

Valuation of SAS

- Using the discounted cash flow model and a relative valuation approach

Program: MSc FSM & MSc AEF

Authors: Carl Mellerby

Carl Månsson

Supervisor: Kenneth Winther

Date of submission: 24th of September, 2014

Master Thesis Copenhagen Business School 2014 Number of pages: 115

Executive summary

During the past years SAS has been struggling financially mainly due to increased competition and a high cost structure. In 2012 the continuously poor financial performance resulted in a severe crisis and SAS was only days away from filing for bankruptcy. However, SAS managed to survive the crisis thanks to extended credit lines and renegotiations of loan-and union agreements and in the fiscal year of 2012/2013, SAS exhibited a full year profit for the first time since 2007.

The financial distress in 2012 and the recurrence of profitability during the fiscal year of 2012/2013 make SAS a highly interesting valuation case. Therefore the purpose of this thesis is to determine the fair value of one SAS AB share by the 1st of April 2014. In order to determine the fair value, the thesis utilizes two different valuation approaches, namely a discounted cash flow model and a relative valuation approach. The two valuation approaches are founded upon a comprehensive and thorough strategic analysis using the PESTEL-framework and the Porter's five forces-model as well as a financial analysis based on the DuPont-framework.

The valuation using the discounted cash flow model estimates the fair value of SAS to be 17.03 SEK by the 1st of April 2014. Since the actual share price of SAS at that time was 14.65 SEK, the discounted cash flow model thereby suggests an undervaluation of the SAS share. The undervaluation is supported by the relative valuation approach.

Factors identified in the analysis supporting the valuation include among others that SAS is able to charge higher ticket prices and thereby enjoy a higher yield compared to competitors. This is possible due to brand loyalties and scale advantages, stemming from past governmental ownership. Additionally, SAS has been able to significantly reduce its payroll expenses by decreasing wages and pensions and cutting numbers of employees. SAS is also better than peers at utilizing its assets and in the midst of a fleet renewal, which will lead to a future savings in jet fuel costs.

The main conclusion to be drawn is thereby that the general market seems to be more pessimistic to the future prospects of SAS than what is actually indicated by the discounted cash flow model and the relative valuation approach. Following SAS's poor performance during the last years this is however not very surprising and it will most likely take several years before the stock market regains full confidence in SAS and is able to fully appreciate its fair value.

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1 Introduction

The airline industry is arguably one of the most prominent industries in shaping the modern world. Transport by air has simplified economic and cultural integration and been a driving force behind globalization. The strong demand for airline transportation is clear: while world real GDP has little more than tripled between 1972 and 2012, airline passengers have nine folded.¹² During this time period, the airline industry has also slowly been deregulated. Whereas almost all airlines were government owned before the 80s, almost 75% of the world's airlines have private majority ownerships today.³ However, historically the airline industry has not been profitable for investors. From 1993 to 2012, the returns on invested capital have been lower than the weighted average cost of capital in the airline industry every single year, i.e. from an economic value added viewpoint the airline industry has never been able to create value to the average airline industry investor.⁴

The deregulation of the European airline industry has led to a large increase of low cost airlines, often termed Low Cost Carriers (LCCs), whom steadily increase their market shares and put pressure on ticket prices.⁵ As an effect, air travel is becoming a commodity instead of a luxury good. In this market old flag carriers (government owned airlines), traditionally also called Full Service Carriers (FSCs), tries to compete with improved operations and more add-on services, but also with higher prices. They struggle with old business models, which were developed under governmental ownership and as a result, many fail. Since the last financial crisis, 13 European governments have had to bail out their flag carriers (national government owned airlines) to save them from bankruptcy.⁶

Following this, it is highly interesting to investigate SAS, the Nordic flag carrier and the largest and oldest airline in the region. SAS has struggled with its profitability during the last decade and in November 2012 the airline was only days away from bankruptcy. The turnaround event during this period was that labor unions accepted large wage cuts and reduced pension plans, which made it

¹ World Bank Data; 'GDP (Constant 2005 US\$)', <<u>http://data.worldbank.org/indicator/NY.GDP.MKTP.KD</u>>

² World Bank Data; 'Air Transport, Passengers Carried', <<u>http://data.worldbank.org/indicator/IS.AIR.PSGR</u>>

³ IATA, Economics Briefing No.10 – June 2013, 'Profitability and the air transport value chain', p. 5
<<u>http://www.iata.org/whatwedo/Documents/economics/profitability-and-the-air-transport-value%20chain.pdf</u>>
⁴ Ibid, p.11

⁵ European Commission, 'Annual analyses of the EU air transport market 2012', p.33 – 34,

⁶ UECNA, 'European Governments bail out national airlines', viewed 2014-04-20, http://www.uecna.eu/spip.php?page=article&id_article=18

possible for SAS to receive extended credit lines. These changes in employment terms were a part of SAS latest strategy 4XNG, which followed the strategies 4Excellence and Core SAS, the latter being the first strategy since the financial crisis with the mission of turning SAS red bottom lines into black. Except wage cuts and lowered pensions, the strategies included personnel reductions, centralization and outsourcing and a renewed focus on the Nordic market. When SAS released their annual report in 2013 it seemed like the strategic efforts had paid of and for the first time since 2007, SAS showed positive net earnings.

1.1 Research Question

Given the black bottom line in 2013 the future of SAS is perhaps looking brighter than for many years. However, the profitability problem of the industry remains, similarly as LCCs continues to steal market shares. The share price of SAS dropped from levels of around 60 SEK in 2009 down to 5-10 SEK in 2012 and 2013. Following the improved earnings during the fiscal year 2012/2013, the share price of SAS by the 1st of April 2014 was 14,65 SEK. The market is thus slightly more optimistic for a profitable SAS than during the troublesome year of 2012, but still far from the levels in 2009. Given the recent strategic efforts of SAS and the positive net earnings in 2012/2013, it is highly interesting to investigate the future prospects of SAS. This therefore results in the following research question:

"What is the fair value of one SAS AB share, as of the 1st of April 2014?"

1.2 Thesis framework

In order to provide an answer to the above stated research question, this thesis will follow a framework as outlined in figure 1-1 (see next page). The figure illustrates how the different parts of the thesis relate to each other and as seen, the thesis will commence with a methodology section. The methodology section provides an overview and discussion regarding the research methodology as well as the different theoretical models, which will be applied throughout the thesis. In addition to this, the methodology section will also include a presentation of the different data sources utilized as well as the delimitations of the thesis.

This will then be followed by a background section providing a thorough presentation of SAS's history from its foundation in 1946 up until today. This section of the thesis will also elaborate upon SAS's ownership structure as well as the company's current strategies and product offering. A comprehensive

overview over a company's history is a necessity in order to fully understand why a company is operated in a certain way and the historical background may also prove to be useful when estimating and forecasting the future of SAS.

In addition to understanding what historical events that have shaped SAS into its current form, it is also highly important to create an understanding of the environment currently surrounding SAS and what factors that will most likely impact SAS going forward. Such aspects will be dealt with in the strategic analysis section of the thesis. The thesis will make use of two different theoretical models in the strategic analysis section, namely the PESTEL and Porters five forces frameworks. The use of two different models with different focus areas enables the thesis to provide a comprehensive description of SAS's current strategic situation. In addition to the strategic analysis section, a comprehensive financial analysis will also be conducted in order to analyze SAS's historical financial performance in relation to a chosen peer group. The financial analysis will be based on the DuPont model. The findings from the strategic analysis and financial analysis will be summarized in a SWOT-analysis.

The strategic analysis as well as the financial analysis plays a significant role for the subsequent section of the essay, which consists of the actual valuation of SAS. Findings from the strategic-and financial analysis form the foundation of the economic forecasts used in the valuation. The main focus of the valuation section is the discounted cash flow framework, which is the key to answering the stated research question. The valuation section of the thesis is then concluded with a sensitivity analysis which challenges key inputs to the valuation and a "sanity check" using a relative valuation approach. The final sections of the thesis includes a discussion of the results of the valuation and a conclusion which will provide an answer to the stated research question.

Figure 1-1 Thesis Framework



1.3 Methodology

This section provides a brief overview of the theoretical models applied throughout this thesis.

1.3.1 Strategic analysis

In order to perform an accurate financial valuation it is essential to understand the environment surrounding the company being valued as mentioned earlier.

The PESTEL-framework provides an indication of the impact of political, economic, social, technological, environmental and legal factors on cash flows and risk according to Petersen & Plenborg.⁷ This thesis will provide and exhaustive analysis based on the PESTEL-framework and the factors identified as the most important ones will be further utilized and form the foundation of the economic forecasts in valuation section.

The strategic analysis section will also include an analysis based on the Porter's five forces framework. "Porter's Five forces of Competition framework views the profitability of an industry (as indicated by its rate of return on capital relative to its cost of capital) as determined by five forces of competitive pressure".⁸

Grant (2002) states that superior profitability arises from two main sources: Location within an attractive industry and achieving a competitive advantage over rivals. Profits earned due to lack of competition (attractive industry) are referred to as monopoly rents. Porters Five Forces framework states that monopoly rents derive from the ownership of resources. These could stem from barriers to entry resulting from patents, distribution channels, learning and other resources that the incumbent firm possess - resources an entrant firm would have to pay disproportionate expenses to obtain or acquire slowly over time.⁹

An industry where barriers to entry are few or none-existent is in microeconomic theory determined as a perfectly competitive industry. In this industry it is impossible to earn economic profit in the long run.

⁷ Petersen C.V. & Plenborg T., 'Financial Statement Analysis', 2012, Pearson Education Unlimited, p.189

⁸ Grant M. Robert, 'Contempory Strategy Analysis', 7th edition, John Wiley & Sons, 2010, p. 33-34

⁹ Ibid

1.3.2 Financial Analysis

The financial analysis will use the DuPont model to analyze SAS financial performance. The DuPont model is a framework that breaks down Return on Equity into operating factors based on the return on invested capital (ROIC) and financing factors, mainly the leverage ratio and net borrowing cost (NBC).¹⁰

1.3.3 SWOT Analysis

The SWOT-framework (strengths, weaknesses, opportunities and threats) is highly a useful tool for summarizing the most critical factors identified in the external and internal analyses and which later form the foundation of the economic forecasts.¹¹ The use of a SWOT-analysis is simple and practical, however, the framework has been under scrutiny and Hill & Westbrook (1997) deems the SWOT-analysis to be "ineffective as a means of analysis or as a part of a corporate strategy review".¹² As a response, Pickton & Wright (1998) instead state that it is the actual application, which determines the effectiveness of the SWOT-framework.¹³ Therefore, when used in combination with other theoretical frameworks, the SWOT-framework may still be highly useful as an analytical tool. As a result, this thesis utilize the SWOT-framework as a "summing up tool" for the most important findings derived from the strategic analysis.

1.3.4 Valuation methods

There is a wide variety of different valuation methods and approaches available to practitioners. According to Petersen & Plenborg (2012) most of the valuation methods may however be classified into four major categories as illustrated in figure 1-2.

¹⁰ Petersen C.V. & Plenborg T, p.120

¹¹ Ibid, p.192

¹² Hill, T. & Westbrook, R. (1997) *SWOT Analysis: It's time for a product recall*, Long Range Planning, Vol. 30, No. 1, pp. 46-52

¹³ Pickton, D.W. & Wright, S.(1998) What's SWOT in strategic analysis?, Strategic Change, Vol. 7, Issue. 2, pp. 101-109

Figure 1-2 Valuation Methods



Source: Own Creation

This thesis will make use of the present value approach as well as the relative valuation approach. This is in line with what is generally favored by practitioners according to Petersen, Plenborg & Schøler (2006) and Bruner, Eades, Harris & Higgins (1998).¹⁴¹⁵

Most present value approaches are derived from the dividend discount model, which states that the value of a company is equal to the value of the company's future dividends discounted to a present value.¹⁶ However, following the dividend irrelevance theorem stated by Modigliani & Miller (1961) and the fact that dividends actually reveal very little about the company's operations, new alternative valuation approaches were developed as a substitute for the dividend discount model.¹⁷ Such new models were said to "capture value-creating activities, rather than the value-irrelevant payout activities".¹⁸ Such alternative valuation approaches include the discounted cash flow models which substitutes dividends with free cash flow.¹⁹ The discounted cash flow model may in turn be separated

¹⁴ Petersen, C., Plenborg, T. & Scholer, F. (2006) *Issues in Valuation of Privately Held Firms*, The Journal of Private Equity, Vol. 10, No.1, pp. 33-48

¹⁵ Bruner, R.F., Eades, K.M., Harris, R.S., & Higgins, R.C. (1998) *Best Practices in Estimating the Cost of Capital: Survey and Synthesis*, Financial Practice and Education, Spring/Summer

¹⁶ Petersen C.V. & Plenborg T, p.216

¹⁷ Miller, M.H. & Modigliani, F. (1961) *Dividend Policy, Growth, and the Valuation of Shares*, The Journal of Business, Vol. 34, No. 4, pp. 411-433

¹⁸ Penman, S.H. & Sougiannis, T. (1998) *A Comparison of Dividend, Cash Flow, and Earnings Approaches to Equity Valuation*, Contemporary Accounting Research, Vol 15, No. 3, pp. 343-383

¹⁹ Ibid

into two different approaches, one approach which estimates the enterprise value (EV) and a second approach which estimates the market value of equity (MVE).²⁰

The enterprise value approach states that the value of a company today equals future free cash flow to firm (FCFF) discounted to a present value using the opportunity cost of capital for all capital invested (WACC).²¹ A two-stage model of the enterprise value approach may be stated as equation 1-1. Since the model state that the only factors that affect firm value is the free cash flow to firm and the discount rate, this indirectly means that the value of a company benefits from a lower discount rate and higher free cash flows to firm.²²

(Equation 1-1) **Enterprise Value** =
$$\frac{FCFFt}{(1+WACC)^{\wedge}t} + \frac{FCFFn+t}{WACC-g} * \frac{1}{(1+WACC)^{\wedge}n}$$

The equity value approach "moves further down" the cash flow statement and is based upon free cash flow to equity instead of free cash flow to firm.²³ Since the model is based on the cash flow to equity holders, it uses the required rate of return of equity investors when discounting the free cash flows to a present value. A two-stage model may be stated as equation 1-2.

(1-2) Market Value of Equity =
$$\frac{FCFEt}{(1+Re)^{\wedge}t} + \frac{FCFEn+t}{Re-g} * \frac{1}{(1+Re)^{\wedge}n}$$

As is seen, the formulas for the two different approaches are very similar. However, the major difference between the enterprise value approach and the equity value approach is to be found in the way that the two models deals with debt holder transactions. While the equity value approach naturally accounts for debt holder transactions and thereby estimates a value of the equity, the enterprise value

²⁰ Petersen C.V. & Plenborg T, p.216-219

²¹ Brealey, R.A., Myers, S.C. & Allen, F. (2011) Principles of Coporate Finance, Global Edition, McGraw-Hill Irwin

²² Petersen C.V. & Plenborg T, p.216-219

²³ Ibid

approach estimates the value of both equity and debt. In an enterprise valuation setting it is therefore necessary to deduct debt before an estimate of the value of the equity may be conducted.²⁴

However, Koller, Goedhart & Vessels (2010) propose a slight variation to the traditional enterprise value approach stated above.²⁵ The proposed variation is seen in equation 1-2.

(1-3) **Enterprise Value** =
$$\frac{FCFt}{(1+WACC)^{h}t} + \frac{NOPAT_{t+1}(1-\frac{g}{RONIC})}{WACC-g}$$

The main difference between the two frameworks is that Koller et al (2010) use the key value driver model when estimating the continuing value. Koller et al (2010) state that the key value driver is superior to compared other methods for computing the continuing value since it connects cash flows directly to growth and ROIC. As a result of this, the thesis will apply the enterprise value approach as stated by Koller et al (2010). The choice of the enterprise value approach as a main theoretical tool in order to answer the stated research question is further justified by Kaplan & Ruback (1995), whom state that the discounted cash flow model is highly accurate as a valuation tool.²⁶

However, despite the reliability of the discounted cash flow model in regards to estimating accurate market values, this thesis will also apply a relative valuation approach as a "sanity check" for the valuation based on the discounted cash flow model. The usage of a second valuation technique, as a "sanity check" is in line with recommendations from Koller et al (2010).²⁷ The relative valuation approach may, according to Petersen & Plenborg (2012), be divided into two different sets of multiples. One set of multiples is used for estimating the enterprise value (EV), just as the above discussed discounted cash flow framework, whilst the second set of multiples estimates the market value of equity (MVE).²⁸ This thesis will incorporate both sets of multiples through the use of the EV/EBITDA-

²⁴ Ibid

²⁵ Koller T., Goedhart M., Wessels D., 'Valuation – Measuring and Managing the Value of Companies', 5th edition, John Wiley & Sons, p.214

²⁶ Kaplan, S.N. & Ruback, R.S. (1995) *The Valuation of Cash Flow Forecasts: An Empirical Analysis*, The Journal of Finance, Vol. 50, No. 4, p. 1059-1093

²⁷ Koller T., Goedhart M., Wessels D., p.43

²⁸ Petersen C.V. & Plenborg T, p.241-244

multiple, EV/Traffic revenue-multiple as well as the Market-to-book-ratio. The use of a relative valuation approach is often a quick and easy way for obtaining "a ballpark valuation for a firm" according to Lerner, Hardymon & Leamon.²⁹

Since two different theoretical valuation methods will be applied to an empirical case it may be concluded that this thesis will apply a deductive approach in order to answer the sated research question.

1.4 Discount rate

Following the use of the enterprise value approach, the weighted average cost of capital (WACC) will accordingly be used as the discount rate. The WACC corresponds to the cost of all capital deployed within a company and is estimated using formula 1-4. In the below formula, only two sources of funding is given, debt and equity, however the WACC-formula may be extended to include further funding sources apart from debt and equity such as hybrid funding sources like preferred equity. ³⁰

(1-4)
$$WACC = \frac{D}{V} * r_d * (1-t) + \frac{E}{V} * r_e$$

This thesis will furthermore apply the capital asset pricing model (CAPM) for computing the required rate of return on common equity. The CAPM model is based on the fundamental assumption that not all risk should affect asset prices.³¹ Specifically the unsystematic risk is diversifiable and therefore only the systematic risk should be included when estimating the expected return of an asset. The use of the CAPM-model for estimating the required rate of return on equity is done in accordance with Petersen & Plenborg.

²⁹ Lerner, J., Hardymon, F. & Leamon, A. (2012) Venture Capital & Private Equity – A Casebook, *John Wiley & Sons*, Inc., Fifth Edition, p.181

³⁰ Petersen C.V. & Plenborg T, p.246-250

³¹ Perold, A.F. (2004) *The Capital Asset Pricing Model*, The Journal of Economic Perspectives, Vol. 18, No. 3, pp. 3-24

The required rate of return to debt holders may be computed using a variety of different methods. This thesis will apply a method consisting of three variables: the risk free rate, the credit spread on the company's debt and the corporate tax rate, this is done in accordance with Petersen & Plenborg (2012).³² See equation 1-5.

(1-5) Rd = (rf + rs) * (1 - t)

The risk free rate is derived from a Swedish government bond with a maturity of 10 years and the estimation of the corporate tax rate is based on the current prevalent tax rate in Sweden. The third and last component of the formula, the credit spread on the company's debt, will be estimated using the BofA Merrill Lynch HY B Index. The choice of the specific index will be elaborated further upon in the cost of capital section of the thesis.

1.5 Data & Sources

This thesis will be based on public information and the main source of information are the annual reports of SAS and its peer group. The annual reports have all been audited and approved by licensed auditors and its credibility, validity as well as reliability may therefore be characterized as high. In addition, the annual reports have further been examined, reorganized and adjusted in order to allow for comparison.

Other significant sources include aviation organizations such as International Air Transport Association (IATA) and Centre for Aviation (CAPA). CAPA is an independent provider of aviation market intelligence, analysis as well as data services whilst IATA is the trade association for the world's airlines and mainly assists with formulating industry standards and policies (capa.com, iata.org). Both of these sources are regarded as being of high quality.

In addition to this, internet sources, business magazines and newspaper articles published up until the 1^{st} of April is used throughout the thesis. When using online sources, the credibility and reliability of the source is always carefully examined prior to usage. Only sources found to be non-biased and of high quality in regards to its validity and credibility is used in this thesis.

³² Petersen C.V. & Plenborg T, p.265

Some of the data used in the thesis is maintained from data sources such as Bloomberg and Datastream. Both of these sources are widely used within the financial industry and its quality is generally regarded as high.

In addition to this, published academic research articles are used widely throughout the thesis. Such materials are peer-reviewed and are therefore assumed to possess a certain quality in regards to research and analysis and therefore cited with confidence.

1.6 Delimitations

This thesis is intended for both current as well as potential private and institutional investors. It is therefore assumed throughout the thesis that the reader possess basic knowledge within business strategy, statistics, corporate finance as well as financial valuation. Therefore the thesis contains only limited explanations of the most basic economic theories.

The thesis will include no information published after the 1st of April 2014. The last official financial report released by SAS and included in this thesis is therefore the 1st interim report for the fiscal year of 2013/2014 which was released on the 14th of March 2014. The main reason behind the inclusion of the first interim report for the fiscal year 2013/2014 is because the interim report includes the months November-January and therefore is needed in order to finalize the "whole" fiscal year of 2013.

This thesis is based upon a historical period consisting of 5 years. The use of a historical period limited to 5 years may be criticized. However, by using a historical period of 5 years, the severe effect of the financial crisis on the airline industry is avoided. The financial crisis had a major negative impact on the airline industry as a whole and may therefore not constitute as a good proxy for the future. As a result, the historical period is limited to 5 years.

2 About SAS

2.1 The foundation and history of SAS

SAS AB, also called SAS Group but henceforth referred to only as SAS, is a publicly traded airline with its seat in Stockholm. It is listed on Nasdaq OMX Stockholm since 2001 with secondary listings in Olso and Copenhagen.³³ SAS was founded in the year of 1946 when the three separate entities of Det Danske Luftfartselskab A/S (DDL), Det Norske Luftfartselskap A/S (DNL) and Svensk Interkontinetal Lufttrafik AB (SILA) created the combined entity Scandinavian Airlines System (SAS).³⁴ The creation of SAS took years of planning but was a logical maneuver since it would have been highly difficult for the three companies to achieve profitability when competing against each other as separate entities on the Nordic market.³⁵ The newly formed entity of SAS began its intercontinental operations to New York in September 1946 and by the end of year 1947 SAS, had already transported more than 18.000 passengers over the Atlantic. In 1959, SAS officially entered the jet-era with the purchase of a Sud Aviation Caravelle III aircraft.³⁶

Throughout the 1960s and 70s SAS continues to expand its route network and thereby also its purchases of new jet powered aircrafts. Notable models include the Douglas DC-8/9 as well as the 747-200, most often called the jumbo jet³⁷ However, SAS overbought aircrafts and when the oil crisis hit during the 1970s the company suffered greatly from increased oil prices and slowing demand.

As a result of poor operating performance, Jan Carlzon was appointed CEO of SAS in 1981 in an attempt to try and turn the company around. Under the leadership of the iconic and innovative CEO Jan Carlzon, SAS began its initiative to become more customer orientated and the number one choice for frequent business travelers. The initiative included the removal of first class on all European routes and instead the introduction of Euroclass. The new Euroclass provided SAS with a competitive edge and

³³ SAS Group Annual Report 2013, p.82

³⁴ SAS Group, 'History', viewed 2014-04-15, <<u>http://www.sasgroup.net/SASGROUP_FACTS/CMSContent/History.htm</u>
³⁵ Scandinavian Airlines, 'SAS timeline', viewed 2014-04-15, <<u>https://www.flysas.com/upload/International/SKI/Media-center/Mediakit/Oct09/SAS%20timeline.pdf</u>

³⁶ Ibid

³⁷ SAS Group, 'History', viewed 2014-04-15,

was to a great extent the reason behind SAS's award as "Airline of the year" in 1984 by Air Transport World.³⁸

In the beginning of the 1990s however, SAS was yet again struggling financially with a stagnating economic environment as well as increasing competition stemming from de-regulation. ³⁹As a response to this, SAS commenced several cost savings programs and in year 1992 SAS also launches its frequent flyer program named Eurobonus. The program is still in use today under the same name and is one of the worlds most awarded frequent fliers programs.⁴⁰ In 1994, SAS is again made profitable and the company remains so throughout the mid- and late 90s. In 1997 SAS is also one of the co-founders to the airline alliance Star Alliance.⁴¹ SAS is still a member of Star Alliance and today the alliance has grown from its original 5 members to its current 27 members. Star Alliance is currently servicing 1.316 airports in over 192 different countries and on a normal day of operations, Star Alliance is handling roughly 20.000 flights worldwide through its members.⁴²

Following the profitable years in the mid-and late 1990s, the market conditions however abruptly changed following the September 11 attacks in 2001. On October 8th 2001, the situation for SAS is made further worse when flight SK 686 bound for Copenhagen collides with a smaller aircraft on the Linate-airport in Milano resulting in 118 fatalities.⁴³ It remains the most fatal accident throughout all of SAS history and the second largest accident in the history of aviation in Italy. Following the terrorist attacks in 2001, along with the general economic downturn, the airline industry suffered greatly and SAS especially so following the Linate-accident. Throughout the first decade of the new millennium, SAS was struggling with its profitability as seen in Table 2-1.

Table 2-1	SAS	Net	Income	2001	- 2013
-----------	-----	-----	--------	------	--------

Year	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Net Income (msek)	179	-3010	-1687	-2218	-2937	-6321	636	4740	255	-1872	-1415	-132	-1064

Source: SAS Group Annual Reports 2001 – 2013 (Own Creation)

³⁸ Scandinavian Airlines, 'SAS in history', viewed 2014-04-15, <<u>https://www.flysas.com/upload/International/SKI/Media-center/Mediakit/Oct08/SAS%20in%20history.pdf</u> >

³⁹ SAS Group Annual Report 1992, p.3

⁴⁰ Scandinavian Airlines, 'SAS in history'

⁴¹ SAS Group, 'History', viewed 2014-04-15

⁴² Star Alliance, 'Member Airlines', viewed 2014-04-15, <<u>http://www.staralliance.com/en/about/member_airlines/></u>

⁴³ SAS Group Annual Report 2001

Apart for a few profitable years during the years 2005-2007 SAS was not able to maintain profitability and as a result of this, several cost savings programs have been initiated. These include SAS Core, SAS 4Excellence and SAS 4Excellence NG, which will be introduced further in the following section 2.3. In addition to the cost savings program, SAS also divested its ownership in Estonian Air and Spanair 2009 in an attempt to further strengthen its financial position.⁴⁴

However, these undertakings proved to be insufficient and during the fall 2012, SAS were to face its largest financial crisis since its creation in 1946. Following SAS inability to achieve profitability since 2007 and its weak financial position, several of the major lenders to SAS were in October 2012 uncertain in regards to whether or not SAS should be granted an extension to its credit facilities as well as to its larger loan commitments which were about to mature in March 2013.⁴⁵

Without the extensions, SAS would not have been able to survive. Following discussions, SAS is by the 10th of November able to reach an agreement on the extension of its loans with its major lenders. The agreement included loan guarantees from the three Scandinavian governments and was conditional on that SAS sold its subsidiary Wideroe, its Ground Handling as well as managed to negotiate wage cuts, prolonged working hours as well as higher retirement ages for its affiliated labor unions.⁴⁶

By the 19th of November SAS finally managed to reach an agreement with the Swedish, Norwegian and Danish labor unions on the new terms and the bankruptcy of SAS was thereby avoided.⁴⁷ The agreement with the labor unions was however reached at the very last moment and the vice chairman of SAS, Jacob Wallenberg, later mentioned in an interview that the company was only days away from bankruptcy and that several initiatives aimed at securing key assets prior to the bankruptcy had already been initiated by the time the agreement with the unions were reached.⁴⁸

⁴⁴ Scandinavian Airlines, 'SAS timeline'

⁴⁵ Dagens Industri, 27th Oct 2012, 'SAS nära konkurs', p.8. Retrieved from DI Archives – requires membership.

⁴⁶ Dagens Industri, 12th Nov 2012, 'EU säger ja till nödlån för SAS', p.8

⁴⁷ Dagens Industri, 20th Nov 2012, 'Bantat SAS ska gå på offensiv', p.6-8

⁴⁸ Dagens Nyheter, 'SAS hade bara cash för tio dagar', viewed 2014-04-18, <<u>http://www.dn.se/ekonomi/sas-hade-bara-</u> cash-for-tio-dagar/>

In May 2013, SAS undertook the sale of 80% of its subsidiary Wideroe to a Norwegian investment group for approximately SEK 2 billion as a part of the agreement with its major lenders.⁴⁹ Following a 10% sale of SAS Ground Handling to Swissport in October 2013, a letter of intent has recently been made with agreements of full ownership transfer to Swissport, starting with a Joint Venture whereas 51% of the shares will be sold to Swissport.⁵⁰ The new agreements with the labor unions as well as the sale of Wideroe resulted in that SAS presented its first full year profit since 2007 in December 2013.⁵¹

2.2 SAS ownership structure

As seen in Figure 2-1 below, the Swedish government currently holds a 21.4% ownership stake in SAS while both the Norwegian and Danish governments holds 14.3% of the ownership. Private investors hold the remaining 50% ownership. Notable owners among these include the Wallenberg foundation with a 7.8% ownership stake in SAS.⁵² The effect of the governmental majority ownership on SAS is difficult to clearly assess. It can be regarded as two sided, on one hand it is possible that SAS business model hasn't adapted fast enough to new market conditions, putting them into financial difficulties. On the other hand, the latest financial crisis for SAS during the fall 2012 exhibited the positive side of the governmental ownership, as the states acted as guarantees for the provided loans and credit facilities.

Figure 2-1 SAS ownership structure



Source: sasgroup.net, 'Share structure'

⁴⁹ Bloomberg, 'SAS Sells 80% of Norway's Wideroe Unit in Pursuit of Cost Cuts', viewed 2014-04-18,

http://www.bloomberg.com/news/2013-05-03/sas-sells-80-of-norway-s-wideroe-unit-in-pursuit-of-cost-cuts.html

⁵⁰ Swissport, 'Swissport to take over SAS Ground Handling', viewed 2014-04-18, <<u>http://www.swissport.com/nc/news-media-center/news-releases/news-detail/article/sas-and-swissport-international-signed-letter-of-intent-swissport-to-take-over-sas-ground-handling/></u>

⁵¹ The Wall Street Journal, SAS Posts First Full-Year Profit Since 2007, But Sees Weak 1Q, <<u>http://online.wsj.com/article/DN-CO-20131219-001342.html</u>>

⁵² SAS Group, 'Share structure', viewed 2014-04-20,

<http://www.sasgroup.net/sasgroup ir/CMSContent/Share%20structure.htm>

2.3 SAS strategy

2.3.1 Core SAS and 4Excellence Strategies

As discussed in section 2.1, SAS suffered large losses in the years following year 2000 and struggled with profitability. During this time competition rose as the number of Low Cost Carriers (LCCs) increased, due to deregulations in the airline industry, at the same time as the industry was shocked by the 9/11 terrorist attacks. After the slight recovery between 2005-2007, SAS was struck hard by the financial crises and the weakened demand for business and leisure travel that followed.⁵³ The year 2009 was the toughest year in aviation history according to IATA with aggregate losses of SEK 11bn.⁵⁴ As a response to the financial troubles and to prevent at potential bankruptcy, SAS introduced a new strategy dubbed Core SAS the same year. The strategy outlined 5 main points to make SAS profitable:

- Focus on the Nordic home market Divesting Spainair, Air Greenland, Spirit, Trust and Skyways, while keeping SAS, Wideroe and Blue1.
- Focus on business travellers and strengthened commercial offering Cutting 57 routes, mostly leisure destinations
- Improved cost base Including new collective agreements, administration centralization, personnel cuts, lean programs and purchasing related savings.
- Streamlined organizations and customer oriented culture.
- Strengthened capital structure by rights issues.⁵⁵

After implementing Core SAS, saving SEK 6bn between 2009 and 2011 as well as becoming the most punctual airline in Europe in 2009 and 2010, SAS launched its new 4Excellence strategy. This strategy did not only contain cost reductions but also growth areas, like focusing on taking a larger share of the growing leisure segment and providing greater focus on supplementary services. Goals were set to become the airline with the most satisfied Nordic customers, to have a 3-5% drop in unit cost annually

⁵³ SAS Group Annual Report 2008

⁵⁴ SAS Group Annual Report 2009, p.2

⁵⁵ SAS Group Annual Report 2009, p.8-14

and to reduce overall emissions by 20%. This was done by focusing on achieving commercial-, sales-, operational- and people excellence.⁵⁶

2.3.2 <u>4XNG Strategy</u>

However, even though the implementation of the 2 former strategies had led to positive results, some main issues were not resolved. Firstly, SAS still had an unnecessarily costly and inflexible cost structure, a remaining given the company's historical heritage. Secondly, SAS dependency on credit facilities to maintain financial stability caused a liquidity problem. Thirdly, SAS Common Equity ratio suffered due to new accounting measures applied in nov 1, 2013.⁵⁷

To address these problems SAS launched its third strategy in the fall of 2012, called 4Excellence Next Generation (4XNG), with an aim of implementing cost reductions of SEK 3bn in the 2013-2015 period. A main point in the 4XNG is that SAS cabin crew and pilots and their unions accepted big wage cuts and new pension plans, which were not as beneficial as old pension agreements negotiated during SAS golden days in the 70s. The effect is a reduction of pension commitments of 60%, from SEK 33,5bn to 14bn.⁵⁸ Other main points include:

- Further outsourcing, business streamlining and sales of assets (Wideroe) resulting in a fall of number of employees from 15000 to 9000.
- Further centralization with all administration in Sweden, while Norway and Denmark will retain only the most essential local functions.
- SAS Ground Handling operations will be taken over by Swissport.⁵⁹

The implementation of the plan was necessary for SAS to receive credit lines from its banks and main owners (the Swedish, Danish and Norwegian governments, and KAW). As of Oct 31st 2013, SAS had contracted credit facilities of MSEK 4155 of which a little less than half (MSEK 1986) was unutilized.⁶⁰

⁵⁶ SAS Group Annual Report 2011, p.9-25

 ⁵⁷ SAS Group Annual Report 2012, 'Strategi 4XNG', <<u>http://sasannualreport2012.com/sv/Start/Strategi+4XNG</u>>
 ⁵⁸ Eurofound, 'Airline workers accept further wage cuts', viewed 2014-05-10,

http://www.eurofound.europa.eu/eiro/2012/12/articles/dk1212019i.htm

⁵⁹ Ibid

⁶⁰ SAS Group Annual Report 2013, p.30

In March of 2014, SAS issued 7 million preference shares and raised SEK 3,5bn to strengthen its capital structure and lessen the company's dependence on bank loans. The issue also provides SAS necessary financing for the coming renewal of its airplane fleet.⁶¹ SAS has placed an order for a total of 42 new Airbus planes and decided to invest in new cabin interiors for its short-haul aircrafts and new seats and entertainment systems for its long-haul aircrafts.⁶²

2.3.3 Customer segment and offering

SAS primary focus is on frequent travelers who make more than five return trips per year, regardless of whether it's for business or leisure. This group comprises 70% of all travelers from, to or within Scandinavia. To capture this segment SAS focuses on the three following areas in their Customer offering:

Ease: By providing two distinct offerings, SAS Go – which is a base product and includes everything needed at a competitive price - and SAS Plus – which includes additional benefits like Fast Track, Lounge, extra bag and free refunds – SAS wants to provide the customer with more transparency and clarity regarding content and pricing. During 2013 SAS also developed apps for smartphones and tablets to allow passengers rebook flights, check in, download boarding cards etc.

Access: As a part of Star Alliance, the largest airline alliance with 26 members, SAS has some consumer benefits. In case of a cancelled flight, SAS passengers are rebooked with the next available flight with any of the members. SAS Eurobonus points are also available for use when booking travels with SAS that uses flights with Star Alliance members.

