	**20 425**
Salaries wages and benefits	-4 371	-4 749	-5 035	-5 434	-6 383	-6 798
Fuel and oil	-5 644	-6 120	-5 763	-5 293	-3 616	-3 647
Maintenance materials and repairs	-955	-1 132	-1 080	-978	-1 005	-1 045
Landing fees and other rentals	-959	-1 043	-1 103	-1 111	-1 166	-1 211
Acquisition and integration	-134	-183	-86	-126	-39	
Other operating expenses	-1 879	-2 039	-2 126	-2 205	-2 242	-2 514
Core operating cost	**-13 942**	**-15 266**	**-15 193**	**-15 147**	**-14 451**	**-15 215**
Core operating EBIDTAR	**1 716**	**1 822**	**2 506**	**3 458**	**5 369**	**5 210**
Depreciation and amortization	-715	-844	-867	-938	-1 015	-1 221
Depreciation on capitalized operating lease	-193	-223	-227	-185	-149	-144
Core operating EBIT	**808**	**755**	**1 412**	**2 335**	**4 205**	**3 845**
Provision for income taxes	-145	-264	-455	-680	-1 298	-1 303
Tax shield, net financial expenses	-115	-100	-94	-84	-68	-54
Tax on special items	79	-72	-13	124	222	65
Tax on EBIT	**-180**	**-437**	**-562**	**-640**	**-1 143**	**-1 293**
Core NOPAT (exc. Special items)	**627**	**318**	**850**	**1 694**	**3 061**	**2 553**
Special items after tax	-277	253	45	-433	-778	-227
NOPAT (inc. Special items)	**350**	**572**	**895**	**1 262**	**2 283**	**2 326**
Net financial expenses	-287	-251	-235	-210	-170	-136
Tax shield, net financial expenses	115	100	94	84	68	54
Group profit after tax	**178**	**421**	**754**	**1 136**	**2 181**	**2 244**

SouthWest Airlines, tax allocation for income statement USD mil.	2011	2012	2013	2014	2015	2016
Corporate tax rate, US	**40,00%**	**40,00%**	**40,00%**	**40,00%**	**40,00%**	**40,00%**
Special Items						
Other (gains) losses net	-198	181	32	-309	-556	-162
Special Items	-198	181	32	-309	-556	-162
Tax on special items	-79	72	13	-124	-222	-65
Special items after tax	**-277**	**253**	**45**	**-433**	**-778**	**-227**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-115	-132	-134	-110	-89	-85
Interest expense	-194	-147	-131	-130	-121	-122
Capitalized interest	12	21	24	23	31	47
Interest income	10	7	6	7	9	24
Net financial expenses	-287	-251	-235	-210	-170	-136
Tax shield, net financial expenses	**-115**	**-100**	**-94**	**-84**	**-68**	**-54**
Capitalized operating lease (multiple x8)						
Aircraft rentals	-308	-355	-361	-295	-238	-229
Capitalized operating lease	2 464	2 840	2 888	2 360	1 904	1 832
Interest expense on capitalized operating lease	-115	-132	-134	-110	-89	-85
Depreciation on capitalized operating lease	-193	-223	-227	-185	-149	-144
Aircraft rentals	**-308**	**-355**	**-361**	**-295**	**-238**	**-229**

SouthWest Airlines, analytical balance sheet USD mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
PPE	12 127	12 766	13 389	14 292	15 601	17 044
Goodwill	970	970	970	970	970	970
Total non-current assets	**13 097**	**13 736**	**14 359**	**15 262**	**16 571**	**18 014**
Current assets						
Accounts and other receivables	299	332	419	365	474	546
Inventories of parts and supplies, at cost	401	469	467	342	311	337
Deferred income taxes	263	246	168	477		
Prepaid expenses and other current assets	238	210	250	232	188	310
Operational cash (1% of revenue)	148	161	167	177	183	186
Total current assets	**1 349**	**1 418**	**1 471**	**1 593**	**1 156**	**1 379**
Non-interest-bearing debt						
Accounts payable	1 057	1 107	1 247	1 203	1 188	1 178
Air traffic liability	1 836	2 170	2 571	2 897	2 990	3 115
Deferred income taxes	2 566	2 884	2 934	3 259	2 490	3 374
Construction obligation	75	63	437	554	757	1 078
Accrued liabilities	996	1 102	1 229	1 565	2 591	1 985
Other non-current liabilities	910	1 124	771	1 255	760	728
Total non-interest-bearing debt	**7 440**	**8 450**	**9 189**	**10 733**	**10 776**	**11 458**
Capitalized operating lease	**2 464**	**2 840**	**2 888**	**2 360**	**1 904**	**1 832**
Invested capital	**9 470**	**9 544**	**9 529**	**8 482**	**8 855**	**9 767**
Total shareholders' equity	**6 877**	**6 992**	**7 336**	**6 775**	**7 358**	**8 441**
Interest bearing liability						
Current maturities of long-term debt	644	271	629	258	637	566
Long-term debt less current maturities	3 107	2 883	2 191	2 434	2 541	2 821
Total Interest bearing liability	**3 751**	**3 154**	**2 820**	**2 692**	**3 178**	**3 387**
Interest bearing assets						
Short-term investments	2 315	1 857	1 797	1 706	1 468	1 625
Other assets	626	633	530	534	717	774
Adjusted cash and bank balances	681	952	1 188	1 105	1 400	1 494
Total Interest bearing assets	**3 622**	**3 442**	**3 515**	**3 345**	**3 585**	**3 893**
Capitalized operating lease	**2 464**	**2 840**	**2 888**	**2 360**	**1 904**	**1 832**
Invested capital	**9 470**	**9 544**	**9 529**	**8 482**	**8 855**	**9 767**

3.8 Ryanair

Ryanair, analytical income statement GBP mil.	2011	2012	2013	2014	2015	2016
Scheduled revenues	2 828	3 504	3 820	3 790	4 260	4 967
Ancillary revenues	802	886	1 064	1 247	1 394	1 569
Core operating income	**3 630**	**4 390**	**4 884**	**5 037**	**5 654**	**6 536**
Fuel and oil	-1 227	-1 594	-1 886	-2 013	-1 992	-2 071
Airport and handling charges	-492	-554	-612	-617	-713	-831
Route charges	-411	-461	-487	-522	-547	-623
Staff costs	-376	-415	-436	-464	-503	-585
Marketing distribution & other	-155	-180	-198	-193	-234	-293
Maintenance materials and repairs	-94	-104	-121	-116	-135	-130
Icelandic volcanic ash related cost	-12					
Core operating cost	**-2 766**	**-3 307**	**-3 738**	**-3 925**	**-4 124**	**-4 533**
Core operating EBIDTAR	**863**	**1 083**	**1 146**	**1 112**	**1 530**	**2 003**
Depreciation	-278	-309	-330	-352	-378	-427
Depreciation on capitalized operating lease	-61	-57	-62	-64	-69	-72
Core operating EBIT	**524**	**717**	**755**	**696**	**1 084**	**1 503**
Tax expense on profit on ordinary activities	-46	-73	-82	-69	-116	-163
Tax shield, net financial expenses	-13	-12	-14	-13	-12	-12
Tax on special items	0	2	1	0	-1	39
Tax on EBIT	**-59**	**-83**	**-95**	**-82**	**-128**	**-135**
Core NOPAT (exc. Special items)	**465**	**634**	**660**	**615**	**955**	**1 367**
Special items after tax	-1	13	4	0	-4	276
NOPAT (inc. Special items)	**465**	**647**	**664**	**614**	**952**	**1 643**
Net financial expenses	-103	-99	-108	-104	-97	-96
Tax shield, net financial expenses	13	12	14	13	12	12
Group profit after tax	**375**	**560**	**569**	**523**	**867**	**1 559**

Ryanair, tax allocation for income statement GBP mil.	2011	2012	2013	2014	2015	2016
Corporate tax rate, Ireland	**13%**	**13%**	**13%**	**13%**	**13%**	**13%**
Special Items						
Gain on disposal of available for sale financial asset		10				318
Foreign exchange (loss)/gain	-1	4	5	-1	-4	-3
Special Items	-1	15	5	-1	-4	315
Tax on special items	0	-2	-1	0	1	-39
Special items after tax	**-1**	**13**	**4**	**0**	**-4**	**276**
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	-36	-34	-37	-38	-41	-43
Finance expense	-94	-109	-99	-83	-74	-71
Finance income	27	44	27	17	18	18
Net financial expenses	-103	-99	-108	-104	-97	-96
Tax shield, net financial expenses	**-13**	**-12**	**-14**	**-13**	**-12**	**-12**
Capitalized operating lease (multiple x8)						
Aircraft operating lease	-97	-91	-98	-102	-109	-115
Capitalized operating lease	778	726	786	812	875	921
Interest expense on capitalized operating lease	-36	-34	-37	-38	-41	-43
Depreciation on capitalized operating lease	-61	-57	-62	-64	-69	-72
Aircraft operating lease	**-97**	**-91**	**-98**	**-102**	**-109**	**-115**

Ryanair, analytical balance sheet GBP mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Property, plant and equipment	4 934	4 925	4 906	5 060	5 471	6 262
Intangible assets	47	47	47	47	47	47
Total non-current assets	**4 981**	**4 972**	**4 953**	**5 107**	**5 518**	**6 308**
Current assets						
Inventories	3	3	3	3	2	3
Current tax	1	9	-	1	1	
Trade receivables	51	52	56	58	60	66
Other assets	99	65	68	124	139	149
Operational cash (1% of revenue)	28	35	38	38	43	50
Total current assets	**181**	**164**	**165**	**224**	**244**	**268**
Non-interest-bearing debt						
Trade payables	151	181	138	150	197	231
Current tax			0			21
Provisions	90	103	136	134	181	149
Deferred tax	268	319	347	369	462	386
Accrued expenses and other liabilities	**1 224**	**1 237**	**1 341**	**1 561**	**1 938**	**2 113**
Total non-interest-bearing debt	**1 732**	**1 841**	**1 962**	**2 214**	**2 778**	**2 899**
Capitalized operating lease	**778**	**726**	**786**	**812**	**875**	**921**
Invested capital	4 207	4 020	3 941	3 929	3 860	4 598
Total shareholders' equity	**2 954**	**3 307**	**3 273**	**3 286**	**4 035**	**3 597**
Interest bearing liability						
Current maturities of debt	337	368	400	468	400	450
Derivative financial instruments	125	28	32	95	812	555
Derivative financial instruments	8	54	50	43	73	112
Other creditors	127	146	128	90	56	33
Non-current maturities of debt	**3 313**	**3 257**	**3 098**	**2 616**	**4 032**	**3 573**
Total Interest bearing liability	**3 910**	**3 853**	**3 708**	**3 313**	**5 373**	**4 723**
Interest bearing assets						
Available for sale financial assets	114	150	221	260	371	
Derivative financial instruments	24	3	5	0	555	89
Derivative financial instruments	384	232	78	17	744	269
Restricted cash	43	35	25	13	7	13
Financial assets: cash > 3 months	869	772	2 293	1 498	3 605	3 062
Adjusted cash and bank balances	2 000	2 673	1 203	1 692	1 142	1 210
Total Interest bearing assets	**3 434**	**3 865**	**3 825**	**3 481**	**6 423**	**4 642**
Capitalized operating lease	**778**	**726**	**786**	**812**	**875**	**921**
Invested capital	**4 207**	**4 020**	**3 941**	**3 929**	**3 860**	**4 598**

3.9 Emirates

Emirates, analytical income statement AED mil.	2011	2012	2013	2014	2015	2016
Passanger revenue	41 415	48 950	57 477	65 405	70 013	68 029
Other revenue	11 530	12 558	13 682	15 312	16 715	15 471
Other operating income	1 286	779	1 954	1 919	2 091	1 544
Core operating income	**54 231**	**62 287**	**73 113**	**82 636**	**88 819**	**85 044**
other operating costs	-16 359	-19 324	-22 338	-24 492	-28 019	-28 446
Jet Fuel	-16 820	-24 292	-27 855	-30 685	-28 690	-19 731
Employee	-7 615	-7 936	-9 029	-10 230	-11 851	-12 452
Core operating cost	**-40 794**	**-51 552**	**-59 222**	**-65 407**	**-68 560**	**-60 629**
Core operating EBIDTAR	**13 437**	**10 735**	**13 891**	**17 229**	**20 259**	**24 415**
Depreciation and amortisation	-3 677	-4 134	-5 136	-6 421	-7 446	-8 000
Depreciation on capitalized operating lease	-2 711	-3 007	-3 715	-4 112	-4 346	-5 077
Core operating EBIT	7 049	3 594	5 040	6 696	8 467	11 338
Income tax expense	-78	-53	-64	-47	-43	-45
Tax shield, net financial expenses	-21	-61	-66	-44	-33	-24
Tax on special items	0	0	0	0	0	0
Tax on EBIT	**-99**	**-114**	**-130**	**-91**	**-76**	**-69**
Core NOPAT (exc. Special items)	**6 950**	**3 480**	**4 909**	**6 605**	**8 391**	**11 268**
Special items after tax	-4	0	0	0	0	0
NOPAT (inc. Special items)	**6 946**	**3 480**	**4 909**	**6 605**	**8 391**	**11 268**
Net financial expenses	-1 500	-1 921	-2 568	-3 232	-3 696	-3 975
Tax shield, net financial expenses	21	61	66	44	33	24
Group profit after tax	**5 467**	**1 620**	**2 408**	**3 417**	**4 728**	**7 318**

Emirates, tax allocation for income statement AED mil.	2011	2012	2013	2014	2015	2016
Effective tax rate, Emirates	1%	3%	3%	1%	1%	1%
Special Items						
Other gains and losses	-4	0	0	0	0	0
Special Items	-4	0	0	0	0	0
Tax on special items	0	0	0	0	0	0
Special items after tax	-4	0	0	0	0	0
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	**-1 606**	**-1 781**	**-2 201**	**-2 436**	**-2 574**	**-3 008**
Finance income	521	414	406	247	175	220
Finance costs	-506	-657	-900	-1 179	-1 449	-1 329
Share of results of investments accounted for using the equity method	91	103	127	136	152	142
Net financial expenses	**-1 500**	**-1 921**	**-2 568**	**-3 232**	**-3 696**	**-3 975**
Tax shield, net financial expenses	-21	-61	-66	-44	-33	-24
Capitalized operating lease (multiple x8)						
Aircraft operating lease	-4 317	-4 788	-5 916	-6 548	-6 920	-8 085
Capitalized operating lease	34 536	38 304	47 328	52 384	55 360	64 680
Interest expense on capitalized operating lease	-1 606	-1 781	-2 201	-2 436	-2 574	-3 008
Depreciation on capitalized operating lease	-2 711	-3 007	-3 715	-4 112	-4 346	-5 077
Aircraft operating lease	**-4 317**	**-4 788**	**-5 916**	**-6 548**	**-6 920**	**-8 085**