Time: Constantly working to be among the most punctual airline in Europe and offer the best timetable with most departures on Scandinavia.⁶³

2.3.4 Route Network

SAS Group offered 150 destinations in 2012/2013 with an average of 791 flights per day.⁶⁴ Approximately 65 of their current destinations are in the Nordics, while 11 are outside Europe and the

⁶¹ SAS Group, 'Information concerning the issue of preference shares in SAS', viewed 2014-05-10,

http://www.sasgroup.net/SASGROUP_IR/AdditionalFiles/Preferensaktier_broschyr_2014eng.pdf

⁶² SAS Group Annual Report 2013, p.10-11

⁶³ Ibid, p. 5-6

rest within Europe. Out of the 65 Nordic destinations, 29 are served by Wideroe, whom are no longer controlled by SAS (20% ownership) but remain as a partner.⁶⁵ SAS core business is operating passenger flights on an extensive Nordic and international route network. This is done mainly through one of their three main hubs in Copenhagen, Stockholm and Oslo.⁶⁶ As showed in Figure 3-3 below, 72% of SAS passenger revenues come from the Nordic region, clearly illustrating SAS focus on its home market.

Figure 2-2	Geographic	distribution	of SAS	passenger	revenues

Geographic distribution of SAS passenger revenues, Nov 2012–Oct 2013	%
Norway	33
Sweden	25
Denmark	14
Rest of Europe	18
North America	5
Asia	4
Other countries	1
	100

Source: SAS Group Annual Report 2013, p.23

Different type of flights, dependent on travel time, is often categorized as small (ca 1-3h)-, medium (ca 3-6h)-, and long-haul (6h+) routes. SAS operates mainly on short-haul routes.⁶⁷ The reason behind this is that the average Scandinavian person flies 4 times a year (compared to 2 times a year for the average non Scandinavian European) and the great majority (>90%) of these are short-haul passengers. This is due to the long distances in the Nordic Region, the topography and because Scandinavia is surrounded by sea.⁶⁸ SAS key routes are given in Table 2-2 and can all be considered short-haul flights.

⁶⁴ Ibid, p.16-17

⁶⁵ Scandinavian Airlines, 'Reisemål', viewed 2014-05-20, <<u>www.sas.no/reise</u>>

⁶⁶ SAS Group Annual Report 2013, p.50

⁶⁷ SAS Group Annual Report 2013, p.4

⁶⁸ SAS Group Annual Report 2013, p.22-23

Table 2-2 SAS key routes

	Route	Daily flights	Ro	oute	Daily flights Route			Daily flights
Oslo-	Trondheim	22	Stockholm-	London	12	Copenhagen-	London	11
Oslo-	Stockholm	18	Stockholm-	Copenhagen	20	Copenhagen-	Oslo	20
Oslo-	London	10	Stockholm-	Gothenburg	15	Copenhagen-	Helsinki	12
Oslo-	Bergen	22	Stockholm-	Luleå	13	Copenhagen-	Amsterdam	7
Oslo-	Helsinki	4	Stockholm-	Helsinki	14	Copenhagen-	Paris	7
Oslo-	Amsterdam	4	Stockholm-	Amsterdam	3	Helsinki-	Oulu	9
Oslo-	Paris	5	Stockholm-	Paris	4	Helsinki-	Vaasa	3

Source: Own creation based on SAS Group annual report 2010, p.24

3 Strategic Analyses

The strategic analysis consists of the PESTEL Analysis and Porter's five forces framework. The PESTEL analysis explores how external macro environmental factors affect the aviation industry and SAS business. Porter's five forces constitute a micro analysis which provides an overview regarding the competition within the aviation industry and SAS business strategy development.

3.1 PESTEL Analysis

3.1.1 (P)olitical

Up until the early 80s a great majority of the world's major airlines were government owned – with the exception of the US airlines. The main reason for this was that states considered the airline industry too fragile to be exposed to the severities of competition and that government owned (and often subsidized) airlines were the best way to sustain industry growth until it reached economic maturity. The national carriers operated as monopolists domestically and under a protectionist environment on their international routes. Also the US airline industry, where there did not exist government owned airlines, was heavily regulated to prevent excessive competition.⁶⁹

However, the US industry was deregulated in 1978 under the Airline Deregulation Act and gave US airlines the freedom to enter or exit the US domestic market. The deregulation was generally perceived as a long-term success by other countries as new entrants and a rise of LCCs caused price levels to drop and passenger levels to increase significantly. However, short-term negative effects included periodic

⁶⁹ Belobaba P., Odoni A., Barnhart C., 'The Global Airline Industry', Johan Wiley & Sons, 2009, p 5-6, 24-25

job losses, reduced wages and air travel connection to smaller cities. As the airline industry began to mature in other parts of the world, the deregulation continued. In Europe the liberalization of the industry took place in several steps between 1987 and 1997.⁷⁰ However as EU grew in members states during the 2000s, the old agreements (from 87-97) where considered invalid and in March 2008 an *open skies* agreement between all EU member states <u>and</u> the US was made.

According to the European Commission, airlines in the Union can with this agreement:

- "Operate flights to the United States from any European airport, regardless of their nationality (the United States recognize them as European);
- Operate without restrictions on the number of flights, aircraft or routes;
- Set prices in line with the market;
- Conclude cooperation agreements."⁷¹

From 1st of January 2012, all air traffic within, from and to EU is included in the European Emissions Trading System (ETS), which is a regulation with the goal of allowing a market-based mechanism tackle aviation emissions. This is done by letting airlines receive tradable allowances covering a certain level of CO₂ emissions from their flights per year.⁷² Between November 2012 to October 2013, SAS bought emission rights to the value of MSEK 31,5. As the European Commission proposed new changes in the ETS during the 1st quarter of 2014, SAS has not given any new information regarding allocation and buying of new emission rights.⁷³ In a report by Thomson Reuters, CO2 prices are to rise slightly until 2020 but given political and regulatory uncertainty price forecasts are highly uncertain.⁷⁴

⁷⁰ Ibid, p. 20-32

⁷¹ Europa - EU legislation, 'Open Skies' agreement between Europa and United States, viewed 2014-05-20, <<u>http://europa.eu/legislation_summaries/external_relations/relations_with_third_countries/industrialised_countries/l24483_</u>en.htm)

⁷² European Commission, 'FAQ Aviation 2013-2016', viewed 2014-05-20, http://ec.europa.eu/clima/policies/transport/aviation/docs/faq aviation 2013-2016 en.pdf>

⁷³ SAS Group Annual Report 2013, p 70

⁷⁴ Thomson Reuters for IATA, 'EU ETS – Issues, Risks and Outlooks', viewed 2014-05-29, <<u>https://www.iata.org/events/Documents/point-carbon-eu-ets.pdf</u>>

3.1.2 (E)conomic

Economic Growth is generally considered the key driver for air traffic growth, both in terms of passenger travel and air cargo. To investigate the relationship a simple OLS linear regression is performed (equation 3-1) with annual growth of world passenger travel between 1970 and 2012 as dependent variable and GDP growth during the same period as independent variable.

(3-1) Annual change (%) in WATPC_i = $\alpha_i + \beta_i$ Annual change (%) in World GDP + e_i WATPC = World Air Transport, Passengers Carried

The data and regression results are shown in appendix $1.^{7576}$ The Beta value of 1,699 is statistically significant at a 0,01% level and indicates that a 1% change in worldwide GDP growth results in a 1,699 % change in world passenger travel. The intercept shows that air traffic would grow of 0,3529% given no change in world GDP. The R² measure of 0,24532 is a measure explaining how much of the variation in passenger travel can be explained by changes in GDP.

A similar regression (equation 3-2) is done with data on passenger travel and GDP from High Income OECD countries.⁷⁷⁷⁸ This is done to investigate whether the relationship is stronger or weaker in high income countries, such as the Nordics.

(3-2) Annual change (%) in HOATPC_i = $\alpha_i + \beta_i$ Annual change (%) in HOGDP + e_i HOATPC = High Income OECD Air Transport, Passengers Carried

HOGDP = High Income OECD GDP

Full data and regression results are shown in appendix 1. The statistically significant Beta-value is 1,93 and the R^2 measure of 0,566 indicates an even stronger relationship between GDP growth and passengers carried, compared to the worldwide numbers. The High Income OECD countries (full list is given in appendix 2) GDP growth also serves as a good proxy to the GDP growth of SAS main markets (the Nordics and developed countries). The relationship is shown in Figure 3.1 and the strong correlation coefficients in appendix 1.

⁷⁵ The World Bank, 'Air Transport, Passengers Carried', <<u>http://data.worldbank.org/indicator/IS.AIR.PSGR</u>>

⁷⁶ The World Bank, 'GDP Growth (annual %)', < <u>http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG</u>>

⁷⁷ The World Bank, 'Air Transport, Passengers Carried', <<u>http://data.worldbank.org/indicator/IS.AIR.PSGR</u>>

⁷⁸ The World Bank, 'GDP Growth (annual %)', < <u>http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG</u>>



Figure 3-1: GDP development Nordics vs. HI OECD, 93-13

Source: The World Bank databank

It can therefore be useful to estimate the future GDP growth of SAS market by looking at forecasts for high income OECD countries (data is used on *Advanced Economies* as classified by IMF, which are basically the same as high income OECD countries^{*})⁷⁹. The forecasts are illustrated in table 3-1 and figure 3-2, together with forecasts for the Nordic countries. The figure (3-1) illustrates clearly that the forecasted GDP growth in HI OECD countries is similar to the growth in the Nordics.

Table 3-1 Figure 3-2: Annual GDP Forecasts Nordics and Advanced economies

Forecast, years	2012	2013	2014	2015	2016	2017	2018	2019
Advanced economies/HI OECD	1,42	1,29	2,22	2,35	2,38	2,37	2,25	2,12
Denmark	-0.359	0,43	1,48	1,67	1,66	1,68	1,76	1,76
Norway	2,79	0,76	1,79	1,85	1,97	2,05	2,08	2,10
Sweden	0,93	1,53	2,77	2,60	2,54	2,42	2,42	2,40



Figure 3-3: Annual GDP Forecasts Nordics and Advanced economies

Source: IMF

^{*}Advanced Countries = HI OECD - Chile, Portugal + Cyprus, Hong Kong, Latvia, Malta, San Marino, Singapore, Taiwan. See appendix 2 for full list.

⁷⁹ IMF, 'World Economic Outlook Database', <<u>http://www.imf.org/external/pubs/ft/weo/2014/01/weodata/weoselagr.aspx></u>

However, regressing Swedish change in passenger numbers on Swedish GDP development shows a much lower Beta of 1,23 (Significant at a 5% level) and doing the same on Danish data shows a Beta of 1,39 (Significant at a 1% level). Norwegian data shows a Beta of 0,48, but it's not statistically significant.⁸⁰⁸¹ These numbers are opposing the High Income OECD numbers that show that the growth of GDP has a higher effect on passenger numbers on SAS market than World numbers. This should be taken into consideration when forecasting the market growth for SAS. As the regressions on Swedish, Danish and Norwegian data contains less observations and are less significant, they are deemed less reliable than the High Income OECD regression. Full data and regression results are shown in appendix 1.

Jet Fuel is the 2nd largest cost post for SAS at 23,4% and during the fiscal year 12/13 the price was at a historic high. ⁸²Jet Fuel is based on crude oil (See relationship in Figure 3-4) and generates between \$16-48b dollars in profit for the oil industry, which are commonly upstream of the refinery⁸³.

⁸⁰ The World Bank, 'Air Transport, Passengers Carried', <<u>http://data.worldbank.org/indicator/IS.AIR.PSGR</u>>

⁸¹ The World Bank, 'GDP Growth (annual %)', <<u>http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG</u>>

⁸² SAS Group Annual Report 2013, p. 46

⁸³ IATA, 'Profitability and the air transport value chain', p.23, <<u>http://www.iata.org/whatwedo/Documents/economics/profitability-and-the-air-transport-value%20chain.pdf</u>>



Figure 3-4 Jet Fuel and Brent Crude Oil prices 1990 - 2014

Source: IATA, june 2014

Given the large cost of fuel for airlines, we would expect a historically negative relationship between airline profits and Crude Oil Prices. To investigate this, an OLS regression (Formula 1.3) is done where annual U.S airline profits between 1970-2006 is the dependent variable and yearly average crude oil (Brent) prices during the same period is the independent variable.⁸⁴⁸⁵

(3-3) U.S. Airlines profits = $\alpha_i + \beta_i$ Crude Oil Price + ε_i

Full data and regression results are found in Appendix 1. The relationship is negative as expected with a Beta of -60,76 (a 1\$ change in crude oil price result in -\$60,76m in U.S. airline profits) but it's not statistically significant (p-value = 0,188 > 0,05). Adding 7 years to the data in the regression (1970-2013) changes the Beta value to -11,81, but the significance level changes dramatically to a p-value of -0,4128. After the latest financial crises the relationship between airline profits and oil prices has thus, according to this regression analysis, weakened. A qualified guess could be that airlines are getting increasingly better at hedging their exposure against jetfuel/oil prices and less affected by volatility in prices. In 2013 SAS hedged 40-80% of their forecasted jet fuel needs for the coming 12 months. Constant development towards more fuel-efficient engines is also a likely reason for the weakened relationship. A third possible reason to the weakened relationship between airline profits and oil prices

⁸⁴ Houston Law Review, Volume 48, Nr. 2, 'The financial performance of the airline industry post-deregulation, <<u>https://www.mcgill.ca/iasl/sites/mcgill.ca.iasl/files/ASPL614_Industry_PostDeregulation-Houston.pdf</u>>

⁸⁵ Oil prices retrieved from Datastream via CBS computers

may the fact that some airline companies in recent year have acquired their own oil refineries. Acquisitions of oil refineries is essentially a backward integration in the airline value chain and allows for airline companies to achieve better control over one of its biggest cost sources. Delta airlines, the world's second biggest airline in the world, acquired its own oil refinery in 2012 and stated that the acquisition "would knock about USD 300 million a year from its roughly USD 12 billion fuel expense, all for a price equivalent to buying a single wide-body aircraft". The acquired refinery is expected to be able to supply roughly 80% of Delta's domestic jet fuel needs.⁸⁶

Even though the above regression is not significant, fuel expenses make up a large part of airline costs, which makes it relevant to investigate current and future oil prices. During the 00s the oil price more than quadrupled and reached an all time high of \$147/barrel in July 2008. The prices crashed during the end of 2008 and 2009 (financial crisis), bottoming out at \$35/barrel, but rose once again in 2011 and are now hovering slightly above \$100/barrel. World Bank forecasts for 2020+ show constantly slowly falling prices, ending at \$97/barrel in 2023 as depicted in Figure 3-5.⁸⁷





Source: World Bank Price Forecast Jan -14.

According to SAS, hedging for currency risks is mainly done through currency forward contracts. The amount of currency deficits being hedged has decreased and in October 2012, only 46% of the company's currency deficits were being hedged SAS main currency exposure lies on the USD and NOK. A 1% weakening of the SEK against the USD during Nov 2012 and Oct 2013 would have

⁸⁶ ft.com (Financial Times), 'Delta buys refinery to combat fuel costs', viewed 2014-05-25, http://www.ft.com/cms/s/0/e388a13c-930d-11e1-aa60-00144feab49a.html#axz38g9eimdL

⁸⁷ World Bank, 'World Commodity Prices forecast – jan 30th 2014' <<u>http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/Price_Forecast_Jan14.pdf</u>>

resulted in a loss of MSEK 95. Inversely, a 1% weakening of the SEK against the NOK would have resulted in a profit of MSEK 75.⁸⁸

3.1.3 (S)ocio-Cultural

The airline industry has seen great changes over the last decades and with new business models being implemented, older and more traditional airline companies feel the pressure to increase efficiency and streamline its operations in order to stay competitive. Many of these new business models focus on offering customers flight tickets at very low prices with little or no add-on services, leading to the rise of Low Cost Carriers (LCCs) or no frills carriers⁸⁹. Examples LCCs in Europe are Ryanair and Norwegian. The competition between these LCC's and the full service carriers (FSC) is very intense and FSC's have lost a large part proportion of their passengers to LCC's, which will be discussed in greater detail in section 3.2.1. The rise of LCCs and the market deregulation also acts as explanatory factors for the falling ticket prices in relation to the consumer price index as seen in the below Figure 3-6.



Figure 3-6 Ticket prices vs. consumer price index

The large loss of passengers to LCC's illustrates a market shift within the industry where flying no longer is seen as a luxury product but rather as a commodity and a means of transportation. A clear

Source: SAS Group Annual Report 2013, p. 23

⁸⁸ SAS Group Annual Report 2013, p.34

⁸⁹ O'Connell, J.F. & Williams, G. (2005) Passengers' perceptions of low cost airlines and full service carriers: A case study involving Ryanair, Aer Lingus, Air Asia and Malaysia Airlines, *Journal of Air Transport Management*, Vol. 11, Issue 4, pp. 259-272

illustration of this is SAS's decision to remove its business class section on its European flights while referring to that;

*"Business class was the right thing in the 1980s, when we helped pioneer it, but the modern traveler has different needs. The highest priority now is time and affordability, not luxury."*⁹⁰

The decision to remove business class from its European flights is coherent with the arguments put forward by Mason (2000) which states that when more pressure is put on business travelers to reduce travel expenses, LCC's will also increasingly be used by business travelers. This then illustrates a further shift since, historically, the main audience for LCC's have been price conscious leisure travelers.⁹¹

The clear shift among customers within the airline industry, to treat flying as more of a commodity and means of transportation rather than a luxury product, is also very clearly indicated in the statistics over ticket prices from 1960-2013 shown in Table 3-5 above. In addition to the trend shift among consumers to treat flying as more of a commodity than a luxury good, the airline industry has also witnessed as second large socio-cultural change during the recent decades stemming from increased globalization. With the world becoming increasingly globalized and with previously local companies now doing business worldwide, the demand for air travel is steadily increasing as illustrated by data from the World Bank shown in Figure 3-7.⁹²

⁹⁰ Bloomberg.com, Jasper C., 'SAS Scraps Business Class in Europe to Meet Low-Cost Threat', viewed 2014-06-05, <http://www.bloomberg.com/news/2013-03-22/sas-scraps-business-class-in-europe-to-meet-low-costchallenge.html>

⁹¹ Mason, K.J. (2000) The Propensity of Business Travelers to Use Low Cost Airlines, Journal of Transport Geography, Vol. 8, pp. 107-119

⁹² World Bank Data, 'Air Transport, Passengers Carried',

<http://data.worldbank.org/indicator/IS.AIR.PSGR/countries?display=graph>



Figure 3-7 Air Transport – Passengers carries 2004-2013

Source: Data.worldbank.org, Air Transport-Passengers carried 2004-2013

According to the latest report by the International Air Transport Association (IATA), the steadily increasing numbers of passengers carried through air transport is expected to continue. By year 2017 the airline industry expects passenger demand to be up by 31% compared to year 2012, in absolute numbers this means a total passenger number of 3.91 billion compared to the 2.98 billion passengers carried in year 2012⁹³. The single largest driver of growth during the time period 2012-2017 includes traffic within or connected to China.⁹⁴

3.1.4 (T)echnological

SAS currently operates with a fleet consisting of aircrafts with an average age of 11.2 years.⁹⁵ The complete fleet, including aircrafts currently on order, is consisting of 198 aircrafts. Excluding the aircrafts on order, this results in a fleet in service of 156 aircrafts. Of these 156 aircrafts, 56 is owned by SAS (7 through finance lease) while 100 aircrafts are currently being leased through operational leases. The complete fleet is specified in Table 3-2.

 $^{^{93}}$ IATA, 'Airlines Expect 31% Rise in Passenger Demand by 2017'. Viewed 2014-06-07,

http://www.iata.org/pressroom/pr/pages/2013-12-10-01.aspx

⁹⁴ IBID

⁹⁵ Planespotters.net, 'SAS Fleet', viewed 2014-06-07, <<u>http://www.planespotters.net/Airline/SAS</u>
Table 3-2 SAS Fleet 2013

Aircraft model	Owned	Leased	On order	Total
Airbus A340/A330	5	6	4	15
Airbus A321/A320/A319	6	18	0	24
Airbus A350	0	0	8	8
Airbus A320Neo	0	0	30	30
Boeing 737NG/Classic	17	71	0	88
Boeing 717-200	4	5	0	9
Bombardier CRJ900NG	12	0	0	12
McDonnell Douglas MD-80	12	0	0	12
Total	56	100	42	198

Source: Own creating based on data from SAS Group Annual Report 2013, p. 95

During year 2013, the aircraft fleet of SAS underwent major changes. After being in service for almost 30 years, the McDonnell Douglas MD-80 model was finally retired from SAS fleet in October 2013.⁹⁶ The MD-80 aircrafts are however still under SAS ownership and are planned to be sold to Delta Airlines in the U.S. which will be using the aircrafts for spare parts to maintain its own fleet of MD-80 aircrafts⁹⁷

In addition to the retirement of the MD-80 aircrafts, the aircrafts currently on order will further alter the fleet of SAS. As is stated in the table, SAS has a total order of 8 new Airbus A350, 4 new Airbus A330-300 Enhanced as well as 30 new Airbus A320-Neo. The list price for all of the aircrafts which SAS currently has on order is estimated at USD 5.8 billion.⁹⁸ However, within the airline industry, aircraft orders usually come with a large discount. According to industry experts, the discount usually varies between 20%-60% with an average of 45% depending on the size of the order.⁹⁹ It is therefore highly likely that the price that SAS in the end will pay for its order of 30 A320Neo, 8 Airbus A350 and 4 A330-300 Enhanced will be significantly lower than the USD 5.8 billion given by the aircrafts list prices.

⁹⁶ SAS Group Annual Report 2013, p.11

⁹⁷ AviationWeek.com, 'Delta buys SAS MD-80 parts', viewed 2014-06-07,<<u>http://aviationweek.com/commercial-aviation/delta-buys-sas-md-80s-parts</u>>

⁹⁸ SAS Group Annual Report 2013, p.10-11

⁹⁹ Wall Street Journal (wsj.com), 'The secret price of a jet airliner', viewed 2014-06-08, http://online.wsj.com/news/articles/SB10001424052702303649504577494862829051078

Even though the new aircrafts will render a significant discount compared to its list prices, the investment will still be significant for SAS. According to SAS annual report 2013, the company is planning to finance the new aircrafts currently on order with a mixture of export credit loans as well as enhanced equipment trust certificates (EETCs) and bank loans.

The first SAS Airbus A350 will be delivered by year 2018 and is meant as a replacement of the older A340/330 fleet on SAS intercontinental routes.¹⁰⁰ For the A330-300 Enhanced, deliveries will start during year 2015 when the leasing contracts for the older A340 fleet is expiring. SAS will be among the first airlines in the world to take the new A330-300 Enhanced into service and the modified aircraft comes with an increased maximum take-off weight and an additional fuel tank situated in the center of the aircraft which allows for a longer full payload range.¹⁰¹ The large order for 30 A320-Neo will see commenced deliveries to SAS in year 2016. It is still not fully clear how the A320-Neo's will be used when delivered to SAS but the most likely scenario is that they will be replacing the older A320 aircrafts which are stationed in Copenhagen. This is in accordance with the annual report from 2013, which states that the company currently is working towards creating a more homogenous fleet at each of its bases in Oslo, Copenhagen as well as Stockholm.

Figure 3-8 SAS creating homogeneous fleets at each base



Source: SAS annual report 2013, p.10

¹⁰⁰ Scandinavian Airlines, 'SAS boosts new fleet with 12 new airbus aircraft, viewed 2014-06-08, <<u>http://www.flysas.com/en/sas-global/12-new-planes/></u>

¹⁰¹ AviationWeek.com, 'SAS renews widebody fleet', viewed 2014-06-07, <<u>http://aviationweek.com/awin/sas-renews-widebody-fleet-a350s-a330s></u>

Technological shifts, stemming from innovation within the aviation industry, have a major impact on the airline industry as a whole. During the most recent years, the biggest and most disruptive innovative change within the industry includes the commenced use of composite materials in the construction of aircrafts. Composite is a material made up by carbon fiber reinforced plastic and both of the world's two leading suppliers of aircrafts, Airbus and Boeing, now provide models, which to a great extent are made up by composite materials. Airbus model is named the A350 and consists of 53% composites while Boeing's similar model is called the 787-Dreamliner and consists of 50% composites. Thanks to the use of composite materials, the weight of the aircraft is significantly decreased which enables lower fuel consumption. Boeing claims that its 787-Dreamliner results in a 20% lower fuel consumption compared to similar existing non-composite aircrafts while Airbus claims its A350 model will be able to achieve a staggering 25% decrease in fuel consumption when taken into service by the end of 2014.¹⁰²¹⁰³

In addition to the significantly reduced weight, which leads to a lower fuel consumption, aircrafts made up by composite materials also has a significant effect on maintenance costs. Traditional aircraft models, which are made up by aluminum, is in regular need of maintenance checks for metal fatigue as well as corrosion. Aircrafts made up by composite materials are not in the same need of such checks and therefore, according to both Airbus and Boeing, such composite aircrafts will enable airline companies to reduce their maintenance costs significantly¹⁰⁴¹⁰⁵

As mentioned earlier in section 3.1.4 SAS, as of mid-2014, has a total order of eight (8) Airbus A350 with an expected first delivery during year 2018. In addition to the orders on the A350, SAS also has orders for a total of four (4) Airbus A330-Enhanced with first delivery as of 2015 and thirty (30) A320-Neo with first delivery expected to 2016. Neither the A330-Enhanced nor the A320-Neo are

¹⁰² Airbus, 'A350 XWB Family', viewed 2014-06-10,

102">http://www.airbus.com/aircraftfamilies/passengeraircraft/a350xwbfamily/spotlight-on/>102

¹⁰³ Boeing, 'Boeing 787 program fact sheet', viewed 2014-06-10,

http://www.boeing.com/boeing/commercial/787family/programfacts.page-104 Airbus, 'A350 XWB Family', viewed 2014-06-10,

<<u>http://www.airbus.com/aircraftfamilies/passengeraircraft/a350xwbfamily/spotlight-on/></u>

¹⁰⁵ Boeing, 'Boeing 787 program fact sheet', viewed 2014-06-10, http://www.boeing.com/boeing/commercial/787family/programfacts.page

completely newly developed aircraft models but rather further developed versions of the A330 and the A320 models.¹⁰⁶

However, despite not being completely new aircraft models, the A330-Enhanced and the A320-Neo still offers rigid performance improvements compared to SAS existing fleet models. According to SAS, the A330-Enhanced will achieve a reduction in fuel consumption by approximately 2% while the A320-Neo will offer its operators a sharp decrease in fuel consumption by 15% compared to aircrafts from the current A320-family according to official numbers by Airbus.¹⁰⁷ The improved performance figures are the results from more fuel efficient aircraft engines such as the all new Pratt & Whitney's PurePower PW1100G-JM and the LEAP-1A from CFM which will be fitted to the A320-Neo¹⁰⁸

In addition to the new and highly fuel efficient aircraft engines, most modern aircrafts are today fitted with wing tip devices such as Sharklets or Winglets. These wing tip devices are add-ons to the end of the airplane wing which further increase fuel efficiency, and thereby also the emission levels, by improving the aerodynamics of the aircraft Sharklets or Winglets are, as mentioned earlier, standard features on most new aircraft models today. However, Sharklets/Winglets may also be mounted on older aircraft models and according to statistics, such wing tip devices may improve fuel efficiency by as much as 4 %.¹⁰⁹

3.1.5 (E)nvironmental

Airline companies are highly dependent on environmental-and weather factors and the rapid climate changes will become an increasingly important factor for the global airline industry. According to the latest report from the Intergovernmental Panel on Climate Change (IPCC), which is a collaboration between United Nations Environment Programme and the World Meteorological Organization, it is very likely (formulated as "with very high confidence" in the report) that climate-related extremes such as heatwaves, droughts, extreme precipitation, inland and coastal flooding, landslides, cyclones and wildfires are likely to increase in occurrence in the near term, 15-25 years. It is also stated that it is very

¹⁰⁶ SAS Group Annual Report 2013, p.10-11

¹⁰⁷ Scandinavian Airlines, 'SAS boosts new fleet with 12 new airbus aircraft, viewed 2014-06-08, http://www.flysas.com/en/sas-global/12-new-planes/>

¹⁰⁸ Airbus, 'A320 Family', viewed 2014-06-10,

<<u>http://www.airbus.com/aircraftfamilies/passengeraircraft/a320family/spotlight-on-a320neo/></u> ¹⁰⁹ Ibid

likely that's these climate-related extremes will severely effect and damage vital societal infrastructure and settlements for countries at all levels of development (IPCC Fifth Assessment Report).¹¹⁰

The conclusion that such climate-related extremes will affect countries at all levels of development makes it highly relevant also for European based airlines such as SAS. Climate-related extremes increase the likelihood of interruptions to flight operations which leads to loss of income for airline companies. Just in the recent years, several climates related extremes have occurred and the effects on the airline industry has been severe. During year 2010 the Icelandic Volcano Eyjafjallajokull erupted and indulged most of Europe's airspace with a thick volcanic ash cloud which grounded most passenger traffic for almost seven days. IATA reports that more than 100,000 flights were cancelled during those seven days and that the airlines lost roughly US\$ 400 million per day.¹¹¹

According to recent research by Kutterolf et al. (2012), climate change and more specifically global warming might increase the number of volcanic eruptions. This is since global warming causes the glaciers to melt at the same time as the sea level is rising. This results in decreased weight on the continents and potentially more open routes for ascending magma.¹¹²

Apart from the volcanic eruption of Eyjafjallajokull, other flight operation interruptions stemming from climate related extremes include hurricane Sandy during the year 2012. During two days at the end of October, all of New York's, Washington's and Philadelphia's major airports were forced to close. At that time, IATA estimates that 5000 flights per day were cancelled and that the costs amounted to around US\$ 190 million per day.¹¹³

In addition to the potential loss of income due to interruptions of flight operations, rapid climate changes also increases the likelihood of that the airline industry will be forced into more strict emission regulations. In the fifth assessment report by the IPCC it is stated that urgent "collective and significant global action is needed to reduce greenhouse gas emissions in order to keep global warming below

http://www.iata.org/whatwedo/Documents/economics/Volcanic-Ash-Plume-May2010.pdf

¹¹⁰ IPCC, 'Climate Change 2014 report', <<u>http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf</u>> ¹¹¹ IATA, 'The impact of eyjafjallajokull's volcanic ash plume', May 2010,

¹¹² S. Kutterolf, M. Jegen, J. X. Mitrovica, T. Kwasnitschka, A. Freundt, P. J. Huybers. 'A detection of Milankovitch frequencies in global volcanic activity'. *Geology*, 2012

¹¹³ IATA, 'IATA Economic briefing – The impacts of hurricane Sandy' Nov 2012, <<u>http://www.iata.org/publications/economics/Documents/hurricane-sandy-impact-nov2012.pdf</u>>

2°C". This statement in combination with the fact that the airline industry is currently one of the fastest growing sources of greenhouse gas emissions makes the aviation industry a clear target for environmental regulators. The EU is currently discussing the IP/14/54 framework which includes a reduction target of greenhouse gas emissions by 40% below the 1990-level.¹¹⁴

Even though the framework is not yet approved by the European Union, it is a clear indicator that it is very likely that emissions of greenhouse gases will become even more heavily regulated in the near term.

3.1.6 (L)egal

One of these significant changes within the legal aspects of the aviation industry includes the commenced use of what can be described as "shipping style flags of convenience".¹¹⁵ This occurrence means that airlines set up operating subsidiaries in low tax countries such as Ireland much in accordance with what shipping companies tend to do with its shipping vessels.¹¹⁶ The most recent, and to SAS relevant, example of such include Norwegians establishment of its subsidiary Norwegian Air International Limited (NAI) in Ireland which is supposed to be Norwegian's vehicle for its long-haul operations.¹¹⁷ On the 12th of February 2014, NAI was granted a EU air operators certificate (AOC) from the Irish authorities which means that the company is allowed to use aircrafts for commercial use.¹¹⁸

Since it is a EU AOC, NAI is furthermore allowed to operate under the EU-US Open skies agreement. However, the American Department of Transportation has not yet approved NAI's application for a foreign air carrier permit since the new structure has raised concerns regarding its legitimacy as well as attracted significant criticism from U.S. airlines as well as unions claiming it to undermine labor rights

¹¹⁴ European Comission, 'Reducing emissions from aviation', viewed 2014-06-13, <http://ec.europa.eu/clima/policies/transport/aviation/index en.htm>

¹¹⁵ Wall Street Journal (wsj.com), 'Norwegian Air Shuttle Gets Irish Air Operator's License', viewed 2014-06-11, <http://online.wsj.com/news/articles/SB10001424052702304434104579378972185771650>

¹¹⁶CAPA – Centre for Aviation, 'Norwegian Air Shuttle's long-haul business model. "Flag of convenience" or fair competition?', viewed 2014-05-11,

¹¹⁷ Ibid

¹¹⁸ Norwegian Air, 'Norwegian has been granted an Operating License and Air Operator's Certificate in the EU', viewed 2014-05-11, http://media.norwegian.com/en/#/pressreleases/norwegian-has-been-granted-an-operating- license-and-air-operator-s-certificate-in-the-eu-960681>

and standards. By establishing an operating subsidiary in Ireland, Norwegian is able to bypass the strict Norwegian labor laws which include some of the world's highest social charges as well as the prohibition of employing staff from outside the European Economic Area. Since Irish labor laws are more flexible, Norwegian is able to employ staff based in Bangkok, which stands under the labor laws of Thailand, to operate its long-haul flights which thereby significantly decreases the company's labor costs. Apart from the potential of lower labor costs, the low Irish corporate tax rates also makes it highly beneficial for Norwegian to register its aircraft fleet in Ireland and then lease the aircrafts back to the Norwegian registered company.¹¹⁹

In addition to receiving criticism for the undermining of labor rights from US airlines and unions, the new operating structure attempted by Norwegian also raises flight safety concerns. Even though Norwegian's long haul fleet is registered in Ireland it almost never flies within the country, thereby making it nearly impossible for the Irish authorities to monitor and oversee the safety of the airline and its aircrafts.¹²⁰ As a result of this it still remains unclear as of mid-2014, whether or not the U.S. Department of Transportation will grant Norwegians application for a permit. However, in the case that Norwegian receives the necessary permits needed to operate its long-haul flight via its Irish operating subsidiary, this would have a significant impact on SAS's ability to compete on long-haul flights. This is foremost because Norwegian would be able to operate its Nordic long-hauls flights with a significantly lower cost base compared to SAS and thereby be able to offer lower prices.

3.2 Porter's Five Forces

3.2.1 Intensity of industry rivalry

Given the deregulation of the European airline industry and the *open skies* agreement, there has been a massive growth of LCCs in Europe. The increase has been the strongest in the intra-EU segments, which mostly consists of short- and medium haul flights. In this segment the LCC market share had a total market share of supply of 56,6% in 2012 and showed an average annual growth of 16% from 2005 to 2012. The growth has mostly been made at the cost of the market shares of FSCs, such as SAS. The

¹¹⁹ CAPA – Centre for Aviation, 'Norwegian Air Shuttle's long-haul business model. "Flag of convenience" or fair competition?'

¹²⁰ Wall Street Journal (wsj.com), 'Norwegian Air Shuttle Gets Irish Air Operator's License', viewed 2014-05-11, <<u>http://online.wsj.com/news/articles/SB10001424052702304434104579378972185771650></u>

development is shown in Figure 3-9. As discussed in section 2.3.4, SAS core business is short haul routes, mostly within Scandinavia, which makes its business very vulnerable to the competition from LCCs.



Figure 3-9 Intra EU27 routes by carrier type - % market share yearly 2005 - 2012

Source: European Commission, 'Annual analyses of the EU air transport market 2012', p.33 – 34,





Source: European Commission, 'Annual analyses of the EU air transport market 2012', p.33 – 34,

SAS also operates a lot of domestic flights. As seen in Figure 3-10, the LCCs have a much smaller market share (26,2% in 2012) among domestic flights compared to intra-EU flights and its growth has not been as explosive. Between 2011 and 2012 the LCCs market share among domestic flights actually decreased slightly, a beneficial development for SAS.¹²¹ The rise of LCCs in Europe is also reflected in

¹²¹ Ibid

the Nordic Region where SAS has gone from a share of capacity of 34% in 2008 to 28% 2012, while Norwegian has doubled their share from 11% to 22% and Ryanair grown from 7% to 9%.¹²²¹²³

SAS loss of market shares has occurred even though there has been an annual growth ranging from 2-5% in airport passenger traffic in the Nordic Countries between 2007 and 2012, see figure 3-11.¹²⁴ The nature of flight travel as a relatively undifferentiated good where the switching costs between suppliers are practically zero, makes increased competition obviously hard to tackle for incumbent firms like SAS. Additionally, price comparison services raises price transparency and price sensitivity among customers. In sum, the intensity of rivalry in the industry can be considered high.

	CAGR% 2007 -				
	2012				
EU27	0,8				
Norway	4,8				
Sweden	2,3				
Denmark	2				
Finland	2,7				

Figure 3-11 Airport traffic growth (%) 2007 - 2012

Source: Own depiction based on data from European Commission, 'Annual analyses of the EU air transport market 2012', p.14

3.2.2 Threat of new entrants

The threat of entry into an industry mainly depends on the barriers to entry that are present, coupled with the reaction from existing competitors. When barriers are high and the entrant can expect tough retaliation from incumbent firms, the threat of entry is low.¹²⁵ One of the sources of barriers to entry is *Economies of scale*, which refers to declining unit costs due to an increase in unit volume.

¹²² SAS Group Annual Report 2008

¹²³ SAS Group Annual Report 2012

¹²⁴ European Commission, 'Annual analyses of the EU air transport market 2012', p.14, <<u>http://ec.europa.eu/transport/modes/air/internal_market/observatory_market/doc/annual-2012-summary.pdf</u>>

¹²⁵ Porter M., 'Competitive Strategy, 1st edition, 1980, The Free Press, p.7



Figure 3-12 Airline seat capacity share in Nordic region

Source: CAPA

SAS is the largest airline both in terms of market share and seat capacity in the Nordic market (Norway, Sweden, Finland, Denmark), its home market, as shown in Figure 3-12.¹²⁶ Being a dominant player gives rise to scale economies like the possibility of discounts, compared to smaller regional rivals, when for ex. buying a large number aircrafts. However, airlines are increasingly leasing their aircrafts (operating lease) instead of buying them (often arranged as financial leases).¹²⁷ This is a way for entrant airlines to overcome the barriers to entry associated with large capital requirements when building an aircraft fleet.

As the biggest airline in Nordics, SAS already has access to popular slots at airports – an incumbent advantage. As long as the slots are used more than 80% over a certain time period, the airline is automatically given access to the slot for the next period.¹²⁸ This is called "grandfathering rights".¹²⁹ However, Copenhagen Airport established in the end of 2010 a new terminal called CPH Go, built to serve LCCs and make them "benefit from optimal operational conditions and low airport charges".¹³⁰

¹²⁸ European Commission, 'Slots', viewed 2014-05-15, <<u>http://ec.europa.eu/transport/modes/air/airports/slots_en.htm</u>>

¹²⁶ CAPA, 'Finnair, SAS and Norwegian, The Nordic Three: is consolidation on the way?', viewed 2014-05-13, http://centreforaviation.com/analysis/finnair-sas-and-norwegian-the-nordic-three-is-consolidation-on-the-way-97260

¹²⁷ The economist, 'Buy or rent?', viewed 2014-05-15, < <u>http://www.economist.com/node/21543195</u>>

¹²⁹ Copenhagen Airport, 'Grandfathering rights'.<u><Airport, 'Grandfather rights, viewed 2014-06-13</u>, <<u>http://www.cph.dk/en/about-cph/profile/Facts-about-CPH/Airport-terminology/></u>

¹³⁰ Copenhagen Airport, 'CPH Go opened at Copenhagen Airport', viewed 2014-05-15, <<u>http://www.cph.dk/en/about-cph/press/news/CPH-Go-opened-at-Copenhagen-Airport/></u>

Such developments decrease SAS slot advantage. Other scale economies in the airline industry could be reduction of back-office costs, support services on planes and other fixed costs that can be spread over a larger sales base.

Another source of barriers to entry is product differentiation. As the oldest and largest airline in the Nordics, SAS might still have some customer loyalties and brand identification advantage compared to newer rivals like Norwegian and other LCCs – still considering the recent financial issues. SAS was also a forerunner when establishing its frequent flyer program *Eurobonus* already in 1992 and have a competitive advantage over entrant LCCs given it's connection with Star Alliance and the possibility to earn points flying with any of the 26 members.

However, despite positive developments for potential entrants, like LCC terminals and improved possibilities of operational leases, the number of new airlines formed has ditched since 2007, see graph. Over the past full business cycles the airline industry has suffered poor profitability and investors earned a return of on average \$17bn less than investments with similar risks.¹³¹ The latest financial crisis has worsened the investment climate and with relatively large capital requirements for startup airlines, the potential risk of newly founded airlines can be considered low. However, forecasted passenger growth is stronger in the Nordic countries compared to some other large countries in Europe like France and the UK and high exit costs industry makes unprofitable businesses reluctant to leave the industry.¹³² This makes it more plausible that current non-Scandinavian tries to enter the Nordic market. Additionally, industry revenues are improving and 2014 are expected to be the most profitable year for airlines since year 2000.¹³³ Overall, the risk of new entrants can be considered low to medium.

<http://ec.europa.eu/transport/modes/air/internal_market/observatory_market/doc/annual-2012-summary.pdf>

¹³¹ IATA, 'Profitability and the air transport value chain', p.21,

http://www.iata.org/whatwedo/Documents/economics/profitability-and-the-air-transport-value%20chain.pdf>
¹³² European Commission, 'Annual analyses of the EU air transport market 2012', p.60,

¹³³ IATA, 'Financial Forecast – December 2013', <<u>http://www.iata.org/whatwedo/Documents/economics/IATA-Economic-</u> <u>Briefing-Financial-Forecast-December-2013.pdf</u>>

3.2.3 Threat of substitute products or services

Substitute products can perform the same function as the product of the industry. This means that the more attractive the price-performance attribute of the substitute, the harder it is to earn profits.¹³⁴ To identify substitutes we make the distinction between *business travels* and *leisure travels*.

A substitute for business traveling is the use of video- and teleconferencing. According to Infonetics Research, an international market research and consulting firm, videoconference and telepresence system revenue grew 18% to 1.8\$ billion in 2010 and is expected to more than double to 5\$ billion in 2015.¹³⁵ In a sustainability report from Deloitte in 2012, more than half of global CFOs plan to invest in video conferencing as a key sustainability driver. In an IBM rapport from 2009, teleconferencing is expected to replace 2,1million airline seats worldwide per year from 2012.¹³⁶

The above stated facts, and considering the increasing internet access and high-speed broadband around the globe makes it clear that video- and teleconferencing is a threat to business traveling. Firms save the time and cost of flying and take environmental responsibility when choosing this alternative. Buying and maintaining videoconference systems can be costly even though these costs might be reduced as the industry matures. Downsides like the lack of personal atmosphere and time difference will however remain advantages for business traveling.

A substitute for both shorter business travels and leisure travels is high-speed rail. In regions where rail travel is common and high-speed rail an option, the demand for air travel has significantly been lowered. Research show customers are sensitive to high-speed train cost. As an example: a price reduction of 5.5% percent on the Barcelona-Seville route would increase passenger volume by 28%.¹³⁷In the Nordic region there are some ventures to increase connectivity with high-speed trains. The Danish Ministry of Transport has reserved 27.5 billion DKK for a fund to develop high-speed railroads which will lower time of travel between Copenhagen and Aalborg from 4.21h to 3h and

¹³⁴ Porter M., 'Competitive Strategy, 1st edition, 1980, The Free Press, p.23

¹³⁵ Infonetics Research, 'Enterprise video conferencing and telepresence market more than doubling by 2015', viewed 2014-05-15, <<u>http://www.infonetics.com/pr/2011/4Q10-Enterprise-Telepresence-Video-Conferencing-Market-Highlights.asp</u>>

¹³⁶ IBM, 'Airlines 2020: Substitution and commodization', p.9, <<u>http://www-935.ibm.com/services/multimedia/uk_en_airlines_2020.pdf</u>>

¹³⁷ Ibid, p.8

between Copenhagen and Aarhus from 2.45h to 2h.¹³⁸ This is a clear threat to SAS who currently runs 8 (16 both ways) daily flights on those distances.¹³⁹

In Sweden, the deregulation of the train traffic has led to an increase in the supply of cheaper travels between the larger cities in Sweden. In march 2015 the Hong Kong based company MTR will provide 110 weekly services on the route between Stockholm and Gothenburg – which will most likely negatively affect SAS business on the route with 13 (26 both ways) daily flights.¹⁴⁰¹⁴¹ In 2011, a Norwegian study called the HH-investigation concluded that the travel time between Oslo and Stockholm could be cut in half if a high-speed railroad was to be built.¹⁴² No decision is however taken in this matter. The overall assessment is that the threat of substitute products are moderate as flying has it's clear benefits over both teleconferencing and high-speed trains.

3.2.4 Bargaining power of customers/buyers

According to Porter, a buyer group is powerful if it can force down prices and play competitors against each other – at the expense of industry profitability.¹⁴³ Generally, this is the case if the buyer purchases large volumes relative to seller sales and if the industry purchases represent a large share of buyer's total purchases. This is not the case in the airline industry – pointing towards low bargaining power for the buyers or in our case, the customers. However buyer power is also positively affected if switching costs between sellers are low and if the products are relatively undifferentiated – which is the case in the airline industry.¹⁴⁴ With constantly evolving price comparison services, customers also have full information regarding market prices, raising their bargaining power.

Let's once again differ between *business travelers* and *leisure travelers*. Companies have the possibility to negotiate over prices and receive corporate travel discounts at most airlines. With low switching costs and different carriers competing on the same routes, the bargaining power of business

¹³⁸ Transportministeriet, '27,5 mia. kr. til en hurtigere og mere miljøvenlig jernbane i Danmark', viewed 2014-05-

^{16, &}lt;<u>http://www.trm.dk/da/nyheder/2013/togfonden+dk+-+fremtidens+jernbane/></u>

¹³⁹ sas.dk, 'book flybillet', viewed 2014-05-20, <<u>www.sas.dk></u>

¹⁴⁰ MTR Express, viewed 2014-05-20, <<u>http://www.mtrexpress.se/english</u>>

¹⁴¹ sas.se, 'book flybillet', viewed 2014-05-20, <<u>www.sas.se></u>

¹⁴² Dagens Nyheter, dn.se, 'Snabbtåg mellan Stockholm och Oslo halverar restiden', viewed 2014-05-20, <<u>http://www.dn.se/debatt/snabbtag-mellan-stockholm-och-oslo-halverar-restiden/></u>

¹⁴³ Porter M., 'Competitive Strategy, 1st edition, 1980, The Free Press, p.24

¹⁴⁴ Ibid, p.24-26

travelers can be considered higher than for leisure travelers. This is somewhat a disadvantage for SAS as business travelers are stated as SAS focus segment in their Core SAS strategy.

3.2.5 Bargaining power of suppliers

Powerful suppliers can squeeze profitability out of an industry by threatening to raise prices and reduce the quality of supplied goods. The conditions where suppliers are powerful basically mirror the conditions for powerful buyers. If they are few and more concentrated that the industry they sell to, they can exercise strong influence in prices, quality and terms.¹⁴⁵

3.2.5.1 Market for commercial jets

For the last decade Boeing and Airbus has controlled nearly the entire global market for commercial aircraft – a lead held by primarily manufacturing medium and large 100+ passenger jets. The large costs and risks of aircraft manufacturing have encouraged consolidation and an increase in international JVs. During the latter part of the last decade, due to rising fuel prices, there was a rise in the market for smaller turboprop aircrafts, made mainly by Brazilian Embraer and Canadian Bombardier.¹⁴⁶

These two are among a few aircraft manufacturers who have recently decided to launch commercial jets carrying between 100 – 150/160 passengers (short/medium-haul aircrafts), threatening the duopoly of Airbus and Boeing.¹⁴⁷ Figure 3-13 illustrates different alternatives in the short/medium haul aircraft segment.

Figure 3-13	Short/Medium	haul	commercial jets
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	Airbus A319	Boeing 737	Bombardier	Embraer E2	Comac	Irkut MS-21-
Aircrafts	Ne0	Max 7	C300	E195	C919	200
Seat capacity:	124-156	126-140	135-160	118-144	156-174	136-162
Introduction:	2015	2017	2015/2016	2018	2016	2017

Source: airbus.com, boeing.com, bombardier.com, embraer.com, english.comac.cc, uacrussia.ru/en (own depiction)

¹⁴⁶ Gale Business Insights, 'Encyclopedia of Global Industries – Aircraft', viewed 2013-05-22, http://bi.galegroup.com.esc-

¹⁴⁵ Porter M., 'Competitive Strategy, 1st edition, 1980, The Free Press, p.27-28

web.lib.cbs.dk/essentials/article/GALEII2501600075/66f8410005bca94c319e5e09870029d5?u=cbs>

¹⁴⁷ Forbes.com, 'New Entrants Pose A Challenge To Boeing's Share Of The Global Commercial Airplane Market', viewed 2014-05-25, <<u>http://www.forbes.com/sites/greatspeculations/2014/03/06/new-entrants-pose-a-challenge-to-boeings-share-of-the-global-commercial-airplane-market/></u>

Other entrants are Comac, a Chinese government-owned corporation and Irkut, a part of United Aircraft Corporation, which is a Russian state-controlled conglomerate.

The new entrants have positioned themselves at a lower price level compared to Airbus and Boeing – while basically promising the same package. For SAS, who's fleet consists mainly of short/medium-haul aircrafts (107 out of 139 aircrafts), the rise of new lower-cost alternatives and tougher competition in this segment will most likely provide a better bargaining position and could possibly reduce aircraft costs in the future.

3.2.5.2 Labor Unions and personnel supply

Accounting for almost 25% of SAS Group overall costs, payroll expenses are the largest cost post for SAS. Scandinavia has traditionally had strong labor unions and 2011 about 2/3 of the workforce in Sweden, Denmark and Finland and ca 55% in Norway belonged to labor unions.¹⁴⁸ The Cabin Attendants Union (CAU) in Denmark for example has a percentage of members close to 100%.¹⁴⁹ However, there is far from a shortage of cabin crew personnel and pilots. According to Swedish labor union SACO, the competition among pilots is tough.¹⁵⁰ Swedish employment service, arbetsförmedlingen, states that the job market for flight attendants are mediocre and that lots of cabin crew personnel also works in check-ins.¹⁵¹ The reduced demand is partly explained by LCCs lower need for cabin crew per flight. The harsher climate for personnel in the industry is one of the reasons why SAS cabin crew and pilots and their unions accepted big wage cuts and new pension plans as part of SAS new strategy. Another reason is the consequences for especially Copenhagen Airport, the most important airport in Scandinavia, if SAS would go bust. SAS is the airport's biggest customer and many jobs and subcontractors would be affected if SAS declared bankruptcy.

¹⁴⁸ ETUI – worker-participation.eu, National Industrial Relations – Compare Countries, viewed 2014-05-25, <<u>http://www.worker-participation.eu/National-Industrial-Relations/Compare-</u>

Countries?countries[]=262&countries[]=357&countries[]=2638&countries[]=368&fields[]=3> ¹⁴⁹ Cabin Attendants Union (CAU), 'Om CAU', viewed 2014-05-25, <<u>http://www.cau.dk/om-cau</u>>

¹⁵⁰ SACO, 'Trafikflygare', viewed 2014-05-26, < <u>http://www.saco.se/yrken-a-o/trafikflygarepilot/</u>>

¹⁵¹Arbetsförmedlingen, 'Yrkeskompassen: yrkesprognos flygvärdinnor', viewed 2014-05-25, <<u>http://www.arbetsformedlingen.se/For-arbetssokande/Yrke-och-framtid/Yrkeskompassen.html?url=1119789672%2FYrkeskompassen%2FYrkesprognos.aspx&sv.url=12.78280711d50273 0c1800078></u>

3.2.5.3 Jet Fuel

Fuel prices are the 2nd largest cost post for SAS. An industry player like Lufthansa contracts over 540 airports globally who uses ca 150 fuel suppliers – meaning ca 1 fuel supplier for every 4th airport used. The prices on jet fuel depend a lot on the infrastructure around the airports. There are only certain amounts of pipelines into airports and fuel farms onsite are not accessible for all airlines. Some countries (like Brazil) have monopoly suppliers and eastern European countries have just recently, due to antitrust regulations, allowed for more suppliers. At airports with only one jet fuel supplier, the bargaining power of airlines is practically zero.¹⁵²

Multiple studies have investigated the potential use of biofuels in aviation and recently several EC-founded projects has been initiated to introduce sustainable biofuels as alternatives to fossil fuels.¹⁵³ Many airlines including SAS also looks into biofuels as a way to reduce emissions and SAS has partnered with biofuel company Solena at Arlanda airport to produce jet-fuel from waste.¹⁵⁴ However, in a report commissioned by IEA Bioenergy in 2012 regarding the role of biofuels in commercial air transport, the authors state that the prices of biojetfuels are at least twice the price of conventional kerosene and only small amounts of biojetfuels are available. They also state that IATA expects that biofuels could become price competitive around year 2030.¹⁵⁵

¹⁵² IATA – Airlines International, 'Causing a bottleneck', viewed 2014-05-28, <<u>http://airlines.iata.org/analysis/causing-a-bottleneck</u>>

¹⁵³ European Commission, 'Biofuels in aviation – greening the skies', viewed 2014-05-28, <<u>http://setis.ec.europa.eu/setis-</u>magazine/bioenergy/biofuels-aviation-%E2%80%93-greening-skies>

¹⁵⁴ Biofuels Digest, 'Solena, SAS partner for aviation biofuels project at Stockholm Airport', viewed 2014-05-28, http://www.biofuelsdigest.com/bdigest/2011/10/11/solena-sas-partner-for-aviation-biofuels-project-at-stockholm-airport/

¹⁵⁵ IEA Bioenergy, 'The potential role of biofuels in commercial air transport', September 2012, http://www.bioenergytrade.org/downloads/T40-Biojetfuel-Report-Sept2012.pdf>

4 Financial Analysis

In this chapter, SAS business is analyzed from its past performance in relation to a chosen peer group. A description of SAS peer group and the rationales behind the choosing of the peers are given in the first section in this chapter. The second section describes how SAS and its peers financial statements are reorganized to be able to perform the profitability analyses, which is the 3rd section in this chapter.

4.1 Peer Group:

Norwegian Air Shuttle ASA: Norwegian is the second largest airline in the Nordics (after SAS) and 3rd largest LCC in Europe. It can be considered SAS toughest competitor, at least in the leisure customer segment. Since its listing on the Oslo Stock Exchange in 2003, the airline has gone from an annual operating revenue of 1billion NOK to 15,5 billion NOK in 2013. The airline has been profitable every year since 2008.¹⁵⁶

In 2012 Norwegian signed one of the largest ever agreement in European aviation history – ordering 122 airplanes from Boeing and 100 from Airbus¹⁵⁷. The largest owner is the CEO Bjorn Kjos with a 27% ownership while the remaining majority consists of Norwegian mutual funds and pension funds.¹⁵⁸ The company's has it's largest market share per airport at the main airports in Olso(40%), Stockholm (22%) and Copenhagen (16%). Norwegian's basic principles regarding its network development are to establish point-to-point connections on markets that has been overprice or underserved while also maximizing aircraft and crew utilization.¹⁵⁹ Norwegian has lately received a lot of critique when refusing to compensate their passengers after long delays due to problems with their new Boeing 787 Dreamliner fleet.¹⁶⁰

Finnair: Similar to SAS, Finnair is an old national (Finland) flag-carrier where the government stills holds the majority ownership. The airline has been in financial troubles with net losses 6 years during the last decade while also suffering from labour disputes. However, the airline has been profitable the

¹⁵⁶ The Norwegian Group, Annual Reports 2003 - 2013

¹⁵⁷ Reuters.com, 'Norwegian Air places huge plane order in recovery bet' viewed 2014-06-02, http://www.reuters.com/article/2012/01/25/uk-norwegianair-idUSLNE80001T20120125>

¹⁵⁸ The Norwegian Group, Annual report 2013, 'Share and Ownership Structure', <<u>http://annualreport.norwegian.com/2013/share-and-ownership-structure</u>>

¹⁵⁹ Ibid, 'Operations and Market Development'

¹⁶⁰ Svenska Dagbladet, 'Norwegian vägrar ersätta passagerare', viewed 2014-06-05, <<u>http://www.svd.se/resor/norwegian-vagrar-ersatta-passagerare_3309554.svd</u>>

last 2 years – a result of restructurings taking place in 2011 and 2012 and a new strategic focus on the Asian market while pursuing leadership in the Nordics with a partnership with Flybe Nordic, an LCC airline.¹⁶¹ Given it's Nordic focus and government ownership it is a clear rival and peer to SAS.

Aer Lingus Group Plc: Aer Lingus is the Irish flag carrier and was government controlled until 2006, when it was listed on the Dublin stock market.¹⁶² Today the government owns 26% of its stocks, while 30% is owned by Ryanair (the largest LCC in Europe), a company that have tried (and failed) to take over Aer Lingus at two separate occasions in 2006 and 2008.¹⁶³¹⁶⁴ Like SAS and Finnair, the company has been struggling to stay profitable after the financial crisis in 2008, but has showed black bottom line numbers the last 4 years.¹⁶⁵ This can partly be attributed to the implementation of a cost reduction program (Greenfield) launched in 2009, which forced staff to accept reductions in pay and increases in work.¹⁶⁶ Its similarities with SAS as a (formerly) state controlled flag carrier, with a home market focus (Ireland and UK) and business model of offering relatively low consumer prices with the possibility of add-ons like fast-track and lounges (hybrid business model – between LCCs and FSCs), makes it a good comparable to SAS.¹⁶⁷¹⁶⁸

Deutsche Lufthansa AG (Lufthansa Group): Lufthansa is the largest airline in Europe in terms of passenger numbers and the largest in the world in terms of sales. (Forbes). The airline is large in the Nordics with more than 46 flights from Copenhagen, Stockholm, Oslo and smaller cities including Karlstad, Billund and Stavanger. This makes it a tough competitor to SAS and will offer the largest competition if SAS opens up more routes to mainland Europe. The Group owns the former Swiss and Austrian flag-carriers SWISS Int Air Lines and Austrian Airlines (both similar in size with SAS) and LCC German Air as well as other smaller regional airlines. Lufthansa has been listed on the Frankfurt Stock Exchange since 1966 and was state-controlled until 1994.

¹⁶¹ Finnair Annual Reports 2011-2013

¹⁶² Aer Lingus Annual Report 2006

¹⁶³ Aer Lingus Annual Report 2013

¹⁶⁴ The Guardian, 'Ryanair launches bid for Aer Lingus' viewed 2014-06-05,
<<u>http://www.theguardian.com/business/2008/dec/01/ryanair-aer-lingus</u>>

¹⁶⁵ Orbis Database, 'Aer Lingus', Retrieved through CBS library

¹⁶⁶ Aer Lingus Annual Report 2009, p. 3-5, 22

¹⁶⁷ CNN video, 'Interview with CEO Christoph Muller', <<u>https://www.youtube.com/watch?v=D0St4Y3PhyQ</u>>

¹⁶⁸ Aer Lingus Annual Report 2013

4.2 Reorganizing the financial statements

In order to measure SAS profitability it is necessary to distinguish between financing items and operating items as the latter are the driving force of SAS value creation.¹⁶⁹ Operations are what makes the company unique and difficult to replicate while its financing composition, as stated by the financing items, only show how its operations are financed. On the Income Statement only operating items are stated to calculate NOPAT, Net Operating Profit After Tax. On the Balance Sheet operating items and financing items are stated separately to form one operating side and one financing side. Both sides amount to Invested Capital, which "represents the amount a firm has invested in its operating activities and which requires a return".¹⁷⁰ SAS and peers financial statements can be found in Appendix 6.

4.2.1 <u>Classifications:</u>

In the case of SAS most balance sheet items are easily classified as either being part of operations or part of financing. However, some items need more consideration and those are discussed more in detail below.

4.2.1.1 - Cash & bank balances:

SAS does not distinguish or separate the balance sheet item cash & bank balances into operating cash and excess cash (financing item). It is thereby very difficult to accurately assess the amount of cash needed in SAS daily operations. However, Petersen & Plenborg argue for that "the consequences of reclassification of operating cash are likely to be modest in most cases" and since the cash position seems to remain rather stable over time the entire balance sheet item of cash & bank balances is classified as excess cash and therefore as a financing item.¹⁷¹

4.2.1.2 - Other provisions & Current portions of other provisions:

Provisions are classified as operating items in the reorganized balance sheet. SAS's provisions stem from three different areas, namely restructuring, loyalty programs as well as other provisions. The restructuring provisions are directly attributable to the many different restructuring programs undertaken by SAS during the last decade such as Core SAS, 4X and 4X NG.

¹⁶⁹ Petersen C.V. & Plenborg T., 'Financial Statement Analysis', 2012, Pearson Education Unlimited, p.68

¹⁷⁰ Ibid,p.74

¹⁷¹ Ibid, p.77

The loyalty program of SAS, EuroBonus, allows "customers to earn bonus points through flying with SAS and other Star Alliance members as well as when they make purchases from other business partners".¹⁷² These bonus points may later be used as currency when paying for passenger tickets as well as in-flight services. Since it is uncertain in regards to the actual amount of these bonus points that will be converted to actual flight tickets and when this will be done, SAS classifies these liabilities as provisions.

The third and final type of provisions is classified as other provisions. This item includes maintenance costs for leased aircrafts and thereby further strengthen the argument for classifying provisions as an operating item in the reorganized balance sheet of SAS.

4.2.1.3 - Capitalized operating leases:

SAS fleet consists of aircrafts that are either owned, leased through a *finance lease* contract or leased through an *operating lease* contract. The aircrafts that are leased through a finance lease are reported as an asset on the balance sheet as SAS has the obligation to purchase the asset at the end of the lease. Therefore the ownership of the asset lies on SAS.

Operating leases, however, are equivalent to renting and the ownership of the asset (the aircrafts) remains with the lessor. Thus, the aircrafts leased through operating lease contracts are not reported as assets on SAS balance sheet with a corresponding liability. This off-balance sheet financing has two effects; an artificial decrease in operating profits (due to rent/lease payments being higher than depreciation of the assets) and a reduction in invested capital causing artificially high capital productivity. As the decrease in operating profits is typically smaller than the reduction in Invested Capital, the net effect is an artificial boost in the returns of Invested Capital (ROIC).¹⁷³ This becomes a problem when comparing SAS to its peers, whom have different capital structures and lease commitments. To adjust for this effect we have to capitalize the asset value of the operating leases on the reorganized balance sheet – on SAS <u>and its peers</u>.

Calculating the asset value of operational leasing can be made in many ways. Rating agencies like S&P uses a present value (of lease payments) approach, which according to Koller et al. systematically

¹⁷² SAS Group Annual Report 2013, p.15

¹⁷³ Koller T., Goedhart M., Wessels D., 'Valuation – Measuring and Managing the Value of Companies', 5th edition, John Wiley & Sons, p.577

undervalues the assets since it ignores the assets residual value. Oppositely, a perpetuity approach overestimates the value by using an infinite asset life.¹⁷⁴ Another possibility is simply multiplying the annual rental/lease costs by a capitalization rate. A factor of 8 is often used by the investment banking community and SAS themselves uses a factor of 7 in their annual report. This thesis however follow Koller et al who suggests the following estimation:

Equation 4-1 Formula for asset value calculation of operating leases

$$Asset Value_{t-1} = \left[\frac{Rental Expense_t}{k_d + \frac{1}{Asset Life}}\right]$$

where k_d is cost of secured debt, which can (according to Koller et al) be estimated by using the yield to maturity on AA-rated 10-year bonds.¹⁷⁵ Using this estimation is a bit problematic as the yield to maturity (YTM) differs quite a lot on corporate AA-rated 10-year bonds, depending on industry and location amongst other. Using Bloomberg database shows that yields varies from 1,5% to over 6%, even though most lies around 3-4%. Looking at the yields for US Treasury High Quality Market Corporate 10-year bonds between 2009 and 2013 (Figure 4-1) reveals a decrease in yields from over 6% in 2009 to 3% in 2013.¹⁷⁶ The falling corporate bond yields follow the falling government bond yields during the same period in both the US and EMEA. Taking all of this into consideration this thesis uses a cost of secured debt of 5% between 2009 and 2011 and 4% between 2012-2013, to reflect a possible drop in rental cost for operational leases. The same cost of secured debt is used for SAS and its peers.

Source: Koller et al., p. 159

¹⁷⁴ ibid, p. 584

¹⁷⁵ ibid, p. 583

¹⁷⁶ US Department of Treasury, The Treasury High Quality Market (HQM) Corporate Bond Yield Curve, <<u>http://www.treasury.gov/resource-center/economic-policy/corp-bond-yield/Documents/hqm_qh_pars.xls</u>>



Figure 4-1 US Treasury High Quality Market Corporate 10-year bond yields from 2009 - 2013

Source: US Department of Treasury

Note that the asset value in the Koller estimation is calculated from rental expenses the following year.

Given the nature of the operating leases (aircrafts), the asset value will be classified as <u>non-current</u> <u>assets</u> (tangible fixed assets) on the operating side of the invested capital calculations on the reorganized Balance Sheets and as <u>long-term liabilities</u> on the financing side of the invested capital calculations. The first classification implies that capitalized operating leases will be included in SAS and peers Total Operating Assets and the latter that it will be included in SAS and peers Net Interest-Bearing Debt (NIBD).

As the asset value is added to invested capital on both the asset and liability side on the balance sheet, a corresponding adjustment must be done in the reorganized income statement. The rental expense found in the income statement of SAS is now separated into an implied lease interest expense part and a depreciation part. The implied interest is calculated by multiplying the cost of secured debt (k_d) with the asset value. This implied interest lease expense is then added to EBITDA to increase NOPAT. Adding back rental expenses and adding the asset depreciation would give the same result on NOPAT. This is illustrated in Figure 4.2 and full calculations can be seen in Appendix 4 (Capitalized Operating Lease calculations) and Appendix 6 (SAS and peers reorganized Financial Statements).

SAS Income Statement (partly)	2009	2010	SAS Capitalized Operating Lease calculation (partly)	2009
EBITDAR	1082	1740	Rental expense (t+1)	-1815
Rental lease expense	-2319	-1815	Cost of secured debt	0,05
Reported EBITDA	-1237	-75	Asset life	20
Implied interest on capitalized op. lease	907,5	780	Asset value	18150
Adjusted EBITDA	-329,5	705	Interest expense	-907,5
Depreciation, amort. and impairment	-1845	-1867	Depreciation	-907,5
EBIT	-2174,5	-1162		
Tax on EBIT	510,14	303,4111		
NOPAT	-1664,4	<u>-858,589</u>		

Figure 4-2 Example of how capitalizing operating leases affect the reorganized income statement and NOPAT calculation

Source: Own depiction

Due to the nature of the large capital requirements of buying aircrafts and the long time between aircraft order and delivery, an operating lease gives added flexibility compared to buying or leasing the aircraft with a finance lease. However, the flexibility of operational leasing comes at a price. A study by Lim, Mann and Mihov as referred to by Koller et al., examining 7000 companies over 20 years, concluded that when companies use more operating leases they were awarded lower credit ratings by rating agencies, which led to higher required yields on new public bond issuances.¹⁷⁷

4.2.2 Adjusting for SAS change in fiscal year

When analyzing SAS past financial performance, a five-year historical period is used, from 2009 to 2013. This length is chosen as 2009 was the year SAS started with its first new strategic direction in form of Core SAS, which still sets the base of its current strategy.

Before 2012, SAS fiscal year started the 1st of January and ended 31st of December. However, in April 2012 SAS shareholders agreed to change the fiscal year, beginning the 1st of November and ending the 31st of October to "be more in line with seasonal operating schedules to improve external reporting and internal governance, and to decrease internal administration".¹⁷⁸ Due to this, SAS fiscal year of 2012, as found in the annual report, is from 1st of January to October 31st of 2012 and the 2013 fiscal year from 1st of November to 31st of 2013. To be able to analyze the operating and financial performance of SAS the last two years, the financial figures in the reorganized SAS Income Statements for 2012 and 2013 in

¹⁷⁷ Koller T., Goedhart M., Wessels D., 'Valuation – Measuring and Managing the Value of Companies', 5th edition, John Wiley & Sons, p.584

¹⁷⁸ Air Transport World, 'SAS to shift financial year', viewed 2014-06-05', <<u>http://atwonline.com/news/sas-shift-financial-year</u>>

this thesis need to be adjusted so that that they cover the period of 1st of January to the 31st of December both years - similarly to SAS fiscal years before 2012 and to SAS peers fiscal years. This is done through the use of SAS interim reports. The figures for the 2012 Income Statement in this thesis is calculated by adding 61/92^{*} of the financial figures in SAS Q1 report 2013 (1st of November 2012 to the 31st of January 2013) to SAS reported figures for 2012 (jan – oct 2012). The 2013 Income Statement is calculated by summing the numbers for the SAS Q2, Q3 and Q4 2013 reports and adding 31/92 of the Q1 2013 report and 61/92 of the Q1 2014 report. SAS reorganized Income Statement, including all quarterly data used, is shown in Appendix 6.

4.2.3 <u>IAS 19</u>

By the 1st of November 2013, the SAS Group has applied the amended standard for pension reporting called IAS 19. In short, IAS 19 establishes the new "principle that the cost of providing employee benefits should be recognized in the period in which the benefit is earned by the employee, rather than when it is paid or payable, and outlines how each category of employee benefits are measured, providing detailed guidance in particular about post-employment benefits".¹⁷⁹ This results in the removal of the so called "corridor-method" which previously allowed for companies to defer actuarial gains and losses coming from defined benefit (pension) obligations. Instead the actuarial gains or losses must be recognized immediately under other comprehensive income. These changes together with the new pension terms, a reversal of deferred tax liabilities related to pensions and accounting for a special payroll tax given surplus in pension plans results in the following effects on SAS:

- Impairment of the actuarial gains and losses of 10.3 billion SEK (caused by IAS 19)
- Reduced pension commitments of ca 12.9 billion SEK
- Reduction of pension plan assets of ca 10.7 billion SEK
- Reduction of deferred tax liabilities of ca 1.2 billion SEK
- Improvement in the IS (decrease in payroll expenses and gains pertaining to the sale of Wideroe) of about 1,1 billion SEK¹⁸⁰

^{*} 62 out of 91 days – November (30), December (31), January (31)

¹⁷⁹ IASplus.com, 'IAS 19', viewed 2014-07-17, <<u>http://www.iasplus.com/en/standards/ias/ias19</u>>

¹⁸⁰ SAS Group annual report 2013, p. 30

and which will thereby affect the fiscal year ending 31st of October 2014. The above stated points will impact SAS's shareholder's equity negatively by an amount of almost 7 billion SEK resulting in a total of 3,2 billion SEK in shareholder's equity compared to the stated 2013 numbers of 11,1 billion.¹⁸¹

SAS has released a restated Balance Sheet and Income Statement for the fiscal year of 2012/2013, where the above stated effects are accounted for, to enable a comparison with the 13/14 fiscal year once released.¹⁸² This thesis will report these restated figures (also translated into 1^{st} Jan – 31^{st} Dec numbers) under the column "2013 – modified" in our following profitability analyses. They are of course also found in the reorganized financial statements in Appendix 6. The changes have great effect on the analyses of SAS long-term liquidity risk (financial leverage ratios) and will be further discussed under Section 4-3-2, Financial Leverage. Additionally and most importantly, since these accounting effects are permanent our forecasts and valuation will be based on the modified 12/13 numbers.

¹⁸¹ SAS, 'Press Release March 11 2014', <<u>http://feed.ne.cision.com/wpyfs/00/00/00/00/00/24/73/AC/wkr0006.pdf</u>>
¹⁸² SAS Group, 'Restated Income Statement and Balance Sheet due to IAS 19'
<<u>http://www.sasgroup.net/SASGROUP_IR/CMSForeignContent/Restate%20IAS19_FY13.xls></u>

4.3 Profitability Analysis

In order to analyze SAS operations and financing from a profitability perspective the DuPont framework is applied, which is illustrated in Figure 4-3.¹⁸³ All data and numbers used in this analysis can be found in appendix 5 (SAS and peers key operating data) and appendix 6 (SAS and peers reorganized financial statements).