Emirates, analytical balance shet statement AED mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Property, plant and equipment	39 848	49 189	57 039	71 582	80 544	82 836
Intangible assets	901	902	910	928	975	1 317
Advance lease rentals	384	370	807	812	920	2 580
Deferred income tax asset	-	9	15	-	4	3
Total non-current assets	**41 133**	**50 470**	**58 771**	**73 322**	**82 443**	**86 736**
Current assets						
Inventories	1 290	1 469	1 564	1 706	1 919	2 106
Trade and other receivables	6 481	8 126	8 744	9 086	8 589	9 321
Operational cash (1% of revenue)	529	615	712	807	867	835
Total current assets	**8 300**	**10 210**	**11 020**	**11 599**	**11 375**	**12 262**
Non-interest-bearing debt						
Trade and other payables	20 502	26 843	269	287	202	513
Deferred revenue	930	1 074	1 460	1 440	1 650	1 596
Provisions	31		1 930	2 643	3 589	3 762
Deferred income tax liability	642	957	-	2	-	4
Trade and other payables	17 551	20 601	25 013	27 079	27 770	27 037
Income tax liabilities	22	36	24	30	34	35
Deferred revenue	792	915	1 147	1 227	1 244	1 316
Total non-interest-bearing debt	**40 470**	**50 426**	**29 843**	**32 708**	**34 489**	**34 263**
Capitalized operating lease	**34 536**	**38 304**	**47 328**	**52 384**	**55 360**	**64 680**
Invested capital	**43 499**	**48 558**	**87 276**	**104 597**	**114 689**	**129 415**
Total shareholders' equity	**20 813**	**21 446**	**23 032**	**25 471**	**28 286**	**32 405**
Interest bearing liability						
Borrowings and lease liabilities	479	631	35 483	38 500	42 426	40 845
Deferred credits	401	350	294	234	207	1 090
Derivative financial instruments	2		1 016	599	521	440
Borrowings and lease liabilities	2 728	4 037	5 042	3 931	5 382	9 260
Deferred credits	136	136	87	66	49	139
Derivative financial instruments	61	40	6	95	2	737
Total Interest bearing liability	**3 807**	**5 194**	**41 928**	**43 425**	**48 587**	**52 511**
Interest bearing assets						
Loans and other receivables	1 704	317	508	428	619	494
Investments accounted for using the equity method	386	430	485	495	544	522
Derivative financial instruments	-	69	92	5	21	-
Derivative financial instruments	123	8	67	1	342	12
Short term bank deposits	3 777	8 055	18 048	8 754	8 488	7 823
Adjusted cash and bank balances	9 667	6 917	5 812	7 000	7 530	11 330
Total Interest bearing assets	**15 657**	**15 796**	**25 012**	**16 683**	**17 544**	**20 181**
Capitalized operating lease	**34 536**	**38 304**	**47 328**	**52 384**	**55 360**	**64 680**
Invested capital	**43 499**	**49 148**	**87 276**	**104 597**	**114 689**	**129 415**

3.10 Turkish Airlines

Turkish Airlines, analytical balance shet statement USD mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Property and Equipment	11 093	12 693	17 166	21 336	11 415	13 476
Intangible Assets	47	51	140	194	101	85
Prepaid Expenses			412	715	415	518
Other non-current assets	257	254	0	0		
Other Receivables	615	1 554	2 681	2 455	1 058	516
Total non-current assets	**12 011**	**14 552**	**20 398**	**24 700**	**12 989**	**14 595**
Current assets						
Trade receivables	765	777	1 148	1 057	361	379
Inventories	252	259	342	452	216	217
Prepaid Expenses			89	139	74	98
Current Income Tax Assets			17	19	12	23
Other Current Assets	191	202	112	90	36	26
Other receivables	793	754	1 381	2 780	1 385	846
Operational cash (1% of revenue)	62	84	112	81	105	98
Total current assets	**2 062**	**2 076**	**3 202**	**4 617**	**2 189**	**1 687**
Non-interest-bearing debt						
Trade Payables	870	912	1 451	1 539	671	616
Deferred Income			47	22	1 104	796
Passenger Flight Liabilites	1 279	1 668	2 563	3 243		
Current Tax Provision	5			2	10	2
Short-term Provisions	276	224	95	170	67	61
Payables Related to Employee Benefits			308	297	121	143
Trade Payables			4	3	0	0
Provisions for Employee Benefits	192	234	250	294	119	113
Deferred Tax Liability	575	744	1 107	1 518	887	955
Deferred Income			31	33	16	6
Other Payables	151	153	114	166	84	93
Other Payables	11	16	31	33	12	11
Other Current Liabilities	421	517	620	612	218	215
Other non- current liabilities	54	47				
Total non-interest-bearing debt	**3 835**	**4 516**	**6 619**	**7 931**	**3 309**	**3 011**
Capitalized operating lease	**1 677**	**1 402**	**1 055**	**1 282**	**1 688**	**1 952**
Invested capital	**11 914**	**13 514**	**18 035**	**22 669**	**13 557**	**15 223**
Total shareholders' equity	**4 498**	**5 405**	**6 963**	**9 154**	**4 842**	**5 087**
Interest bearing liability						
Short Term Borrowings					250	1 357
Short-Term Portion of Long-Term Borrowings	790	866	1 188	1 421	763	1 064
Derivative Financial Instruments			234	991	568	146
Long-Term Borrowings	7 123	7 801	10 364	12 334	6 636	7 822
Other Financial Liabilities	158	193	34	44	15	4
Total Interest bearing liability	**8 071**	**8 860**	**11 820**	**14 790**	**8 232**	**10 393**
Interest bearing assets						
Short term financial investments	214	552	43	201	62	349
Non-current assets held for sale	279					
Derivative financial instruments			65	354	100	197
Financial Investments	2	2	2	3	1	47
Equity Accounted Investees	295	269	390	526	246	247
Investment Property	55	58	76	83	1	1
Adjusted cash and bank balances	1 487	1 272	1 227	1 393	795	1 368
Total Interest bearing assets	**2 332**	**2 153**	**1 803**	**2 558**	**1 205**	**2 209**
Capitalized operating lease	**1 677**	**1 402**	**1 055**	**1 282**	**1 688**	**1 952**
Invested capital	**11 914**	**13 514**	**18 035**	**22 669**	**13 557**	**15 223**

Turkish Airlines, analytical income statement USD mil.	2011	2012	2013	2014	2015	2016
Passanger revenue	5 395	7 317	7 785	9 220	9 310	8 590
Other sales Revenue	848	1 034	3 460	-1 169	1 212	1 202
Other Operating Income	85	336	83	94	244	145
Core operating income	**6 328**	**8 688**	**11 328**	**8 145**	**10 766**	**9 937**
Fuel expenses	-2 113	-2 890	-3 060	-3 598	-2 997	-2 673
Personal expenses	-867	-1 019	-1 053	-1 195	-1 258	-1 442
Wet lease expenses	-13	-63	-269	-348	-285	-252
Other cost of sales (-)	-1 430	-1 834	-3 014	-318	-2 809	-2 964
General Administrative Expenses (-)	-193	-210	-279	-187	-272	-315
Marketing and Sales Expenses (-)	-679	-893	-1 146	-835	-1 148	-1 171
Other Operating Expenses (-)	-210	-24	-49	-35	-31	-86
Core operating cost	**-5 505**	**-6 932**	**-8 869**	**-6 516**	**-8 800**	**-8 903**
Core operating EBIDTAR	**823**	**1 756**	**2 459**	**1 629**	**1 966**	**1 034**
Depreciation	-549	-682	-1 695	-943	-860	-1 081
Depreciation on capitalized operating lease	-132	-110	-83	-101	-133	-153
Core operating EBIT	**143**	**964**	**681**	**585**	**973**	**-200**
Tax Expense of Continuing Operations	-67	-125	-206	-121	-338	-18
Tax shield, net financial expenses	-14	-41	44	-56	51	-4
Tax on special items	1	1	30	22	36	32
Tax on EBIT	**-80**	**-166**	**-131**	**-155**	**-251**	**10**
Core NOPAT (exc. Special items)	**62**	**798**	**550**	**430**	**722**	**-190**
Special items after tax	4	2	119	87	145	129
NOPAT (inc. Special items)	**67**	**800**	**669**	**516**	**867**	**-61**
Net financial expenses	-71	-207	222	-280	253	-20
Tax shield, net financial expenses	14	41	-44	56	-51	4
Group profit after tax	**10**	**635**	**847**	**293**	**1 069**	**-77**

Turkish Airlines, tax allocation for income statement USD mil.	2011	2012	2013	2014	2015	2016
Corporate tax rate, Turkey	**20%**	**20%**	**20%**	**20%**	**20%**	**20%**
Special Items						
Income from Investment Activities	0	0	98	62	102	137
Expenses from Investment Activities (-)	0	0	-24	-1	-1	-20
Share of Investments' Profit / Loss Accounted By Using The Equity Method	5	3	75	47	80	44
Special Items	5	3	149	108	181	161
Tax on special items	-1	-1	-30	-22	-36	-32
Special items after tax	4	2	119	87	145	129
Net financial expenses & Tax Shield						
Interest expense on capitalized operating lease	**-78**	**-65**	**-49**	**-60**	**-78**	**-91**
Financial Income	140	91	456	22	532	300
Financial Expenses (-)	-133	-232	-185	-242	-201	-229
Net financial expenses	**-71**	**-207**	**222**	**-280**	**253**	**-20**
Tax shield, net financial expenses	-14	-41	44	-56	51	-4
Capitalized operating lease (multiple x8, interest rate 4,65%)						
Operating lease expenses	-210	-175	-132	-160	-211	-244
Capitalized operating lease	1 677	1 402	1 055	1 282	1 688	1 952
Interest expense on capitalized operating lease	-78	-65	-49	-60	-78	-91
Depreciation on capitalized operating lease	-132	-110	-83	-101	-133	-153
Rentals on leased aircraft	**-210**	**-175**	**-132**	**-160**	**-211**	**-244**

3.11 Singapore Airlines

Singapore Airlines, analytical income statement SGP mil.	2011	2012	2013	2014	2015	2016
Airline operations Revenue	12 406	12 817	13 413	13 660	14 052	13 859
Other revenue	2 119	2 041	1 686	1 584	1 514	1 369
Share of profits of joint venture companies	75	75	95	94	52	23
Share of losses of associated companies	101	51	50	-45	-129	-11
Core operating income	**14 700**	**14 984**	**15 244**	**15 293**	**15 488**	**15 240**
Staff costs	-2 218	-2 194	-2 353	-2 337	-2 335	-2 461
Crew expenses	-134	-141	-148	-145	-146	-149
Fuel costs	-4 575	-5 803	-5 899	-5 702	-5 580	-4 527
Aircraft maintenance and overhaul costs	-403	-463	-539	-642	-647	-790
Commission and incentives	-403	-331	-356	-347	-376	-365
Landing, parking and overflying charges	-613	-669	-688	-717	-748	-766
Handling charges	-952	-1 013	-1 006	-1 039	-1 066	-1 145
Material costs	-224	-219	-214	-223	-59	-67
Inflight meals	-433	-481	-543	-549	-554	-547
Advertising and sales costs	-191	-202	-209	-258	-259	-289
Insurance expenses	-51	-47	-43	-42	-45	-44
Company accommodation and utilities	-113	-114	-116	-119	-120	-119
Other passenger costs	-145	-139	-158	-173	-175	-181
Other operating expenses	-504	-555	-420	-423	-642	-587
Core operating cost	**-10 960**	**-12 371**	**-12 694**	**-12 714**	**-12 750**	**-12 036**
Core operating EBIDTAR	**3 740**	**2 613**	**2 550**	**2 579**	**2 738**	**3 204**
Depreciation	-1 672	-1 589	-1 589	-1 576	-1 539	-1 543
Impairment of property, plant and equipment	-16	-16	-10	-20	-2	-11
Amortisation of intangible assets	-24	-23	-23	-26	-26	-33
Depreciation on capitalized operating lease	-365	-360	-348	-408	-527	-581
Core operating EBIT	**1 663**	**625**	**580**	**550**	**645**	**1 037**
Taxation	-270	-51	-28	57	-36	-121
Tax shield, net financial expenses	-42	-40	-32	-37	-49	-55
Tax allocated to special items	1	10	13	6	15	44
Tax on EBIT	**-312**	**-82**	**-47**	**26**	**-70**	**-132**
Core NOPAT (exc. Special items)	**1 351**	**544**	**534**	**575**	**574**	**905**
Special items after tax	4	50	62	29	71	215
NOPAT (inc. Special items)	**1 356**	**594**	**596**	**604**	**645**	**1 120**
Net financial expenses	-249	-237	-186	-216	-287	-324
Tax shield, net financial expenses	42	40	32	37	49	55
Group profit after tax	**1 149**	**397**	**442**	**424**	**407**	**852**

Singapore Airlines, tax allocation for income statement SGP mil.	2011	2012	2013	2014	2015	2016
Corporate tax rate, Singapore	**17%**	**17%**	**17%**	**17%**	**17%**	**17%**
Special Items						
Exceptional items	-202	-5	-20	-38	35	
Other non-operating items	80	49	12	2	-14	91
Surplus on disposal of aircraft, spares and spare engines	103	-1	56	51	52	53
Dividends from long-term investments	24	18	27	20	13	115
Special Items	5	60	75	34	85	259
Tax on special items	-1	-10	-13	-6	-15	-44
Special items after tax	**4**	**50**	**62**	**29**	**71**	**215**
Net financial expenses & Tax Shield						
Finance charges	-70	-74	-43	-37	-50	-50
Interest income	37	51	63	63	75	71
Interest expense on capitalized operating lease	-216	-213	-206	-242	-312	-344
Net financial expenses	-249	-237	-186	-216	-287	-324
Tax shield, net financial expenses	**-42**	**-40**	**-32**	**-37**	**-49**	**-55**
Capitalized operating lease (multiple x8, interest rate 4,65%)						
Rentals on leased aircraft	-582	-574	-554	-650	-840	-925
Capitalized operating lease	**4 654**	**4 590**	**4 429**	**5 196**	**6 716**	**7 398**
Interest expense on capitalized operating lease	-216	-213	-206	-242	-312	-344
Depreciation on capitalized operating lease	-365	-360	-348	-408	-527	-581
Rentals on leased aircraft	**-582**	**-574**	**-554**	**-650**	**-840**	**-925**

Singapore Airlines, analytical balance sheet SGP mil.	2011	2012	2013	2014	2015	2016
Non-current assets						
Aircraft, spares and spare engines	11 577	11 384	10 876	10 101	9 958	10 511
Land and buildings	275	252	243	227		
PPE Others	2 026	1 746	1 980	2 699	3 566	3 633
Intangible assets	125	158	219	223	498	516
Associated companies	505	543	554	729	922	902
Joint venture companies	103	113	121	127	168	156
Total non-current assets	**14 610**	**14 196**	**13 992**	**14 106**	**15 111**	**15 718**
Current assets						
Inventories	336	306	275	243	202	182
Trade debtors	1 382	1 355	1 578	1 605	1 492	1 222
Prepayments	104	99	103	108	125	132
Operational cash (1% of revenue)	145	149	151	152	156	152
Total current assets	**1 966**	**1 908**	**2 107**	**2 108**	**1 974**	**1 688**
Non-interest-bearing debt						
Sales in advance of carriage	1 460	1 457	1 434	1 446	1 465	1 626
Deferred revenue	445	497	533	573	613	669
Current tax payable	**440**	**244**	**160**	**201**	**162**	**192**
Provisions	63	35	72	76	179	219
Deferred taxation	2 181	2 029	1 948	1 789	1 600	1 682
Provisions	202	319	421	587	959	877
Defined benefit plans			164	170	130	129
Total non-interest-bearing debt	**4 791**	**4 581**	**4 732**	**4 842**	**5 106**	**5 394**
Capitalized operating lease	**4 654**	**4 590**	**4 429**	**5 196**	**6 716**	**7 398**
Invested capital	**16 440**	**16 112**	**15 796**	**16 568**	**18 694**	**19 409**
Total shareholders' equity	**14 503**	**13 187**	**13 402**	**13 575**	**12 930**	**13 133**
Interest bearing liability						
Finance lease commitments	61	65	68	53	0	0
Loans	2	2	6	8	0	0
Notes payable	900	0	0	0	0	0
Borrowings	0	0	0	0	447	212
Derivative liabilities	136	79	73	57	869	623
Deferred account	347	224	147	226	142	225
Long-term liabilities	1 079	1 019	945	904	1 521	1 283
Trade and other creditors	2 726	2 885	3 056	2 978	2 907	2 899
Total Interest bearing liability	**5 251**	**4 274**	**4 294**	**4 226**	**5 885**	**5 243**
Interest bearing assets						
Long-term investments	35	374	707	1 125	928	773
Other long-term assets	120	216	214	92	574	497
Deferred account	-	52	16	8	56	6
Deposits and other debtors	52	47	55	50	39	115
Loan receivable from an associated company						62
Derivative assets	74	72	79	134	114	25
Investments	398	625	349	287	169	668
Adjusted cash and bank balances	7 289	4 554	4 909	4 731	4 887	3 820
Assets held for sale					71	398
Total Interest bearing assets	**7 968**	**5 939**	**6 329**	**6 429**	**6 837**	**6 364**
Capitalized operating lease	**4 654**	**4 590**	**4 429**	**5 196**	**6 716**	**7 398**
Invested capital	**16 440**	**16 112**	**15 796**	**16 568**	**18 694**	**19 409**

Appendix 4: Adjustments to SAS's analytical statements

Source is SAS's annual reports, for tax rates source is KPMG 2016

4.1 Adjustments SAS's cash and bank balance

Adjusting SAS's cash and bank balance										
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Revenue	**50598**	**52870**	**44918**	**41070**	**41412**	**35986**	**42182**	**38006**	**39650**	**39459**
A. Cash and bank balances (as stated on Balance sheet)	1583	1911	498	1762	966	2423	2671	3714	3047	2303
B. Operational cash (1% of revenue)	506	529	449	411	414	360	422	380	397	395
Cash and bank balances (=A - B)	**1077**	**1382**	**49**	**1351**	**552**	**2063**	**2249**	**3334**	**2651**	**1908**

Source SAS annual reports

4.2 Adjustments of SAS's other receivables

Adjusting SAS's other recivables, 2007 - 2010						
Other Long-term recivables	**2011**	**2012**	**2013**	**2014**	**2015**	2016
Loans and receivables	723	878	1 868	1 663	1 710	1 931
Interest Derivatives	85	71	49	29	8	0
Total financial items	**808**	**949**	**1 917**	**1 692**	**1 718**	1 931
Non-financial items	203	301	332	236	233	400
Total Other Long-term receivables	**1 011**	**1 250**	**2 249**	**1 928**	1 951	2 331
Financial items %	*80%*	*76%*	*85%*	*88%*	*88%*	83%
Non-financial items %	*20%*	*24%*	*15%*	*12%*	*12%*	17%
Mean financial items (%) 2011 - 2016	***83%***					
Mean non-financial items (%) 2011 - 2016	***17%***					
Other receivables	2011	2012	2013	2014	2015	2016
Loans and receivables	566	207	147	83	47	26
Fuel derivatives	367	329	62	3	50	277
Currency derivatives	771	64	66	508	456	442
interest derivatives	1	0	0	0	0	0
Total financial items	**1 705**	**600**	**275**	**594**	**553**	745
Non-financial items	869	799	591	669	314	448
Total Other receivables	**2 574**	**1 399**	**866**	**1 263**	**867**	1 193
Financial items %	*66%*	*43%*	*32%*	*47%*	*64%*	62%
Non-financial items %	*34%*	*57%*	*68%*	*53%*	*36%*	38%
Mean financial items (%) 2011 - 2016	**52%**					
Mean non-financial items (%) 2011 - 2016	**48%**					

**	**2007**	**2008**	2009	2010
Other Long-term recivables	577	410	729	2 379
Total financial items	481	341	607	1 981
Non-financial items	96	69	122	398
Other receivables	2 637	2 661	4 780	2 901
Total financial items	1 381	1 393	2 503	1 519
Non-financial items	1 256	1 268	2 277	1 382

** The division of financial and non-financial from 2006 - 2010 have been calculated using the averages from the period 2011 - 2016.

Source SAS annual reports

4.3 Adjusting calendar year 2012

Adjusting 2012 to full calendar year.				
SEK mil Year end	2012 2012-10-31	Interim report (1 nov 2012 - 31 jan 2013)	Interim report * (2/3)	2012 adjusted 2012-12-31 (ADJUSTED)
Income statement				
Passenger revenue	26 998	6 956	4 637	31 635
Other Traffic revenue	4 810	1 383	922	5 732
non-traffic revenue	4 178	1 258	839	5 017
Core operating income	**35 986**	**9 597**	**6 398**	**42 384**
Payroll expenses	-11 584	-3 216	-2 144	-13 728
Jet fuel expense	-8 035	-2 038	-1 359	-9 394
Government users fees	-3 539	-954	-636	-4 175
Other operating expenses	-10 531	-3 127	-2 085	-12 616
Shares of income in affiliated companies	32	-13	-9	23
Income from the sales of aircraft and building	-247	-7	-5	-252
Core operating cost	-33 904	-9 355	-6 237	-40 141
Core operating EBIDTAR	**2 082**	**242**	**161**	**2 243**
Depreciation on capitalized operating leases	-843	-249	-166	-1 009
Depreciation, amortization and impairment	-1 426	-426	-284	-1 710
Core operating EBIT	**-187**	**-433**	**-289**	**-476**
			0	0
Corporation tax	260	193	129	389
Tax shield, net financial expenses	-379	-102	-68	-447
Tax allocated to special items	104	0	0	104
Tax on EBIT	**-15**	**92**	**61**	**46**
Core NOPAT (exc. Special items)	-202	-342	-228	-430
			0	0
Special items	400	1	1	401
Tax on special items	-104	0	0	-104
NOPAT (inc. Special items)	**94**	**-341**	**-227**	**-133**
			0	0
Net financial expenses	-1 458	-391	-260	-1 719
Tax on net financial expense	379	102	68	447
Net earnings	**-985**	**-630**	**-420**	**-1 405**
			0	0
Dirty surplus (other comprehensive income)	-292	-56	-37	-329
Comprehensive income for the year attributable to minority interests				
	0		0	0
Total proifit to majority interest	**-1 277**	**-686**	**-457**	**-1 734**
Tax allocation				
Marginal tax rate	**26%**			
Special Items				
Income from the sales of shares in subsidiaries, affiliated companies and operations	400	0	0	400
Income from other holdings of securities (operational)	0	1	1	1
Income for discontinued operations	0	0	0	0
Special Items	**400**	**1**	**1**	**401**
Tax on special items	-104	0	0	-104
Special items after tax	**296**	**1**	**0**	**296**
Net financial expenses & Tax Shield				
Income from other holdings of securities (financial)	0		0	0
Interest expense on capitalized operating leases	-499	-148	-98	-598
Financial income	96	8	5	101
Financial expenses	**-1 055**	**-251**	**-167**	**-1 222**
Net financial expenses	-1 458	-391	-260	-1 719
Tax shield, net financial expenses	**-379**	**-102**	**-68**	**-447**
Capitalized operating lease				
Leasing costs for aircraft	-1 342	-397	-265	-1 607
Cost of secure debt *			0	0
Capitalized operating lease (multipe x8)	10 736	3 176	2 117	12 853
Interest expense (capitalized operating leases)	-499	-148	-98	-598
Lease depreciation	-843	-249	-166	-1 009
Leasing costs for aircraft	-1 342	-397	-265	-1 607
Other comprehensive income, net after tax (Dirty Surplus)				
Exchange-rate differences in translation of foreign operations	-29	5	3	-26
Cash-flow hedges – hedging reserve	-263	-61	-41	-304
Changes in holdings in subsidiares	0		0	0
Revaluations of defined-benefit pension plans	0		0	0
Total other comprehensive income, net after tax	**-292**	**-56**	**-37**	**-329**

Source SAS annual reports

Appendix 5: Operational & profitability measures

Source is respective airlines annual report if not otherwise stated.

5.1 RPK, ASK & Load factor

Operational figures												
	SAS	Finnair	Lufthansa	KLM	Delta	Norwegian	Easyjet	Southwest Airlines	Ryanair	Emirates	Turkish Airlines	Singapore Airlines
ASK												
2011	41	29	258	74	378	22	69	194	102	183	81	113
2012	43	30	260	101	371	26	72	206	114	201	96	119
2013	45	31	267	104	375	34	74	210	117	237	116	125
2014	45	31	268	106	386	46	79	211	125	271	135	128
2015	44	32	274	108	397	49	84	226	128	296	153	148
2016	49	34	287	112	405	58	88	239	141	334	170	149
RPK												
2011	31	21	200	64	310	17	61	157	86	146	59	85
2012	33	24	205	86	311	20	65	166	94	160	74	88
2013	33	25	210	89	314	27	68	168	96	189	92	94
2014	35	25	215	91	327	38	73	174	104	215	107	95
2015	34	26	220	93	337	42	76	189	113	235	119	94
2016	37	27	227	98	343	51	81	201	131	255	127	94
Load Factor												
2011	75%	73%	78%	86%	82%	79%	89%	81%	84%	80%	73%	75%
2012	77%	78%	79%	86%	84%	79%	90%	80%	82%	80%	77%	74%
2013	75%	80%	79%	86%	84%	78%	92%	80%	82%	80%	79%	75%
2014	77%	80%	80%	86%	85%	81%	92%	82%	83%	79%	79%	74%
2015	76%	80%	80%	86%	85%	86%	90%	84%	88%	80%	78%	64%
2016	76%	80%	79%	87%	85%	88%	92%	84%	93%	76%	75%	63%

5.2 ROIC & WACC

SAS ROIC (after tax) compared with WACC										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
SAS ROIC (after tax)	4,5%	-4,9%	-5,8%	-2,7%	1,3%	-1,4%	5,8%	3,2%	8,8%	9,0%
SAS's WACC	4,79%	4,79%	4,79%	4,79%	4,79%	4,79%	4,79%	4,79%	4,79%	4,79%

5.3 ROIC, industry

SAS ROIC (before tax) compared with the Industry						
	2011	2012	2013	2014	2015	2016
Finnair	-3,9%	4,0%	1,1%	-1,0%	5,6%	7,0%
Lufthansa	5,5%	8,3%	0,9%	-8,6%	5,8%	7,6%
KLM	4,0%	3,6%	6,5%	6,0%	9,8%	13,8%
Delta	13,0%	15,5%	13,4%	9,1%	30,2%	27,3%
Norwegian	6,5%	5,6%	8,7%	-2,4%	3,3%	6,6%
Easyjet	13,0%	14,9%	22,6%	22,6%	23,9%	16,4%
Southwest Airlines	8,5%	7,9%	14,8%	27,5%	47,5%	39,4%
Ryanair	12,5%	17,8%	19,2%	17,7%	28,1%	32,7%
Emirates	16,2%	7,4%	5,8%	6,4%	7,4%	8,8%
Turkish Airlines	1,2%	7,1%	3,8%	2,6%	7,2%	-1,3%
Singapore Airlines	10,1%	3,9%	3,7%	3,3%	3,4%	5,3%

	2011	2012	2013	2014	2015	2016
SAS	3,8%	-1,5%	8,1%	4,1%	12,0%	10,6%
NLAs	4,6%	7,9%	5,5%	1,4%	12,9%	13,9%
LCCs	10,1%	11,6%	16,3%	16,4%	25,7%	23,8%
EGAs	9,2%	6,1%	4,4%	4,1%	6,0%	4,3%

	2011	2012	2013	2014	2015	2016
SAS	3,8%	-1,5%	8,1%	4,1%	12,0%	10,6%
Norwegian	6,5%	5,6%	8,7%	-2,4%	3,3%	6,6%