Source: Petersen & Plenborg (Own depiction)

4.3.1 **Operating analysis.**

As seen from the DuPont Framework in Figure 4-3, the operating analysis takes its starting point from the ROIC, Return on Invested Capital. ROIC is the overall profitability measure for operations, and is defined in the following equations $(4-2 \text{ to } 4-5)^{184}$:

(Equation 4-2) ROIC = Profit Margin * Turnover rate of Invested Capital(4-3) $Profit Margin = \frac{NOPAT}{Net Revenue}$

¹⁸³ Petersen C.V. & Plenborg T, p.94

¹⁸⁴ Ibid, p.95, p.107

$(\Lambda \Lambda)$	Turnona	prrate of int	_	Net Revenue	
(+-+)	1 11 11000	_	Invested Capital		
(1,5)	DOIC -	NOPAT	Net Revenue	_	NOPAT
(4-3) ROIL =	– Net Revenue *	Invested Capital	$-\overline{I}$	nvested Capital	

As seen in Table 4-1, SAS has the lowest average ROIC (based on the 2009 -2013 non-restated numbers) over the last 5 years in its peer group - while the most profitable peers are Lufthansa followed by Norwegian. While SAS ROIC has been quite volatile, see Table 4-1 and Figure 4-4, there is a positive trend whereas ROIC numbers has gone from negative in 2009 and 2010 to positive from 2011 and onwards.

Table 4-1 SAS and peers return on invested capital (ROIC) – red/green numbers shows lowest/highest ROIC the given year

Return on Invested Capital (ROIC)	2009	2010	2011	2012	2013	2013 - modified	Mean airline
SAS	-5,82%	-3,35%	5,45%	0,54%	4,58%	6,51%	0,28%
Norwegian	6,84%	3,67%	2,79%	4,68%	3,60%	n/a	4,32%
Aer Lingus	-7,48%	5,11%	5,72%	3,38%	3,37%	n/a	2,02%
Finnair	-2,45%	1,73%	-0,53%	2,85%	2,08%	n/a	0,74%
Lufthansa	1,32%	12,06%	4,09%	9,73%	3,85%	n/a	6,21%
Mean yearly	-1,52%	3,84%	3,50%	4,24%	3,50%	6,51%	2,71%



Figure 4-4 SAS and peers return on invested capital (ROIC)

Source: SAS Group and peers annual reports 2009-2013

As already mentioned, 2009 was the toughest year in aviation history in terms of demand with a negative growth in passenger travel numbers (see appendix graph 8) and of its peers only Lufthansa and Norwegian succeeded with a positive ROIC this year. While SAS improved its ROIC significantly in 2011, effects of successful implementation of Core SAS, the ROIC dips again during 2012. This year SAS has the lowest ROIC compared with its peers which together with the low ROIC in 2009 and 2010 explains SAS low profitability over the period. Yet SAS, given the implementation of its latest

strategy 4XNG, manages to succeed with the highest ROIC in 2013. Adjusting for the implementation of IAS 19 lowers payroll costs with 144 MSEK and also accounts for the sale of Wideroe (realized actuarial gains or losses) adding additionally 1071 MSEK to NOPAT – boosting SAS ROIC way above peers. Finnair is only slightly more profitable during the period compared to SAS, but has actually performed worse during the last three years by having the lowest ROIC in 2013 and 2011. Aer Lingus has had a stable and above average ROIC since 2010.

As shown in equation 4-2 and figure 4-3 (DuPont framework), ROIC is a product of SAS Profit Margin and Turnover Rate of Invested Capital, and an analysis of these ratios are made to explain SAS low ROIC.

4.3.1.1 Profit Margin Analysis

Table 4-2 below shows that SAS Profit Margin is lower than its ROIC and by far the lowest among its peers over the 5-year period and an identifier for SAS profitability problem. The trend over the period is however positive and follows the development of SAS ROIC.

Table 4-2 SAS and peers profit margin – red/green numbers shows lowest/highest profit margin the given year

Profit Margin	2009	2010	2011	2012	2013	2013 - modified	Mean airline
SAS	-3,71%	-2,11%	3,21%	0,35%	2,80%	4,17%	0,11%
Norwegian	8,93%	4,87%	4,17%	7,47%	4,90%	n/a	6,07%
Aer Lingus	-10,02%	5,88%	7,09%	3,77%	3,86%	n/a	2,12%
Finnair	-2,78%	2,18%	-0,61%	3,18%	2,33%	n/a	0,86%
Lufthansa	0,69%	5,07%	1,72%	3,79%	1,64%	n/a	2,58%
Mean yearly	-1,38%	3,18%	3,12%	3,71%	3,10%	4,17%	2,35%

Source: SAS Group and peers annual reports 2009-2013

Looking at SAS Trend analysis Income Statement (Appendix 7) reveals a fall in total revenue between 2009 and 2013, which consists mainly of "Passenger revenue" (~75%) and "Other operating revenue". The largest posts in "Other operating revenue" are unspecified "Other operating revenue" and "Ground handling services". Both posts decreases between 2009 and 2011 and while this thesis uses data from quarterly reports, where no specification of "Other operating revenue" is made, this thesis does not have any numbers on these posts between 2012 and 2013. However, as SAS Ground Handling Services was sold in March 2013, this is one major explanation for the decrease in "Other operating revenue". An increase might however be expected as SAS is starting to lease its old MD-90 fleet to Delta airlines.

Given that passenger traffic is the core of SAS business model and that 75% of SAS total revenue comes from passenger traffic, passenger revenue is the focus in the following revenue analysis.

4.3.1.1.1 Passenger revenue breakdown

To investigate what factors drive passenger revenue and why it has decreased, it is broken down into price and quantity as shown in the following equations (4-6 to 4-8).

(4-6) **Passenger revenue = Revenue Passenger Kilometer (RPK) * Avg. revenue per kilometer**

(4-7) Revenue Passenger Kilometer (RPK) = Passenger numbers * Avg. flight distance

(4-8)

Passenger Revenue = Passenger numbers * Avg. flight distance * Avg. revenue per kilometer

The first thing to look at is numbers of passengers. In Table 4-3 we see that SAS passenger numbers are actually increasing slightly over the period. SAS closest rival Norwegian has a massive growth in passenger numbers, which almost doubles during the period. As the two airlines control the majority of the Nordic market, these numbers indicates a strong home market growth.

Table 4-3 SAS and	peers passenge	er numbers indexed
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Passenger numbers indexed	2009	2010	2011	2012	2013
SAS	100 (24898)	101,3	109,3	110,8	112,7
Norwegian	100 (10800)	120,4	145,4	163,9	191,7
Aer Lingus	100 (10382)	90,0	91,6	93 <i>,</i> 0	92,7
Finnair	100 (7433)	96,0	107,8	118,0	124,7
Lufthansa	100 (76543)	121,1	131,4	135,3	136,6

Source: SAS Group and peers annual reports 2009-2013

However, the growth in SAS passenger numbers opposes the development in SAS passenger revenues. To explain this, SAS either has a decreasing avg. flying distance or a decreasing avg. revenue per kilometer or both, as shown in equation 4-8.

Avg. flight distance (km)	2009	2010	2011	2012	2013	Mean airline
SAS	1013	1019	999	1033	1058	1024
Norwegian	982	1060	1110	1150	1299	1120
Aer Lingus	1524	1487	1477	1505	1538	1506
Finnair	2682	2693	2683	2686	2673	2683
Lufthansa	2099	2011	1992	1979	2005	2017

Table 4-4 SAS and peers average flight distance

Source: SAS Group and peers annual reports 2009-2013

Table 4-4 shows a slight increase in average flight distance for SAS since 2011, which can be interpreted as a sign of a higher demand among Nordic passengers for longer/leisure travels. However, SAS and Norwegian have the shortest average flight distance reflecting the relatively short distances between the largest cities in the Nordics – both airlines most common flight routes. Norwegians expansion with long-distance traveling is noticeable given its increase in flight distance, as well as Finnairs focus on the Asian market.

The last explanatory variable for the sinking passenger revenue is average revenue per km per passenger, often referred to as *yield* and a measurement of ticket prices. To convert the avg. revenue per km to from NOK (Norwegian) and Euro (Aer Lingus, Finnair, Lufthansa), annual averages of the monthly SEK/NOK and SEK/EUR exchange rates are used, see appendix 3. The results are found in table 4-5 where it can clearly be seen that SAS has the highest ticket prices followed by Lufthansa.

Table 4-5 SAS and peers average revenue per km per passenger in SEK - red/green numbers shows lowest/highest average revenue per km the given year

Avg. revenue per km (ticket prices/yield) in SEK	2009	2010	2011	2012	2013	Mean airline
SAS	1,30	1,16	1,12	1,11	1,04	1,15
Norwegian	0,73	0,62	0,60	0,64	0,55	0,63
Aer Lingus	0,67	0,69	0,68	0,70	0,68	0,68
Finnair	0,82	0,87	0,82	0,81	0,76	0,82
Lufthansa	1,02	0,99	0,92	0,92	0,89	0,95
Mean yearly	0,91	0,87	0,83	0,84	0,79	0,84

Source: SAS Group and peers annual reports 2009-2013

Norwegian has the lowest prices during the last 4 years and also show the largest decrease (in percent) during the period. In 2013 they are almost half of SAS prices. This is of course a main reason for SAS decreasing market share in the Nordics. (32% in 2009, 29% in 2013). SAS ticket prices have however also fallen sharply since 2009, which is expected development given SAS falling passenger revenue.

Falling prices can be found among all peers, except Aer Lingus whom has kept their prices relatively constant. Given the increase in passenger traffic, the falling prices indicate a tougher competition among airlines and a development in business models towards price minimization. However, it is important to note that SAS ability to extract higher ticket prices and a higher yield than peers is a competitive advantage. It is likely that this is due to product differentiation factors such old customer loyalties and brand identification advantage as discussed in Section 3.2.2. in the Porters five forces analyses.

4.3.1.1.2 Load factor

The high ticket prices of SAS are obviously an advantage given that passenger numbers and flight avg. distances stay the same. Still, SAS have a low profitability, which is naturally caused by high costs. Too investigate whether these are be caused by overcapacity, SAS Load Factor is calculated. The Load Factor describes the capacity utilization of available airline seats and is the quota of RPK (Revenue Passenger Kilometer – No of paying passengers multiplied by flown distance in km) and ASK (Available Seat Kilometer – No of available seats multiplied by flown distance in km) as illustrated in equation 4-9.

$(4-9) \quad Load \ Factor = \frac{Revenue \ Passenger \ Kilometer \ (RPK)}{Available \ Seat \ Kilometer \ (ASK)}$

As shown in table 4-6, SAS Load Factor in 2013 has increased since 2009 but fallen 2% since 2012, when the Load Factor peaked. Still, it has been consistently lower than its peers, which drive up costs and contribute negatively to SAS profit margin. Lufthansa manage to have the highest Load Factors, apprx. 5,5% higher Load Factor compared to SAS almost every year. According to SAS, short-haul routes normally have lower Load Factor than medium-, and long-haul routes, partly explaining SAS low number (AR 2013). This is in line with Lufthansa's high Load Factor (long avg. flight distance) but is contradicted by excellent Norwegian whom almost has the same Load Factor as Lufthansa, but only slightly longer flying distance compared to SAS.

Table 4-6 SAS Indexed RPK and ASK and SAS and peers Load Factors - red/green numbers shows lowest/highest average revenue per km the given year

Indexed SAS RPK and ASK	2009	2010	2011	2012	2013	
RPK (mil)	100 (25226)	101,9	107,7	112,9	117,6	
ASK (mil)	100 (35571)	97,4	104,0	107,7	114,6	
Load Factor (RPK/ASK)	2009	2010	2011	2012	2013	Mean airline
SAS	70,9%	74,2%	73,4%	74,4%	72,8%	73,1%
Norwegian	78,2%	77,4%	79,3%	78,5%	78,3%	78,3%
Aer Lingus	74,5%	76,1%	75,6%	77,7%	78,4%	76,5%
Finnair	75,9%	76,5%	73,3%	77,6%	79,5%	76,6%
Lufthansa	77,9%	79,6%	77,6%	78,8%	79,8%	78,7%
Mean vearly	75.5%	76.8%	75.8%	77.4%	77.8%	76.6%

Source: SAS Group and peers annual reports 2009-2013

Yet again shown in Table 4-7, SAS high ticket prices causes SAS to have the highest passenger revenue per ASK. However, due to the low Load Factor the gap compared to peers is smaller than the ticket prices suggest.

Table 4-7 SAS and peers passenger revenue per available seat kilometer (RASK)

Passenger RASK (SEK)	2009	2010	2011	2012	2013	Mean airline
SAS	0,92	0,86	0,82	0,83	0,76	0,84
Norwegian	0,57	0,48	0,48	0,50	0,43	0,49
Aer Lingus	0,59	0,61	0,52	0,47	0,45	0,53
Finnair	0,62	0,66	0,60	0,63	0,60	0,62
Lufthansa	0,80	0,78	0,71	0,73	0,71	0,75
Mean yearly	0,70	0,68	0,63	0,63	0,59	0,65

Source: SAS Group and peers annual reports 2009-2013

To improve its Load Factor and get rid of the overcapacity problem, it should be important for SAS to increase their RPK faster than ASK. This has not happened during the last 5 years as there has been a slight increase in both, see table 4-6. Between October 2012 and November 2013 for example, SAS opened up 52 new routes which clearly shows in an ASK increase. In the future it can therefore be suggested that SAS should not open up more routes unless they close down routes with low load factors or/with low avg. ticket prices.

4.3.1.1.3 Cost breakdown

SAS profit margin increased between 2009 and 2013 while Total revenues decreased, implying that Total operating costs decreased at a greater scale. This is shown in table 4-8 below, which depicts the

largest costs as percentage of total revenue, sorted from highest to lowest given total revenue in 2013. SAS by far largest cost posts are, as already mentioned, Fuel expenses and Payroll expenses and together they make up for 50% of SAS total operating costs. The rest, except Depreciation, Amortization & Impairment (D&A&I) and Depreciation leases is classified as other operating expenses and consist of selling costs, handling costs, government fees etc.

Table 4-8 Costs as percentage of total revenue for SAS – the red number illustrates the change in payroll expenses given the implementation of IAS19

Costs as percentage of total revenue	2009	2010	2011	2012	2013	2013 modified
Total revenue	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Payroll expenses	-40,1%	-33,1%	-31,6%	-32,3%	-24,8%	-24,4%
Jet fuel	-17,1%	-16,2%	-18,8%	-22,2%	-21,7%	-21,7%
Other operating expenses						
Government user fees	-9,8%	-10,3%	-9,8%	-9,9%	-9,9%	-9,9%
Other	-11,6%	-17,5%	-8,8%	-9,8%	-8,5%	-8,5%
Technical aircraft maintenance	-6,5%	-5,9%	-5,6%	-5,8%	-6,2%	-6,2%
Selling costs	-1,3%	-1,1%	<u>-5,7%</u>	-5,7%	<u>-5,7%</u>	<u>-5,7%</u>
Handling costs	-3,9%	-4,2%	-4,1%	-3,9%	-4,0%	-4,0%
Computer and telecom costs	-4,7%	-4,5%	-2,6%	-2,5%	-2,4%	-2,4%
Catering costs	-2,6%	-2,1%	-2,0%	-2,2%	-2,3%	-2,3%
Total other operating expenses	-40,6%	-45,7%	-38,6%	-39,6%	-39,2%	-39,2%
D&A&I	-4,1%	-4,6%	-5,8%	-4,0%	-3,9%	-3,9%
Depreciation leases (Rental lease + Implied interest on capitalized lease)	-3,1%	-2,5%	-2,2%	-1,9%	-2,5%	-2,5%
Total operating expenses	-105,0%	-102,1%	-97,0%	-100,0%	-92,1%	-91,7%

Source: SAS Group Annual Reports 2009-2013

4.3.1.1.4 Payroll Expenses

SAS has had considerably higher payroll costs as percentage of total revenue compared with its peers during the period which has obviously affected its profitability very negatively. This is illustrated clearly in table 4-9 below. However, payroll costs has dropped dramatically and was in 2013 only 56,5% of the costs in 2009. The largest decrease was between 2012 and 2013 when costs dropped by 26%. This was partly the effect of the large wage cuts and new pension plans accepted by unions in the end of 2012. It is also worth noting that an earlier IAS 19 implementation might have reduced payroll cost as actuarial gains or losses would have been recognized immediately under other comprehensive income/payroll expenses.

Table 4-9 Payroll expenses as percentage of total revenue for SAS and peers - red/green numbers
shows lowest/highest payroll expenses as percentage of total revenue annually

Payroll expenses as % of total revenue	2009	2010	2011	2012	2013	2013 - modified	Mean airline
SAS	-40,1%	-33,1%	-31,6%	-32,3%	-24,8%	-24,4%	-31,0%
Norwegian	-17,8%	-17,8%	-17,4%	-16,1%	-15,9%	n/a	-17,0%
Aer Lingus	-25,9%	-21,3%	-20,2%	-19,1%	-19,5%	n/a	-21,2%
Finnair	-25,8%	-21,7%	-21,0%	-17,6%	-15,9%	n/a	-20,4%
Lufthansa	-23,9%	-22,1%	-21,4%	-21,3%	-22,8%	n/a	-22,3%
Mean yearly	-26,7%	-23,2%	-22,3%	-21,3%	-19,8%	-24,4%	-22,4%

Source: SAS Group and peers annual reports 2009-2013

Another reason for the falling payrolls costs is a reduction of nr employees, going from 18786 in 2009 to 14127 in 2013. This is also visible in the table below as there is an increase in ASK per nr of employees. There is however a staggering difference between SAS and Norwegian whereas the latter manages to have 3 times as many ASKs per employee. It is very questionable whether SAS additional services, such as the Eurobonus system, lounges and fast track security, require that much more personnel.

Table 4-10 Available seat kilometers (ASK) per number of employees for SAS and peers

ASK (mil) per no. of employees	2009	2010	2011	2012	2013	Mean airline
SAS	2,13	2,50	2,70	2,83	2,88	2,61
Norwegian	7,32	8,05	9,74	8,46	8,66	8,44
Aer Lingus	5,52	5,19	5,33	5,31	5,30	5,33
Finnair	2,99	3,32	3,93	4,77	5,37	4,07
Lufthansa	1,84	2,00	2,17	2,20	2,24	2,09
Mean yearly	3,96	4,21	4,77	4,71	4,89	4,51

Source: SAS Group and peers annual reports 2009-2013

Table 4-11 shows that SAS has the highest payroll costs per employee, a salaries proxy, compared to its peers. This was expected given SAS focus on reducing these expenses in the Core SAS and 4XNG strategies. While still having the highest salaries, SAS has succeeded well in lowering its costs given the 25% decrease between 2009 and 2013, which has resulted in only slightly higher salaries then Norwegian last year. Once again a big drop between 2012 and 2013 is visible as new collective agreements where made.

Payroll costs per employee (SEK -000)	2009	2010	2011	2012	2013	2013 - modified	Mean airline
SAS	-958	-866	-865	-918	-720	-710	-865
Norwegian	-848	-827	-941	-785	-695	n/a	-819
Aer Lingus	-863	-706	-670	-660	-670	n/a	-714
Finnair	-590	-564	-574	-601	-570	n/a	-580
Lufthansa	-568	-545	-504	-519	-540	n/a	-535
Mean yearly	-765	-701	-711	-696	-639	-710	-703

Table 4-11 Payroll costs per employee for SAS and peers

Source: SAS Group and peers annual reports 2009-2013

As both SAS and Norwegian operates a lot of flights in the Sweden and Denmark, whom have the highest labor costs in EU28 as well as in Norway (20% higher labour costs than Sweden), the higher salaries are probably inevitable.¹⁸⁵ Finnair has managed to have considerably lower labor cost by using Asian staff with lower salaries but has also gotten critique for this. ¹⁸⁶ Lufthansa Group has the lowest costs among the peers, which can be explained by the fact that 40% of the employees are non-German and might origin from countries with considerably lower labor costs than the Nordics. ¹⁸⁷

4.3.1.1.5 Fuel Expenses

Fuel costs are determined by fuel prices, fuel efficiency and nr of ASK. Fuel prices on airports vary, as the fuel supplier/s set the prices. It is very difficult to compare these prices, given varying exchange rates and different airline main currencies. It is also hard to estimate at which airport each airline buys the most fuel as this change depending on routes. Due to these limitations the fuel prices in our following FASK analysis are considered the same for each airline. Worth noting however, is that all airlines hedge their projected future fuel consumption, but SAS to a lesser degree than Norwegian and Lufthansa (section 3.1.2). This makes SAS more vulnerable to changes in fuel prices compared to these peers. Hedging fuel prices by buying options entails a lot of up front cash, as a commodity clearing house requires a margin (ca 10%) of the hedged sum. Having low liquidity (like SAS in 2012, see section 4.3.2.1.) therefore reduces the possibilities of fuel hedging.

¹⁸⁵ Eurostat, 'Newsrelease 27 March 2014 - Labour Costs in the EU28',

http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/3-27032014-AP/EN/3-27032014-AP-EN.PDF Helsingin Sanomat, 'Union says Finnair Asian flight attendants still underpaid', viewed 2014-06-14,

http://www.hs.fi/english/print/1135218478630

¹⁸⁷ Lufthansa, 'Number of Employees and international', viewed 2014-06-14,
<<u>http://reports.lufthansa.com/2011/ar/combinedmanagementreport/employees/numberofemployeesandinternationality.html</u>>

During the period all peers except Aer Lingus has seen a rise in fuel expenses per ASK (FASK) as showed in Table 4-12. This reflects the increase in crude oil and jet fuel prices shown discussed in the PESTEL analyses under Economical factors. Given our assumption of similar prices, the FASK should be determined by fuel efficiency, which is determined by the fleets/fleet optimization. SAS has the second highest average FASK over the period in its peer group, 43% higher per ASK then Norwegian, with the lowest expenses. Since 2009, SAS FASK has however risen only by 1% compared to a 20% rise for Norwegian, proving good work from SAS in fleet optimization. As stated in (PESTEL) SAS average fleet is 11,2 years while Norwegians is estimated to be 4,9 years. Lufthansa, whom have the highest expenses per ASK also has the highest fleet age, 11,8 years, and Aer Lingus and Finnair has an age of 9,3 respectively 9,9 years. These numbers show a clear relationship given fleet age and rising fuel costs. SAS will continue of phasing in newer Boeing 737 NG and Airbus A320 during 13/14 to improve fuel expenses and in 2016, 30 new Airbus A-321 will be delivered which consume 20% less fuel than current models. Another way for SAS to reduce its FASK is to improve its Load Factor by reducing numberr of ASK while keeping RPK constant – which would be relevant given the below peer Load Factor.

Table 4-12 Fuel expenses per ASK (FASK) for SAS and peers- red/green numbers shows lowest/highest FASK the given year

Fuel expenses per ASK (FASK) (SEK)	2009	2010	2011	2012	2013	Mean airline
SAS	-0,216	-0,190	-0,210	-0,245	-0,218	-0,216
Norwegian	-0,127	-0,140	-0,163	-0,168	-0,152	-0,150
Aer Lingus	-0,166	-0,140	-0,139	-0,167	-0,163	-0,155
Finnair	-0,182	-0,165	-0,170	-0,192	-0,191	-0,180
Lufthansa	-0,188	-0,211	-0,218	-0,247	-0,232	-0,219
Mean yearly	-0,176	-0,169	-0,180	-0,204	-0,191	-0,184

Source: SAS Group Annual Reports 2009-2013

Other expenses

The 3rd largest cost post for SAS is Government user fees which obviously are very hard for SAS to influence. Accordingly, they have remained very stable during the last 5 year. Technical Maintenance costs has however dropped slightly which most likely is a result of fleet optimization as SAS has reduced the number of different aircraft models. An example of this is the phasing out of the old McDonnell Douglas MD80-series which made its last flights in October 2013 after almost 30 years in
service. ¹⁸⁸Handling costs has also remained fairly stable which is positive given that SAS is selling its SAS Ground Handling services to Swissport to reduce its fixed costs and secure a flexible cost base.¹⁸⁹ SAS selling costs has however increased a massive 400%, going from 1,3% of total revenue in 2009 to 5,7% in 2013. This indicates a larger focus on marketing to enlighten the customers on SAS benefits over rivals.

Conclusion on Profit Margin

The profit margin development for SAS has been positive during the last 5 years but has on average been lower compared to its peers. SAS main strength has been to be able to extract higher ticket prices (high yields) from consumers compared to peers without loosing passengers. However, a low Load Factor provides a large problem and raises SAS costs. Especially payroll expenses has been way above peers and lowered SAS profit margin greatly. The main reason for this is that employee numbers per ASK twice as high as most peers and higher salaries. Yet, SAS has with its latest strategies almost halved its payroll expenses by decreasing its personnel while lowering salaries and renegotiating pension plans. These efforts, together with a renewing and optimization of the fleet causing more a competitive FASK and lower maintenance costs, have made SAS a more profitable airline.

4.3.1.1.6 Turnover rate of Invested Capital

SAS has an annual turnover of invested capital that lies between 1,57-1,7, which was expected given that SAS ROIC was higher than its profit margin. This is double that of its peers, except Lufthansa who has a turnover well above 2, which indicates that SAS is effective in utilizing its assets. This is shown in Table 4-13.

¹⁸⁸ Flygtorget, 'Nu går MD-epoken i graven för SAS', viewed 2014-06-

^{14,&}lt;<u>http://www.flygtorget.se/Aktuellt/Artikel/?Id=10010</u>>

¹⁸⁹ Swissport, 'Swissport to take over SAS Ground Handling', viewed 2014-04-18, <<u>http://www.swissport.com/nc/news-media-center/news-releases/news-detail/article/sas-and-swissport-international-signed-letter-of-intent-swissport-to-take-over-sas-ground-handling/></u>

Turnover Invested Capital	2009	2010	2011	2012	2013	Avg. 5-year period
SAS	1,57	1,59	1,70	1,56	1,64	1,61
Norwegian	0,77	0,75	0,67	0,63	0,74	0,71
Aer Lingus	0,75	0,87	0,81	0,90	0,87	0,84
Finnair	0,88	0,79	0,86	0,90	0,89	0,87
Lufthansa	1,92	2,38	2,39	2,57	2,35	2,32
Avg. SAS and peers	1,18	1,28	1,29	1,31	1,30	1,27

Table 4-13 Turnover Invested Capital for SAS and peers

Source: SAS Group and peers annual reports 2009-2013

To analyze what items on the balance sheet that is causing relatively a high or low invested capital this thesis is using a variation of common-size analysis by calculating *days on hand* for each item, found in appendix 7. This measure conveys the number of days that an accounting item is consuming cash and this way we obtain information on the relative importance and trend of the item. ¹⁹⁰ Days on hand is calculated by the ratio found in Equation 4-10:

(4-10) **Days on hand** = $\frac{360}{turnover rate of each item}$

The turnover rate of invested capital translated into days on hand, i.e. the number of days is takes to convert invested capital into revenue is shown in Table 4-14 and simply calculated by dividing 360 with the turnover rate.

Table 4-14 Days on	hand for Invested	Capital for SAS	5 and peers
•		1	1

Days on hand for Invested Capital	2009	2010	2011	2012	2013
SAS	229,3	226,3	211,8	230,3	220,1
Norwegian (incl Boeing prepayment)	470,6	477,2	538,7	574,6	489,4
Aer Lingus (property, plant & eq.)	482,6	414,5	446,1	401,4	412,1
Finnair	402,3	401,8	418,1	453,8	408,7
Lufthansa	187,8	151,3	150,4	140,2	152,9

Source: SAS Group and peers annual reports 2009-2013

Looking at SAS & peer balance sheet items (Appendix 6), the two most cash consuming items are aircrafts & spare parts (owned) and capitalized operational leases (also aircrafts). The days on hand for each items for SAS and peers are shown in table 4-15 where its clearly visible that SAS are faster in converting their aircraft assets into revenue compared to peers. The rationales behind this would be that

¹⁹⁰ Petersen C.V. & Plenborg T., 'Financial Statement Analysis', 2012, Pearson Education Unlimited, p.115

SAS has an older fleet with a lower asset value (given deprecation) still capable of bringing in high revenues (ticket prices).

This logic is also shown as SAS days in hand decreases during the period, a result of depreciation, but also of the sale of Wideroe who operated 30 aircrafts. Norwegian's days on hand for owned aircrafts and parts are 3 times as high as SAS in 2013, which is a very poor result considering Norwegian has an even lower ratio of owned/finance leased aircrafts in relation to operationally leased aircrafts as SAS (63/93 for SAS, 28/68 for Norwegian). Explaining this is a very new fleet causing a high asset value, low ticket prices causing low revenues and maybe primarily that prepayment to Boeing for undelivered aircrafts is included – assets that currently provide 0 revenue.

While SAS days on hands for owned aircrafts has decreased, SAS days on hands for capitalized operating leases have increased, indicating a shift whereas SAS focuses on leasing instead of owning aircrafts, to increase flexibility of the fleet. Regarding the new orders for SAS long-distance fleet, SAS CEO discusses himself the possibilities of sale and leaseback opportunities.¹⁹¹ Norwegian has twice the days on hand for capitalized operating leases reflecting the larger part of operationally leased aircrafts compared to SAS. Lufthansa is the peer with the highest turnover rate of invested capital and naturally lowest days on hand. Lufthansa practically own/finance lease all of their aircrafts (659 out of 682) which shows in days of hand for capitalized leases, which is only 9,2 in 2013.

Table 4-15	Days on	hand for	r aircraft	and parts	s assets	and	capitalized	operating	leases	for	SAS
and peers											

Days on hand for aircraft and parts assets (owned/financial leases)	2009	2010	2011	2012	2013
SAS	115,3	111,8	103,2	95,4	77,2
Norwegian (incl Boeing prepayment)	117,5	171,5	205,0	235,8	232,0
Aer Lingus (property, plant & eq.)	236,0	225,2	215,4	191,5	174,2
Finnair	179,5	186,4	223,3	233,7	254,1
Lufthansa	161,8	143,7	143,5	138,8	148,7
Days on hand for capitalized operating leases	2009	2010	2011	2012	2013
SAS	145,5	137,9	122,8	174,2	179,8
Norwegian	383,4	347,4	371,6	399,5	329,8
Aer Lingus	154,0	130,0	136,2	129,7	126,8
Finnair	279,8	271,7	246,7	273,7	207,4
Lufthansa	35,4	16,2	13,0	9,0	9,2

Source: SAS Group and peers annual reports 2009-2013

¹⁹¹ Aviation Week, 'SAS renews widebody fleet with A350s, A330s', viewed 2014-06-30, <<u>http://aviationweek.com/awin/sas-renews-widebody-fleet-a350s-a330s</u>>

Operating liabilities reduces invested capital as it finances operational activities. The days on hand for operating liabilities for SAS are relatively similar to its peers, as seen in Table 4-16. As operating liabilities primarily consists of accounts payables, provisions and unearned transportation revenue (tickets sold but not used), this is an indication that SAS still has similar credit times to suppliers and customer confidence compared to peers.

Days on hand for total operating liabilities	2009	2010	2011	2012	2013
SAS	-132,8	-136,6	-116,8	-125,7	-115,1
Norwegian	-85,6	-92,2	-90,8	-105,9	-124,2
Aer Lingus	-153,5	-133,5	-104,8	-95,2	-94,2
Finnair	-126,1	-125,0	-136,1	-136,8	-143,6
Lufthansa	-129,6	-114,8	-104,9	-101,8	-107,7

Table 4-16 SAS and peers days on hand for total operating liabilities

Source: SAS Group and peers annual reports 2009-2013

In summary, SAS can enjoy a high turnover rate of invested capital given high ticket prices, an aging fleet with lower asset value while still enjoying confidence from suppliers (normal credit times) and customers (advance ticket payments).

It is important to not that given the current low interest rates, this thesis use, as mentioned in section 4.2.1.3 regarding classification of capitalized operating leases, a rate between 4 and 5% when calculating the asset value of operational leases. This produces a multiplier effect of >10x rental expenses which is higher than the 7x and 8x multiplier used by SAS and Wall Street – magnifying (but providing an accurate) asset value of leases and invested capital and therefore reducing the turnover rate of capital.

4.3.2 Financing Analysis - Liquidity risk

SAS's liquidity risk will be investigated both from a short-and long term perspective. The analysis of the short term liquidity risk is done in order to analyze SAS's ability to service and satisfy its short-term obligations whilst the analysis of the long term liquidity risk will analyze SAS's ability to service all its future debt obligations. The short term liquidity risk will be analyzed using the current ratio, the quick ratio as well as the interest coverage ratio whilst the analysis of the long term liquidity risk will be done using the financial leverage-ratio and the solvency ratio.

4.3.2.1 Short term liquidity risk

4.3.2.1.1 Current Ratio

The current ratio is a measure of a company's short term liquidity risk. ¹⁹²As is illustrated in the formula below, the current ratio is calculated by dividing current assets by current liabilities. According to Petersen & Plenborg, a current ratio above 2 indicates a good ability to cover financial commitments. ¹⁹³However, it may be troublesome to compare the current ratio between different industries characterized by different business models. Service sectors tend to have lower amounts of inventory at the same time as the sector tends to have a high amount of short term liabilities, rendering in a low current ratio. As oppose to this is the manufacturing sector which often tends to have high amounts of inventory and low amounts of current liabilities rendering in a high current ratio.

(4-11) **Current Ratio** = $\frac{Current Assets}{Current Liabilities}$

SAS's short-term liquidity risk measured as the current ratio is illustrated in table 4-17. SAS exhibits a current ratio which is well below 1 during the last 5 years, thus meaning that SAS's current liabilities far exceed its current assets. The analysis also indicates that SAS short term liquidity risk was the highest during year 2012 which corresponds well with SAS most severe financial crisis during that same year.

Current ratio	2009	2010	2011	2012	2013	Mean
SAS	0,63	0,74	0,65	0,46	0,55	0,61
Norwegian	0,99	0,83	0,63	0,60	0,74	0,76
AerLingus	1,62	1,92	2,23	2,23	1,81	1,96
Finnair	0,98	1,18	0,81	0,81	0,81	0,92
Lufthansa	0,95	1,01	0,87	0,97	0,86	0,93
Mean yearly	1,04	1,13	1,04	1,01	0,95	1,03

Table 4-17 SAS and	peers current ratio
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Source: SAS Group and peers annual reports 2009-2013

SAS's peers exhibits average current ratios in the range of 0.75-1.96 for the past five years as is illustrated in the table above. With an average current ratio of 0.60 for the past five years, SAS thereby

¹⁹² Petersen C.V. & Plenborg T, p. 155

¹⁹³ Ibid

¹⁹⁴ Ibid, p.156

exhibits the highest short term liquidity risk among its peers. AerLingus exhibits by far the lowest short term liquidity risk compared to all other peers due to very high deposits holdings.

4.3.2.1.2 Quick Ratio

The quick ratio is just in accordance with the current ratio, a measure of a company's short term liquidity risk. However, the difference between the current ratio and quick ratio is that the quick ratio excludes the effect of inventory in the estimation of current assets. This is done in order to only include the most liquid current assets.¹⁹⁵ The exclusion of inventory results in a more conservative short term liquidity risk measure.

$(4-12) \quad Quick \ ratio = \frac{Current \ assets \ excl.inventory}{Current \ liabilities}$

As is seen in the table below, the quick ratio exhibits very similar results to the current ratio, i.e. a high short term liquidity risk of SAS. This is in line with expectations since airline companies rarely hold a high amount of inventory on its balance sheets.

Quick ratio	2009	2010	2011	2012	2013	Mean
SAS	0,59	0,69	0,60	0,41	0,52	0,56
Norwegian	0,97	0,81	0,61	0,58	0,72	0,74
AerLingus	1,62	1,91	2,23	2,23	1,80	1,96
Finnair	0,94	1,11	0,76	0,79	0,78	0,88
Lufthansa	0,88	0,94	0,80	0,90	0,80	0,86
Mean yearly	1,00	1,09	1,00	0,98	0,93	1,00

Table 4-18 SAS and peers and quick ratio

Source: SAS Group and peers annual reports 2009-2013

4.3.2.1.3 Interest Coverage Ratio

The interest coverage ratio is a measure of a company's ability to service its ongoing interest payments using earnings generated by the company's operations. More specifically the ratio illustrates how many times operating profit covers net financial expenses and is calculated by dividing earnings before interest and tax (EBIT) by net financial expenses (NFE).¹⁹⁶

(4-13) Interest coverage ratio = $\frac{EBIT}{Net financial expenses}$

¹⁹⁵ Ibid, p.155

¹⁹⁶ Ibid

According to Petersen & Plenborg there is no rule of thumb for an appropriate level of the interest coverage ratio due to different levels of the ratio across industries.¹⁹⁷ However, as is illustrated in table 4-19 SAS exhibited the lowest ability among its peers to service its interest payments during the last five years. However, following the cost saving initiatives undertaken during the fall 2012, SAS exhibited a significant improvement in its ability to service its interest payments.