5.4 Profit margin, industry

SAS profit margin (before tax) compared with the Industry	2011	2012	2013	2014	2015	2016
Finnair	-2,8%	2,4%	0,6%	-0,4%	2,6%	4,0%
Lufthansa	3,7%	5,3%	0,6%	-6,2%	4,5%	6,0%
KLM	3,2%	2,8%	4,3%	2,9%	5,2%	8,5%
Delta	6,7%	7,0%	10,0%	5,9%	19,9%	18,9%
Norwegian	7,1%	6,4%	9,6%	-3,4%	5,7%	11,9%
Easyjet	8,9%	9,5%	12,6%	13,9%	15,6%	11,5%
Southwest Airlines	5,2%	4,4%	8,0%	12,5%	21,2%	18,8%
Ryanair	14,4%	16,3%	15,5%	13,8%	19,2%	23,0%
Emirates	13,0%	5,8%	6,9%	8,1%	9,5%	13,3%
Turkish Airlines	2,3%	11,1%	6,0%	7,2%	9,0%	-2,0%
Singapore Airlines	11,3%	4,2%	3,8%	3,6%	4,2%	6,8%

	2011	2012	2013	2014	2015	2016
SAS	3,0%	-1,1%	5,7%	2,5%	8,0%	7,5%
NLAs	2,7%	4,4%	3,9%	0,5%	8,0%	9,4%
LCCs	8,9%	9,2%	11,4%	9,2%	15,4%	16,3%
EGAs	8,9%	7,0%	5,6%	6,3%	7,6%	6,0%
Global	3,1%	2,6%	3,5%	4,7%	8,3%	8,3%

5.5 CAGR in RPK

SAS RPK compared with the Industry	2011	2012	2013	2014	2015	2016
Finnair	19	21	24	25	25	26
Lufthansa	187	200	205	210	215	220
KLM	77	64	86	89	91	93
Delta	314	310	311	314	327	337
Norwegian	14	17	20	27	38	42
Easyjet	56	61	65	68	73	76
Southwest Airlines	125	157	166	168	174	189
Ryanair	72	86	94	96	104	113
Emirates	126	146	160	189	215	235
Turkish Airlines	48	59	74	92	107	119
Singapore Airlines	83	85	88	94	95	94

	2010	2011	2012	2013	2014	2015	CAGR 2011 - 2016
SAS (CAGR 4%)	29	31	33	33	35	34	**4%**
NLAs (CAGR 3%)	149	149	156	159	164	169	**3%**
LCCs (CAGR 10%)	67	80	86	90	97	105	**10%**
EGAs (CAGR 11%)	86	97	108	125	139	150	**11%**

5.6 Ticket price (passenger revenue per RPK)

SAS's ticket price (revenue/RPK) compared with the industry

	2011	2012	2013	2014	2015	2016
Finnair	0,83	0,80	0,81	0,77	0,68	0,73
Lufthansa	1,07	1,04	0,62	0,63	0,65	0,61
KLM	0,88	0,66	0,68	0,70	0,72	0,72
Delta	0,63	0,68	0,68	0,79	0,88	0,89
Norwegian	0,61	0,64	0,54	0,47	0,44	0,45
Easyjet	0,46	0,62	0,64	0,72	0,80	0,62
Southwest Airlines	0,61	0,65	0,64	0,75	0,82	0,84
Ryanair	0,30	0,32	0,35	0,34	0,35	0,38
Emirates	0,50	0,55	0,54	0,61	0,69	0,65
Turkish Airlines	0,59	0,65	0,55	0,64	0,66	0,61
Singapore Airlines	Not enough information in segment reporting					

	2011	2012	2013	2014	2015	2016
SAS	0,99	0,94	0,95	0,83	0,90	0,82
NLAs	0,85	0,80	0,70	0,72	0,73	0,74
LCCs	0,49	0,56	0,54	0,57	0,60	0,57
EGAs	0,55	0,60	0,54	0,63	0,68	0,63

5.7 CASK, industry

SAS CASK (unit cost) compared with the industry

	2011	2012	2013	2014	2015	2016
Finnair	0,72	0,69	0,68	0,69	0,67	0,67
Lufthansa	0,97	0,94	0,50	0,55	0,51	0,49
KLM	1,04	0,79	0,79	0,82	0,82	0,79
Delta	0,56	0,61	0,59	0,73	0,70	0,72
Norwegian	0,52	0,54	0,45	0,48	0,43	0,43
Easyjet	0,47	0,52	0,52	0,58	0,62	0,52
Southwest Airlines	0,49	0,53	0,50	0,57	0,59	0,63
Ryanair	0,27	0,28	0,31	0,32	0,33	0,35
Emirates	0,45	0,53	0,51	0,56	0,63	0,54
Turkish Airlines	0,49	0,53	0,59	0,41	0,54	0,54
Singapore Airlines	1	1	1	1	1	1

	2011	2012	2013	2014	2015	2016	Decrease 2011 - 2016
SAS	0,98	0,99	0,89	0,82	0,82	0,75	**23%**
NLAs	0,82	0,76	0,64	0,70	0,67	0,67	**15%**
LCCs	0,44	0,46	0,44	0,49	0,49	0,48	**-4%**
EGAs	0,51	0,57	0,57	0,55	0,59	0,57	**-5%**

5.8 Payroll expense, industry

SAS's payroll expense compared with the industry

	2011	2012	2013	2014	2015	2016
Finnair	0,17	0,19	0,19	0,20	0,18	0,14
Lufthansa	0,22	0,16	0,16	0,17	0,11	0,10
KLM	0,25	0,27	0,25	0,25	0,23	0,18
Delta	0,17	0,18	0,16	0,22	0,14	0,11
Norwegian	0,16	0,17	0,15	0,15	0,11	0,10
Easyjet	0,06	0,06	0,06	0,07	0,08	0,07
Southwest Airlines	0,19	0,20	0,18	0,19	0,14	0,14
Ryanair	0,11	0,12	0,14	0,15	0,15	0,15
Emirates	0,16	0,22	0,21	0,23	0,22	0,15
Turkish Airlines	0,17	0,20	0,17	0,20	0,17	0,14
Singapore Airlines	0	0	0	0	0	0

	2011	2012	2013	2014	2015	2016	Decrease 2011 - 2016
SAS	0,32	0,32	0,26	0,20	0,22	0,19	-41%
NLAs	0,20	0,20	0,19	0,21	0,16	0,13	-34%
LCCs	0,13	0,14	0,13	0,14	0,12	0,11	-15%
EGAs	0,18	0,23	0,21	0,23	0,21	0,16	-10%

5.9 Jet Fuel expense

SAS's jet fuel expense compared with the industry and jet kerosene price

	2011	2012	2013	2014	2015	2016
Finnair	0,15	0,12	0,11	0,10	0,10	0,11
Lufthansa	0,23	0,23	0,09	0,09	0,10	0,10
KLM	0,26	0,20	0,20	0,21	0,24	0,25
Delta	0,12	0,13	0,13	0,16	0,19	0,22
Norwegian	0,10	0,09	0,08	0,08	0,07	0,07
Easyjet	0,14	0,17	0,17	0,19	0,19	0,14
Southwest Airlines	0,15	0,15	0,16	0,19	0,24	0,26
Ryanair	0,03	0,03	0,03	0,03	0,04	0,04
Emirates	0,07	0,07	0,07	0,08	0,09	0,09
Turkish Airlines	0,07	0,07	0,06	0,07	0,07	0,08
Singapore Airlines	0	0	0	0	0	0

	2011	2012	2013	2014	2015	2016	Average for period
SAS	0,19	0,22	0,20	0,20	0,19	0,13	**0,23**
NLAs	0,19	0,17	0,13	0,14	0,16	0,17	**0,19**
LCCs	0,10	0,11	0,11	0,12	0,13	0,13	**0,14**
EGAs	0,08	0,08	0,08	0,08	0,09	0,09	**0,10**
Jet kerosene (USB/barrel)	127,50	129,60	124,50	114,80	66,70	52,10	

Source: EIA 2017

5.10 Government user fees

SAS's government user fees (% of core operating income)										
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Core operating income	52,251	53,195	44,918	40,723	41,412	42,384	42,182	38,006	39,65	39,459
Government user fees	-4574	-4662	-4399	-4198	-4042	-4175	-4154	-3962	-4087	-4106
Government user fees (%	**8,8%**	**8,8%**	**9,8%**	**10,3%**	**9,8%**	**9,9%**	**9,8%**	**10,4%**	**10,3%**	**10,4%**

5.11 Other operating expenses

SAS's other operating expenses (% of core operating income)										
Core operating income	52,251	53,195	44,918	40,723	41,412	42,384	42,182	38,006	39,65	39,459
Other operating expense:	-16 991	-17 492	-13 828	-14 411	-11 930	-12 616	-12 242	-12 354	-12 041	-13 997
Shares of income in affiliated companies	9	-147	-258	12	28	23	25	30	37	39
Income from the sales of aircraft and	41	4	-97	-239	12	-252	-118	-16	777	265
Total other operating exp	**16 941**	**17 635**	**14 183**	**14 638**	**11 890**	**12 844**	**12 335**	**12 340**	**11 227**	**13 693**
Other operating expense	**32%**	**33%**	**32%**	**36%**	**29%**	**30%**	**29%**	**32%**	**28%**	**35%**

5.12 Turnover rate of capital

SAS's turnover rate of invested capital compared with the industry						
Finnair	1,38	1,72	1,95	2,16	2,18	1,74
Lufthansa	1,49	1,58	1,51	1,38	1,30	1,27
KLM	1,25	1,25	1,52	2,07	1,88	1,62
Delta	1,95	2,22	1,34	1,53	1,52	1,44
Norwegian	0,92	0,88	0,91	0,69	0,59	0,55
Easyjet	1,47	1,57	1,80	1,63	1,53	1,43
Southwest Airlines	1,65	1,79	1,86	2,19	2,24	2,09
Ryanair	0,86	1,09	1,24	1,28	1,46	1,42
Emirates	1,25	1,28	0,84	0,79	0,77	0,66
Turkish Airlines	0,53	0,64	0,63	0,36	0,79	0,65
Singapore Airlines	1	1	1	1	1	1

	2011	**2012**	**2013**	**2014**	**2015**	**2016**
SAS	1,28	1,38	1,41	1,65	1,49	1,41
NLAs	1,52	1,69	1,58	1,79	1,72	1,52
LCCs	1,23	1,33	1,45	1,45	1,46	1,37
EGAs	0,89	0,95	0,81	0,69	0,80	0,70

5.13 SAS's ROIC, profit margin and turnover rate

SAS's ROIC, profit margin and turnover rate (before tax)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ROIC (EBIT)	4,5%	-4,9%	-5,8%	-2,7%	1,3%	-1,4%	5,8%	3,2%	8,8%	9,0%
PM (EBIT)	3,1%	-3,2%	-4,7%	-2,1%	1,0%	-1,0%	4,1%	1,9%	5,9%	6,4%
Turnover	1,5	1,6	1,2	1,3	1,3	1,4	1,4	1,7	1,5	1,4

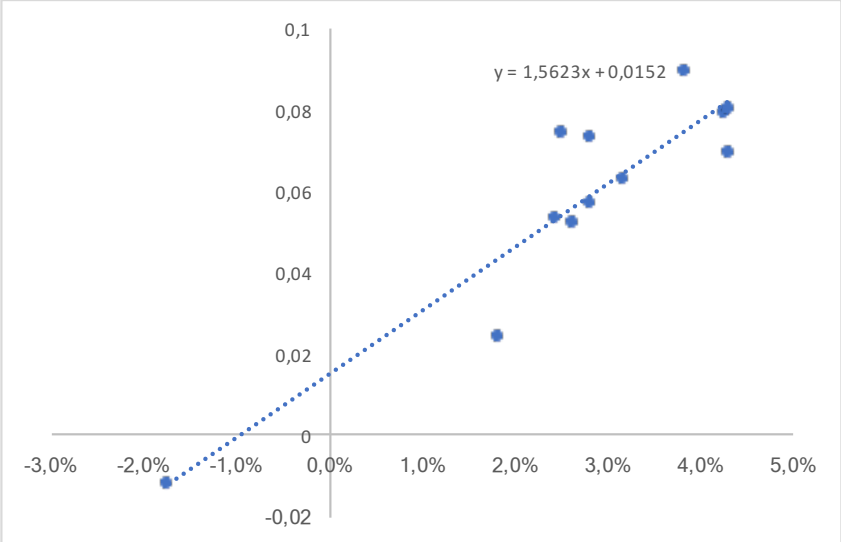
NOTE 2 REVENUE

	Nov–Oct 2015–2016	Nov–Oct 2014–2015
Traffic revenue:		
Passenger revenue	30,371	30,496
Charter	1,791	1,742
Freight and mail	1,253	1,265
Other traffic revenue	2,293	2,066
Other operating revenue:		
In-flight sales	252	253
Ground handling services	1,041	1,294
Technical maintenance	152	163
Terminal and forwarding services	351	370
Sales commissions and charges	556	548
Other operating revenue	1,399	1,453
Total	**39,459**	**39,650**

Appendix 8: World economic growth and passenger growth

8.1 Regression analysis, GPD and passenger growth

	World GDP growth %	World passenger growth %
2005	3,8%	8,9%
2006	4,3%	6,9%
2007	4,3%	7,9%
2008	1,8%	2,4%
2009	-1,7%	-1,2%
2010	4,3%	8,0%
2011	3,2%	6,3%
2012	2,4%	5,3%
2013	2,6%	5,2%
2014	2,8%	5,7%
2015	2,8%	7,3%
2016	2,5%	7,4%



Regression Statistics	
Multiple R	0,92
R Square	0,84
Adjusted R Square	0,82
Standard Error	0,01
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	0,00725249	0,00725249	52,6908237	2,73E-05
Residual	10	0,00137642	0,00013764		
Total	11	0,00862892			

	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*Ipper 95,0%*
Intercept	0,01520381	0,00684909	2,21983023	0,05070913	-5,69E-05	0,030465	-5,69E-05	0,030465
X Variable 1	1,56228069	0,21522443	7,25884451	2,73E-05	1,082731	2,041831	1,082731	2,041831

Source: World Bank 2017 and IATA 2016

8.2 GDP growth and RPK growth

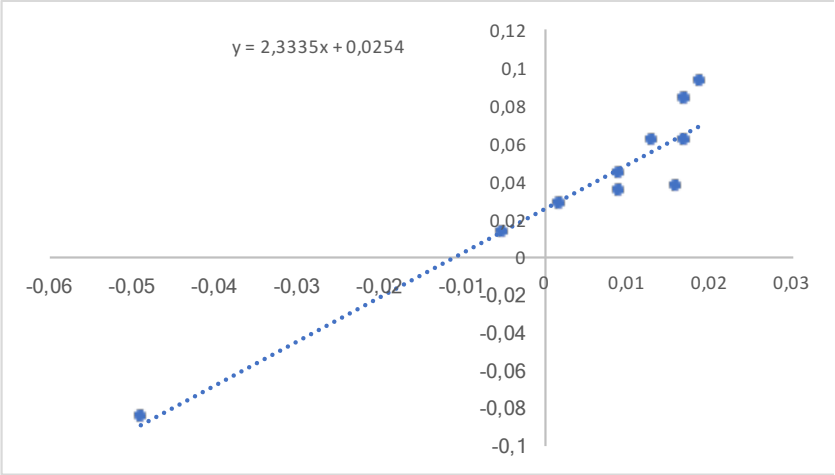
World RPK Growth		
RPK-to-GDP factor	2,1	
	GDP growth	**RPK Growth**
2005	3,8%	8,9%
2006	4,3%	6,9%
2007	4,3%	7,9%
2008	1,8%	2,4%
2009	-1,7%	-1,2%
2010	4,3%	8,0%
2011	3,2%	6,3%
2012	2,4%	5,3%
2013	2,6%	5,2%
2014	2,8%	5,7%
2015	2,8%	7,3%
2016	2,5%	7,4%
2017	3,1%	0,0%
2018	3,3%	0,0%
2019	3,3%	0,0%
2020	3,3%	0,0%
2021	3,2%	0,0%
2022	3,2%	0,0%
2023	3,2%	6,80%
2024	3,2%	6,80%
2025	3,2%	6,80%
2026	3,2%	6,80%

Source: World Bank 2017, IMF 2017, & IATA 2016

Appendix 9: GDP growth and passenger growth, Scandinavia

9.1 Denmark

GDP Growth and passenger growth, Denmark		
	GDP growth, Denmark	Passangers growth Denmark
2007	1%	4%
2008	*-1%*	*1%*
2009	-5%	-9%
2010	2%	9%
2011	1%	6%
2012	0%	3%
2013	*1%*	*3%*
2014	2%	6%
2015	2%	4%
2016	2%	8%



Regression Statistics	
Multiple R	0,96
R Square	0,92
Adjusted R Square	0,91
Standard Error	0,01
Observations	10

ANOVA

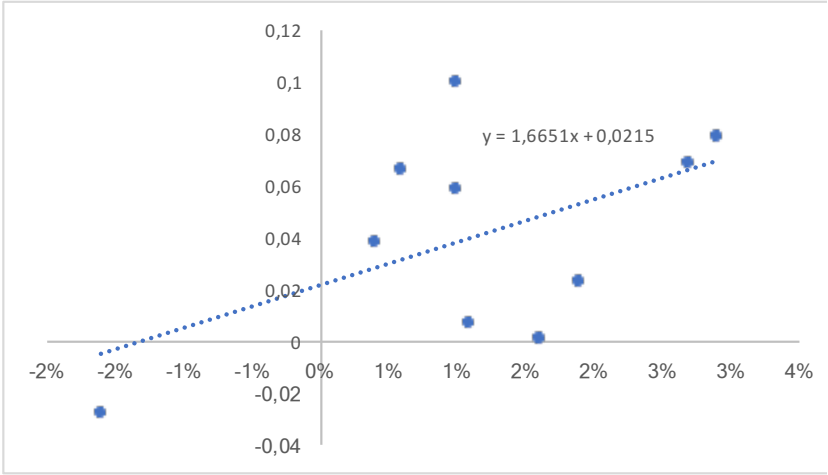
	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	0,02028748	0,02028748	94,7207977	1,04E-05
Residual	8	0,00171345	0,00021418		
Total	9	0,02200093			

	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	0,02543744	0,00476893	5,33398728	0,00069917	0,01444	0,036435	0,01444	0,036435
X Variable 1	2,33354346	0,2397691	9,73246103	1,0389E-05	1,780635	2,886452	1,780635	2,886452

Source: Eurostat 2017 and, IMF 2017

9.2 Norway

GDP Growth and passenger growth, Norway		
	GDP growth, Norway	Passangers growth, Norway
2007	3%	8%
2008	*0%*	*4%*
2009	-2%	-3%
2010	1%	7%
2011	1%	10%
2012	3%	7%
2013	*1%*	*6%*
2014	2%	2%
2015	2%	0%
2016	1%	1%



Regression Statistics	
Multiple R	0,53
R Square	0,28
Adjusted R Square	0,19
Standard Error	0,04
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	0,00407676	0,00407676	3,17426622	0,112667
Residual	8	0,01027454	0,00128432		
Total	9	0,0143513			

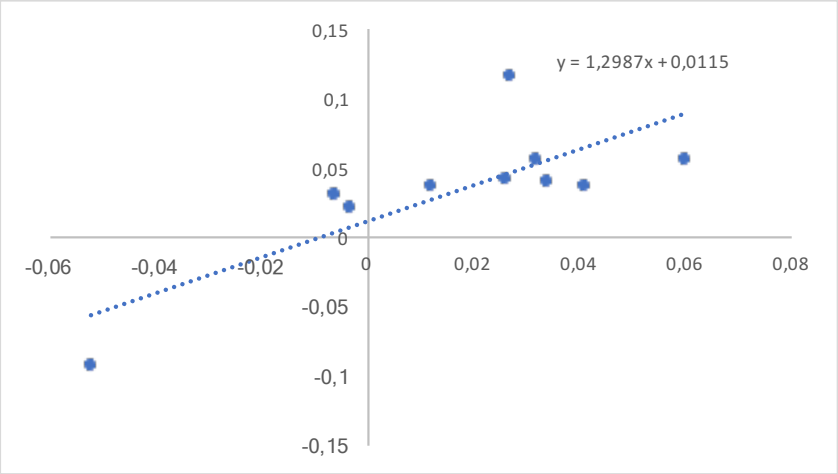
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	0,02149409	0,0156832	1,37051689	0,20774507	-0,014671	0,05766	-0,014671	0,05766
X Variable 1	1,66509894	0,93458406	1,78164705	0,11266697	-0,490056	3,820254	-0,490056	3,820254

Source: Eurostat 2017 and, IMF 2017

9.3 Sweden

GDP Growth and passenger growth, Sweden

	GDP growth, Sweden	Passangers growth, Sweden
2007	3%	4%
2008	*-1%*	3%
2009	-5%	-9%
2010	6%	6%
2011	3%	11%
2012	0%	2%
2013	*1%*	*4%*
2014	3%	4%
2015	4%	4%
2016	3%	6%



Regression Statistics	
Multiple R	0,79
R Square	0,62
Adjusted R Square	0,57
Standard Error	0,03
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	0,01490123	0,01490123	13,0968621	0,006793
Residual	8	0,00910217	0,00113777		
Total	9	0,02400339			

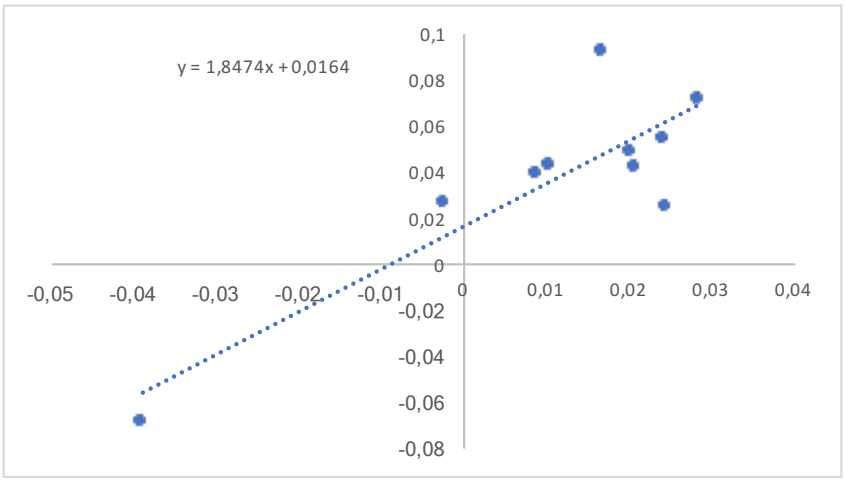
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	0,01145341	0,01230585	0,9307282	0,37922403	-0,016924	0,039831	-0,016924	0,039831
X Variable 1	1,29870409	0,35886126	3,61895871	0,00679284	0,471169	2,12624	0,471169	2,12624

Source: Eurostat 2017 and, IMF 2017

9.4 Scandinavia

GDP Growth and passenger growth, Scandinavia

	GDP growth, Scandinavia	Passangers growth
2007	2%	5%
2008	0%	3%
2009	-4%	-7%
2010	3%	7%
2011	2%	9%
2012	1%	4%
2013	*1%*	*4%*
2014	2%	4%
2015	2%	2%
2016	2%	5%



Regression Statistics	
Multiple R	0,87
R Square	0,75
Adjusted R Square	0,72
Standard Error	0,02
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	0,01207203	0,01207203	24,0207603	0,001192
Residual	8	0,00402053	0,00050257		
Total	9	0,01609256			

	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	0,01640694	0,0082446	1,99002307	0,08177008	-0,002605	0,035419	-0,002605	0,035419
X Variable 1	1,8474059	0,37693716	4,90109787	0,00119212	0,978187	2,716625	0,978187	2,716625

Source: Eurostat 2017 and, IMF 2017

Appendix 10: Crude oil and jet kerosene

10.1 Mark-up on jet kerosene

Price of crude oil, jet kerosense and SAS's fuel expense

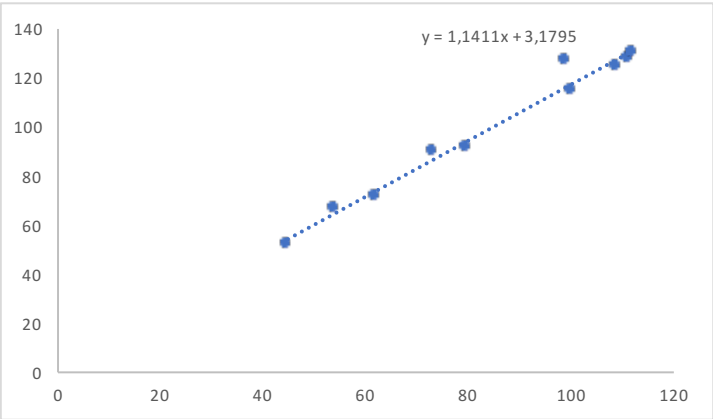
	Crude oil price, Brent, $/b	Jet kerosene price, $/b	fuel espense (SEK) / ASK	Mark-up on Jet kerosene
2007	73	90	0,17	23,29%
2008	99	126,7	0,22	27,98%
2009	62	71,1	0,17	14,68%
2010	79,4	91,4	0,15	15,11%
2011	111,2	127,5	0,22	14,66%
2012	111,8	129,6	0,23	15,92%
2013	108,8	124,5	0,23	14,43%
2014	99,9	114,8	0,22	14,91%
2015	53,9	66,7	0,18	23,75%
2016	44,6	52,1	0,15	16,82%
		Average mark-up (2007 - 2016)		**18,15%**

Source: IATA 2016 and SAS 2016

10.2 Regression analysis, crude oil and jet kerosene

Regression analysis, price of crude oil and jet kerosene

	Crude oil price, Brent, $/b	Jet kerosene price, $/b
2007	73	90
2008	99	126,7
2009	62	71,1
2010	79,4	91,4
2011	111,2	127,5
2012	111,8	129,6
2013	108,8	124,5
2014	99,9	114,8
2015	53,9	66,7
2016	44,6	52,1



Regression Statistics	
Multiple R	0,99
R Square	0,98
Adjusted R Square	0,98
Standard Error	4,57
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	7406,97527	7406,97527	354,934136	6,51E-08
Residual	8	166,948727	20,8685909		
Total	9	7573,924			

	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	3,17951182	5,30974019	0,59880742	0,56586695	-9,064771	15,42379	-9,064771	15,42379
X Variable 1	1,1410679	0,06056721	18,8396958	6,5129E-08	1,0014	1,280736	1,0014	1,280736

Source: IATA 2016

10.3 EIA's forecast of crude oil price, 2050 and beyond.

EIA forecast of crude oil price (USD/barrel)			
	Crude oil, brent (USD/barrel)		
2016	43,43	CAGR (2017 - 2050)	4,2%
2017	49,91		
2018	63,04	CAGR (2051 -), EIA's	3,0%
2019	70,37		
2020	74,82		
2021	78,15		
2022	80,71		
2023	82,28		
2024	83,72		
2025	86,23		
2026	88,55		
2027	90,00		
2028	90,68		
2029	92,07		
2030	94,52		
2031	96,81		
2032	99,53		
2033	99,65		
2034	101,45		
2035	102,15		
2036	104,99		
2037	105,52		
2038	106,67		
2039	108,39		
2040	109,37		
2041	110,04		
2042	110,24		
2043	110,84		
2044	111,38		
2045	112,01		
2046	112,97		
2047	114,09		
2048	114,33		
2049	115,78		
2050	116,80		