Interest coverage ratio	2009	2010	2011	2012	2013	Mean
SAS	-1,74	-0,61	0,44	0,10	1,55	-0,05
Norwegian	3,16	1,69	1,38	1,91	1,73	1,97
AerLingus	-13,09	3,21	4,54	2,84	2,63	0,02
Finnair	-1,08	0,66	-0,19	1,17	1,25	0,36
Lufthansa	0,63	3,96	2,16	4,41	2,62	2,76
Mean yearly	-2,42	1,78	1,67	2,08	1,95	1,01

Table 4-19 SAS and peers interest coverage ratio

Source: SAS Group and peers annual reports 2009-2013

What may be concluded from the analysis of the short term liquidity is that SAS historically has exhibited a significantly higher short-term liquidity risk compared to its peers. In addition, both the current-and the quick ratio signals high short term liquidity risk also for the most recent fiscal year. However, the interest coverage ratio signals a somewhat lower short term liquidity risk during the year 2013 most likely as a result of the divestments of Wideroe as well as SAS Ground Handling. However, the high short term liquidity risk identified by both the current as well as the quick ratio may have severe implications for SAS. A high short-term liquidity risk, i.e. low liquidity, may for example lead to the inability to enter into hedging contracts. As is mentioned in section 4.3.1.1.5, entering into hedging contracts require the upfront payment of a clearing house margin and are therefore costly. In the annual report 2013, SAS mentions that the currently low level of currency exposure being hedged (46%) is because of the group's weak financial position and restricted credit limit.¹⁹⁸ The inability of SAS to enter into currency-and oil hedges may come at very high costs and may lead to an even weaker financial position if spot prices on oil were to go up or if the USD (deficit currency) strengthens

¹⁹⁷ Ibid, p.156

¹⁹⁸ SAS Group Annual Report 2013, p.33

towards the SEK. In addition to this, research by Carter, Roger & Simkins (2006) further indicate that jet fuel hedging is positively related to airline firm value and that the valuation premium increases the higher the proportion of future fuel requirements being hedged.¹⁹⁹

Following the analysis of SAS short term liquidity risk, the company's long term liquidity risk will now be analyzed using the financial leverage ratio as well as the solvency ratio.

4.3.2.2 - Long term liquidity risk

4.3.2.2.1 Financial leverage

Financial leverage is a measure of a company's long term liquidity risk (Petersen & Plenborg, 2012). As is illustrated by the formula it is calculated as net interest bearing debt divided by equity.²⁰⁰

(4-14) Financial leverage = $\frac{Net \text{ interest bearing debt}}{Market Value of Equity}$

As can be seen from the above formula this thesis will apply the market value of equity in the calculations of the financial leverage and the analysis of the long term liquidity risk. This is done since it is generally recommended to use market values if such are available since they are closer to the realizable value.²⁰¹ However, the same ratios but based on book values will still be presented in order to provide such an extensive analysis as possible. Furthermore, it is out of great importance to include all financial obligations when estimating the leverage ratio. This is especially important for the airline companies which often exhibits significant amounts of off balance sheet debt such as operational leases. As discussed upon earlier, SAS leases a significant part its fleet through operational leases. Following the reclassification of these operational leases into financial leases (see section 4.2.1.3) the leases are added to interest bearing debt in the reorganized balance sheet and thereby included in the estimation of SAS's financial leverage.

In addition to the financial leverage-ratio, the analysis of SAS's long term liquidity risk will also include the solvency ratio. The solvency ratio and the financial leverage ratio provide the same information, however presented differently, and in general a high financial leverage and a low solvency

¹⁹⁹ Carter, D., Rogers, D.A. & Simkins, B.J. (2006) Hedging and Value in the Airline Industry, *Journal of Applied Corporate Finance*, Vol. 18, Issue. 4, pp. 21-33

²⁰⁰ Petersen C.V. & Plenborg T, p. 158-161

²⁰¹ Ibid

ratio signals high long term liquidity risk.²⁰² The solvency ratio will, in accordance with the financial leverage ratio, be based on market values and is estimated using formula 4-15.

(4-15) Solvency ratio =
$$\frac{MV Equity}{(NIBD + MV Equity)}$$

Long-term liquidity risk ratios	2009	2010	2011	2012	2013	2013 modified
D/BVE-ratio	1,51	0,77	0,96	1,43	1,26	7,14
D/MVE-ratio	1,73	1,51	4,54	6,17	2,57	4,24
Solvency ratio (BVE)	0,40	0,56	0,51	0,41	0,44	0,12
Solvency ratio (MVE)	0,37	0,40	0,18	0,14	0,28	0,19

Table 4-20 SAS Long-term liquidity risk ratios

Source: SAS Group Annual Reports 2009-2013

As seen in the above table 4-20, the introduction of the new IAS 19 Employee benefit regulation and the new pension agreements significantly alters the leverage-and solvency ratio of SAS. From the reported level of 2,57 the leverage ratio increases up to 4.24 and the solvency ratio accordingly decreases to only 0.19. As seen in SAS reorganized Balance Sheet under the column 2013 modified (Appendix 6), this is due to reduced pension funds by 9079 MSEK, which increases SAS net interest bearing assets (NIBD) with a corresponding amount. The book value of SAS Pension Funds is calculated as the net of pension fund/plan assets and liabilities/commitments while subtracting actuarial gains and losses and plan amendments. The reduction of 9079 MSEK is a result of impaired actuarial gains and losses and plan amendments relating to pensions and the sale of Wideroe from IAS 19 (-11,3 billion SEK), reduced pension commitments of (+12,9 billion SEK) and reduced pension plan assets (+1202 MSEK) has also resulted in a reduction of SAS Shareholder's equity of -7877 MSEK. This change is very visible in SAS D/BVE ratio, which has increased hugely as seen in Table 4-20.

High leverage ratios or accordingly low solvency ratios signals high long term liquidity risk. To be able to draw any conclusions about this risk, it is important to compare financial ratios to an industry benchmark. Petersen & Plenborg (2012) suggests the average solvency ratio in the airline industry, based on a selection of 49 firms, to be 67.5%. Throughout the last five years, SAS exhibits solvency

²⁰² Petersen C.V. & Plenborg T, p. 158-161

ratios well below this number thereby further strengthening the argument for classifying SAS as a company exhibiting a high long term liquidity risk. However, comparing the solvency ratio of SAS with its peers, SAS's solvency is just slightly below the peer group average and both Norwegian and especially Finnair exhibits lower solvency ratios. However, would the current IAS 19 regulations been implemented earlier it is most likely that SAS historical solvency ratios would have much lower than the stated ones – while also having higher lower payrolls costs and better net earnings.

Solvency ratios	2009	2010	2011	2012	2013	2013 modified	Mean
SAS	0,37	0,40	0,18	0,14	0,28	0,19	0,27
Norwegian	0,33	0,30	0,12	0,22	0,26	n/a	0,25
AerLingus	0,27	0,49	0,31	0,45	0,47	n/a	0,40
Finnair	0,27	0,27	0,14	0,13	0,15	n/a	0,19
Lufthansa	0,44	0,63	0,46	0,59	0,48	n/a	0,52
Mean yearly	0,34	0,42	0,24	0,31	0,33	0,19	0,33

Table 4-21 SAS and peers solvency ratios

Source: SAS Group and peers annual reports 2009-2013

It is however important to remember that a low solvency ratios does not necessarily have to mean over indebtedness and that the company is in need of debt in order maintain its business. A low solvency ratio may also be explained by what is called as "trading on equity", i.e. the company may be delivering returns on borrowed capital that exceeds its cost of capital. For Norwegian this may be the case since the company is profitable. For Finnair and SAS however this is not highly likely since both companies have been struggling financially over the last years.

What is further highly interesting regarding the solvency ratios of SAS and its peers is that only one (Lufthansa) out of the five airlines analyzed has been able to maintain a solvency ratio consistently over 40% the last five years. This is so despite the study by Fernandes & Capobianco (2001) which finds the optimal amount of shareholder contributions to be between 40% - 75% for the airline industry.²⁰³ In between this range airline companies tend to be more efficient and exhibit superior financial performance measured as return on equity, operating margin, total asset turnover as well as return on net assets.

²⁰³ Fernandes, E. & Capobianco, H.M.P. (2001) Airline Capital Structure and Returns, *Journal of Air Transport Management*, Issue 7, pp. 137-142

Fernandes & Capobianco (2001) furthermore in there study create a financial leverage interval where a financial leverage of 1.3-2.5 (equivalent to a solvency ratio of 40%-75%) is seen as great, 2.5 - 4.2 is a fuzzy grey area while a financial leverage above 4.2 is seen as bad. See figure 4-5 below.

Figure 4-5 Financial leverage interval by Fernandes & Capobianco

-	great	fuzzy		bad
1.3	2.5		4.2	

Source: Fernandes & Capobianco, 'Airline Capital Structure and Returns'

As mentioned earlier, companies exhibiting a financial leverage ratio in the first section ("great") of the interval tend to deliver high efficiency as well as superior performance. Companies found in the midsection ("fuzzy") however exhibit a non-optimal capital structure and a high financial risk. The last section of the interval ("bad") identify companies with an excess elevation of financial risk and which are vulnerable to creditors and "a small oscillation in income could lead the company to fail on the execution of contracts" 204

	peers ie er uge i					
Leverage ratios	2009	2010	2011	2012	2013	2013 modified
SAS	1,73	1,51	4,54	6,17	2,57	4,24
Norwegian	2,02	2,36	7,17	3,58	2,78	n/a
AerLingus	2,67	1,04	2,22	1,21	1,14	n/a
Finnair	2.69	2.68	6.40	6.55	5.68	n/a

0,58

1,63

Table 4-22 SAS and peers leverage ratios

Source: SAS Group and peers annual reports 2009-2013

1,27

2,08

As may be seen in the table above only Lufthansa has been able to maintain a financial leverage ratio in between 1.3-2.5 consistently over the past five years. SAS however only managed to exhibit what is regarded as an efficient capital structure during the years 2009 to 2010. For the last three years, the company has instead either been in in the "fuzzy" area or what is regarded as the "bad" area. Both of these two areas signals high long term liquidity risk and thus thereby further strengthen the previously drawn conclusions that SAS currently exhibits a relatively high long term liquidity risk. However, it is also highly worth noting that SAS pension commitments is expected to drop an additional 6,6 billion

1,19

4,30

0,70

3,64

1,07

2,65

n/a

4,24

Lufthansa

Mean yearly

Mean 3,30

3,58

1,66

4,80

0,96

2,86

²⁰⁴Ibid, p.141

SEK until 17/18 as a result of the new pension agreements. This will strengthen SAS NIBD with the corresponding amount and provide better leverage/solvency ratios.

4.3.2.3 - Net Borrowing Cost

To see if SAS and peers financial leverage reflects in their cost of debt it's valuable to examine their net borrowing cost (NBC) as defined in the below equation 4-16.

(4-16) Net Borrowing Cost (NBC) = $\frac{Net \ financial \ expenses \ after \ tax \ (NFE \ AT)}{Net \ interest-bearing \ debt \ (NIBD)}$

According to Petersen & Plenborg, the NBC should be interpreted by care as it rarely matches the firm's borrowing rate exactly. This is because the NBC is affected by the difference between deposit and lending rates and because financial items such as currency gains are included.²⁰⁵ However, as seen in Table 4-23, the NBC matches SAS and peers leverage ratios. Finnair, who by far has the highest leverage ratios, also has the by far the highest Net Borrowing costs and Lufthansa, the least levered firm, has the lowest. SAS pre IAS 19 leverage ratios is slightly lower than the ratios of Norwegian, which also corresponds in a slightly lower average NBC.

Table 4-23 SAS and peers net borrowing cost (NBC)

Net Borrowing Cost	2009	2010	2011	2012	2013	Mean
SAS	-6%	-13%	-25%	-10%	-5%	-12%
Norwegian	-14%	-19%	-11%	-13%	-11%	-13%
Aer Lingus	-2%	-14%	-7%	-9%	-8%	-8%
Finnair	-24%	-39%	-22%	-58%	-34%	-36%
Lufthansa	-6%	-13%	-6%	-8%	-3%	-7%

Source: SAS Group and peers annual reports 2009-2013

4.3.3 Return on Equity

As seen in the DuPont framework in the beginning of this profitability section, Return on equity (ROE) is the result of both operating profitability and financial leverage. The relationship between operating profitability (measured as ROIC), NBC and Financial Leverage (NIBD/BVE) as measured in ROE is found in the following equation 4-17.²⁰⁶

(4-17) Return on equity = $ROIC + (ROIC - NBC) * \frac{NIBD}{RVF}$

²⁰⁵ Petersen C.V. & Plenborg T., 'Financial Statement Analysis', 2012, Pearson Education Unlimited, p.117

²⁰⁶ Petersen C.V. & Plenborg T., p.117

As seen in Table 4-24, SAS ROE is the lowest among peers with an average negative return of 13%. This is not surprise given SAS ROIC (lowest among peers) and high financial leverage (especially when measured by book values of equity) and average net borrowing costs. However, the trends in SAS ROIC, NBC and financial leverage are all positive, which naturally translates into a positive trend for ROE. Looking at SAS 2013 modified result (incl IAS 19 changes and new pension terms), the ROE is highest among all peers during all years, which indicates a positive future outlook for SAS. It should be noted that the main reason for this great ROE is the reduction of SAS book value of equity from SEK 11,1 billion to 3,2 billion.

Table 4-24 SAS and peers return on equity

Return on Equity (ROE)	2009	2010	2011	2012	2013	2013 modified	Mean
SAS	-26%	-15%	-14%	-12%	4%	30%	-13%
Norwegian	28%	10%	6%	19%	12%		15%
Aer Lingus	-18%	6%	9%	4%	4%		1%
Finnair	-12%	-3%	-12%	2%	2%		-5%
Lufthansa	-2%	14%	0%	12%	5%		6%

5 SWOT Analysis

The SWOT analysis concludes the results found in the Strategic and Financial analysis and outlines SAS Strengths, Weaknesses, Opportunities and Threats.

Strengths

- Still the biggest airline (largest market share) in the Nordics
- Customers willing to pay higher than peer ticket prices. Avg. revenue per km almost twice as high as Norwegian's in 2013.
- Strong turnover of invested capital. Rationales behind this is SAS high ticket prices and their old fleet with a relative peer low asset value.
- Punctuality
- Access to popular airport slots
- As the oldest airline in the Nordics, SAS brand awareness and identification is likely much stronger compared to newer rivals
- Old and awarded bonus program (EuroBonus) give rise to customer loyalties

Weaknesses

- Lower Load Factor compared to peers boosts costs.
- High payroll costs. Even while costs as pct. of revenue has dropped considerably since 2009, they are still above peer levels. A main explanation behind this is that SAS ASK per no. of employees are much lower than all peers except Lufthansa – reflecting an inefficiency in their use of personnel. Another reason is higher wages compared to peers.
- Higher fuel costs per ASK then peers (except Lufthansa) reflects an old fleet.
- High short- and long-term liquidity risk
- Strained liquidity affects SAS possibilities of fuel and currency hedging.

Opportunities

- GDP/revenue(passenger numbers) correlation. An industry and GDP growth is forecasted both in a short-term (2020) and long-term perspective (2050)
- Technological improvements (composite materials, new engines) reduces fuel expenses and increases safety while web services allow airlines to cut personnel costs.
- Possibility of low cost biofuels
- Avoiding high taxes and inflexible labour laws by setting up subsidiaries in countries such as Ireland.
- Greater competition among aircraft manufacturers likely to lower prices.

Threats

- The airline industry has historically suffered poor profitability.
- Uncertainty regarding CO2 emission rights prices
- Full deregulation of the airline industry in the EU did not happen until 2008 possibility of tougher competition, especially in the form of LCCs. It is shown historically that the rise of LCCs has been at the cost of FSCs
- GDP/Revenue (passenger numbers) correlation. Industry sensitive to GDP growth downturns i.e. sensitive to changes in household income (financial crisis. Market bubbles)

- Increasing Oil prices (War, Middle East crises
- Consumers Increasingly price sensitive, as air travel becomes a commodity
- Competitors avoiding high taxes and inflexible labor laws by setting up subsidiaries in countries such as Ireland
- Extension of train/high-speed train railroads in the Nordics
- Increasing video/telecommunications might steal business travellers.

6 Valuation of SAS

The valuation of SAS in this thesis is done with an enterprise Discounted Cash Flow (DCF) model. This model discounts the free cash flow, i.e. the cash flow to all investors, at the weighted average cost of capital (WACC) to calculate the enterprise value. The WACC is calculated in the following section. To determine the equity value, and the share price, the claims on cash flow from debt holders and non-equity holders are subtracted from enterprise value 207 As discussed in the methodology section, another way of determining equity value is to discount the equity cash flows with the cost of equity – a free cash flow to equity (FCFE) model. However as its challenging matching these cash flows with the correct cost of equity, Koller et al recommends using the enterprise DCF model. The determination of the SAS free cash flow is the second section in this chapter. In the last section the full DCF model is presented and the fair value of SAS share on the 1st of April, 2014.

6.1 Weighted Average Cost of Capital (WACC)

The WACC is a weighted average of the required rate of return for each type of funding source utilized in a company and is estimated using formula 6-1.²⁰⁸

(6-1)
$$WACC = \frac{D}{V} * rd * (1-t) + \frac{E}{V} * re$$

In the above formula, only two sources of funding is given, however the WACC-formula may be extended to include further funding sources apart from debt and equity such as hybrid funding sources like preferred equity (ibid). The estimation of SAS cost of capital will commence with an estimation of

²⁰⁷ Koller T., Goedhart M., Wessels D.,p.104

²⁰⁸ Petersen C.V. & Plenborg T., p.117

the cost of common equity suing the CAPM-formula. This is then followed by an estimation of the cost of preferred equity as well as the cost of debt of SAS. Finally the capital structure of SAS will be determined.

6.1.1 Cost of Common Equity

When estimating the cost of common equity of SAS, the Capital Asset Pricing Model (CAPM) will be applied, this is in accordance with Koller et al (2010). Furthermore, Koller et al mentions that the CAPM-formula is the most commonly used model and also remains to be the best model for estimating the cost of equity to be used in a company valuation.²⁰⁹ This is also in line with the findings of Bruner, Eades, Harris & Higgins (1998).²¹⁰ The CAPM-formula is found in equation 6-2.

(6-2)
$$CAPM = Rf + \beta * (Rm - Rf)$$

Below the components needed for estimating the cost of equity using the CAPM-formula will be estimated.

6.1.1.1 - Risk-free Rate

The first parameter of the CAPM-formula is the risk-free rate. Koller et al. (2010) speaks for the use of long-term government securities as a proxy for the risk free rate. It is furthermore out of importance to use government bond yields which are denominated in the same currency as the company's cash flows since inflation then will be "modeled consistently between cash flow and discount rate".²¹¹ In accordance with this, the risk free rate to be used in this thesis is based on Swedish government bonds with a maturity of 10 years. By the end of august 2014, the yield of such a bond was approximately 1.40 %.²¹² However, this extremely low bond yield may hardly be said to constitute as a good proxy for

²¹² Bloomberg, 'Swedish government bond 10-yr note', viewed 2014-06-25, http://www.bloomberg.com/quote/GSGB10YR:IND

²⁰⁹ Koller T., Goedhart M., Wessels D.,p.36

²¹⁰ Bruner, R.F., Eades, K.M., Harris, R.S., & Higgins, R.C. (1998) *Best Practices in Estimating the Cost of Capital: Survey and Synthesis*, Financial Practice and Education, Spring/Summer

²¹¹ Koller T., Goedhart M., Wessels D., p.241,

the future interest rate level. As is seen in figure 6-1, the current level is significantly lower than the average for the last 10 years.





Source: Own creation based on data from the Swedish Riksbank

As a result of the currently very low interest rates, this thesis will use the 10-year average yield of a Swedish government bond with a maturity of 10 years as a proxy for the risk free rate. This rate is 3,03 %. The use of a 10-year average instead of the current level will provide the valuation with a more reasonable estimation of the risk-free rate since it is very likely (following the predictions by the Swedish Riksbank) that the interest rate will appreciate from today's historically low levels to a level closer to the historical mean during the forecasting period.

6.1.1.2 - Beta

The Beta of SAS's common equity is estimated using a simple *OLS*-regression analysis. The regression analysis includes weekly return data for a time period of 3 years with the OMX Nordic 40 as a proxy for the market portfolio. The use of weekly return data from the last three years results in a total of 156 observations which is sufficient for the beta to be statistically robust at the same time as it is well above the recommended minimum of 60 observations as stated by Koller et a (2010). Using weekly data at the same time also avoids possible daily trade noise. The regression analysis indicates a beta of SAS of 1.23. (See appendix 10 for calculations)

6.1.1.3 - Market Risk Premium

The last component of the CAPM-formula is the market risk premium. The market risk premium is according to Brealey, Myers and Allen (2011) the difference between the expected return on the market and the risk free interest rate.²¹³

(6-3) Market Risk Premium = (Rm - Rf)

According to Brealey et al (2011), the risk premium has averaged roughly 7,1 % per year since 1900. However, the level of the market risk premium is a much disputed area and Koller et al (2010) mention that while the market risk premium is difficult to measure, various models tend to point towards a market risk premium rather in the range between 4,5 % - 5,5 %.²¹⁴ Furthermore, Bruner et al (1998) performed a survey of industry practices and found that a majority of corporations used a risk premium between 5 %- 6 % while a majority of financial advisors tended to use a risk premium in the range of 7 %- 7,4 % when estimating the cost of equity through the CAPM-formula.²¹⁵ In addition to this, Fernandez, Aguirreamalloa & Corres (2012) performed a survey among 82 countries regarding the most commonly used market risk premium and found the average in Sweden to be 5,9%.²¹⁶ However, Turner & Morrell (2003) suggest the use of a market risk premium of 4.5 % when applying the CAPM-formula for estimating the cost of equity.²¹⁷ Since the study by Turner & Morrell (2003) is specifically aimed at the airline industry the use of a <u>4.5%</u> market risk premium also seems the most appropriate in the estimation of the cost of common equity of SAS. The use of a 4.5% market risk premium is furthermore also in the range as suggested by Koller et al (2010). Following the estimation of the market risk premium, it is now possible to estimate the full cost of common equity of SAS:

Cost of common equity = 3.03 % + 1,23 * 4,5% = 8.57 %

²¹³ Brealey, R.A., Myers, S.C. & Allen, F. (2011) *Principles of Coporate Finance*, Global Edition, McGraw-Hill Irwin ²¹⁴ Koller T., Goedhart M., Wessels D., p.241,

²¹⁵ Bruner, R.F., Eades, K.M., Harris, R.S., & Higgins, R.C. (1998) *Best Practices in Estimating the Cost of Capital: Survey and Synthesis*, Financial Practice and Education, Spring/Summer

²¹⁶ Fernandez, P., Aguirreamalloa, J. & Corres, L. (2012) *Market Risk Premium Used in 82 Countries in 2012; a Survey with 7.192 Answers*, IESE Business School, University of Navarra, January

²¹⁷ Turner, S. & Morrell, P. (2003) An Evaluation of Airline Beta Values and their Application in Calculating the Cost of Equity Capital, Journal of Air Transport Management, Vol. 9, Issue 4, July, pp. 201-209

6.1.2 Cost of preferred equity

During the 7th of March 2014, SAS issued a total amount of 7 million preferred shares on Nasdaq OMX Stockholm (sas.se). Prior to the issuance of the preferred shares SAS had a total of 329 million shares outstanding and therefore the total amount of shares outstanding after the issuance was 336 million shares. The preferred shares were issued at 500 SEK/share with a yearly dividend of 50 SEK.²¹⁸ This result in a dividend yield of 10% given the preferred shares issuances price (ibid). However, by the end of March the value of the preferred shares had appreciated up to 514 SEK/share and as a result the dividend yield depreciated down to roughly **9.73**% as seen in the calculation below. This will be applied as the cost of preferred equity in the estimation of the weighted average cost of capital of SAS.

Cost of preferred equity
$$=$$
 $\frac{50}{514} = 9.73\%$

6.1.3 <u>Tax</u>

The corporate tax rate in Sweden is 22%.²¹⁹ The tax rate is believed to remain at this level and therefore 22% is used throughout the full forecasting period.

6.1.4 Cost of Debt

According to Koller et al (2010), the ideal method for estimating the cost of debt for investment grade companies is to use the yield to maturity (YTM) on the company's long term, option free bonds.²²⁰ SAS issued bonds during February 2014, however these bonds come with the option to convert into common equity. Koller et al (2010) mentions that the YTM of the bond will be distorted when attached options, such as convertibility or callability, is included since the value of such options will affect the value of the bond but not its actual cash flows.²²¹ In addition to this, SAS is currently rated well below investment grade. To use the YTM on a below investment grade bond as a proxy for the cost of debt may, according to Koller et al (2010), cause significant error and as a result the YTM on SAS's bonds does not constitute as a suitable proxy for the company's cost of debt. The alternative is to divide the company's net financial expenses (NFE) with its net interest bearing debt (NIBD). However, in the

 ²¹⁸ SAS Group, Press releases, '2014-02-24', <<u>http://se.yhp.waymaker.net/sasgroup/release.asp?id=269296</u>
 ²¹⁹ Ekonomifakta.se, 'Bolagsskatt- internationellt', viewed 2014-07-05,

">http://www.ekonomifakta.se/sv/Fakta/Skatter/Skatt-pa-foretagande-och-kapital/Bolagsskatt/

²²⁰ Koller T., Goedhart M., Wessels D., p.261-262

²²¹ Ibid

case of SAS, these estimate fluctuates significantly historically and does therefore not either constitute as a suitable proxy for the future cost of debt of SAS. This is discussed in section 4.3.2.3 and shown clearly in Table 4.16. Instead this thesis will follow the methodology suggested by Petersen and Plenborg (2012) in the estimation of SAS's cost of debt, shown in equation 6-4.²²²

(6-4)
$$Rd = (Rf + Rs) * (1 - t)$$

The formula consists of three components, the risk free rate, the risk premium on debt (credit spread) as well as the corporate tax rate. Both the risk free rate as well as the corporate tax rate is known since before and therefore only the risk premium on SAS's debt requires an approximation before an estimate of SAS's cost of debt is possible. Since SAS is currently rated B- by Standard & Poor as well as B3 by Moody's, this thesis will make use of the BofA Merrill Lynch High Yield B Option-Adjusted Spread Index for being able to provide an estimate of the risk premium (credit spread) on the debt of SAS.²²³ This is shown in figure 6-2.





BofA Merrill Lynch HY B Index

Source Own creation based on data from Federal Reserve Bank of St. Louis

Just as in the case with the risk free rate, the current level of the spread (3.80%) is well below the historical average of 5.55%. The currently low credit spreads are the result of the historically low yields

²²² Petersen C.V. & Plenborg T., p.265

²²³ Federal Reserve Bank of St. Louis - economic research, 'BofA Merrill Lynch High Yield B Option-Adjusted Spread', < <u>http://research.stlouisfed.org/fred2/series/BAMLH0A2HYB</u>>

on government bonds which forces investors into more risky assets such as high yield bonds in the search for yield.²²⁴ In addition to this, the default rates are also historically low which further spurs the inflow of capital into the high yield segment and narrowing the spread further. However, the currently low credit spread on high yield bonds will most likely not prevail throughout our forecasting period. This is since the current environment even allows for companies of very poor quality and with a very low ability to service its debt over time to issue bonds at very favorable terms. Such a situation will sooner or later lead to a surge in default rates with higher yields and widening spreads as a result.²²⁵ This thesis will therefore, just as with the risk free rate, apply the 10 year average of the credit spread in order to achieve a normalized proxy for the risk premium of debt throughout the forecasting period. This results in a cost of debt of 6.65% as seen in the following calculation.

$$Rd = (3.03\% + 5.55\%) * (1 - 22\%) = 6.65\%$$

6.1.5 <u>Capital Structure / Debt-to-Equity Ratio</u>

The final component needed before an estimation of SAS's weighted average cost of capital is possible is the capital structure. According to Petersen & Plenborg (2012) market values must always be used when estimating the capital structure since the market values reflect the true opportunity cost of investors.²²⁶ In addition to this, Koller et al (2010) argues for the use of the target capital structure when valuing a company. This is since the "current capital structure may not reflect the level expected to prevail over the life of the business".²²⁷ Furthermore, in the survey performed by Bruner et al (1998) it was found that a slight majority of corporations use target ratios whilst a vast majority of financial advisors use the target capital structure and so is also the case for SAS. This thesis will therefore use the current capital structure based on market values when determining the weighted average cost of capital. The book value of debt is assumed to be coherent to its market value. The book value of debt is the net interest-bearing debt (NIBD) stated in the 2013 IAS 19 modified SAS Balance Sheet column, as

²²⁴ Forbes, 'Code red in high yield', viewed 2014-07-10, <<u>http://www.forbes.com/sites/greatspeculations/2014/07/25/code-</u> red-in-high-yield>

²²⁵ Ibid

²²⁶ Petersen C.V. & Plenborg T., p.265

²²⁷ Koller T., Goedhart M., Wessels D.,p.266

²²⁸ Bruner, R.F., Eades, K.M., Harris, R.S., & Higgins, R.C. (1998)

these values (argued in section 4.2.3 and 4.3.2.2) better illustrates SAS current financial situation and capital structure. This results in a capital structure that is illustrated in table 6-1.

Table 6-1 SAS current capital structure based on market values. Price/share of common and preferred equity as of 31st of March 2014.

Capital structure mSEK	As of 31st of March	%	Price/share	No. Shares
Common equity	4721	15,2%	14,35	329000000
Preferred equity	3598	11,6%	514	7000000
Debt (NIBD 2013 IAS 19 modified)	22767	73,2%	-	-
Enterprise value	31086	100,0%	-	-

Source: SAS Group Annual Report 2013 and Bloombergs database for SAS share values (Own creation)

SAS's weighted average cost of capital

Following the computations of the above parameters, the weighted average cost of capital (WACC) of SAS may now be estimated using formula 6-1:

6.2 Cash Flow Forecasting

The free cash flow (FCF) to all investors is according to Koller et al. determined by the following equations (6-5, 6-6):²²⁹

(6-5) **FCF** = **NOPAT** – **Net Investments**

(6-6) Net Investments = Invsted Capital (t + 1) – Invested Capital (t)

To forecast SAS free cash flow one must therefore forecast both SAS Income Statement, to calculate NOPAT and SAS Balance Sheet (Operating Side) to calculate Invested Capital. SAS Balance Sheets and Income Statements are forecasted as pro forma statements. To prepare these statements a salesdriven forecasting approach is used, whereas different accounting items are driven based on their level of activity. The activity is measured in terms of key indicators called financial value drivers which mirrors the company's underlying performance, such as revenue growth.²³⁰

²²⁹ Koller T., Goedhart M., Wessels D.,p.40

²³⁰ Petersen & Plenborg, p. 175

Koller et al. recommends a total forecasting period of 10-15 years, with a detailed 5-7 year forecast and a simplified forecast the remaining years.²³¹ Petersen & Plenborg uses 5-year forecast and Rosenbaum & Pearl argues for the same length.²³² This thesis uses an explicit 8-year forecasting period due to the lack of detailed forecast data for variables (i.e. GDP and Oil price - used when forecasting the financial value drivers) for longer time periods. Additionally, this is the time period in which SAS is expecting delivery of new aircrafts given it's major fleet renewal order made in 2011, which is affecting leasing costs and capital expenditures. The forecasting of a terminal period (9th year) is also done to calculate the NOPAT for the terminal year. Based on this value, NOPAT_{t+1} and an estimated growth factor (*g*) of NOPAT in perpetuity and an expected long-term rate of return on new invested capital (RONIC), a continuing value is calculated given the following Equation 6-7, suggested by Koller et al:

(6-7) Continuing Value_t =
$$\frac{NOPAT_{t+1}(1-\frac{g}{RONIC})}{WACC-g}$$

6.2.1 Forecasting SAS Income Statement

6.2.1.1 - Revenue Growth

As stated in the financial analysis (ROIC analyses), most part of SAS total revenue comes from its passenger revenue. In SAS common size income statement, the percentage of total revenue attributable to passenger revenue increases from 72,7% in 2009 to 75,7% in 2013. As SAS has started to divest their ground handling (10%) and will eventually transfer the full ownership to Swissport a future passenger revenue/total revenue ratio of 77% is forecasted. SAS future total revenue breakdown is shown in figure 6-4.

Figure 6-3 SAS future total revenue breakdown

Passenger revenue (77%) Charter (5%) Mail and freight (3%) Other traffic revenue (5%) Other operating revenue (10%)

²³¹ Koller T., Goedhart M., Wessels D.,p.188

²³² Rosenbaum, Joshua & Pearl, Joshua (2009), *Investment Banking - Valuation, Leveraged Buyouts and Mergers & Acquisitions*, John Wiley & Sons, 1st Edition, p.119

Source: Own depiction

Holding the other revenue items constant, this thesis forecasts total revenue by forecasting passenger revenue and divide the forecast by 0,77 to obtain total revenue.

As mentioned in section 4.3.1.1.1. and shown in Equation 4-8, SAS passenger revenue is dependent upon three factors: Passenger numbers, flight distance and ticket prices (revenue per km). While SAS had a decline in passenger revenues between 2009 - 2013, at the same time as both passenger numbers and average flight distance grew slightly it could be concluded that the drop in revenue was attributable to falling ticket prices. In order to forecast revenue, these three variables are forecasted separately.

6.2.1.1.1 Forecasting passenger numbers:

In the PESTEL section (under Economic variables) this thesis finds that passenger numbers strongly correlates to GDP growth. In order to forecast passenger numbers its therefore appropriate to use GDP forecasts. The thesis uses a GDP forecast of Advanced Countries and the underlying reasons are explained in section 3.1.2 (Economical factors in the PESTEL analysis). Regressing air travel passenger numbers on GDP growth in Advanced Economies (which has hade a GDP development comparable to the Nordics), shows a Beta of 1,93 which is highly statistically significant and states that a 1% GDP growth almost generates a 2% growth in passenger numbers. At the same time, a similar regression on the Swedish and Danish passenger numbers show lower Betas of (1,23 respectively 1,39) indicating that SAS passenger numbers may not be affected as much by growth in GDP as the first regression suggests. In the latest annual analyses of the EU air transport market, released in December 2013, EUROCONTROL forecasts an annual traffic growth in Europe of 2,3% as a base case scenario and a 3,4% as a high case scenario. Boeing forecasts a long-term European traffic growth (2012-2032) of 3,8% and worldwide traffic growth of 5,5%, which corresponds with Airbus figures.²³³

Given the regression results and the forecasting figures of EUROCONTROL and Boeing, a Beta/Multiplier of 1,5 is used when forecasting SAS passenger numbers from Advanced Economies annual GDP growth between 2014 and 2019. The result is found in table 6-2.

²³³ Annual Analyses of the EU Air Transport Market 2012, European Commission, p. 50-59

 Table 6-2 Forecasted SAS passenger numbers by estimation of passenger number growth

Beta: 1,5		Forecasting period								
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
GDP growth Advanced economies/HI OECD		2,22%	2,35%	2,38%	2,37%	2,25%	2,12%			
Passenger number growth		3,33%	3,53%	3,57%	3,56%	3,38%	3,18%	3,00%	3,00%	3,00%
Passenger numbers (000s)	25245	26086	27006	27970	28964	29941	30894	31820	32775	33758

Source: Own creation

The historical passenger number of 2013 (25245), shown in the above table, is the base figure upon which the passenger growth is added. This figure is not the one used in the financial analysis (28050), but 10% lower given the sale of Wideroe, as Wideroe's passenger revenue was 10% of SAS revenue in 2013. The Advanced Economies forecast only stretches until 2019, why passenger numbers between 2020 and 2022 (terminal period) cannot be estimated by GDP growth. Instead, a 3% growth is estimated during these years as EUROCONTROL suggests a falling passenger number growth after 2017 in Europe due to Airport constraints and also because it is not likely that SAS will grow at the same rate as forecasted by Boeing (3,8%) for worldwide air traffic, even with a forecasted lowering of ticket prices as argued below. This is primarily due to the slower growth of European air traffic as well as the industry deregulation and rise of LCCs discussed in the PESTEL and Porters five forces analyses.