Source: EIA 2016

Appendix 11 Beta

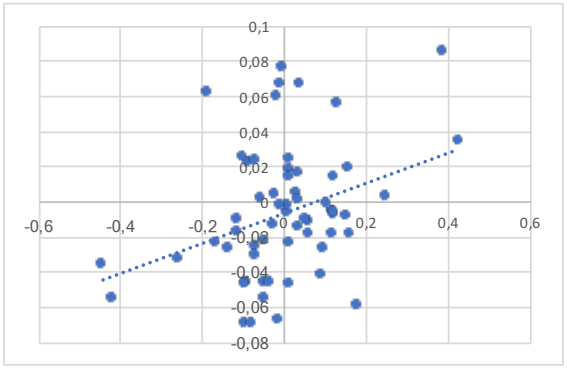
11.1 Data for Beta Calculations

Data for Beta calculations						
	SAS		OMX 30		S&P 500	
Date	Close	Return	Close	Return	Close	Return
2016-10-31	15,1	1,32%	1481,1	-2,35%	2198,8	-3,30%
2016-09-30	15,3	11,76%	1446,3	-0,50%	2126,1	1,98%
2016-08-31	17,1	3,51%	1439,1	-1,46%	2168,3	0,12%
2016-07-31	17,7	-5,08%	1418,1	-2,22%	2170,9	0,12%
2016-06-30	16,8	-4,76%	1386,7	-4,55%	2173,6	-3,44%
2016-05-31	16,0	42,50%	1323,6	3,47%	2098,9	-0,09%
2016-04-30	22,8	0,88%	1369,5	-0,64%	2096,9	-1,51%
2016-03-31	23,0	-2,17%	1360,7	0,37%	2065,3	-0,27%
2016-02-29	22,5	3,11%	1365,7	0,50%	2059,7	-6,19%
2016-01-31	23,2	6,03%	1372,5	-1,18%	1932,2	0,41%
2015-12-31	24,6	-0,81%	1356,3	6,67%	1940,2	5,34%
2015-11-30	24,4	-18,85%	1446,8	6,17%	2043,9	1,78%
2015-10-31	19,8	-16,67%	1536,1	-2,40%	2080,4	-0,05%
2015-09-30	16,5	-4,85%	1499,2	-5,49%	2079,4	-7,66%
2015-08-31	15,7	-1,91%	1416,9	5,94%	1920,0	2,72%
2015-07-31	15,4	-0,65%	1501,1	7,63%	1972,2	6,68%
2015-06-30	15,3	-3,59%	1615,6	-4,58%	2103,8	-1,94%
2015-05-31	14,8	3,73%	1541,7	6,70%	2063,1	2,15%
2015-04-30	15,3	5,23%	1645,0	-1,03%	2107,4	-1,04%
2015-03-31	16,1	1,24%	1628,0	2,44%	2085,5	-0,84%
2015-02-28	16,3	12,27%	1667,7	1,40%	2067,9	1,77%
2015-01-31	18,3	-9,84%	1691,0	-6,94%	2104,5	-5,20%
2014-12-31	16,5	-7,88%	1573,6	-6,93%	1995,0	3,20%
2014-11-30	15,2	0,66%	1464,6	-0,22%	2058,9	0,42%
2014-10-31	15,3	-25,82%	1461,3	-3,32%	2067,6	-2,39%
2014-09-30	11,4	12,33%	1412,8	-0,70%	2018,1	-2,27%
2014-08-31	12,8	-11,37%	1403,0	-1,01%	1972,3	1,58%
2014-07-31	11,3	11,95%	1388,9	-0,65%	2003,4	-3,63%
2014-06-30	12,7	-0,79%	1379,9	-0,22%	1930,7	1,53%
2014-05-31	12,6	1,20%	1376,8	1,84%	1960,2	-1,87%
2014-04-30	12,7	9,45%	1402,1	-2,69%	1923,6	-2,06%
2014-03-31	13,9	3,24%	1364,4	0,04%	1883,9	-0,62%
2014-02-28	14,4	24,74%	1365,0	0,30%	1872,3	-0,69%
2014-01-31	17,9	1,12%	1369,1	-4,72%	1859,4	-4,13%
2013-12-31	18,1	-8,84%	1304,4	2,18%	1782,6	3,69%
2013-11-30	16,5	11,52%	1332,9	-1,89%	1848,4	-2,30%
2013-10-31	18,4	5,98%	1307,7	-1,85%	1805,8	-2,73%
2013-09-30	19,5	15,90%	1283,5	-1,86%	1756,5	-4,27%
2013-08-31	22,6	-44,47%	1259,6	-3,59%	1681,6	-2,89%
2013-07-31	12,6	3,59%	1214,3	1,62%	1633,0	3,23%
2013-06-30	13,0	-1,54%	1234,1	-6,73%	1685,7	-4,71%
2013-05-31	12,8	12,89%	1151,0	5,54%	1606,3	1,52%
2013-04-30	14,5	-2,77%	1214,8	-1,30%	1630,7	-2,03%
2013-03-31	14,1	-5,69%	1199,0	0,18%	1597,6	-1,78%
2013-02-28	13,3	10,19%	1201,2	-0,15%	1569,2	-3,47%
2013-01-31	14,6	-7,19%	1199,4	-2,52%	1514,7	-1,09%
2012-12-31	13,6	-42,07%	1169,2	-5,51%	1498,1	-4,80%
2012-11-30	7,9	-11,46%	1104,7	-1,71%	1426,2	-0,70%
2012-10-31	7,0	-7,19%	1085,8	-3,11%	1416,2	-0,28%
2012-09-30	6,5	15,50%	1052,1	1,93%	1412,2	2,02%
2012-08-31	7,5	-13,42%	1072,4	-2,66%	1440,7	-2,37%
2012-07-31	6,5	-6,98%	1043,9	2,32%	1406,6	-1,94%
2012-06-30	6,0	-9,17%	1068,2	-4,60%	1379,3	-1,24%
2012-05-31	5,5	9,17%	1019,1	-4,23%	1362,2	-3,80%
2012-04-30	6,0	38,66%	976,0	8,57%	1310,3	6,68%
2012-03-31	8,3	1,21%	1059,6	1,40%	1397,9	0,76%
2012-02-29	8,4	-10,18%	1074,5	2,54%	1408,5	-3,04%
2012-01-31	7,5	18,00%	1101,8	-5,94%	1365,7	-3,90%
2011-12-31	8,9	-9,60%	1036,3	-4,68%	1312,4	-4,18%
2011-11-30	8,0	15,00%	987,8	-0,86%	1257,6	-0,85%
2011-10-31	9,2		979,4		1247,0	
2011-09-30	null		null		null	

Source: yahoo finance

11.2 Regression analysis, OMX30, beta estimation

SUMMARY OUTPUT



Regression Statistics	
Multiple R	0,33977639
R Square	0,11544799
Adjusted R S(	0,1001971
Standard Err(	0,13846009
Observations	60

ANOVA

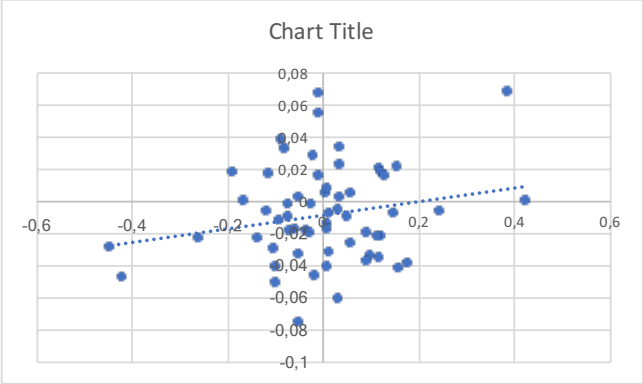
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,14512433	0,14512433	7,56991517	0,00790599
Residual	58	1,11192939	0,0191712		
Total	59	1,25705372			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,01135956	0,01812907	0,62659382	0,53338411	-0,0249297	0,04764883	-0,0249297	0,04764883
X Variable 1	1,34134714	0,48752364	2,75134788	0,00790599	0,36546254	2,31723173	0,36546254	2,31723173

Source: yahoo finance

11.3 Regression analysis, S&P500, beta estimation

SUMMARY OUTPUT



Regression Statistics	
Multiple R	0,207034
R Square	0,042863
Adjusted R S(	0,026361
Standard Err(	0,144029
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	0,053881	0,053881	2,597402	0,112468
Residual	58	1,203172	0,020744		
Total	59	1,257054			

	Coefficients	*andard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	0,012211	0,019445	0,627988	0,532477	-0,026713	0,051136	-0,026713	0,051136
X Variable 1	1,021542	0,63385	1,611646	0,112468	-0,247247	2,290331	-0,247247	2,290331

Source: yahoo finance

Appendix 12: SAS interest rates on debt

Weighted intrest on debt, 2013 - 2016

		2013				2014				2015				2016			
Subordinated loans																	
Currency		**market value**	**Interest rate**	**Weightts**	**Weighted interest rate**	**market value**	**Interest rate**	**Weightts**	**Weighted interest rate**	**market value**	**Interest rate**	**Weightts**	**Weighted interest rate**	**market value**	**Interest rate**	**Weightts**	**Weighted interest rate**
mSEK	Subordinated	340	2,4%	100,0%	2,4%	368	2,4%	100,0%	2,4%	332	2,4%	100,0%	2,4%	325	0,6%	100,0%	0,6%
Bond Loans																	
	Original amount issued	**Carrying value**	**Coupon rate**	**Weightts**	**Weighted interest rate**	**Carrying value**	**Coupon rate**	**Weightts**	**Weighted interest rate**	**Carrying value**	**Coupon rate**	**Weightts**	**Weighted interest rate**	**Fair value**	**Coupon rate**	**Weightts**	**Weighted interest rate**
mEUR	60	512	7,80%	11,4%	0,9%	544	4,40%	20,1%	0,9%	560	4,40%	20,4%	0,9%			0,0%	0,0%
mEUR	75	650	9,70%	14,4%	1,4%		9,70%	0,0%	0,0%			0,0%	0,0%			0,0%	0,0%
mEUR	40	334	6,20%	7,4%	0,5%	356	5,70%	13,1%	0,7%	363	5,50%	13,2%	0,7%	394	5,2%	16,4%	0,9%
mEUR	10			0,0%	0,0%			0,0%	0,0%			0,0%	0,0%	99	7,2%	4,1%	0,3%
mSEK	1300	1 217	10,50%	27,0%	2,8%		10,50%	0,0%	0,0%			0,0%	0,0%			0,0%	0,0%
mSEK	1500	1 487	9,00%	33,0%	3,0%	1 490	9%	54,9%	4,9%	1 493	9%	54,4%	4,9%	1 512	9,0%	63,0%	5,7%
mEUR	35	308	8,70%	6,8%	0,6%	323	8,70%	11,9%	1,0%	328	8,70%	12,0%	1,0%	394	8,7%	16,4%	1,4%
	Total	**4 508**			**9,1%**	**2 713**			**7,6%**	**2 744**			**7,6%**	**2 399**			**8,3%**
	Less amortization	–1867				-				**-560**				-148			
	Total	**2 641**				**2 713**				2 184				**2 251**			
Other Loans																	
Currency		**Fair value**	**Interest rate**	**Weightts**	**Weighted interest rate**	**Fair value**	**Interest rate**	**Weightts**	**Weighted interest rate**	**Fair value**	**Interest rate**	**Weightts**	**Weighted interest rate**	**Fair value**	**Interest rate**	**Weightts**	**Weighted interest rate**
mSEK	Finance leases	627	1,6%	10,3%	0,2%	605	1,5%	9,8%	0,1%	837	3,2%	15,5%	0,5%	1 350	3,4%	21,8%	0,7%
mSEK	Convertible bond	1 627	7,5%	26,8%	2,0%	2 684	5,6%	43,5%	2,4%	1 358	3,6%	25,1%	0,9%	1 414	3,6%	22,8%	0,8%
mSEK	Other loans	3 826	3,3%	62,9%	2,1%	2 884	3,2%	46,7%	1,5%	3 213	3,3%	59,4%	1,9%	3 426	3,4%	55,3%	1,9%
	Total	**6 080**			**4,3%**	**6 173**			**4,1%**	**5 408**			**3,4%**	**6 190**			**3,4%**
mSEK	Less amortization	-777				-2 100				-702				-1 760			
	Total	**5 303**				**4 073**				**4 706**				**4 430**			
	Consolidated	**2013**				**2014**				**2015**				**2016**			
	Subordinated	340	4,1%	2,4%	0,1%	368	5,1%	2,4%	0,1%	332	4,6%	2,4%	0,1%	325	4,6%	0,6%	0,0%
	Bond Loans	2 641	31,9%	**9,1%**	2,9%	2 713	37,9%	**7,6%**	2,9%	2 184	30,2%	**7,6%**	2,3%	2 251	32,1%	**8,3%**	2,7%
	Other Loans	5 303	64,0%	**4,3%**	2,7%	4 073	56,9%	**4,1%**	2,3%	4 706	65,2%	**3,4%**	2,2%	4 430	63,2%	**3,4%**	2,2%
		8 284			5,7%	7 154			5,3%	7 222			4,6%	7 006			4,8%
	Cost of debt	**2013**	**2014**	**2015**	**2016**												
	interest rate	5,7%	5,3%	4,6%	4,8%												
	Average interest	**5,1%**															

Source: SAS annual reports

Appendix 13: Interest rate, government bonds and treasury bond

Development in interest rates				
	Swedish repo rate	SE GVB 10Y	NO GVB 10Y	US TSB 10Y
1994	7,2%	9,7%	7,5%	5,8%
1995	8,5%	10,3%	7,4%	7,8%
1996	6,3%	8,1%	6,8%	5,7%
1997	4,1%	6,6%	5,9%	6,6%
1998	4,1%	5,0%	5,4%	5,5%
1999	3,0%	5,0%	5,5%	4,7%
2000	3,7%	5,4%	6,2%	6,7%
2001	4,0%	5,1%	6,2%	5,2%
2002	4,1%	5,3%	6,4%	5,0%
2003	3,1%	4,6%	5,0%	4,1%
2004	2,2%	4,4%	4,4%	4,2%
2005	1,7%	3,4%	3,7%	4,2%
2006	2,2%	3,7%	4,1%	4,4%
2007	3,5%	4,2%	4,8%	4,8%
2008	4,1%	3,9%	4,5%	3,7%
2009	0,7%	3,3%	4,0%	2,5%
2010	0,5%	2,9%	3,5%	3,7%
2011	1,8%	2,6%	3,1%	3,4%
2012	1,5%	1,6%	2,1%	2,0%
2013	1,0%	2,1%	2,6%	1,9%
2014	0,5%	1,7%	2,5%	2,9%
2015	-0,3%	0,7%	1,6%	1,9%
2016	-0,5%	0,5%	1,3%	2,1%

Source: Norges Bank 2017, Multpl 2017, Riksbank 2017, Riksbank B 2017

Appendix 14: Yield on a Swedish 10-year government bond

Quarterly yield on a 10- year Swedish government bond	
2007 Q 1	3,87%
2007 Q 2	4,21%
2007 Q 3	4,31%
2007 Q 4	4,28%
2008 Q 1	4,01%
2008 Q 2	4,21%
2008 Q 3	4,13%
2008 Q 4	3,22%
2009 Q 1	2,89%
2009 Q 2	3,46%
2009 Q 3	3,40%
2009 Q 4	3,26%
2010 Q 1	3,28%
2010 Q 2	2,82%
2010 Q 3	2,56%
2010 Q 4	2,90%
2011 Q 1	3,35%
2011 Q 2	3,06%
2011 Q 3	2,24%
2011 Q 4	1,76%
2012 Q 1	1,85%
2012 Q 2	1,59%
2012 Q 3	1,42%
2012 Q 4	1,50%
2013 Q 1	1,90%
2013 Q 2	1,82%
2013 Q 3	2,36%
2013 Q 4	2,37%
2014 Q 1	2,25%
2014 Q 2	1,92%
2014 Q 3	1,56%
2014 Q 4	1,16%
2015 Q 1	0,66%
2015 Q 2	0,70%
2015 Q 3	0,73%
2015 Q 4	0,79%
2016 Quarter 1	0,87%
2016 Quarter 2	0,70%
2016 Quarter 3	0,16%
Average	**2,40%**

Source: riksbank 2017

Appendix 15 Forecasting

15.1 Passenger revenue

Passenger revenue calculations	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
Volume																					
Growth in RPK, Scandinavian passengers											4,3%	4,0%	4,1%	4,1%	3,8%	3,8%	4,0%	4,0%	4,0%	4,0%	
Growth in RPK, Global											4,8%	4,8%	4,8%	4,8%	4,8%	4,8%	4,8%	4,8%	4,8%	4,8%	
Total growth in RPK (70% Scandinavia, 30% World)		0,0%	-12,3%	1,3%	4,3%	8,4%	0,6%	3,8%	-2,7%	9,4%	4,5%	4,2%	4,3%	4,3%	4,1%	4,1%	4,3%	4,3%	4,3%	4,3%	2,86%
RPK (million)	33	33	29	29	31	33	33	35	34	37	38,6	40,2	41,9	43,7	45,5	47,4	49,4	51,5	53,7	56,0	
CAGR in RPK, historical period	1,23%																				
CAGR in RPK, forecast period										4,26%											
Ticket price																					
Inflation																					
Sweden	1,7%	3,4%	1,3%	2,3%	2,8%	2,4%	0,8%	0,6%	0,5%	0,3%	1,0%	1,4%	1,8%	2,0%	2,0%	2,0%	1,7%	1,8%	1,9%	1,9%	1,9%
Norway	0,7%	3,8%	2,2%	2,4%	1,3%	0,7%	2,1%	2,0%	2,2%	3,6%	2,1%	2,0%	2,2%	2,3%	2,5%	2,5%	2,3%	2,3%	2,3%	2,4%	2,4%
Denmark	1,7%	3,3%	1,9%	1,9%	1,4%	0,9%	0,4%	0,2%	0,7%	1,1%	1,6%	1,6%	1,7%	1,9%	2,0%	2,0%	1,8%	1,8%	1,9%	1,9%	1,9%
Average scandinavia	**1,4%**	**3,5%**	**1,8%**	**2,2%**	**1,8%**	**1,3%**	**1,1%**	**0,9%**	**1,1%**	**1,7%**	**1,6%**	**1,7%**	**1,9%**	**2,1%**	**2,2%**	**2,2%**	**1,9%**	**2,0%**	**2,0%**	**2,1%**	**2,1%**
Ticket prioce (Passanger revenue per RPK in	1,17	1,15	1,13	1,02	0,88	0,95	0,95	0,83	0,90	0,82	0,81	0,81	0,80	0,79	0,78	0,77	0,77	0,76	0,75	0,75	0,75
CAGR in ticket price (2017 - 2026)										-1,02%											
Ticket price adjusted for inflation											0,83	0,82	0,81	0,81	0,80	0,79	0,78	0,77	0,77	0,77	0,77
Change in ticket price											0,54%	-0,92%	-0,79%	-0,85%	-0,92%	-1,02%	-1,25%	-0,96%	-0,96%	0,02%	0,00%
Passenger revenue (Growth in RPK *change in ticket price)											**4,47%**	**4,20%**	**4,26%**	**4,25%**	**4,06%**	**4,07%**	**4,20%**	**4,23%**	**4,23%**	**4,27%**	**2,86%**

15.2 Core operating income

Core operating income calculations	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026, terminal
Other-traffic revenue (% of passenger revenue)	14%	14%	15%	18%	33%	18%	18%	18%	17%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%
non-traffic revenue (% of passenger revenue)	22%	26%	22%	18%	20%	16%	15%	14%	13%	12%	12%	11%	11%	11%	10%	10%	9%	9%	8%	8%	8%
CAGR in non traffic revenue, forecasting period	-0,44%																			

15.3 Payroll expense

Payroll expenses calculations	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026, terminal
$Payroll\ expense = \%\ of\ total\ revenue \times \Delta(payroll\ expense/\ ASK)$																				
ASK (million)	44	46	40	39	41	36	45	45	44	49										
Payroll expense/ASK	-0,39	-0,40	-0,45	-0,35	-0,32	-0,38	-0,26	-0,20	-0,22	-0,19	-0,18	-0,18	-0,18	-0,18	-0,17	-0,17	-0,17	-0,17	-0,16	-0,16	-0,16
CAGR of payroll expense/ASK in forecasting	-1,56%																			
Payroll expense, % of core operating income	-33%	-34%	-40%	-33%	-32%	-32%	-27%	-24%	-24%	-23%	-23%	-22%	-22%	-22%	-21%	-21%	-21%	-20%	-20%	-20%	-20%

15.4 Jet fuel expense

Jet fuel expenses calculations	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
$Annual\ Fuel\ \exp ense = fuel\ \exp ense_{(t-1)} \times \Delta\ crude\ oil\ price \times \frac{Fleet_{(t-1)} + (7,3 \times 0,85) - 2,3}{Fleet_{(t-1)}}$																					
Jet fuel expense																					
Crude oil brent, USD/barrel	73	99	62	79,4	111,2	111,8	108,8	99,9	53,9	44,6	49,9	63,0	70,4	74,8	78,1	80,7	82,3	83,7	86,2	88,6	
Jet kerosene, USD/barrel	90	126,7	71,1	91,4	127,5	129,6	124,5	114,8	66,7	52,1	59,0	74,5	83,1	88,4	92,3	95,4	97,2	98,9	101,9	104,6	
Mark-up, jet kerosene in relation to crude oil	23,3%	28,0%	14,7%	15,1%	14,7%	15,9%	14,4%	14,9%	23,7%	16,8%	18,2%	18,2%	18,2%	18,2%	18,2%	18,2%	18,2%	18,2%	18,2%	18,2%	
Average markup, historic period	18,2%																				
Growth in Jet kerosene price		**40,8%**	**-43,9%**	**28,6%**	**39,5%**	**1,6%**	**-3,9%**	**-7,8%**	**-41,9%**	**-21,9%**	**13,2%**	**26,3%**	**11,6%**	**6,3%**	**4,5%**	**3,3%**	**1,9%**	**1,7%**	**3,0%**	**2,7%**	
Growth and change in fleet composition																					
Fleet (7,3 new aircfats annualy, 5 to expand											161	166	171	176	181	186	191	196	201	206	
fleet, 2,3 to replace older aircafts)										156											
Fleet growtt, factoring in annual increaased											2,5%	2,4%	2,4%	2,3%	2,2%	2,2%	2,1%	2,0%	2,0%	1,9%	
Growth in Jet fuel expenses (Growth in jet kerosene price * fleet growth adjusted for efficiency)											**15,7%**	**28,7%**	**14,0%**	**8,6%**	**6,7%**	**5,4%**	**4,0%**	**3,8%**	**5,0%**	**4,6%**	**2,50%**

15.5 Government users fee and other operating expenses

Government users fee as and other operating expenses (% of core operating income)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
Government users fee as % of core operating income)	-8,8%	-8,8%	-9,8%	-10,3%	-9,8%	-9,9%	-9,8%	-10,4%	-10,3%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%	-10,4%
Other operating expenses as % of core operating income (include shares of income in affiliated companies & Income from the sales of aircraft and building)	-32,4%	-33,2%	-31,6%	-35,9%	-28,7%	-30,3%	-29,2%	-32,5%	-28,3%	-34,7%	-31,7%	-31,7%	-31,7%	-31,7%	-31,7%	-31,7%	-31,7%	-31,7%	-31,7%	-31,7%	-31,7%
Average other operating expenses, historic period	-31,7%																				

15.5 Balance sheet items and depreciation

Value drivers, balance sheet & depreciation	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
											gradual increase or decrease					steady state					
NWC as % of revenue	-20,1%	-17,7%	-17,5%	-21,1%	-18,1%	-20,4%	-19,0%	-21,3%	-22,1%	-25,5%	-24,6%	-23,7%	-22,9%	-22,0%	-21,1%	-20,3%	-20,3%	-20,3%	-20,3%	-20,3%	-20,3%
Average historic period	-20,3%																				
Non-current operating assets as % of core operating income	50,1%	49,8%	64,1%	70,2%	70,2%	67,8%	59,8%	43,0%	42,3%	44,1%	46,1%	48,1%	50,1%	52,1%	54,1%	56,1%	56,1%	56,1%	56,1%	56,1%	56,1%
Average historic period	56,1%																				
Non-current operating liabilites as % core operating income	1,7%	2,1%	5,6%	5,6%	4,2%	4,9%	3,6%	5,9%	5,5%	5,3%	5,2%	5,0%	4,9%	4,7%	4,6%	4,4%	4,4%	4,4%	4,4%	4,4%	4,4%
Average historic period	4,4%																				
NIBD as % of Invested capital (exclucding cap. op. leases)	-16%	46%	38%	19%	37%	38%	29%	77%	51%	52%	49,4%	46,9%	44,5%	42,0%	39,5%	37,1%	37,1%	37,1%	37,1%	37,1%	37,1%
Average historic period	37,1%																				
Capitalized operating lease as % of net non-current operating assets	82%	72%	71%	55%	46%	48%	60%	121%	142%	149%	137,9%	127,2%	116,5%	105,9%	95,2%	84,5%	84,5%	84,5%	84,5%	84,5%	84,5%
Average historic period	84,5%																				
Depreciation, amortization and impariment as % of net non-current operating assets	-5,8%	-6,3%	-7,0%	-7,1%	-8,8%	-6,4%	-7,0%	-10,3%	-10,0%	-8,9%	-8,7%	-8,5%	-8,4%	-8,2%	-8,0%	-7,8%	-7,8%	-7,8%	-7,8%	-7,8%	-7,8%
Average historic period	-7,8%																				
Depreciation on capitlized operating leases as % of capitalized operating	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%	7,9%

Appendix 16: Pro forma statements

16.1 Pro forma income statement

Pro Forma Income statement	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026, terminal
Passenger revenue	38601	38103	32674	29939	26998	31 635	31739	28710	30496	30371	31 730	33 063	34 470	35 936	37 395	38 919	40 552	42 269	44 058	45 941	47 255
Other traffic revenue	5 222	5 331	5 056	5 369	8 951	5 732	5 708	5 190	5 073	5 337	5 576	5 810	6 057	6 315	6 571	6 839	7 126	7 428	7 742	8 073	8 304
non-traffic revenue	8 428	9 761	7 188	5 415	5 463	5 017	4 735	4 106	4 081	3 751	4 198	4 680	5 197	5 748	6 333	6 950	7 597	8 271	8 968	9 686	10 460
Core operating income	**52 251**	**53 195**	**44 918**	**40 723**	**41 412**	**42 384**	**42 182**	**38 006**	**39 650**	**39 459**	**41 503**	**43 553**	**45 724**	**47 999**	**50 300**	**52 708**	**55 275**	**57 967**	**60 768**	**63 700**	**66 019**
Payroll expenses	-17 271	-18 153	-17 998	-13 473	-13 092	-13 728	-11 451	-9 181	-9 622	-9 105	-9 427	-9 738	-10 064	-10 400	-10 728	-11 066	-11 424	-11 793	-12 170	-12 558	-13 015
Jet fuel expense	-8 104	-9 637	-7 685	-6 601	-7 769	-9 394	-9 046	-8 806	-8 430	-6 449	-7 462	-9 605	-10 948	-11 889	-12 682	-13 372	-13 913	-14 440	-15 162	-15 864	-16 261
Government user fees	-4 574	-4 662	-4 399	-4 198	-4 042	-4 175	-4 154	-3 962	-4 087	-4 106	-4 319	-4 532	-4 758	-4 995	-5 234	-5 485	-5 752	-6 032	-6 323	-6 628	-6 870
Other operating expenses	-16 991	-17 492	-13 828	-14 411	-11 930	-12 616	-12 242	-12 354	-12 041	-13 997											
Shares of income in affiliated companies	9	-147	-258	12	28	23	25	30	37	39	-13 150	-13 799	-14 487	-15 208	-15 937	-16 700	-17 513	-18 366	-19 254	-20 182	-20 917
Income from the sales of aircraft and building	41	4	-97	-239	12	-252	-118	-16	777	265											
Core operating cost	**-46 890**	**-50 087**	**-44 265**	**-38 910**	**-36 793**	**-40 141**	**-36 986**	**-34 289**	**-33 366**	**-33 353**	**-34 357**	**-37 674**	**-40 257**	**-42 492**	**-44 581**	**-46 623**	**-48 602**	**-50 631**	**-52 909**	**-55 233**	**-57 063**
Core operating EBIDTAR	**5 361**	**3 108**	**653**	**1 813**	**4 619**	**2 243**	**5 196**	**3 717**	**6 284**	**6 106**	**7 146**	**5 878**	**5 467**	**5 508**	**5 719**	**6 085**	**6 673**	**7 336**	**7 859**	**8 466**	**8 956**
Depreciation on capitalized operating leases	-1 619	-1 433	-1 456	-1 140	-980	-1 009	-1 122	-1 336	-1 628	-1 784	-1 838	-1 873	-1 891	-1 889	-1 861	-1 807	-1 895	-1 987	-2 083	-2 184	-2 263
Depreciation, amortization and impairment	-1 478	-1 591	-1 845	-1 867	-2 413	-1 710	-1 658	-1 443	-1 466	-1 367	-1 485	-1 604	-1 727	-1 855	-1 984	-2 117	-2 220	-2 328	-2 440	-2 558	-2 651
Core operating EBIT	**2 264**	**84**	**-2 648**	**-1 194**	**1 226**	**-476**	**2 416**	**938**	**3 190**	**2 955**	**3 823**	**2 402**	**1 848**	**1 763**	**1 873**	**2 161**	**2 559**	**3 021**	**3 336**	**3 725**	**4 041**
Corporation tax	-286	28	803	799	-58	389	-254	199	-461	-110	-841	-528	-407	-388	-412	-476	-563	-665	-734	-819	-889
Tax shield, net financial expenses	-339	-316	-313	-466	-357	-447	-355	-402	-383	-334	-274	-285	-294	-300	-303	-302	-317	-333	-349	-366	-380
Tax allocated to special items	-36	-1 485	27	-8	-385	104	-82	-6	-7	-2	0	1	2	3	4	5	6	7	8	9	10
Tax on EBIT	**-662**	**-1 773**	**517**	**325**	**-800**	**46**	**-690**	**-209**	**-851**	**-445**	**-1 115**	**-813**	**-701**	**-688**	**-715**	**-777**	**-880**	**-997**	**-1 083**	**-1 185**	**-1 269**
Core NOPAT (exc. Special items)	**1 602**	**-1 689**	**-2 132**	**-869**	**426**	**-430**	**1 726**	**729**	**2 339**	**2 510**	**2 709**	**1 588**	**1 148**	**1 074**	**1 158**	**1 384**	**1 678**	**2 023**	**2 253**	**2 539**	**2 773**
Special items	-130	-5 305	102	-30	-1 482	401	-371	-28	-33	-7	0	0	0	0	0	0	0	0	0	0	0
Tax on special items	36	1 485	-27	8	385	-104	82	6	7	2	0	0	0	0	0	0	0	0	0	0	0
NOPAT (inc. Special items)	**1 509**	**-5 509**	**-2 056**	**-891**	**-671**	**-133**	**1 437**	**707**	**2 313**	**2 505**	**2 709**	**1 588**	**1 148**	**1 074**	**1 158**	**1 384**	**1 678**	**2 023**	**2 253**	**2 539**	**2 773**
Net financial expenses	-1 212	-1 128	-1 204	-1 793	-1 373	-1 719	-1 612	-1 828	-1 740	-1 517	-1 243	-1 296	-1 337	-1 366	-1 377	-1 371	-1 443	-1 513	-1 586	-1 663	-1 726
Tax on net financial expense	339	316	313	466	357	447	355	402	383	334	274	285	294	300	303	302	317	333	349	366	380
Net earnings (before minory interest and other comprehensive income)	**636**	**-6 321**	**-2 947**	**-2 218**	**-1 687**	**-1 405**	**179**	**-719**	**956**	**1 321**	**1 739**	**578**	**105**	**9**	**84**	**315**	**553**	**843**	**1 015**	**1 242**	**1 427**