6.2.1.1.2 Average Flight Distance:

Given the sale of Wideroe, whom provided short regional flights in Norway, the average flight distance of SAS is forecasted to increase from 1058km in 2013 to 1100 in 2014. On average, SAS flight distance has increased 10km each year from 2009 to 2013. This is why an annual increase of 10km is forecasted until our terminal year, 2022. This also corresponds with the fact that the largest market growth is outside Europe, specifically in Eastern Asia and South America, why it is likely that SAS will try to extend their offerings in these markets and increase its long-haul routes²³⁴. Table 6-3 provides an overlook on forecasted avg. flight distance for SAS:

²³⁴ Annual Analyses of the EU Air Transport Market 2012, European Commission, p. 53

Table 6-3 Forecasted SAS average flight distance

		Terminal period								
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Avg. flight distance (km)	1058	1100	1110	1120	1130	1140	1150	1160	1170	1170

Source: Own creation

6.2.1.1.3 <u>Ticket Prices (Avg. revenue per km per passenger)</u>

During 2009 and 2013, SAS average revenue per km sank from 1,13 SEK/km to 1,04 in 2013, while being 0,99 in 2011 and 2012. Lower ticket prices has been a trend among SAS peers during the last 5 years with an average decrease of ca -0,025 SEK/km annually. This is likely to continue given the growth of LCCs among intra EU-flights as well as among regional flights and a continuing commodization of air travel as discussed in section 3.1.3. However, due to the likelihood of increased consolidation in the European airline industry and the overall profitability problems, the rate of decrease is expected to grow smaller during the coming years and ticket prices to turn constant in the long run. Given the sale of Wideroe, whom due to its short, regional flights could charge an extraordinary high 3,56 SEK/km in 2013, a drop to 0,95 in average prices is expected in 2014 from 1,04 in 2013. Prices are then expected to drop 0,03 SEK/km annually between 2014-16, 0,02 SEK/km annually during 2016-18, 0,01 SEK/km annually during 2018-21 and then remain constant between 20-21, our terminal period. Table 6-4 illustrates the forecasted ticket prices:

Table 6-4 Forecasted SAS average revenue per km per passenger (ticket prices/yields)

			Forecasting period							
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Avg. revenue per km (ticket prices)	1,043	0,950	0,920	0,890	0,870	0,850	0,840	0,830	0,820	0,820

Source: Own creation

6.2.1.1.4 Total Revenue:

SAS forecasted passenger revenue is found by multiplying the above forecasted factors. The total revenue is then calculated by dividing the passenger revenue with 0,77, given their forecasted ratio of 77%. Table 6-5 below shows the figures along with the annual percentage growth of total revenue for SAS.

			Forecasting period							Terminal period
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Passenger revenue (MSEK)	30931	27260	27578	27880	28474	29013	29843	30637	31444	0,76
Total revenue (MSEK)	41038	35402	35816	36208	36980	37680	38757	39788	40837	42062
Total revenue growth		-13,7%	1,2%	1,1%	2,1%	1,9%	2,9%	2,7%	2,6%	3,0%

 Table 6-5 Forecasted SAS total revenue and total revenue growth based on forecasted SAS passenger revenue

Source: Own creation

It is clear that the forecast on total revenue for 2014 is heavily affected by the sale of wideroe, corresponding to a -13,7% drop in revenue. Additionally, yearly growth during our forecasting period after 2014 varies between 1,7 - 2,6% which are moderate numbers. They are naturally lower than the passenger number growth due to the forecasted yearly drop in ticket prices that will be a necessity for SAS to remain competitive, as well as the slightly longer flight distances. The trend however is positive given that the fall in prices is likely to slow down in the long run leading to increasing revenue growth. During terminal period and forward the decrease is expected to stop and the growth of revenues to be the same as the growth in passenger numbers, forecasted at 3%.

6.2.1.2 Payroll expenses as % of revenue:

High payroll costs has historically been the key reason behind SAS profitability problems. In 2009, payroll costs exceeded 40% of SAS total revenue compared with industry rivals like Norwegian at 18%. Since, mainly due to the wage cuts and new pension plans accepted by unions in the end of 2012 as a part of the 4XNG program, SAS payroll costs has dropped to less than 25% of total revenue. Still, more payroll reductions are to be made as part of the 4XNG program with plans of reducing the workforce , from a current (2013) 14100 employees to 9000. This is to be made by outsourcing, business streamlining and centralization, as stated in section 2.3.2. Given no exact information of when and how this is to be made, a yearly 1% drop in payroll expenses as part of total revenue are forecasted until is reaches 20% in 2018. Thereafter the rate is kept constant as SAS is not expected to be able to reach Norwegian and Finnair levels (15,9% in 2013), given SAS status as a FSC airline with services like Eurobonus and Fast Track. The forecast of payroll expenses are shown in Table 6-6:

Table 6-6 Forecasted SAS payroll expenses as % of total revenue

			Forecasting period							Terminal period
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Payroll expenses as % of tot revenue	-24,4%	-24,0%	-23,0%	-22,0%	-21,0%	-20,0%	-20,0%	-20,0%	-20,0%	-20,0%
Payroll expenses	-10027	-8497	-8238	-7966	-7766	-7536	-7751	-7958	-8167	-8412

Source: Own creation

6.2.1.3 Fuel expense growth as part of ASK growth

The forecasting of fuel expenses is calculated from SAS ASK growth while adjusting for growth/drop in oil prices and savings from a more efficient fleet. SAS excluding Wideroe phased in 21 new airplanes 2012/2013, still their fleet number fell from 145 - 139. At the same time SAS ASK rose by 2460, indicating a more efficient use of the airplanes, see appendix 5. 26 new planes are supposed to be phased in during 2014/2014 by operating leases and 54 more lines opened, compared to 52 during 2012/2013. A similar ASK increase as during 2013 should therefore be forecasted for 2014 why an (conservative) ASK of 2000 is used. This is however including Wideroe why a subtraction of 1500 ASKs is done (Wideroe ASK in 2013) for a total increase of 500 ASK in 2014.²³⁵

Between 2009 and 2013, the average annual ASK increase was 3,5%. A slightly lower ASK growth at 2,5% are forecasted between from 2015 until 2022 except between 2017-2019 when the majority of SAS newly ordered fleet will be delivered and a growth rate of 4,5% is used. The annual change (decrease) in oil prices is then deducted from the percentage increase in ASK. Additionally it is estimated that SAS will update 10% (ca 15 planes) of their fleet annually, which would lead to annual fuel expense savings of ca 1,25% (10% updated fleet * 10-15% fuel reduction – see section 3.1.4). The forecast of fuel expenses are shown in Table 6-7:

Table 6-7 Forecasted SAS fuel expenses based on SAS forecasted ASK, oil price forecasts and savings from a new fleet

					Forecast	ing perio	d			Terminal period
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ASK	40772	41272	42304	43361	45313	47352	49483	50720	51988	53287
Oil Price Forecasts	104,1	103,5	99,8	98,6	98,2	97,9	97,6	97,4	97,3	97,1
Change in ASK		1,2%	2,5%	2,5%	4,5%	4,5%	4,5%	2,5%	2,5%	2,0%
Change in Oil Prices		-0,6%	-3,6%	-1,2%	-0,4%	-0,3%	-0,3%	-0,2%	-0,1%	-0,2%
Savings from newer fleet		-1,25%	-1,25%	-1,25%	-1,25%	-1,25%	-1,25%	-1,25%	-1,25%	<u>-1%</u>
Change in Fuel Expenses		-0,60%	-2,32%	0,05%	2,84%	2,94%	2,94%	1,05%	1,15%	0,8%
Fuel Expenses	-8908	-8855	-8649	-8653	-8899	-9161	-9431	-9529	-9639	-9715

²³⁵ SAS Group Annual Report 2013

6.2.1.4 Other operating expenses as % of revenue

Other operating expenses are forecasted as percentage of SAS total revenue, with the year 2013 as reference point. The individual items under other operating expenses are all kept constant at 2013 percentage level, except two items. Handling costs are forecasted to rise from 4 to 5% of total revenue during 2014-2016, as a direct effect of the planned gradual divestment and outsourcing of SAS Ground Handling. Government user fees which are expected to rise 0,05% annually due to the increase in average flying distance resulting in new increased government fees for markets. The forecast of other operating expenses are shown in Table 6-8:

			Forecasting period							
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Selling costs (% of tot rev)	-5,7%	-5,7%	-5,7%	-5,7%	-5,7%	-5,7%	-5,7%	-5,7%	-5,7%	-5,7%
Government user fees (% of tot rev)	-9,9%	-10,0%	-10,0%	-10,1%	-10,1%	-10,2%	-10,2%	-10,3%	-10,3%	-10,4%
Catering costs (% of tot rev)	-2,3%	-2,3%	-2,3%	-2,3%	-2,3%	-2,3%	-2,3%	-2,3%	-2,3%	-2,3%
Handling costs (% of tot rev)	-4,0%	-4,3%	-4,7%	-5,0%	-5,0%	-5,0%	-5,0%	-5,0%	-5,0%	-5,0%
Tech aircraft maintenance (% of tot rev)	-6,2%	-6,2%	-6,2%	-6,2%	-6,2%	-6,2%	-6,2%	-6,2%	-6,2%	-6,2%
Computer & telecom costs (% of tot rev)	-2,4%	-2,4%	-2,4%	-2,4%	-2,4%	-2,4%	-2,4%	-2,4%	-2,4%	-2,4%
Other (% of tot rev)	-8,5%	-8,5%	-8,5%	-8,5%	-8,5%	-8,5%	-8,5%	-8,5%	-8,5%	-8,5%
Total (% of tot rev)	-39%	-39%	-40%	-40%	-40%	-40%	-40%	-40%	-41%	-40,6%
Total Other operating expenses	-16088	-13980	-14279	-14577	-14906	-15207	-15661	-16098	-16542	-17060

 Table 6-8 Forecasted SAS other operating expenses as % of total revenue

Source: Own creation

6.2.1.5 Rental lease expenses as % of revenue

Rental lease expenses are also forecasted as percentage of revenue. During 2012/2013 SAS phased in 21 new planes by operational leases while leasing costs rose with 0,7% from 4,5 to 5,2% (of revenue). As SAS plans to phase in additionally 26 planes during 2013/2014, SAS rental expenses are expected to rise 0,75% during 2014. SAS also states that they will sell and leaseback more than half of their newly ordered fleet and given the fact that 2/3s of SAS current fleet are financed through operational leases, this is likely to be the case with the ordered fleet as well. Given this information SAS rental lease costs are expected to rise further during the forecasting period. Further details on how this order affects rental expenses and Capital Expenditures are given in the following section 6.2.1.6. Additionally, looking at current bond yield curves and the current historically low interest rates, it seems highly likely that interest rates will rise in a few years, why the <u>cost of unsecured debt</u> for leases has been adjusted up from 4% to 5% between 2015 and 2017. This will directly affect rental expenses

upwards. The forecasted rental expenses are shown in table 6-9, including a full calculation of operating lease asset value (using the Koller et al formula in section 4.2.1.3), implied interest expense, depreciation and yearly implied capital expenditures of the operating leases.

Table 6-9	Forecasted	SAS	rental	expenses	(as	%	of	total	revenue)	including	calculation	of
operating	lease asset va	alue										

					Forecastir	ng period				Terminal period
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Rental lease expenses (as % of tot rev)	-4,5%	-5,2%	-5,5%	-6,0%	-6,5%	-7,0%	-7,0%	-7,0%	-7,0%	-7,0%
Rental lease expenses	-1844	-1841	-1970	-2172	-2404	-2638	-2713	-2785	-2859	-2944
Rental expense (t+1)	-1841	-1970	-2172	-2404	-2638	-2713	-2785	-2859	-2944	-2944
Cost of secured debt	4,0%	4,0%	4,0%	4,5%	5,0%	5,0%	5,0%	5,0%	5,0%	5,0%
Asset life	20	20	20	20	20	20	20	20	20	20
Asset value	20455	21887	24139	25302	26376	27130	27852	28586	29443	29443
Interest expense	-818	-875	-966	-1139	-1319	-1357	-1393	-1429	-1472	-1472
Depreciation	-1023	-1094	-1207	-1265	-1319	-1357	-1393	-1429	-1472	-1472
Operating lease CapEx	985	2527	3458	2428	2393	2111	2114	2164	2330	1472

Source: Own creation

In our forecasted pro forma income statement, implied interest is deducted before NOPAT, leaving only operating lease depreciation to affect the NOPAT calculation. Operating lease capital expenditure is calculated as it is added to the forecasted pro forma balance sheet. It is also a reference when estimating asset sales for the intangible & tangible assets calculation, as seen below.

6.2.1.6 - Depreciation as % of intangible & tangible fixed assets

According to Koller et al²³⁶ you have 3 options on how to forecast depreciation – (1) as percentage of revenue, (2) as percentage of PP&E (tangible assets) or if you work inside the company, (3) based on equipment purchases (capital expenditures for tangible assets) and depreciation schedules. This thesis uses a mix of the latter two and forecasts depreciation as a % of intangible & tangible fixed assets, which in their turn are forecasted based on SAS capital expenditures. This is done even though no inside information is used. The reason is that SAS has publicized their purchase orders on aircrafts for their fleet renewal strategy and lists all ordered aircraft until 2021, as shown in Table 6-10 further below. This information gives a relatively precise estimation of the investments SAS will be doing in aircrafts the next eight years – which is of great importance as investments in aircrafts has by far been the largest capital expenditures (CAPEX) for SAS historically. While forecasting SAS CAPEX based

²³⁶ Koller T., Goedhart M., Wessels D.,p.196

on both historical figures and projected aircraft expenditures makes the forecasting more complex, it would make this valuation less precise and imply more guessing to leave this information out.

Total intangible & tangible fixed assets are calculated by adding capital expenditures and subtracting asset sales (incl. reclassifications and difference in exchanges rates) and depreciation from total intangible & tangible fixed assets for the period before (t-1). This is shown historically in Table 6-10 as well as depreciation as % of total intangible & tangible fixed assets (t-1). The average of these percentages, 11,86%, is later used when forecasting depreciation.

Table 6-10 SAS historical breakdown of total intangible and tangible fixed assets

			Historica	l Period		
Years	2009	2010	2011	2012	2013	Mean
Total intangibe & tangible fixed assets (t-1)	15224	16870	16196	15837	15265	
+Capital Expenditures	4661	2493	2041	3054	1569	
-Assets Sales incl reclassifications/exch. rates	-1170	-1300	13	-1917	-3761	
-Depreciation	-1845	-1867	-2413	-1708	-1594	
Total intangibe & tangible fixed assets	16870	16196	15837	15265	11479	
Depreciation/Tangible&Intagnible Assets(T-1)	-0,1212	-0,1107	-0,1490	-0,1079	-0,1044	-0,1186

Source: Own creation based on SAS Group Annual Reports 2009 -2013

To forecast depreciation as part of total intangible & tangible assets, capital expenditures (CAPEX) and asset sales has to be forecasted first, which is done as follows:

Using historical data in SAS annual reports, CAPEX (investments in Tangible & Intangible Assets) <u>excluding aircrafts</u> amount to a sum of between 700 - 1000 mSEK between 2009 and 2013 (except in 2011 when a 1 billion acquisition of Swediavias assets where made in relation to divestment of Swedavia). Given that this valuation translates SAS broken fiscal year data to full year data using interim reports, there are no full year data on different types of CAPEX in 2013 and 2012. However, using the data from the annual report 2013 (Nov 12 - Oct 13), aircraft investments amounts to apprx. 500 mSEK. Thus, aircraft investments vary between 3700 (2009) to 500 mSEK (2013) yearly, which can be seen by looking at Table 6-10 and subtracting non-aircraft investments (700-1000 mSEK). As there where no indications from SAS in 2012 or 2013 to invest in any new aircraft (not including operating leases!) the following year, aircraft investments for 2014 are forecasted at 500 mSEK, the same amount as in 2013. CAPEX excluding aircrafts are forecasted at 850mkr for a total CAPEX at

1350. This is referred to as Base CAPEX. Assets sales etc. between 2009 and 2012 (2013 is not included due to the sale of Wideroe) averages ca 1100, why this sum is forecasted for 2014. The Base CAPEX of 1350 and Asset sales of -1100 are then multiplied by the growth factor of revenues for each forecasted year from 2014 and forward.

Table 6-11 SAS ordered aircrafts 2014 - 2021

Aircraft on firm or	der 201	4-20	21					
	2014	2015	2016	2017	2018	2019	2020	2021
Airbus A320neo			4	11	7	8		
AirbusA330E/A350		2	2		1	1	2	4
List price of aircraft o	rdered,	MUSD)					
Airbus A320neo	2,550							
AirbusA330E/A350	3,280							

Source: SAS Group annual report 2013

However, added to the Base CAPEX is the cost of the aircrafts that SAS has ordered for their fleet renewal, see table 6-11. This order consists of 42 planes and has a value of \$5,8bn²³⁷, which is approximately 38 billion SEK (a USD/SEK exchange rate of 6,5 is used as this was the rate in Q2 in 2011 when orders where made). Purchase prices on aircrafts differ greatly from list prices and heavy discounts are often received depending on order volume. Industry officials acknowledge that discounts vary between 20% to 60% with an average of around 45%, as discussed in section 3.1.4.

Given this information SAS order is estimated to be worth ca 21 billion SEK. As 42 planes are ordered, the average asset value per plane would be 500 mSEK. As shown in Table 6-12, a 500 mSEK sum per plane is added to Base CAPEX for every plane that is delivered, i.e. in 2017 a sum of 5500mkr (11*500) is added to CAPEX. However, as SAS will sell and leaseback approximately 2/3s of the fleet, 2/3s of the purchase price is added back. This sum can be compared to increases in Operating Lease Capital Expenditures, shown in the bottom of table 6-12. The sums should be roughly the same every year as, obviously, the value of the aircrafts is the same regardless of the way they are financed. Given that SAS does not increase its operational leases (except from the sale and leaseback of its ordered aircrafts), which is what this thesis forecasts, the total sums of the Operating Lease CAPEX and the Sale/Leaseback of ordered aircrafts, should also be more or less the same, as seen in Table 6-12.

²³⁷ SAS Annual Report 2013

				Aircraft	delivery	period			Total
Years	2015	2016	2017	2018	2019	2020	2021	2022	
Base CAPEX	1366	1381	1410	1437	1478	1517	1557	1604	
-Aircraft cost	1000	3000	5500	4000	4500	1000	2000	2500	
+Sale Leaseback	667	2000	3667	<u>2667</u>	3000	<u>667</u>	<u>1333</u>	<u>1667</u>	14000
=Capital Expenditures	1699	2381	3243	2770	2978	1851	2224	2437	
Operating Lease CAPEX	985	2527	3458	2428	2393	2111	2114	2164	16016

Table 6-12 Forecasted SAS capital expenditures based on aircraft cost and sale leaseback. The sale leaseback is compared with operating lease capital expenditures (bottom line)

Source: Own creation

As CAPEX and assets sales are now forecasted, total intangible & tangible assets can be forecasted as well as depreciation. The forecasting is shown in table 6-13 with depreciation calculated as $\underline{11,86}\%$ (as argued above) of total intangible & tangible assets (t-1).

Table 6-13 Forecasted total intangible & tangible fixed assets based on capital expenditures, asset sales and depreciation

					Forecast	ing perio	d			Terminal period
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total intangibe & tangible fixed assets (t-1)	15265	11479	10367	9725	9816	10738	11044	11490	10723	10421
+Capital Expenditures	1569	1350	1699	2381	3243	2770	2978	1851	2224	2437
-Assets sales incl reclassifications/exch. rates	-3761	-1100	-1112	-1136	-1157	-1190	-1222	-1254	-1254	-1254
-Depreciation	-1594	-1362	-1230	-1154	-1164	-1274	-1310	-1363	<u>-1272</u>	-1236
=Total intangibe & tangible fixed assets	11479	10367	9725	9816	10738	11044	11490	10723	10421	10368

Source: Own creation

As argued in section 6.1.3., a tax rate of 22% is used and no more items in the pro forma Income Statement needs to be forecasted in order to calculate NOPAT.

6.2.2 Balance Sheet Forecasting

Only four item groups on SAS Balance Sheet are forecasted: Capital operating lease assets, total intangible & tangible assets, current assets & receivables and current liabilities. The first and second group has already been forecasted in the above Depreciation forecasting section while the second and third group makes up for SAS operating working capital. As suggested by Koller et al. current assets & receivables are forecasted as percentage of revenue.²³⁸ A rate of 8,44% is used which corresponds to

²³⁸ Koller T., Goedhart M., Wessels D.,p.202

the ratio in 2013. Similarly Current Liabilities is forecasted as percentage of fuel expenses + other operating expenses, as these provide the strongest proxy to cost of goods sold (COGS), which is the suggested value driver according to Koller et al^{239} . A rate of 42,6% is used which corresponds to the ratio in 2013, see appendix 6.

Two other group items remain to be forecasted; financial fixed assets and long-term liabilities. Given very little information about these items from SAS and in order of not making this valuation unnecessary complex, these group items are held constant. Table 6-14 illustrated the Balance Sheet forecasting and the calculation of Invested Capital and Net Investments.

Table 6-14 Forecasted SAS Invested Capital and net investments based on balance sheet items

					Forecasti	ng period	ł			Terminal period
Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
+Capitalized operating lease assets	20455	21887	24139	25302	26376	27130	27852	28586	29443	29443
+Total Intangibe & Tangible Fixed Assets	11479	10367	9725	9816	10738	11044	11490	10723	10421	10368
+Total financial fixed assets	3049	3049	3049	3049	3049	3049	3049	3049	3049	3049
+Total current assets & receivables	3462	2987	3021	3055	3120	3179	3270	3357	3445	3548
-Total long-term liabilities	1522	1522	1522	1522	1522	1522	1522	1522	1522	1522
-Total current liabilities	10666	9744	9784	9912	10158	10398	10707	10935	11172	11425
Invested Capital	26257	27024	28628	29787	31602	32482	33431	33257	33664	33461
Net Investments		768	1604	1159	1815	879	949	-174	407	-203

Source: Own creation

6.3 DCF model

Given the forecasting of SAS Income Statement and net operating profit after tax (NOPAT) and SAS Balance Sheet and Net Investments, a forecasting of SAS Free Cash Flow (FCF) can be made according to equation 6-5. The free cash flows are then discounted by the WACC of 7,30% as calculated in section 6.1.5. The FCF under the terminal period, the continuing value, is calculated as stated in equation 6-7. The growth rate of NOPAT in perpetuity, g, is set at 3% which is the same as the growth rate of revenues in the terminal period. The reason behind this is simply that operating costs are estimated to remain at the same percentage level of revenues in the long run. This also what

The expected rate of return on new invested capital (RONIC) is set at 8%, which is slightly higher than average rate of the ROIC during the forecasting period (7,5%) and terminal period (7,5%) but considerably lower than the rate of the terminal period, 9,7%. The logic behind not using the average

²³⁹ Ibid

rate is that the forecasting period includes huge financing costs for the renewed fleet. Still, using the ROIC during the terminal period as the RONIC would also be misleading since it would not mirror any future fleet renewals.

Discounting the FCFs for each year in the forecasting period and the continuing value in the terminal period, yields an Enterprise Value (EV) for SAS of MSEK 32221 as of 1^{st} April 2014. Subtracting the net interest-bearing debt (NIBD - 2013 IAS 19 value) and preferred equity value produces a Common Equity value of MSEK 6401, which divided by the number of shares, 329 million, yields a share value of <u>17,03</u> SEK. Given the share price of SAS the 1^{st} of April, 2014 of 14,65, this indicates that SAS is undervalued. The complete DCF model is shown in table 6-15.

	Ŧ	istorical Pe	riod				9	recast Perio	p				Terr	ninal period
Years	2009	2010	2011	2012 2	013 modif	2014	2015	2016	2017	2018	2019	2020	2021	2022
Income Statement														
Total Revenue	44918	40723	41412	42349	41038	35402	35816	36208	36980	37680	38757	39788	40837	42062
Revenue growth		-9,3%	1,7%	2,3%	-3,1%	-13,7%	1,2%	1,1%	2,1%	1,9%	2,9%	2,7%	2,6%	3,0%
Payroll expenses	-17998	-13473	-13092	-13679	-10027	-8497	-8238	-7966	-7766	-7536	-7751	-7958	-8167	-8412
% of revenue	-40,1%	-33,1%	-31,6%	-32,3%	-24,4%	-24,0%	-23,0%	-22,0%	-21,0%	-20,0%	-20,0%	-20,0%	-20,0%	-20,0%
Fuel Expenses	-7685	-6601	-7769	-9386	-8908	-8855	-8649	-8653	-8899	-9161	-9431	-9529	-9639	-9715
% of revenue	-17,1%	-16,2%	-18,8%	-22,2%	-21,7%	-25,0%	-24,1%	-23,9%	-24,1%	-24,3%	-24,3%	-24,0%	-23,6%	-23,1%
Other operating expenses	-18227	-18609	-15972	-16776	-16088	-13980	-14279	-14577	-14906	-15207	-15661	-16098	-16542	-17060
% of revenue	-40,6%	-45,7%	-38,6%	-39,6%	-39,2%	-39,5%	-39,9%	-40,3%	-40,3%	-40,4%	-40,4%	-40,5%	-40,5%	-40,6%
EBITDAR	1082	1740	4619	2680	6758	4071	4650	5013	5409	5776	5914	6204	6489	6875
Rental lease expense	-2319	-1815	-1560	-1605	-1844	-1841	-1970	-2172	-2404	-2638	-2713	-2785	-2859	-2944
Reported EBITDA	-1237	-75	3059	1074	4913	2230	2680	2840	3005	3138	3201	3418	3630	3930
Implied interest on cap. op. leases	908	780	636	820	818	818	875	996	1139	1319	1357	1393	1429	1472
Adjusted EBTIDA	-330	705	3695	1894	5731	3049	3556	3806	4144	4457	4557	4811	5059	5403
Depreciation, Amortization & Impairment	-1845	-1867	-2413	-1708	-1594	-1362	-1230	-1154	-1164	-1274	-1310	-1363	-1272	-1236
EBIT	-2175	-1162	1282	186	4138	1687	2326	2652	2980	3183	3247	3448	3787	4166
Tax on EBIT	510	303	46	-39	-2427	-371	-512	-583	-656	-700	-714	-759	-833	-917
NOPAT	-1664	-859	1327	147	1711	1316	1814	2069	2324	2483	2533	2689	2954	3250
Balace Sheet														
Total Tangible fixed & intangible assets	16870	16196	15837	15265	11479	10367	9725	9816	10738	11044	11490	10723	10421	10368
Total financial fixed assets	1888	3566	2351	1847	3049	3049	3049	3049	3049	3049	3049	3049	3049	3049
Total current assets & receivables	8269	5698	5494	4273	3462	2987	3021	3055	3120	3179	3270	3357	3445	3548
Total long-term liabilities (non-current)	-5341	-4589	-3882	-3110	-1522	-1522	-1522	-1522	-1522	-1522	-1522	-1522	-1522	-1522
Total current liabilities	-11231	-10867	-9557	-11673	-10666	-9744	-9784	-9912	-10158	-10398	-10707	-10935	-11172	-11425
Capitalized operating leases	18150	15600	14126	20493	20455	21887	24139	25302	26376	27130	27852	28586	29443	29443
Invested Capital					26257	27024	28628	29787	31602	32482	33431	33257	33664	33461
Net investments						768	1604	1159	1815	879	949	-174	407	-203
Cash Flow Statement														
NOPAT	-1664	-859	1327	147	1711	1316	1814	2069	2324	2483	2533	2689	2954	3250
Net Investments						-768	-1604	-1159	-1815	-879	-949	174	-407	203
FCF						548	211	910	509	1604	1584	2863	2547	47235
ROIC						4,9%	6,3%	6,9%	7,4%	7,6%	7,6%	8,1%	8,8%	9,7%
EV	32230		RONIC	8,00%										
NIBD	-23031	-	WACC	7,30%										
Preferred equity	-3598		50	3,00%										
MVE	5602													
Shares outstanding	329													
Share value	17,03													

Table 6-15 Valuation of SAS using the DCF model
6.4 Sensitivity Analysis

The DCF model has provided the value of one SAS share based on several forecasted value drivers. For potential investors it might be valuable to know how the value of SAS responds to changes in the inputs behind the value driver – for the purpose of better monitoring and to gain an understanding of the robustness of the model. However, Koller argues that looking into separate value drivers and inputs have limited use as inputs rarely change in isolation and secondly as when two value drivers change simultaneously, the combined effect often differs from the sum of individual effects due to interactions between them. Due to this reason individual value drivers are not looked into, but rather the 3 factors that affect the continuing value. Two of them are direct results of all forecasted value drivers – namely the growth rate of NOPAT, g, and the forecasted long-term return on new invested capital, RONIC while the WACC is a result of SAS future financing. Different growth rates of NOPAT in relation to different RONIC values and WACC values are illustrated in below tables.

g/WACC	-1%	-0,50%	Base Case (7,3%)	+0,5%	+1%
4,50%	80,6	26,6	22,74	6,93	-4,75
4,0%	65,97	39,03	20,26	6,43	-4,19
3,5%	56,56	34,6	18,43	6,04	-3,75
3,0%	50,01	31,33	17,03	5,74	-3,39
2,5%	45,18	28,82	15,92	5,49	-3,1
2,0%	41,47	26,83	15,02	5,29	-2,85
1,50%	38,54	25,22	14,27	5,11	-2,64

Table 6-16 Sensitivity analysis by changing the NOPAT growth factor (g) and WACC

Source: Own creation

As seen in table 6-16, SAS would remain undervalued even if g would be lowered down to 2%. The effects of changes in g are thus fairly small on SAS share value. First at a 1,5% growth rate of NOPAT would SAS be overvalued. This supports this thesis case of SAS as undervalued. A fall of the growth rate to 1,5% would either be a result of a fall in passenger revenues, likely driven by a significantly below industry passenger growth rate, or a sudden rise in costs, which would most likely be a result of unexpectedly high fuel costs or a fail in cutting passenger costs as expected. A change in WACC has a larger effect on SAS share price. A 0,5% rise would lead to a significant overvaluation. Given SAS capital structure, cost of debt has the largest impact on SAS WACC. As stated in section 6.1.3, the cost of debt is mainly affected by the risk-free rate and the credit spread. Both of these factors are based on

10-year average, where the last financial crisis is included – a period when the bond spread has been extremely high. Both the risk-free premium and the credit spread are today much lower than the averages, why an increase in the WACC is relatively unlikely. This is also why an increase in WACC would be considered more likely. Additionally, a decrease in WACC achieves a larger change in share price than a corresponding increase.

It is also worth noting that if the WACC would be 1% higher, a positive growth of NOPAT will lead to lower a lower share value. At first look this may be confusing but it's quite simple. This is because the WACC is larger than the RONIC. As the RONIC (future ROIC) is fixed, the growth rate of NOPAT is the same as Invested Capital. And as the WACC is higher than RONIC, the increase in Invested Capital will create higher financial expenses than operating profits, leading to negative net earnings. A WACC higher the RONIC means the company has a competitive disadvantage and that it wont add value to investors. The same effect is also visible in table 6-17 which illustrates how differences in RONIC and g affects SAS share value.

g/RONIC	-1%	-0,5%	base case (8,0%)	+0,5%	+1%
4,50%	7,7	15,72	20,26	28,93	34,43
4,00%	8,92	14,97	20,26	24,93	29,08
3,5%	9,81	14,41	18,43	21,98	25,13
3,0%	10,5	13,98	17,03	19,71	22,1
2,5%	11,04	13,64	15,92	17,92	19,71
2,0%	11,48	13,37	15,02	16,47	17,76
1,50%	11,85	13,14	14,27	15,27	16,15

Table 6-17 Sensitivity analysis by changing the NOPAT growth rate (g) and RONIC

Source: Own creation

If RONIC falls by 1% to 7% it will be lower than the WACC and a higher growth rate will not add value do investors. A deteriorating RONIC but high growth of NOPAT would be a result of a worsening turnover rate on invested capital and that balance sheet items are consuming too much cash. This is quite unlikely given SAS higher than peer turnover rate of invested capital. A RONIC of 7,5%, a 0,5% decrease, would lead to a slight overvaluation of SAS, but compared to changes in WACC the value of SAS is not as sensitive.

6.5 Relative Valuation

When estimating the value of a company using comparable firms it is highly critical to use firms that are actually comparable, i.e. to use firms which exhibits the similar characteristics as the company being valued. Such characteristics include similar risk, growth as well as that the companies share the same economic outlook²⁴⁰. As is discussed in section 4.1, the peer group used in this thesis exhibits such similarities to SAS and is therefore found suitable for the relative valuation approach. Apart from similar characteristics, it is also according to Petersen & Plenborg (2012) a prerequisite when using the relative valuation approach that the accounting numbers of the comparable firms are based on the same quality and that the same accounting policies apply.²⁴¹ Since SAS and its peers are all based within the European Union/ European Economic Area the company's financial statements are all prepared in accordance with IFRS and thereby fulfill the prerequisite stated by Petersen & Plenborg (2012). In addition to this, the same method for converting operating leases into financial leases has been applied which further improve the comparability between SAS and the peer group.

6.5.1 Enterprise-value-based multiples

This thesis utilizes two different enterprise-value-based multiples, namely the EV/EBITDA-multiple as well as the EV/Traffic revenue multiple. The multiple based on the EBITDA is calculated following formula 7-8.

(6-8) (NIBD+Market value of equity) EBITDA

The use of the EV/EBITDA multiple has the advantage that it disregards potential differences in the capital structure between the comparable firms since the measure ignores the interest expense, i.e. its capital structure neutral.²⁴² This is important since some minor differences in capital structure among the peer group are identified in section 4.3.2. Such differences could potentially, if for example net earnings would have been applied instead of EBITDA, have distorted the estimations of firm value. In addition to being capital structure neutral, the EV/EBITDA multiple also excludes non-operating items

²⁴⁰ Petersen C.V. & Plenborg T., p.226-228

²⁴¹ Ibid

²⁴² Lerner, J., Hardymon, F. & Leamon, A. (2012) Venture Capital & Private Equity – A Casebook, *John Wiley & Sons*, Inc., Fifth Edition

as well as non-cash charges such as depreciation and amortization thereby providing a relatively good proxy of operating profitability. The second enterprise-value-based multiple included in the sanity check of the DCF-framework is the EV/Traffic revenue multiple. It is calculated following formula 7-9.

$$(6-9) \quad \frac{NIBD+Market \ value \ of \ equity}{Traffic \ revenue}$$

The main purpose of including the EV/traffic revenue multiple is to try to achieve a more industryspecific measure. For EV/traffic revenue to provide a reasonable estimate it is according to Petersen & Plenborg (2012) necessary that the comparable firms exhibits similar operating margins.²⁴³ During the year 2013, SAS and its peer group exhibited relatively similar margins (as seen in section 4.3.1 and therefore the use of the EV/traffic revenue multiple may be justified.

Enterprise-value-based multiples	EV/EBITDA	EV/Traffic revenue
SAS	6,37	0,89
Norwegian	17,36	2,03
AerLingus	11,45	1,44
Finnair	12,26	1,09
Lufthansa	6,18	0,75
Mean peer group	11,81	1,33
Implied EV of SAS (MSEK)	51644	41044
NIBD (MSEK)	-23031	-23031
Preferred equity (MSEK)	-3598	-3598
Shares oustanding (million)	329	329
Implied share price	76,03 kr	43,81 kr
Actual share price	14.65 kr	14.65 kr

Equation 6-10 SAS enterprise-value based multiples

Source: Own creation

As is seen in the above table 7-10, both the EV/EBITDA and the EV/traffic revenue ratios exhibit an undervaluation of SAS. Whilst the EV/EBITDA multiple indicates a significant undervaluation with an implied share price of 76.03 SEK versus the actual price of share at 14.65 SEK, the EV/traffic revenue multiple indicates a slightly lower undervaluation with an implied share price of 43.18 SEK versus the actual share price of 14.65 SEK. Both of the enterprise-value-based multiples thereby support the DCF-framework which found the SAS share to be undervalued as of the 1st of April 2014.

²⁴³ Petersen C.V. & Plenborg T., p.229

6.5.2 Equity-based multiples

In addition to the enterprise-value-based multiples discussed above, this thesis also makes use of an equity-based multiple, namely the market-to-book ratio (M/B). The market to book ratio is calculated following formula 7-11 in accordance with Petersen & Plenborg (2012).²⁴⁴

$(6-11) \quad Market \ to \ book \ ratio = \frac{Market \ value \ of \ equity}{Book \ value \ of \ equity}$

The market-to-book multiple is one of the most widely used comparable valuation metrics and estimates how much an investor is willing to pay for one unit of book value equity.

Table 6-18 SAS equity-based multiples

Equity-based multiples	M/B
SAS	1,49
Norwegian	3,20
AerLingus	1,06
Finnair	0,50
Lufthansa	1,44
Mean peer group	1,55
Implied MVE of SAS (MSEK)	4993
Shares oustanding (million)	329
Implied share price	15,18 kr
Actual share price	14,65 kr

Source: Own creation

As may be seen in the table above, the average airline stock trades at 1.55 times its book value. Since SAS trades at 1.49 times its book value, the equity-based multiple indicates a slight undervaluation of SAS. The market-to-book ratio provides an implied share price of SAS of 15.18 SEK whilst the actual share traded at 14.65 SEK at the time. The undervaluation indicated by the market-to-book ratio is thereby not as significant as indicated by the DCF-framework nor the enterprise-value-based multiples but the results are still consistent to previous indications that the SAS share seems to be undervalued as of the 1st of April 2014.

²⁴⁴ Petersen C.V. & Plenborg T., p.229

7 Discussion and conclusion

Both the discounted cash flow model and the relative valuation approach exhibits an undervaluation of SAS as of the 1st of April 2014. One of the foremost reasons to the undervaluation in the discounted cash flow model includes the high ticket prices, which results in significantly higher yields (revenue per km per passenger) compared to peers. The historically high yields has made it possible for SAS to have an uncompetitive cost structure, specifically regarding payrolls expenses which amounted to a staggering 40% of total revenue in 2009. In 2013 this number was already down to 24,4% (IAS 19) and is expected to further decrease during the forecasting period mainly due to the 4XNG strategy including staff reductions and lowering the payroll costs per employee. The expected reduction of additionally 5000 employees and the slight forecasted rise in the ASK mean that SAS becomes significantly more efficient in its operations if measured as the ASK per numbers of employees. This is necessary when competing with LCCs like Norwegian – whom exhibits an ASK per employee of 8,66 compared to SAS of 2,88 in 2013.

Although quite significant drops in ticket prices are forecasted, SAS yield will remain above peer levels. Together with payroll cost on pair with peers and savings in fuel expenses due to a more efficient fleet, SAS will during the forecasting period achieve higher EBITDAR-margins than during the historical period. However, the rental lease expenses are expected to increase due to the fleet renewal (sale and leasebacks) and a higher forecasted cost of secured debt. This affects SAS NOPAT negatively, even though some of the negative effect is offset by lower depreciation costs, given that a larger part of the fleet would be of operating leases. Still, SAS forecasted NOPAT is greater than during the historical period which leads to a much higher return on invested capital (ROIC).

When forecasting the continuing value, which has a huge impact on the estimated enterprise value of SAS, the RONIC is set at 8%. This is based on the average ROIC during the forecasted period and the terminal ROIC value. Setting the RONIC at 8% still means that SAS will earn abnormal returns in the long run as SAS WACC is only 7,3%, which according to economic theory suggests that SAS has sustainable competitive advantages. This may be criticized, since SAS has historically not earned such abnormal returns. However, a larger RONIC than WACC is motivated by a belief that SAS enjoys brand loyalties greater than its rivals, due to its history and that SAS, as the largest airline in the Nordics, has scale advantages. These advantages can take its form in discounts when buying aircrafts

and accessibility to landing rights and airport slots, as discussed in section 3.2.2. As an example, a discount of 45% instead of 25% for 10 normally priced short-, medium-haul jets would generate saving of 1 billion SEK. It is also worth noting that SAS Eurobonus possess a very strong position and that SAS has been named Europe's most punctual airline on several occasions. The belief of SAS brand advantages is partly proven by the higher ticket prices that SAS is able to extract from its customers. Additionally, "Shipping style flag of convenience", as discussed in section 3.1.6, and referring to the fact that airlines set up subsidiaries outside their home country to avoid taxes and bypass labor laws, might lower the reputation of SAS competitors. This would particularly apply to LCC's like Norwegian and further strengthen the loyalties to SAS. Another factor, which supports the high forecasted ROIC and RONIC, is SAS high turnover rate of invested capital compared to peers - which means that SAS is good at utilizing its assets. This rate will likely decrease slightly following the renewal of fleet, but a certain margin compared to peers is expected to be maintained. A high turnover rate of invested capital also leads to lower net investments in relation to a similar increase in revenues, compared to peers. SAS forecasted net investments will rise due to the fleet renewal, however the effect of a new aircraft fleet on revenues should be greater compared to peers given shorter days on hand for aircrafts, as stated in section 4.3.1.1.6. Smaller net investments lead to higher free cash flows and a higher valuation.

The factors contributing to a higher NOPAT and FCF is clearly underestimated by the market. This is however not surprising since SAS for several years has underperformed and the market may therefore be more critical in the assessment of the company's performance. It may therefore take a longer time period whereas SAS need to prove consistent profitability, to regain investor's confidence and be valued at a fair market value. Another factor that must be discussed regarding investors view on SAS market value is the implementation of the amended standard for pension reporting, IAS 19 which significantly worsened SAS leverage ratios. Given that SAS pension funds were reduced by 9 billion SEK and book value of equity reduced by 7 billion SEK, it's most likely that investors view on SAS market value was negatively impacted. However, given the undervaluation of SAS share price it is possible this negative reaction from investors is disproportionate. Another possible cause for the undervaluation is that the market underestimates the effect of GDP growth on passenger revenue growth, which is proved very large in this thesis. The GDP growth over the coming years might therefore have a larger impact on the airlines passenger revenue than what is currently "priced in

today". Finally, it is highly the case that SAS previously uncompetitive cost structure and business model was a remaining from being the Nordic flag carrier in the times before the deregulation of the European airline market. The fact that SAS remained government owned after the deregulation probably delayed the development of a business model that was competitive when the market conditions changed from being almost monopolistic to close to perfectly competitive. A simple example is that pensions terms which where negotiated during the 70s weren't renegotiated until 2012, during latest financial crisis of SAS. However, as discussed and shown in this thesis the business model of SAS is now competitive while the positive aspects of governmental ownership remains, such as acting as a guarantee when applying for credit extensions and possibly reducing the cost of debt. As shown in table 4-23 (section 4.3.2.3), SAS net borrowing cost 2013 is the 2nd lowest among peers, even though SAS has a very high leverage ratio, especially after implementing IAS 19, which strengthens the latter argument. These rationales further strengthen the case that SAS is undervalued. The answer to the research question is therefore that the fair value of one SAS AB share is 17,03 SEK as of 1st of April 2014.

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Appendix 1 – PESTEL Regressions

Regression: World Air Transport Passengers Carried on World GDP (annual change)

	World Air Transport -	Yearly		
Year	Passengers Carried	Change (%)	World GDP (yearly change %	6)
1970	310441392		4,03	
1971	331604904	6,82	4,10	
1972	366588352	10,55	5,54	
1973	401571800	9,54	6,37	
1974	421145200	4,87	1,89	
1975	432276500	2,64	0,72	
1976	471773396	9,14	5,11	
1977	513269292	8,80	3,88	
1978	576090004	12,24	4,19	
1979	648400600	12,55	4,07	
1980	641872888	-1,01	1,89	
1981	640619400	-0,20	2,09	
1982	654482108	2,16	0,35	
1983	685101596	4,68	2,64	
1984	732410288	6,91	4,62	
1985	783198104	6,93	3,82	
1986	842594296	7,58	3,30	
1987	904838104	7,39	3,48	
1988	953896012	5,42	4,61	
1989	983208800	3,07	3,88	
1990	1024976616	4,25	2,86	
1991	1133228204	10,56	1,28	
1992	1145436692	1,08	1,77	
1993	1142265216	-0,28	1,61	
1994	1233233404	7,96	3,17	
1995	1302891640	5,65	2,97	
1996	1390963704	6,76	3,33	
1997	1455104192	4,61	3,78	
1998	1466961780	0,81	2,52	
1999	1562256300	6,50	3,37	
2000	1674064712	7,16	4,26	
2001	1655230214	-1,13	1,74	
2002	1627404873	-1,68	2,06	
2003	1665309283	2,33	2,82	
2004	1888695284	13,41	4,19	
2005	1970142144	4,31	3,62	
2006	2072995909	5,22	4,10	
2007	2209136496	6,57	3,98	
2008	2208218737	-0,04	1,46	
2009	2249518122	1,87	-2,09	
2010	2618460406	16,40	4,07	
2011	2776646839	6,04	2,83	
2012	2866763551	3,25	2,39	
SUMMARY	ΟΠΤΡΠΤ			
Regressio	n Statistics			
R	0 60955		Standard Error 3.42	2312
R Square	0.37155		Total Number Of	41
Adjusted R	0.35544			-
	Coefficients	Standard Error	LCL UCL	t Stat
Intercept	0,32593	1,20009	-2,5853 3.23	716 0,27159
Beta	1,6986	0,35374	0,84049 2,55	671 4,80185
T (2%)	2,42584	, '	,	
LCL - Lowe	er value of a reliable inte	rval (LCL)		
UCL - Upp	er value of a reliable inte	erval (UCL)		
		~ (/		

Regression: High Income OECD Passengers Carried on GDP growth (annual change)

High Income OECD - Change Change (%) Change (%) 1970 269039192 3,45 1971 288445904 7,21 3,66 1973 346194100 8,96 6,19 1974 357790000 3,35 1,04 1975 358947500 0,32 0.08 1976 386658596 7,72 4,69 1977 41851092 8,25 3,71 1978 469745504 12,23 4,24 1979 527825500 12,36 3,78 1988 511557188 -3,08 1,20 1981 50085208 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 61646640 7,79 3,32 1986 670814696 8,26 3,17 1987 782273104 7,74 3,38 1988 760237412 5,19 4,75 1984 9				Yearly	High Income OECD				
Year Passengers Carried (%) change (%) 1970 269039192 3,45 1971 28844590 7,21 3,66 1972 317730408 10,15 5,30 1973 355799000 3,35 1,04 1975 358947500 0,22 0,08 1976 386658596 7,72 4,69 1977 418551092 8,25 3,71 1978 469745504 12,23 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 502055400 1,86 1,88 1982 509852908 5,15 0,24 1988 57643458 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 72213104 7,74 3,38 1989 76228700 3,43 3,92 1999			High Income OECD -	Change	GDP - Yearly				
1970 269039192 3,45 1971 288445904 7,21 3,66 1972 317730408 10,15 5,30 1973 346194100 8,96 6,19 1974 357790000 3,35 1,04 1975 358947500 0,32 0,08 1976 386658596 7,72 4,69 1977 418551092 8,25 3,71 1978 469745504 12,23 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 500852008 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 616646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 78628700 1,33 3,21 1991 801620204 -2,38	Year		Passengers Carried	(%)	change (%)				
1971 28445904 7,21 3,66 1972 317730408 10,15 5,30 1973 345194100 8,96 6,19 1974 357790000 3,35 1,04 1975 388658596 7,72 4,69 1977 418551092 8,25 3,71 1978 46974504 1,2,23 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 50065400 -1,86 1,88 1982 500852008 1,55 0,24 1983 53645596 5,18 2,97 1984 574844588 7,20 4,66 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1990 821162716 4,44 3,03 1991 80162024 -,238 1,24 1992 84452692		1970	269039192		3,45				
1972 317730408 10,15 5,30 1973 346194100 8,96 6,19 1974 357790000 3,35 1,04 1975 358947500 0,32 0,08 1976 386658596 7,72 4,69 1977 418551092 8,25 3,71 1978 469745504 12,23 4,24 1979 572829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 502065400 -1,86 1,88 1982 509852098 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1989 766289700 3,43 3,92 1990 821162716 4,44 3,03 1991 811620204 -2,38 1,24 1993 849541604 <td></td> <td>1971</td> <td>288445904</td> <td>7,21</td> <td>3,66</td> <td></td> <td></td> <td></td>		1971	288445904	7,21	3,66				
1973 346194100 8,96 6,19 1974 35779000 3,35 1,04 1975 38847500 0,32 0,08 1976 386658596 7,72 4,69 1977 418551092 8,25 3,71 1978 497745504 12,23 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 502065400 -1,86 1,88 1982 509852908 1,55 0,24 1983 51646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 861951816 2,07 1,29 1990 821162716 4,44 3,03 1991 8616545404 8,53 3,21 1992 84452692 5,34 2,05 1993 81051816 2,07 1,29 1994 1065141604		1972	317730408	10,15	5,30				
1974 357790000 3,35 1,04 1975 33685356 7,72 4,69 1977 418551092 8,25 3,71 1978 469745504 12,23 4,24 1979 527829500 12,26 3,78 1980 511557188 -3,08 1,20 1981 502065400 -1,86 1,88 1982 509852908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 786289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,61 2,78 1993 987894296 5,61 2,78 1993 1913830		1973	346194100	8,96	6,19				
1975 358947500 0,32 0,08 1976 386558596 7,72 4,69 1977 418551092 8,25 3,71 1978 469745504 12,23 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 502065400 -1,86 1,88 1982 509852908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 6708140696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 786289700 3,43 3,92 1990 821162716 4,44 3,03 1992 844452692 5,54 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 1065141604 <td></td> <td>1974</td> <td>357790000</td> <td>3,35</td> <td>1,04</td> <td></td> <td></td> <td></td>		1974	357790000	3,35	1,04				
1976 386658596 7,72 4,69 1977 418551092 8,25 3,71 1978 469745504 12,23 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 52065400 -1,86 1,88 1982 509852908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 766289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,61 2,78 1994 93544504 8,53 3,21 1995 987894296 5,61 2,78 1997 1022969000		1975	358947500	0.32	0.08				
1977 418551092 8,25 3,71 1978 469745504 12,23 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 502065400 -1,86 1,88 1982 50985208 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1989 786289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 936445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 11235972		1976	386658596	7.72	4.69				
1978 469745504 1,2,3 4,24 1979 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 502055400 -1,86 1,88 1982 509852908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1987 722713104 7,74 3,38 1987 786289700 3,43 3,92 1990 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 80152054 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 119113380 0,61 2,62 1999 123079655 <td></td> <td>1977</td> <td>418551092</td> <td>8.25</td> <td>3.71</td> <td></td> <td></td> <td></td>		1977	418551092	8.25	3.71				
1970 527829500 12,36 3,78 1980 511557188 -3,08 1,20 1981 502065400 -1,86 1,88 1982 509852908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 61646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1993 11013380 0,61 2,62 1999 1202906900 7,49 3,43 2001 123796324		1978	469745504	12 23	4 74				
1980 511557188 -3,08 1,20 1981 502065400 -1,86 1,88 1982 509852908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1988 760237412 5,19 4,75 1988 760237412 5,19 4,75 1989 78228700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 84452692 5,61 2,78 1993 861951816 2,07 1,29 1994 93544504 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792		1979	527829500	12.36	3.78				
1981 50005400 -1,86 1,88 1982 509852908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,79 3,92 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 82162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 112359792 4,43 3,44 1998 119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 123796324 2,46 2,04 2001 1233796324		1980	511557188	-3.08	1 20				
1962 5026052908 1,55 0,24 1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 93544504 8,53 3,21 1995 987894296 5,61 2,78 1993 861951816 2,07 1,29 1994 93544504 8,53 3,21 1995 987894296 5,61 2,78 1995 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 119113380 0,61 2,62 2001 1239067065		1981	502065400	-1.86	1.88				
1983 536245596 5,18 2,97 1984 574844588 7,20 4,68 1985 619646804 7,79 3,92 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 786289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 120206900 7,49 3,43 2001 1239907765 -3,73 1,42 2		1982	509852908	1 55	0.24				
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1985 61304044 7,73 3,22 1986 670814696 8,26 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 786289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2005 1421677385 4,18 2,61 2006 146783225		1005	610646904	7,20	-,00				
1980 07081490 6,20 3,17 1987 722713104 7,74 3,38 1988 760237412 5,19 4,75 1989 786289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1995 987894296 5,61 2,78 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 119113380 0,61 2,62 1999 1202066900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1233960765 -3,73 1,42 2003 1421677385 4,18 2,61 2004 1464595116 </td <td></td> <td>1006</td> <td>670814606</td> <td>0.76</td> <td>3,52</td> <td></td> <td></td> <td></td>		1006	670814606	0.76	3,52				
1987 722/13104 7,74 5,36 1988 760237412 5,19 4,75 1989 786289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2004 136459		1007	722712104	0,20	3,17				
1988 76023/412 5,19 4,75 1989 766289700 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 14989		1907	722713104	7,74	5,50				
1989 786289/00 3,43 3,92 1990 821162716 4,44 3,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1191113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 153266914 4,46 2,58 2010 1561		1988	760237412	5,19	4,75				
1990 821162/16 4,44 5,03 1991 801620204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 10202060900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2010 1561420973 7,55 2,76 2011 1		1989	/86289/00	3,43	3,92				
1991 80.062/0204 -2,38 1,24 1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 <td< td=""><td></td><td>1990</td><td>821162716</td><td>4,44</td><td>3,03</td><td></td><td></td><td></td></td<>		1990	821162716	4,44	3,03				
1992 844452692 5,34 2,05 1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2003 1233796324 2,46 2,004 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 <t< td=""><td></td><td>1991</td><td>801620204</td><td>-2,38</td><td>1,24</td><td></td><td></td><td></td></t<>		1991	801620204	-2,38	1,24				
1993 861951816 2,07 1,29 1994 935445404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2010 1561420973 7,55 2,76 2011 160260812 2,64 1,59 2012 1619324335 1,04 1,36 VICL VICL t Stat p-level Adjusted R 0,55602 <		1992	844452692	5,34	2,05				
1994 935443404 8,53 3,21 1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 Standard Error R Square 0,56602 Total Number Of Ca<		1993	861951816	2,07	1,29				
1995 987894296 5,61 2,78 1996 1065141604 7,82 2,90 1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 VICL VICL UCL t Stat p-level Coefficients		1994	935445404	8,53	3,21				
199610651416047,822,90199711123597924,433,44199811191133800,612,62199912029069007,493,43200012879483017,073,9120011239907765-3,731,4220021204191491-2,881,54200312337963242,462,042004136459511610,603,12200514216773854,182,61200614678322563,252,88200715332669144,462,5820081498901584-2,240,1020091451790965-3,14-3,55201015614209737,552,76201116026089122,641,59201216193243351,041,36SUMMARY OUTPUTRegression StatisticsR0,75235Standard Error2,93567R Square0,56602Total Number Of Ca41Adjusted R0,5549LCLUCLt StatP-levelIntercept-0,672040,84484-2,721491,3774-0,795470,43115Beta1,930460,270671,273852,587077,132080,T (2%)2,42584LCL - Lower value of a reliable interval (LCL)UCLUCLVUCL - Upper value of a reliable interval (UCL)UCLUCLVV		1995	987894296	5,61	2,78				
1997 1112359792 4,43 3,44 1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 Standard Error 2,93567 R Square 0,55602 Total Number Of Ca 41 Adjusted R 0,5549 0,27067 1,27385 2,58707 7,13208 <td></td> <td>1996</td> <td>1065141604</td> <td>7,82</td> <td>2,90</td> <td></td> <td></td> <td></td>		1996	1065141604	7,82	2,90				
1998 1119113380 0,61 2,62 1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 VICle t Stat p-level Regression Statistics R 0,75235 Standard Error 2,93567 R dijusted R 0,5549 Coefficients tandard Err LCL UCL		1997	1112359792	4,43	3,44				
1999 1202906900 7,49 3,43 2000 1287948301 7,07 3,91 2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 Coefficients< tandard Err		1998	1119113380	0,61	2,62				
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2001 1239907765 -3,73 1,42 2002 1204191491 -2,88 1,54 2003 1233796324 2,46 2,04 2004 1364595116 10,60 3,12 2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R Q,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 Coefficients tandard Err LCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,9547		2000	1287948301	7,07	3,91				
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2004136459511610,603,12200514216773854,182,61200614678322563,252,88200715332669144,462,5820081498901584-2,240,1020091451790965-3,14-3,55201015614209737,552,76201116026089122,641,59201216193243351,041,36SUMMARY OUTPUTRegression StatisticsCoefficientstandard Error2,93567Coefficientstandard Error2,93567Adjusted R0,5569Coefficientstandard Error1,3774-0,795470,43115Beta1,930460,270671,273852,587077,132080,T (2%)2,42584LCL - Lower value of a reliable interval (LCL)UCL - Upper value of a reliable interval (UCL)		2003	1233796324	2,46	2,04				
2005 1421677385 4,18 2,61 2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 Coefficients tandard Err LCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) <td cols<="" td=""><td></td><td>2004</td><td>1364595116</td><td>10,60</td><td>3,12</td><td></td><td></td><td></td></td>	<td></td> <td>2004</td> <td>1364595116</td> <td>10,60</td> <td>3,12</td> <td></td> <td></td> <td></td>		2004	1364595116	10,60	3,12			
2006 1467832256 3,25 2,88 2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 Coefficients tandard Error 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) UCL UCL VICL		2005	1421677385	4,18	2,61				
2007 1533266914 4,46 2,58 2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 - - Coefficients tandard Error 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL LCL UCL V UCL LCL UCL LCL UCL LCL UCL LCL UCL LCL UCL		2006	1467832256	3,25	2,88				
2008 1498901584 -2,24 0,10 2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 Coefficients tandard Error LCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) UCL		2007	1533266914	4,46	2,58				
2009 1451790965 -3,14 -3,55 2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics Regression Statistics Regression Statistics Coefficients Standard Error 2,93567 R Square 0,75235 Standard Error 2,93567 R Square 0,5549 41 Coefficients tandard Error 2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL LCL UCL		2008	1498901584	-2,24	0,10				
2010 1561420973 7,55 2,76 2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,55549 Coefficients tandard Error LCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 0, LCL - Lower value of a reliable interval (LCL) UCL UCL V V UCL - Upper value of a reliable interval (UCL) UCL V V		2009	1451790965	-3,14	-3,55				
2011 1602608912 2,64 1,59 2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 Coefficients tandard Erro LCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) UCL UCL UCL UCL UCL UCL - Upper value of a reliable interval (UCL) UCL UCL UCL UCL UCL UCL UCL		2010	1561420973	7,55	2,76				
2012 1619324335 1,04 1,36 SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL UCL UCL UCL UCL UCL UCL UCL UCL - Lower value of a reliable interval (LCL) UCL UCL <td></td> <td>2011</td> <td>1602608912</td> <td>2,64</td> <td>1,59</td> <td></td> <td></td> <td></td>		2011	1602608912	2,64	1,59				
SUMMARY OUTPUT Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 Coefficients tandard Err LCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) UCL UCL UCL UCL UCL UCL		2012	1619324335	1,04	1,36				
Regression Statistics R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 UCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL UCL UCL UCL UCL UCL UCL - Upper value of a reliable interval (UCL) UCL UCL UCL UCL UCL	SUM	MARY	OUTPUT						
R 0,75235 Standard Error 2,93567 R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 UCL t Stat Coefficients tandard Err LCL UCL t Stat Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) UCL - Upper value of a reliable interval (UCL) UCL - Upper value of a reliable interval (UCL)	Reg	ressior	n Statistics						
R Square 0,56602 Total Number Of Ca 41 Adjusted R 0,5549 UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL UCL V V V UCL - Lower value of a reliable interval (LCL) UCL V V V V	R		0,75235		Standard Error	2,93567			
Adjusted R 0,5549 UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 - - - - - - - - - - - - 0, - - - - 0, - - - - - 0, 3115 - - - - 0, 3115 - - - - 0, - 0, - 0, - - - - 0, - - 0, - - 0, - 0, - - 0, - 0, - - 0, - - 0, - 0, - - 0, - - 0, - - 0, <td< td=""><td>R Sq</td><td>uare</td><td>0,56602</td><td></td><td>Total Number Of Ca</td><td>41</td><td></td><td></td></td<>	R Sq	uare	0,56602		Total Number Of Ca	41			
Coefficients tandard Errx LCL UCL t Stat p-level Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 - - - - - - - - - 0, UCL - Lower value of a reliable interval (LCL) UCL - Upper value of a reliable interval (UCL) - <td< td=""><td>Adju</td><td>sted R</td><td>0,5549</td><td></td><td></td><td></td><td></td><td></td></td<>	Adju	sted R	0,5549						
Intercept -0,67204 0,84484 -2,72149 1,3774 -0,79547 0,43115 Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) UCL - Upper value of a reliable interval (UCL) V <th< td=""><td></td><td></td><td>Coefficients</td><td>tandard Erro</td><td>LCL</td><td>UCL</td><td>t Stat</td><td>p-level</td></th<>			Coefficients	tandard Erro	LCL	UCL	t Stat	p-level	
Beta 1,93046 0,27067 1,27385 2,58707 7,13208 0, T (2%) 2,42584	Inte	rcept	-0,67204	0,84484	-2,72149	1,3774	-0,79547	0,43115	
T (2%) 2,42584 LCL - Lower value of a reliable interval (LCL) UCL - Upper value of a reliable interval (UCL)	B	eta	1,93046	0,27067	1,27385	2,58707	7,13208	0,	
LCL - Lower value of a reliable interval (LCL) UCL - Upper value of a reliable interval (UCL)	T (29	6)	2,42584						
UCL - Upper value of a reliable interval (UCL)	LCL	- Lowe	r value of a reliable inte	erval (LCL)					
	UCL	- Uppe	er value of a reliable int	erval <u>(</u> UCL)					

Regression: Nordic Countries Passenger Air Transport on GDP growth (annual change)

[Passenger T	ravel	Passeng	er Travel C	hange (%)	GI	DP Chang	e (%)
0	SW/F	NOR	DNK	Sw-eden	Norway	Denmark	Sweden	Norway	Denmark
1970	2550000	2412300	1775300	SW cuch	,	bernnark	Sweden	Norway	Definition
1970	2913800	2791600	2056800						
1972	3014000	3101600	2284900	34	11 1	11 1	43	2.8	57
1973	3225900	3342600	2409000	7.0	7.8	5.4	53	3.8	0.6
1974	3350300	3367500	2401900	3.9	0.7	-0.3	6.8	5.0	9.3
1975	3464700	3530400	2518100	3.4	4.8	4.8	3.8	5.3	4.6
1976	3908900	3853500	2795700	12,8	9,2	11,0	2,1	3,8	2,7
1977	3851800	4192500	2946800	-1,5	8,8	5,4	3,4	6,3	3,4
1978	4360900	4487400	3117200	13,2	7,0	5,8	3,6	2,3	4,0
1979	5193400	4866900	3556200	19,1	8,5	14,1	5,0	4,5	6,3
1980	5209400	4804400	3329700	0,3	-1,3	-6,4	6,0	2,0	2,0
1981	5632000	4979400	3065000	8,1	3,6	-7,9	0,9	5,6	3,0
1982	6091100	5210400	3536900	8,2	4,6	15,4	2,3	5,3	4,2
1983	6590800	5610800	3947700	8,2	7,7	11,6	4,0	4,5	3,8
1984	7335200	6113900	3229200	11,3	9,0	-18,2	3,2	3,8	-0,8
1985	7609600	6799700	3494000	3,7	11,2	8,2	2,6	5,0	-1,2
1986	8713900	7485200	3834000	14,5	10,1	9,7	1,1	5,8	6,1
1987	9428800	8146000	4148100	8,2	8,8	8,2	-1,6	4,1	2,0
1988	10211900	8261000	4376700	8,3	1,4	5,5	1,8	3,9	2,3
1989	10855000	8300000	4720600	6,3	0,5	7,9	3,8	4,4	4,0
1990	11402500	8928500	4840300	5,0	7,6	2,5	1,7	4,5	-0,5
1991	9826800	8857300	4582000	-13,8	-0,8	-5,3	0,5	1,5	-0,9
1992	9923500	9661200	4826800	1,0	9,1	5,3	1,2	0,1	3,7
1993	9719000	10383600	5077900	-2,1	7,5	5,2	1,9	3,9	2,7
1994	10807700	11133100	5381000	11,2	7,2	6,0	4,2	5,9	4,2
1995	9498000	11695500	5689300	-12,1	5,1	5,7	2,2	5,4	4,0
1996	9879000	12727300	5892000	4,0	8,8	3,6	2,7	4,0	4,9
1997	11326900	13759000	6236400	14,7	8,1	5,8	3,4	1,8	0,3
1998	11877700	14291500	5946600	4,9	3,9	-4,6	2,6	-0,2	-0,1
1999	12917600	15009600	5767700	8,8	5,0	-3,0	2,7	1,0	0,6
2000	13354314	15182305	5922623	3,4	1,2	2,7	0,8	1,9	1,6
2001	13123426	14556181	6382092	-1,7	-4,1	7,8	-1,1	3,1	1,3
2002	12421220	13699204	6322432	-5,4	-5,9	-0,9	-1,2	3,5	2,0
2003	11586025	12805757	5886037	-6,7	-6,5	-6,9	-2,1	2,8	-0,1
2004	11623925	122//222	6428701	0,3	-4,1	9,2	4,0	5,1	5,5
Regression	Swe-uen Statistics								
R	0 35112	Standard F	7 04155						
R Square	0,33112	Total Numh	33						
Adjusted R	0.09501		00						
, laja ele a , l	Coefficients	standard Erro	LCL	UCL	t Stat	p-level			
Intercept	1,49257	1,90755	-3,18632	6,17146	0,78245	0,43989			
Beta	1,23213	0,59013	-0,21535	2,67961	2,08791	0,04512			
Regression	Denmark								
Regression	n Statistics								
R	0,473	Standard E	6,43827						
R Square	0,22373	Total Numb	33						
Adjusted R	0,19869								
Interest		a ZOAAF	LCL 4.0505	00L		p-ievei			
Rota	-0,00978	1,70445	-4,2505	4,11093	-0,04094	0,96761			
Deta	1,39224	0,40578	0,24977	2,53472	∠,98906	0,00544			
Regression	Norway								
Regression	1 Statistics			_					
R	0,16196	Standard E	5,04751	•					
R Square	0,02623	Total Numb	33						
Adjusted R	-0,00518								
	Coefficients	standard Erro	LCL	UCL	t Stat	p-level			
Intercept	-0,06978	1,70445	-4,2505	4,11093	-0,04094	0,96761			
Beta	1,39224	0,46578	0,24977	2,53472	2,98906	0,00544			

	Crude Oil-	-Brent prices	- Yearly average	US airline	Industry
Year	ba	ased on mon	thly data	annual	profits
1970		2,23		-200	
1971		3,205		28	
1972		3.616667		215	
1973		4.208333		227	
1974		12.125		322	
1975		11.5		-84	
1976		13.14		563	
1977		14 2525		752	
1078		14 22592		1107	
1978		21 15		247	
1979		27 6075		17	
1960		36 5775		201	
1901		22,5275		-501	
1982		32,9825		-910	
1983		29,77083		-100	
1984		28,605		825	
1985		27,77917		863	
1986		14,16417		-235	
1987		18,48917		593	
1988		14,99167		1686	
1989		18,48333		128	
1990		23,94583		-3921	
1991		19,525		-1940	
1992		19,32333		-4791	
1993		17,13667		-2136	
1994		16,20833		-344	
1995		17,30833		2314	
1996		20,67167		2804	
1997		19,26333		5168	
1998		13,1275		4903	
1999		18,64917		5360	
2000		28,58083		2486	
2001		24,33083		-8275	
2002		25,48667		-11312	
2003		28,72583		-3628	
2004		38,91		-9071	
2005		55,22083		-5782	
2006		65,65		3045	
Regression St	atistics	1970 - 2006			
Multiple R		0,221062			
R Square		0,048868			
Adjusted R Squa	re	0.021693			
Standard Error		3606.114			
Observations		37			
(oefficients	tandard Erre	t Stat	P-value	
Intercent	827 441	1167 371	0 708806977	0.483139	
X Variable 1	-60 7596	45 30929	-1 3409971	0,403135	
Regression St	atistics	1970 - 2013	1,3405571	0,10050	
Multinle R		0.063568			
R Squaro		0,003308			
Adjusted P Same	ro	0,004041			
Standard Free	IC				
		256,7755			
observations	.	44		0	
(.oefficients	candard Errc	t Stat	P-value	
Intercept	-113,393	1273,53	-0,089038622	0,929474	
X Variable 1	-11,8176	28,62794	-0,412801216	0,681852	

Regression: US airline industry profits on Crude Oil Brent price (annual change)

Appendix 2 – HI OECD and "Advanced Countries" classification according to The World Bank – bold countries indicates differences in classification.