16.2 Pro forma tax allocation and capitalized operating leases

Pro Forma tax allocation and capitalized operating leases	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
Tax rate	28%	28%	26%	26%	26%	26%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%
rd (forecast period)	5,10%																				
Net financial expenses & Tax Shield																					
Income from other holdings of securities (financial)	5	0	0	-263	13	0	1	-9	-267	1	0	0	0	0	0	0	0	0	0	0	0
Interest expense on capitalized operating leases	-959	-849	-863	-675	-580	-598	-664	-791	-965	-1 056	-1 089	-1 109	-1 120	-1 119	-1 103	-1 070	-1 122	-1 177	-1 234	-1 293	-1 341
Financial income	787	654	304	186	224	101	50	102	124	91											
Financial expenses	-1 045	-933	-645	-1 041	-1 030	-1 222	-999	-1 130	-632	-553											
Financial expense (excluding COL)	**-258**	**-279**	**-341**	**-855**	**-806**	**-1 121**	**-949**	**-1 028**	**-508**	**-462**	**-155**	**-186**	**-217**	**-246**	**-274**	**-300**	**-321**	**-336**	**-353**	**-370**	**-385**
Net financial expenses	**-1 212**	**-1 128**	**-1 204**	**-1 793**	**-1 373**	**-1 719**	**-1 612**	**-1 828**	**-1 740**	**-1 517**	**-1 243**	**-1 296**	**-1 337**	**-1 366**	**-1 377**	**-1 371**	**-1 443**	**-1 513**	**-1 586**	**-1 663**	**-1 726**
Tax shield, net financial expenses	-339	-316	-313	-466	-357	-447	-355	-402	-383	-334	-274	-285	-294	-300	-303	-302	-317	-333	-349	-366	-380
Special items																					
Income from the sales of shares in subsidiaries, affiliated companies and operations	0	0	429	-73	0	400	-371	6	0	-7											
Income from other holdings of securities (operational)	0	0	0	0	-1 482	1	0	-34	-33	0											
Income for discontinued operations	-130	-5 305	-327	43	0	0	0	0	0	0											
Special Items	**-130**	**-5 305**	**102**	**-30**	**-1 482**	**401**	**-371**	**-28**	**-33**	**-7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Tax on special items	36	1 485	-27	8	385	-104	82	6	7	2	0	0	0	0	0	0		0	0	0	0
Special items after tax	**-94**	**-3 820**	**75**	**-22**	**-1 097**	**296**	**-289**	**-22**	**-26**	**-5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Capitalized operating lease																					
Leasing costs for aircraft	-2 578	-2 282	-2 319	-1 815	-1 560	-1 607	-1 786	-2 127	-2 593	-2 840											
Rcol	4,65%																				
Capitalized operating lease (multipe x8)	20 624	18 256	18 552	14 520	12 480	12 853	14 288	17 016	20 744	22 720	23 412	23 859	24 094	24 069	23 710	23 017	24 138	25 313	26 536	27 817	28 830
Interest expense (capitalized operating leases)	-959	-849	-863	-675	-580	-598	-664	-791	-965	-1 056	-1 089	-1 109	-1 120	-1 119	-1 103	-1 070	-1 122	-1 177	-1 234	-1 293	-1 341
Lease depreciation	-1 619	-1 433	-1 456	-1 140	-980	-1 009	-1 122	-1 336	-1 628	-1 784	-1 838	-1 873	-1 891	-1 889	-1 861	-1 807	-1 895	-1 987	-2 083	-2 184	-2 263
Leasing costs for aircraft	**-2 578**	**-2 282**	**-2 319**	**-1 815**	**-1 560**	**-1 607**	**-1 786**	**-2 127**	**-2 593**	**-2 840**	**-2 927**	**-2 982**	**-3 012**	**-3 009**	**-2 964**	**-2 877**	**-3 017**	**-3 164**	**-3 317**	**-3 477**	**-3 604**

16.3 Pro forma balance sheet

Pro Forma balance sheet	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026, terminal
Net working capital (NWC)	-10506	-9399	-7848	-8580	-7508	-8653	-7995	-8087	-8759	-10044	-10 205	-10 332	-10 452	-10 557	-10 628	-10 681	-11 201	-11 746	-12 314	-12 908	-13 378
Total non-current operating assets	26177	26494	28795	28587	29052	28720	25206	16326	16791	17385	19 120	20 940	22 904	25 009	27 219	29 582	31 023	32 533	34 105	35 751	37 053
Total non-current operating liabiltites	905	1102	2509	2286	1728	2097	1522	2249	2180	2092	2 141	2 185	2 228	2 271	2 308	2 343	2 457	2 577	2 701	2 831	2 934
Net non-current assets	**25272**	**25392**	**26286**	**26301**	**27324**	**26623**	**23684**	**14077**	**14611**	**15293**	**16 979**	**18 756**	**20 676**	**22 738**	**24 911**	**27 239**	**28 566**	**29 957**	**31 404**	**32 919**	**34 118**
Invested capital (excluding. COL)	14766	15993	18438	17721	19816	17970	15689	5990	5852	5249	6 774	8 423	10 223	12 181	14 283	16 558	17 365	18 211	19 090	20 011	20 740
Capitalized operating lease (COL) operations	20624	18256	18552	14520	12480	12853	14288	17016	20744	22720	23 412	23 859	24 094	24 069	23 710	23 017	24 138	25 313	26 536	27 817	28 830
Invested Capital (adjusted for COL)	35390	34249	36990	32241	32296	30823	29977	23006	26596	27969	30 186	32 282	34 317	36 250	37 993	39 575	41 503	43 524	45 627	47 828	49 570
Total shareholders' equity	17149	8682	11389	14438	12433	11156	11103	1407	2839	2526	3 427	4 469	5 677	7 065	8 637	10 422	10 929	11 462	12 015	12 595	13 054
Net interest-bearing debt (NIBD)	-2383	7312	7049	3283	7383	6814	4586	4583	3012	2723	3 347	3 954	4 546	5 116	5 646	6 137	6 435	6 749	7 075	7 416	7 686
Capitalized operating lease (COL) financial	20624	18256	18552	14520	12480	12 853	14288	17016	20744	22720	30 186	32 282	34 317	36 250	37 993	39 575	41 503	43 524	45 627	47 828	49 570

16.4 Pro forma cash flow statement & DCF

Pro Forma cash flow statement																					
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	E2017	E2018	E2019	E2020	E2021	E2022	E2023	E2024	E2025	E2026,	terminal
NOPAT	1 509	-5 509	-2 056	-891	-671	-133	1 437	707	2 313	2 505	2 709	1 588	1 148	1 074	1 158	1 384	1 678	2 023	2 253	2 539	2 773
Depreciation COL	1 619	1 433	1 456	1 140	980	1 009	1 122	1 336	1 628	1 784	1 838	1 873	1 891	1 889	1 861	1 807	1 895	1 987	2 083	2 184	2 263
Depreciation, non-current assets	1 478	1 591	1 845	1 867	2 413	1 710	1 658	1 443	1 466	1 367	1 485	1 604	1 727	1 855	1 984	2 117	2 220	2 328	2 440	2 558	2 651
△ NWC		1 107	1 551	-732	1 072	-1 145	658	-92	-672	-1 285	-161	-127	-120	-105	-71	-53	-520	-545	-568	-594	-470
Net investment (net non-current assets)		1 711	2 739	1 882	3 436	1 009	-1 281	-8 164	2 000	2 049	3 171	3 380	3 647	3 918	4 157	4 444	3 547	3 719	3 888	4 073	3 850
Investment in COL		-935	1 752	-2 892	-1 060	1 382	2 556	4 064	5 356	3 760	2 530	2 320	2 126	1 865	1 502	1 114	3 016	3 163	3 306	3 464	3 276
Free cash flow for firm (FCFF)		-4 368	-4 797	3 858	-726	1 339	2 283	7 678	-1 277	1 132	492	-507	-887	-859	-585	-197	-249	2	150	338	1 031
NOPAT	1 509	-5 509	-2 056	-891	-671	-133	1 437	707	2 313	2 505	2 709	1 588	1 148	1 074	1 158	1 384	1 678	2 023	2 253	2 539	2 773
△ Invested capital		1 141	-2 741	4 749	-55	1 473	846	6 971	-3 590	-1 373	-2 217	-2 096	-2 035	-1 933	-1 743	-1 582	-1 928	-2 021	-2 103	-2 201	-1 742
Free cash flow for firm (FCFF)		-4 368	-4 797	3 858	-726	1 339	2 283	7 678	-1 277	1 132	492	-507	-887	-859	-585	-197	-249	2	150	338	1 031

Valuation																					
WACC											4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	4,80%	
Discount factor											0,95	0,91	0,87	0,83	0,79	0,75	0,72	0,69	0,66	0,63	32,25
g terminal period	2,86%										469	-462	-771	-712	-463	-149	-179	1	98	212	33 251
PV of FCFF in forecast horizon	**-1 956**																				
PV of FCFF terminal period	**33 251**																				
Enterprise value	**31 295**																				
NIBD 2016 (inc. capitalized op. leases)	25 443																				
Estimated market value of equity	**5 852**																				
Common shares (million)	330,08																				
Estimated share price 31 Oct 2016	**17,73**																				
Observable share price 31 Oct 2016	15,30																				

WACC					
re	9,50%	**rf**	**2,40%**	E/(D+E+COL)	0,19
rd	5,10%	Beta	1,30	D/(D+E+COL)	0,17
rcol	4,65%	rm-rf	5,46%	COL/(D+E+COL)	0,64
		t	22%		

Appendix 17: Business models and value drivers

Source: The comparison groups' annual reports 2016

Data based on 2016 annual reports	Network Legacy Carriers (NLC)					Low-cost Carriers (LCC)				Emerging Global Airlines (EGA)		
	SAS	Finnair	Lufhansa	KLM	Delta	Norwegian	Easy Jet	Southwest	Ryan Air	Emirates	Turkish Airlines	Singapore Airlines
Region	Europe	Europe	Europe	Europe	US	Europe	Europe	US	Europe	Middle east	Europe/ Asia	Asia
Foundation												
Founded	1946	1923	1953	1919	1924	1993	1995	1967	1985	1985	2004	1972
Years operated	71	94	64	98	93	24	22	50	32	32	13	45
Fleet												
# of aircrafts in fleet	156	73	617	203	832	118	257	723	341	251	334	173
Mean age fleet	10,9	9,4	11,3	12,5	17,0	3,6	6,7	12,0	6,0	6,2	7,1	6,5
Fleet composition												
% Boeing	53%	0%	11%	68%	56%	98%	0%	100%	100%	63%	47%	39%
% Airbus	27%	67%	69%	6%	22%	2%	100%	0%	0%	37%	53%	61%
% Other	21%	33%	19%	26%	22%	0%	0%	0%	0%	0%	4%	5%
% WB aircrafts in fleet	10%	26%	27%	37%	18%	10%	0%	0%	0%	100%	30%	70%
Fleet growth in the next 10 years (if order and order options from 2016 and beyond materializes)	21%	14%	25%		26%	68%	40%	40%	37%	56%	33%	57%
Network	Hub-to-spoke	Hub-to-spoke	Hub-to-spoke	Hub-to-spoke	Hub-to-spoke	Point-to-point	Point-to-point	Predominantly point-to-point, but a hybrid	Point-to-point	Hub-to-spoke	Hub-to-spoke	Hub-to-spoke
Services												
Mebership in gloobal alliance												
Star Alliance	x		x								x	x
One World		x										
SkyTeam				x	x							
Offers Business Class	x	x	x	x	x	-	-	-	-	x	x	x
Cargo and/or ground handling service	X	X	X	X	X	-	-	-	-	X	X	X

Summary of data for value drivers

Value drivers	NLAs	LCCs	EGAs
Legacy			
Years since founcation	84	26	30
Operations & Network			
Mean age of fleet	**12**	**7**	**7**
Homogeneity of fleet (% of aircrafts from airlines argest aircrafts supplier)	63%	100%	59%
% of WB aircrafts in fleet	24%	2%	67%
Network	Hub-to-spoke	Point-to-point	Hub-to-spoke
Services			
Membership in global alliance	**100%**	**0%**	**67%**
Business Class	**100%**	**0%**	**100%**
Fleet growth in the next 10 years (if order and order options from 2016 and beyond materializes)	22%	46%	**49%**
Cargo and/or ground handling service	x	x	x
Sales, distribution channels and fare structure			
Sales, distribution channels and fare structure	Diverse	Homogenious	Diverse

Note: Turkish airlines was founded in 1933, but fundamentally changed its business model in 2004