HI OECD	Advanced Countries
Australia	Australia
Austria	Austria
Belgium	Belgium
Canada	Canada
Chile	Cyprus
Czech Republi	Czech Republic
Denmark	Denmark
Estonia	Estonia
Finland	Finland
France	France
Germany	Germany
Greece	Greece
Iceland	Hong Kong SAR
Ireland	Iceland
Israel	Ireland
Italy	Israel
Japan	Italy
Korea, Rep.	Japan
Luxembourg	Korea, Rep.
Netherlands	Latvia
New Zealand	Luxembourg
Norway	Malta
Poland	Netherlands
Portugal	New Zealand
Slovak Republ	Norway
Slovenia	Portugal
Spain	San Marina
Sweden	Singapore
Switzerland	Slovak Republic
United Kingdo	Slovenia
United States	Spain
	Sweden
	Switzerland
	Taiwan
	United Kingdom
	United States

Appendix 3 – Exchange rates for calculating peer ticket prices

Yearly avg. exe	2009	2010	2011	2012	2013
SEK/NOK	120,51	119,35	115,61	116,24	111,11
SEK/Euro	10,63	9 <i>,</i> 58	8,98	8,71	8,62

Full data:

	SWEDISH KROM	NA TO 100		SWEDISH K	RONA TO EURO (WMR)	
Name	NORWEGIAN KRON	E - EXCHANGE	Name	- EXCHAI	NGE RATE - SDEURSP	
Code	RATE - SDNOKSP S	SOURCE OMX	Code	SOUF	RCE WM/Reuters	
2009-01-01	110,35 Yea	arly Averages:	2009-01-01	10,9925	Yearly Averages:	
2009-02-01	120,4	, , ,	2009-02-01	10,712		
2009-03-01	127,65		2009-03-01	11,56875		
2009-04-01	122,45		2009-04-01	10,88565		
2009-05-01	122,25		2009-05-01	10,68095		
2009-06-01	120,4		2009-06-01	10,5375		
2009-07-01	119,45		2009-07-01	10,712		
2009-08-01	117,6		2009-08-01	10,22115		
2009-09-01	118,4		2009-09-01	10,2543		
2009-10-01	120,45		2009-10-01	10,2105		
2009-11-01	123,65		2009-11-01	10,36465		
2009-12-01	123,1	120,5125	2009-12-01	10,43875	10,63156	
2010-01-01	124,3	,	2010-01-01	10,24425		
2010-02-01	124,15		2010-02-01	10,1235		
2010-03-01	121,05		2010-03-01	9,74435		
2010-04-01	121,5		2010-04-01	9,71405		
2010-05-01	122,55		2010-05-01	9,60795		
2010-06-01	121,1		2010-06-01	9,55925		
2010-07-01	, 119,75		2010-07-01	9,62765		
2010-08-01	119,05		2010-08-01	9,3481		
2010-09-01	116,9		2010-09-01	9,31545		
2010-10-01	114,45		2010-10-01	9,2391		
2010-11-01	113,95		2010-11-01	9,29565		
2010-12-01	113,45	119,35	2010-12-01	9,16025	9,581629	
2011-01-01	114.9	- ,	2011-01-01	8,9432		
2011-02-01	111.6		2011-02-01	8,8045		
2011-03-01	112,75		2011-03-01	8,7121		
2011-04-01	114,35		2011-04-01	8,9492		
2011-05-01	114,7		2011-05-01	8,9185		
2011-06-01	114,85		2011-06-01	8,91745		
2011-07-01	117,1133		2011-07-01	9,10625		
2011-08-01	116,9337		2011-08-01	9,0429		
2011-09-01	118,4547		2011-09-01	9,10655		
2011-10-01	117,2002		2011-10-01	9,13125		
2011-11-01	117,11		2011-11-01	9,06045		
2011-12-01	117,4045	115,6138667	2011-12-01	9,105	8,983113	
2012-01-01	115,0673		2012-01-01	8,89925		
2012-02-01	116,0559		2012-02-01	8,8708		
2012-03-01	118,6361		2012-03-01	8,82195		
2012-04-01	116,2517		2012-04-01	8,795		
2012-05-01	117,5128		2012-05-01	8,8976		
2012-06-01	118,883		2012-06-01	8,99155		
2012-07-01	115,9677		2012-07-01	8,727		
2012-08-01	112,2962		2012-08-01	8,3125		
2012-09-01	114,9365		2012-09-01	8,42305		
2012-10-01	114,7428		2012-10-01	8,4755		
2012-11-01	116,8724		2012-11-01	8,61445		
2012-12-01	117,6913	116,2428083	2012-12-01	8,6575	8,707179	
2013-01-01	116,72		2013-01-01	8,57675		
2013-02-01	115,7453		2013-02-01	8,6055		
2013-03-01	112,082		2013-03-01	8,3859		
2013-04-01	111,3465		2013-04-01	8,36015		
2013-05-01	112,49		2013-05-01	8,5328		
2013-06-01	113,0853		2013-06-01	8,5635		
2013-07-01	110,0999		2013-07-01	8,68915		
2013-08-01	110,4993		2013-08-01	8,72425		
2013-09-01	108,9233		2013-09-01	8,71535		
2013-10-01	106,1453		2013-10-01	8,61195		
2013-11-01	109,4799		2013-11-01	8,816		
	,		1			\mathbf{C}

Appendix 4 – SAS and peers capitalized operating lease calculations

SAS (MSEK)	2009	2010	2011	2012 (ian-	2012	2013 01	2013 02	2013 Q3	2013 Q4	2013	2014 01
<u> </u>				oct)							
Rental expense (t+1)	-1815	-1560	-1342	-1523	-1844	-423	-480	-486	-485	-1841	-485
Cost of secured debt	5,0%	5,0%	4,5%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%
Asset life	20	20	20	20	20	20	20	20	20	20	20
Asset value	18150	15600	14126	16920	20493	4700	5333	5400	5389	20455	5389
Implied Interest expense	-908	-780	-636	-677	-820	-188	-213	-216	-216	-818	-216
Depreciation	-908	-780	-706	-846	-1025	-235	-267	-270	-269	-1023	-269
CapEx		-1770	-767		7391					985	
Norwegian (NOK 000s)	2009	2010	2011	2012	2013]					
Rental expense (t+1)	-620114	-778411	-829667	-1032915	-1284395						
Cost of debt	5,0%	5,0%	4,5%	4,0%	4,0%						
Asset life	20	20	20	20	20						
Asset Value	7784110	8296670	10872789	14271056	14271056						
Implied Interest expense	-389206	-414834	-489276	-570842	-570842						
Depreciation	-230909	-363578	-340391	-462073	-713553						
						•					
Aer Lingus (Euro 000s)	2009	2010	2011	2012	2013]					
Rental expense (t+1)	-51579	-43909	-46317	-45182	-45182						
Cost Debt	5,0%	5,0%	4,5%	4,0%	4,0%						
Asset life	20	20	20	20	20						
Asset value	515790	439090	487547	502022	502022						
Implied Interest expense	-25790	-21955	-21940	-20081	-20081						
Depreciation	25790	21955	24377	25101	25101						
Finnair (Euro millions)	2009	2010	2011	2012	2013						
Rental expense (t+1)	-120	-109	-156	-148	-169						
Cost of debt	5,0%	5,0%	4,5%	4,0%	4,0%						
Asset life	20	20	20	20	20						
Asset Value	1089	1560	1557	1882	1882						
Implied Interest expense	-54	-78	-70	-75	-75						
Depreciation	-66	-31	-86	-73	-94						
						•					
Lufthansa (Euro millions)	2009	2010	2011	2012	2013						
Rental expense (t+1)	-246	-136	-113	-74	-74						
Cost Debt	5,0%	5,0%	5,0%	4,0%	4,0%						
Asset life	20	20	20	20	20						
Asset value	2460	1360	1130	822	822						
Interest expense	-123	-68	-57	-33	-33						
Depreciation	-123	-68	-57	-41	-41						

Appendix 5 – SAS and peers key operating data

SAS	2009	2010	2011	2012	2013
Passenger nr (000)	24898	25228	27206	27583,3	28050,37
RPK (mil)	25226	25711	27174	28491,53	29674,53
ASK (mil)	35571	34660	37003	38312,95	40771,97
Load Factor	70,9%	74,2%	73,4%	74,4%	72,8%
Avg. flight distance km	1013,174	1019,1454	998,8238	1032,927	1057,902
Avg. revenue per km	1,29525	1,16444	1,12229	1,10946	1,04233
ASK per employee	1,893485	2,2276496	2,443733	2,570821	2,886102
Nr of employees	18786	15559	15142	14903	14127
Norwegian	2009	2010	2011	2012	2013
Passenger nr (000)	10800	13000	15700	17700	20700
RPK (mil)	10602	13774	17421	20353	26881
ASK (mil)	13555	17804	21958	25920	34318
Load Factor	78,20%	77,40%	79,30%	78,50%	78,30%
Passenger revenue (000 Euro)	6389406	7210161	9097288	11201072	13381460
Avg. flight distance	981,6667	1059,5385	1109,618	1149,887	1298,599
Avg. revenue per km (NOK)	0,60266	0,5234617	0,522202	0,55034	0,497804
ASK per employee	7,319114	8,0524649	9,737472	8,45953	8,655233
Nr of employees	1852	2211	2255	3064	3965
Aer Lingus	2009	2010	2011	2012	2013
Passenger nr (000)	10382	9346	9513	9653	9625
RPK (mil)	15819	13895	14051	14523	14807
ASK (mil)	21228	18260	18593	18685	18898
Load Factor	74,50%	76,10%	75,60%	77,70%	78,40%
Passenger revenue (000 Euro)	992683	1001119	1067993	1159853	1170614
Avg. flight distance	1523,695	1486,7323	1477,031	1504,506	1538,39
Avg. revenue per km (Euro)	0,062753	0,0720489	0,076008	0,079863	0,079058
ASK per employee	5,522373	5,1934016	5,325981	5,312767	5,29801
Nr of employees	3844	3516	3491	3517	3567
Finnair	2009	2010	2011	2012	2013
Passenger nr (000)	7433	7139	8013	8774	9269
RPK (mil)	19934	19222	21498	23563	24776
ASK (mil)	26260	25127	29345	30366	31162
Load Factor	75,90%	76,50%	73,30%	77,60%	79,50%
Passenger revenue (million Euro)	1538	1740	1971	2187	2174
Avg. flight distance	2681,824	2692,534	2682,89	2685,548	2672,996
Avg. revenue per km (E)	0,077155	0,0905213	0,091683	0,092815	0,087746
ASK per employee	2,985109	3,3157825	3,929958	4,76853	5,369981
Nr of employees	8797	7578	7467	6368	5803
Lufthansa	2009	2010	2011	2012	2013
Passenger nr (000)	76543	92693	100603	103590	104587
RPK (mil)	160647	186451	200376	205015	209649
ASK (mil)	206269	234377	258263	260169	262682
Load Factor	77,90%	79,60%	77,60%	78,80%	79,80%
Passenger revenue (million Euro)	15430	19186	20534	21766	21743
Avg. flight distance	2098,781	2011,4895	1991,75	1979,1	2004,542
Avg. revenue per km (Euro)	0,096049	0,102901	0,102477	0,106168	0,103711
ASK per employee	1,836441	2,0020928	2,168746	2,197967	2,238583
Nr of employees	112320	117066	119084	118368	117343

Appendix 6 – SAS and peers reorganized financial statements

SAS reorganized Income Statement incl. quaterly data used for 2012 and 2013 (incl IAS 19 and new pension agreements modified) full year calculations

MSEK	2014 01	2013 -	2013	2013 04	2013 03	2013 02	2013 01	2012	2012	2011	2010	2009
Traffic revenue	2014 Q1	modified	2015	2013 04	2013 03	2013 Q2	2013 Q1	2012	(ian-oct)	2011	2010	2005
Dacconger revenue	E 727	20021	20021	0266	070/	7622	COFC	21610	26000	20/07	20020	22674
Charter	217	2042	2042	645	721	227	323	1060	1726	1977	1022	2176
Mail and freight	212	1269	1760	220	204	221	244	1300	1120	1440	1533	1011
Other troffic revenue	312	1208	1208	550	294	321	544	1356	1054	2121	1006	1011
	486	2220	2220	558	10422	496	000	2409	1954	2131	1906	1869
lotal traffic revenue	6852	36461	36461	9899	10422	8/8/	8339	<u>3/33/</u>	31808	35949	35308	37730
Other operating revenue									10			
In-flight sales	-	-	-	-	-	-	-	-	18	27	30	457
Ground handling services	-	-	-	-	-	-	-	-	1012	1339	1182	1349
Technical maintenance	-	-	-	-	-	-	-	-	148	243	263	604
Terminal and forwarding services	-	-	-	-	-	-	-	-	315	383	219	767
Sales commissions and charges	-	-	-	-	-	-	-	-	776	477	434	398
Other operating revenue	-	-	-	-	-	-	-	-	1909	2994	3287	3613
Total other operating revenue	1019	<u>4577</u>	<u>4577</u>	1160	1171	1146	1258	<u>5012</u>	<u>4178</u>	<u>5463</u>	5415	7188
		0	0					0				
Total revenue	7871	41038	41038	11059	11593	9933	9597	42349	35986	41412	40723	44918
								0				
Payroll expenses	-1446	<u>-10027</u>	-10171	-2661	-2887	-2599	-3160	<u>-13679</u>	-11584	-13092	-13473	-17998
Jet fuel expenses	-1830	-8908	-8908	-2502	-2354	-2152	-2038	<u>-9386</u>	-8035	<u>-7769</u>	-6601	-7685
Other operating expenses												
Selling costs	-490	-2358	-2358	-626	-604	-594	-620	-2405	-1994	-2348	-465	-597
Government user fees	-843	-4080	-4080	-1079	-1109	-1012	-954	-4172	-3539	-4042	-4198	-4399
Catering costs	-171	-957	-957	-313	-237	-224	-207	-917	-780	-823	-869	-1187
Handling costs	-382	-1644	-1644	-403	-446	-410	-390	-1631	-1372	-1709	-1712	-1767
Technical aircraft maintenance	-643	-2564	-2564	-667	-629	-624	-646	-2453	-2025	-2329	-2410	-2938
Computer and telecommunications costs	-254	-988	-988	-234	-244	-260	-243	-1059	-898	-1088	-1823	-2130
Other	-833	-3496	-3496	-860	-756	-984	-1021	-4139	-3462	-3633	-7132	-5209
Total other operating expenses	-3616	-15944	-16088	-4182	-4025	-4108	-4081	-16776	-14070	-15972	-18609	-18227
<u> </u>												
Share of income in affiliated companies	-12	26	26	19	19	0	-13	23	32	28	12	-258
Income from the sale of shares in	1	701	-370	-69	0	-302	0	400	400		-73	429
subsidiaries and affiliated companies	_				-		-			-		
Income from sale of aircraft and build	-22	-128	-128	-32	-39	-40	-7	-252	-247	12	-239	-97
	-33	120	120	01	00	10		202			2010	2009
FRITDAR	946	6758	5399	1632	2307	732	298	2680	2482	4619	1740	1082
Rental lease expense	-/185	-1844	-18//	-486	_480	_//22	-397	-1605	_13/2	-1560	-1815	-2319
Reported FBITDA	461	4913	3554	1146	1827	309	_99	1074	1140	3059	-75	-1237
Implied interest on capitalized on lease	216	818	818	216	216	213	188	820	677	636	780	908
Adjusted EBITDA	677	5721	/272	1262	20/12	522	200	1904	1917	2605	705	-330
Depresention amort and impairment	220	1504	1504	2002	126	110	126	1709	1426	2/12	1067	10/15
	-329	-1594	-1394	-300	-420	-410	-420	-1708 196	-1420	12415	-1007	-1045 2175
	0.1	4130	1620	100	101/	204	-337	200	331	1202	-1102	-21/5
NORAT	-01	-2427	-1030	-190	-398	20	79	-39	-02	40	303	510
NOPAL	267	1/11	1149	1/8	1219	132	-258	<u>147</u>	309	1327	-859	-1664
income from other holdings of securities	5	4	4	0	0	0	1	1	0	-1469	-263	204
Financial income	25	61	61	18	11	13	8	101	96	224	186	304
Financial expenses	-308	-1037	-1037	-279	-230	-233	-251	-1221	-1055	-1030	-1041	-645
Implied Interest on capitalized op. lease	-216	-818	-818	-216	-216	-213	-188	-820	-6/7	-636	-/80	-908
NFE (Net financial Expenses)	-494	-1790	-1790	-477	-441	-433	-430	-1939	-1636	-2911	-1898	-1249
lax shield	115	1050	1050	96	109	-116	101	405	342	-104	496	293
NFE AT (Net Financial Expenses After Ta	-379	-740	-740	-381	-332	-549	-329	-1534	-1294	-3014	-1402	-956
Income from discontinued operations	0	0	0	0	0	0	0	0	0	0	43	-327
Net Earnings	-112	<u>971</u>	<u>409</u>	397	886	-417	-587	<u>-1387</u>	-985	<u>-1687</u>	-2218	-2947

SAS reorganized Balance Sheet, incl. year 2013 modified according to IAS 19 and new pension agreements

Operating Side	2013-	2013	2012	2011	2010	2009	Financing Side	2013-	2013	2012	2011	2010	2009
MSEK	mod						MSEK	mod					
Operating assets							Total shareholders' equity	3226	11103	11156	12433	14438	11389
Non-current assets													
Intangible assets	1802	1802	1922	1693	1414	1296	Interest-bearing debt						
							Long-term liabilities						
Tangible fixed assets							Subordinated Loans	956	956	978	1019	974	919
Land and Building	241	241	353	491	375	439	Bond Loans	2641	2641	2763	2809	1503	0
Aircraft	8795	8795	11220	11866	12652	13087	Other Loans (Non-Current)	5054	5054	5260	6179	6866	6809
Spare engines and spare parts	147	147	1349	1367	1393	1299	Capitalized operating lease	20455	20455	20493	14126	15600	18150
Workshop and aircraft servicing equip.	117	117	110	76	90	161							
Other equipment and vehicles	105	105	117	123	130	192	Current liabilities						
Investment in progress	21	21	34	66	118	158	Current Portion of LT loans	2517	2517	1403	2309	1383	5742
Prepaym. rel. to tangible fixed assets	251	251	160	155	24	238	Short term loans	231	231	411	997	1073	907
Capitalized operating lease	20455	20455	20493	14126	15600	18150	Liab. attrib. to Assets for sale	0	0	0	0	132	157
Financial fixed assets									_			_	
LT receivables. from affl. Companies	0	0	0	0	0	0	Total Interest-bearing debt	<u>31854</u>	<u>31854</u>	<u>31308</u>	<u>27439</u>	27531	<u>32684</u>
Deferred tax assets	800	536	597	1340	1187	1159							
Other long-term receivables	2249	2249	1250	1011	2379	729	Interest-bearing assets						
							Financial fixed assets						
Current Assets							Equity in affiliated companies	352	352	325	317	294	358
Expendable spare parts and inventories	359	359	687	705	678	758	Other holdings of securities	292	292	23	23	23	234
Prepayments to suppliers	2	2	0	0	0	0	Pension funds	3428	12507	12232	11355	10512	10286
Current receivables							Current Receivables						
Accounts receivable	1376	1376	1311	1275	1277	1581	Short-Term investments	2080	2080	366	2842	3281	3691
Receivables from affiliated companies	1	1	3	6	3	92	Cash	2671	2671	2423	966	1762	498
Other receivables	866	866	1399	2574	2901	4780	Assets held for sale	0	0	0	0	493	401
Prepaid expenses and accrued income	858	858	873	934	839	1058							
							Total Interest-bearing assets	8823	17902	<u>15369</u>	<u>15503</u>	<u>16365</u>	<u>15468</u>
Total Operating Assets	<u>38445</u>	<u>38181</u>	41878	37808	41060	45177							
							Net interest-bearing debt	23031	13952	15939	11936	11166	1/216
Operating Liabilities							luura ata d Causita d	26257	25055	27005	24260	25604	20005
Long-term liabilities (non-current)		020	4040	2454	2202	2022	Invested Capital	26257	25055	27095	<u>24369</u>	25604	28605
Deferred tax liability	1201	938	1013	2154	2303	2832							
Other provisions	1361	1361	1967	1673	2143	2131							
Other Liabilities (non-current)	101	101	130	22	143	3/8							
Current liabilities													
Prenavments from Customers	16	16	Λ	24	16	12							
Accounts Pavable	1680	1680	1920	1540	17/0	1729							
Liabilities to affilitated companies	1009	1009	ر عرب ۱	1040	1,43	1,20							
Tax Pavable	36	36	22	19	22	0 77							
Unearned Transportation revenue	3932	2022	4292	3453	3598	3227							
Current Portion of other provisions	855	855	1186	478	657	857							
Other Liabilities (current)	722	722	1033	1160	2070	2110							
Accrued expenses and prepaid income	3416	3416	3201	2934	2755	3264							
	3410	5410	5201	2554	2,33	5204							
Total Operating Liabilities	12188	13126	14783	13439	15456	16572							
<u></u>		10120		<u></u>	10.00	20072							
Invested Capital (Net Operating Assets	26257	25055	27095	24369	25604	28605							

Norwegian reorganized Income Statement

NOK 1000	2013	2012	2011	2010	2009
Revenues					
Passenger transport	13381460	11201072	9097288	7210161	6389406
Ancillary revenue	1757887	1405495	1224744	1034006	788655
Other revenues	371871	234624	206688	162172	131129
Other income	68326	17851	3471	191328	0
Total revenue	<u>15579544</u>	<u>12859042</u>	<u>10532191</u>	<u>8597667</u>	<u>7309190</u>
Payroll expenses	<u>-2478294</u>	<u>-2068202</u>	<u>-1836194</u>	<u>-1531211</u>	<u>-1303299</u>
Fuel expenses	<u>-4707203</u>	<u>-3740508</u>	<u>-3093514</u>	<u>-2092859</u>	-1423328
Other operating expenses					
Sales & Distribution	-339376	-274954	-198930	-167859	-149415
Airport charges	-2182645	-1730217	-1561369	-1295913	-1037716
Handling charges	-1339417	-1077334	-982191	-863551	-722658
Technical maintenance	-927820	-792565	-711597	-697196	-659796
Other aircraft expenses	-589740	-482931	-441657	-405787	-325372
Other operating expenses	-733319	-534335	-472908	-397735	-396058
Total operating expenses	<u>-13297814</u>	-10701046	-9298360	-7452111	-6017642
EBITDAR	2281730	2157996	1233831	1145556	1291548
Rental lease expense	-1284395	-1032915	-829667	-778411	-620114
Reported EBITDA	997335	1125081	404164	367145	671434
Implied interest on capitalized operating lease	570842	570842	489276	414834	389206
Adjusted EBITDA	1568177	1695923	893440	781979	1060640
Depreciation, amortization and impairment	-529825	-385244	-293950	-186707	-148882
EBIT	1038352	1310679	599490	595272	911758
Tax on EBIT	-274953	-350255	-159878	-176830	-258714
NOPAT	763400	<u>960424</u>	<u>439612</u>	<u>418441</u>	<u>653044</u>
Share of result in associated company	46597	32840	19518	6328	3200
Other losses/(gains)-net	502148	-336385	305720	29732	49315
Financial income	176920	344820	52938	75092	68907
Financial expenses	-755794	-157932	-321850	-48491	-20933
Implied interest on capitalized operating lease	-570842	-570842	-489276	-414834	-389206
NFE_	-600971	-687499	-432950	-352173	-288717
Tax shield	159135	183722	115463	104616	81924
NFE AT	-441836	-503777	-317486	-247557	-206792
Net Earnings	<u>321564</u>	<u>456646</u>	<u>122125</u>	<u>170884</u>	<u>446251</u>

Norwegian reorganized Balance Sheet

	2012	2012	2011	2010	2000
NOK 1000	2013	2012	2011	2010	2009
Operating access					
Intensible assets	225270	727774	226216	210202	100542
Deferred tax assets	223270	257774	250210	210295	190545
Aircraft	20317	4295	2009	270	074902
Aircrait	7526707	55/9/5/	3809159	2092130	974892
Equipment and fixtures	12972	58476	31991	20175	30905
Buildings	14966	9525	9525	9525	3933
Prepayment Boeing contract	2514882	2844359	2126954	2002600	1410992
Other receivables	199036	135562	113061	53242	26391
	/4135	68385	81994	66191	40825
Trade and other receivables	1623079	1096558	1072497	842143	829893
Capitalized operating lease	14271056	14271055,6	10872789	8296670	7784110
Total Operating Assets	<u>26550620</u>	<u>24305744,6</u>	<u>18416255</u>	<u>13599245</u>	<u>11292641</u>
Operating Liabilities					
Provisions	412737	175306	81865	94961	70336
Deferred tax liability	443991	301042	134646	89483	17806
Trade and other payables	1949693	1564955	1230935	1063436	746549
Air traffic settlement liabilities	2566519	1739681	1208326	954232	792713
Tax payable	2	0	488	976	111158
Total Operating Liabilities	<u>5372942</u>	<u>3780984</u>	<u>2656260</u>	<u>2203088</u>	<u>1738562</u>
Invested Capital (Net Operating Assets)	<u>21177678</u>	<u>20524760,6</u>	<u>15759995</u>	<u>11396157</u>	<u>9554079</u>
Financing Cide					
Total shareholders' equity	2749827	2420651	1945589	1795904	1601607
Interest-bearing debt					
Interest-bearing debt Borrowings	5736896	4166854	2682888	1943903	878878
Interest-bearing debt Borrowings Finance lease liability	5736896 6860	4166854 10853	2682888 15485	1943903 20007	878878 28829
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings	5736896 6860 768401	4166854 10853 1349359	2682888 15485 1551918	1943903 20007 520972	878878 28829 675304
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument	5736896 6860 768401 0	4166854 10853 1349359 190356	2682888 15485 1551918 539	1943903 20007 520972 15003	878878 28829 675304 1227
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation	5736896 6860 768401 0 127821	4166854 10853 1349359 190356 0	2682888 15485 1551918 539 151187	1943903 20007 520972 15003 121672	878878 28829 675304 1227 97558
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation Capitalized operating lease	5736896 6860 768401 0 127821 14271056	4166854 10853 1349359 190356 0 14271055 6	2682888 15485 1551918 539 151187 10872789	1943903 20007 520972 15003 121672 8296670	878878 28829 675304 1227 97558 7784110
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i>	5736896 6860 768401 0 127821 14271056	4166854 10853 1349359 190356 0 14271055,6	2682888 15485 1551918 539 151187 10872789	1943903 20007 520972 15003 121672 8296670	878878 28829 675304 1227 97558 7784110
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u>	5736896 6860 768401 0 127821 14271056 <u>20911034</u>	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u>	2682888 15485 1551918 539 151187 10872789 <u>15274806</u>	1943903 20007 520972 15003 121672 8296670 <u>10918227</u>	878878 28829 675304 1227 97558 7784110 <u>9465906</u>
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u> Interest-bearing assets	5736896 6860 768401 0 127821 14271056 <u>20911034</u>	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u>	2682888 15485 1551918 539 151187 10872789 <u>15274806</u>	1943903 20007 520972 15003 121672 8296670 <u>10918227</u>	878878 28829 675304 1227 97558 7784110 <u>9465906</u>
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u> Interest-bearing assets Finance lease assets	5736896 6860 768401 0 127821 14271056 <u>20911034</u> 21242	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u> 24562	2682888 15485 1551918 539 151187 10872789 <u>15274806</u> 27882	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u> Interest-bearing assets Finance lease assets Finance lease assets	5736896 6860 768401 0 127821 14271056 <u>20911034</u> 21242 93847	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u> 24562 12861	2682888 15485 1551918 539 151187 10872789 <u>15274806</u> 27882 2689	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203 2689	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092 7236
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u> Interest-bearing assets Finance lease assets Financial assets available for sale Investments in associates	5736896 6860 768401 0 127821 14271056 <u>20911034</u> 21242 93847 164575	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u> 24562 12861 116050	2682888 15485 1551918 539 151187 10872789 <u>15274806</u> 27882 2689 82001	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203 2689 62272	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092 7236 47943
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u> Interest-bearing assets Finance lease assets Financial assets available for sale Investments in associates Derivative financial instrument	5736896 6860 768401 0 127821 14271056 <u>20911034</u> 21242 93847 164575 37389	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u> 24562 12861 116050 0	2682888 15485 1551918 539 151187 10872789 <u>15274806</u> 27882 2689 82091 242790	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203 2689 62272 43395	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092 7236 47943 23688
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u> Interest-bearing assets Finance lease assets Financial assets available for sale Investments in associates Derivative financial instrument Cash and cash equivalents	5736896 6860 768401 0 127821 14271056 <u>20911034</u> 21242 93847 164575 37389 2166130	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u> 24562 12861 116050 0 1730895	2682888 15485 1551918 539 151187 10872789 <u>15274806</u> 27882 2689 82091 242790 1104948	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203 2689 62272 43395	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092 7236 47943 23688
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> <u>Total Interest-bearing debt</u> Interest-bearing assets Finance lease assets Financial assets available for sale Investments in associates Derivative financial instrument Cash and cash equivalents	5736896 6860 768401 0 127821 14271056 <u>20911034</u> 21242 93847 164575 37389 2166130	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u> 24562 12861 116050 0 1730895	2682888 15485 1551918 539 151187 10872789 <u>15274806</u> 27882 2689 82091 242790 1104948	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203 2689 62272 43395 1178415	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092 7236 47943 23688 1408475
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> Total Interest-bearing debt Interest-bearing assets Finance lease assets Financial assets available for sale Investments in associates Derivative financial instrument Cash and cash equivalents Total Interest-bearing assets	5736896 6860 768401 0 127821 14271056 <u>20911034</u> 21242 93847 164575 37389 2166130 <u>2483183</u>	4166854 10853 1349359 190356 0 14271055,6 <u>19988477,6</u> 24562 12861 116050 0 1730895 <u>1884368</u>	2682888 15485 1551918 539 151187 10872789 <u>15274806</u> 27882 2689 82091 242790 1104948 <u>1460400</u>	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203 2689 62272 43395 1178415 <u>1317974</u>	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092 7236 47943 23688 1408475 <u>1513434</u>
Interest-bearing debt Borrowings Finance lease liability Short term part of borrowings Derivative financial instrument Pension Obligation <i>Capitalized operating lease</i> Total Interest-bearing debt Interest-bearing assets Finance lease assets Financial assets available for sale Investments in associates Derivative financial instrument Cash and cash equivalents Total Interest-bearing assets Net interest-bearing debt	5736896 6860 768401 0 127821 14271056 20911034 21242 93847 164575 37389 2166130 <u>2483183</u> 18427851	4166854 10853 1349359 190356 0 14271055,6 19988477,6 24562 12861 116050 0 1730895 <u>1884368</u> 18104109,6	2682888 15485 1551918 539 151187 10872789 15274806 27882 2689 82091 242790 1104948 <u>1460400</u> 13814406	1943903 20007 520972 15003 121672 8296670 <u>10918227</u> 31203 2689 62272 43395 1178415 <u>1317974</u> 9600253	878878 28829 675304 1227 97558 7784110 <u>9465906</u> 26092 7236 47943 23688 1408475 <u>1513434</u> 7952472

Aer Lingus reorganized Income Statement

EUR 1000	2013	2012	2011	2010	2009
Revenues					
Passenger revenue	1170614	1159853	1067993	1001119	992683
Anciallry revenue	181444	176466	168651	165127	173907
Cargo Revenue	43639	45670	43069	41271	34338
Other revenue	29418	11295	8596	8055	4811
Total revenue	1425115	1393284	<u>1288309</u>	1215572	1205739
Staff costs	-277353	-266764	-260550	-258892	-312192
Fuel and oil costs	-357338	-358560	<u>-288728</u>	-266205	-331657
Other Operating expenses					
Maintenance expenses	-68419	-60096	-58104	-54253	-70451
Airport charges	-298678	-295336	-275631	-252589	-251993
En-route charges	-60689	-61391	-59668	-55961	-59001
Distribution charges	-46978	-46957	-46728	-47521	-45458
Ground op., catering, other operating costs	-126995	-126240	-129102	-109281	-101734
Other gains/losses-net	588	13330	3028	25799	24248
Net exceptional items	-17354	-26466	37161	-30987	-88630
Total Other Operating expenses	<u>-1253216</u>	-1228480	<u>-1078322</u>	-1049890	-1236868
EBITDAR	171899	164804	209987	165682	-31129
Operating lease payments	-45182	-46137	-43909	-51579	-55845
EBITDA	126717	118667	166078	114103	-86974
Implied interest on capitalized operating lease	20081	20081	21940	21955	25790
Adjusted EBITDA	146798	138748	188018	136058	-61185
Depreciation and amortization	-82927	-76079	-79808	-87444	-82674
EBIT	63871	62669	108210	48614	-143859
Tax on EBIT	-8832	-10107	-16890	22906	23008
NOPAT	<u>55039</u>	<u>52562</u>	<u>91319</u>	<u>71520</u>	<u>-120851</u>
Finance income	10837	15303	15422	22401	36900
Finance cost	-15075	-17131	-17330	-15613	-22098
Share of loss of Joint Venture	6	-190	0	0	0
Implied interest on capitalized operating lease	-20081	-20081	-21940	-21955	-25790
NFE_	-24313	-22099	-23848	-15167	-10988
Tax shield	3362	3564	3722	-7146	1757
NFE AT	-20951	-18535	-20125	-22313	-9230
Net Earnings	34088	34027	<u>71194</u>	<u>49207</u>	<u>-130081</u>

Aer Lingus reorganized Balance Sheet

Operating Side	2013	2012	2011	2010	2009
Euro 1000					
Operating assets					
Non-current assets					
Property, plant and equipment	689447	741087	770944	760356	790486
Intangible assets	14444	12447	12643	4388	5613
Investment in joint venture	13933	10764	0	0	0
Deferred tax asset	0	1330	4929	13537	4755
I rade and other receivables	43278	15858	16680	0	0
Deposits	101752	119716	128516	128359	101305
Non-current assets held for sale	0	0	9792	0	0
Capitalized operating lease	502022	502022	487547	439090	515790
Current Assets					
Inventories	2536	2235	1/193	1280	816
Trade and other receivables	73526	83929	79319	82454	75835
Current income tax receivables	, 3320	3	16	3/	18
Denosits	563229	432504	459561	420885	636093
Total Operating Assets	2004167	1921895	1971440	1850383	2130711
	2004107	1521055	1571440	1050505	2150711
Operating Liabilities					
Non-current liabilities					
Provisions for other liabilities and charges	57627	55138	47826	80012	115050
Deferred tax liability	3864	0	0	0	0
Current liabilities					
Trade and other payables	292268	283639	293453	299117	340710
Provisions for other liabilities and charges	19105	29732	33678	71538	58483
Total Operating Liabilities	372864	368509	<u>374957</u>	450667	<u>514243</u>
Invested Capital (Net Operating Assets)	<u>1631303</u>	<u>1553386</u>	<u>1596483</u>	<u>1399716</u>	<u>1616468</u>
Financing Side					
Total shareholders' equity	852767	834711	836721	802408	704497
Interest-bearing debt					
Non-current liabilities	262277	400.000	500074	470650	444274
Finance lease obligations	363277	489608	536971	479658	444374
Derivative financial instruments	215	846	/33	0	/303
Post employment benefit obligations	28254	34858	28982	0	0
Capitalized operating lease	502022	502022	487547	439090	515790
Current lighilities					
Current nubilities	114221	41070	10266	EEE72	10217
Parivative financial instruments	114321	41979	40266	355/3	48247
Derivative infancial instruments	14274	11220	0005	/511	118/3
Total Interact bearing debt	1022262	1090522	1102266	001920	1027597
Total Intelest-bearing debt	1022303	1060555	1105500	991820	1027587
Interest-hearing assets					
Non-current assets					
Loans and non-current receivables	11742	13373	42180	39790	71944
Derivative financial instruments (non-curre	1742	43373	2084	8462	6849
	1200	1007	2004	0402	0045
Current assets					
Derivative financial instruments (current)	10125	4539	34845	40261	17699
Loans and receivables	31887	0	0	0	5362
Cash and cash equivalents	188805	312939	264495	305999	13762
Total Interest-bearing assets	243827	361858	343604	394512	115616
A			<u></u>	<u></u>	
Net interest-bearing debt	778536	718675	759762	597308	911971
Invested Capital	1631303	1553386	1596483	1399716	1616468

Finnair reorganized Income Statement

Operating side	2013	2012	2011	2010	2009
Million Furo	2015	LUIL	2011	2010	2005
Operating assets					
Intangible assets	19	26	32	39	46
Tanaihle assets	15	20	52	35	10
Land	1	1	1	1	1
Buildings	26	20	52	54	52
Aircraft	1101	1750	1102	1221	1220
All clait	1101	1230	226	112	114
Advanses paid	20	54 22	220	112	114
Advances paid	00	22	22	19	0Z 21
Receivables	21	33	32	14	21
	55	/8	/5	48	42
	20	1/	49	48	3/
Irade receivables & other receivables	237	251	283	252	198
Capitalized operating lease	1882	1882	1557	1560	1089
Total Operating Assets	<u>3555</u>	<u>3649</u>	<u>3497</u>	<u>3367</u>	<u>2901</u>
Operating Liabilities					
Deferred tax liability	73	95	99	103	99
Trade payables & other liabilities	62	650	627	576	582
Current income tax liabilities	0	0	0	0	0
Provisions (short term)	41	38	46	28	73
Provisions (long term)	69	82	87	73	0
Deferred income	341	0	0	0	0
Accruals realtd to other expenses	169	0	0	0	0
Employe benefit related accruals	95	0	0	0	0
Total Operating Liabilities	<u>849</u>	<u>866</u>	<u>859</u>	<u>780</u>	<u>754</u>
Invested Canital (Net Operating Assets)	2706	2783	2638	2587	2147
Financing side	2700	2705	2000	2307	214/
Total shareholders' equity	692	786	753	853	854
	052	700	755	000	054
Interest-bearing debt					
Interest-bearing liabilities (Long-term)	411	414	516	678	637
Pension obligation	11	1	0	3	0
Interest-bearing liabilities (Short term)	208	174	230	99	202
Liabilities attributable to assets held for sale	2	2	0	0	0
Derivative financial instruments	29	0	0	0	0
Capitalized operating lease	1882	1882	1557	1560	1089
Total Interest-bearing debt	<u>2543</u>	<u>2473</u>	2303	<u>2339</u>	<u>1928</u>
Interest-bearing assets					
Investments in associates companies	8	12	14	8	8
Other financial assets	336	364	354	485	598
Cash & Cash equivalents	123	67	50	42	9
Assets held for sale	18	32	0	71	19
Derivative financial instruments	44	0	0	0	0
Total Interest-bearing assets	<u>528</u>	<u>475</u>	<u>417</u>	<u>605</u>	<u>635</u>
Net interest-bearing debt	2014	1998	1886	1734	1293
Invested Capital	2706	<u>2</u> 783	<u>2</u> 638	<u>2</u> 587	<u>2</u> 147

Finnair reorganized Balance Sheet

Operating side	2013	2012	2011	2010	2009
Million Euro					
Operating assets					
Intangible assets	19	26	32	39	46
Tanaihle assets					
Land	1	1	1	1	1
Buildings	36	38	52	54	52
Aircraft	1181	1258	1183	1221	1220
Other equipment	26	3/	226	112	11/
Advances paid	66	22	220	10	22
Receivables	21	22	27	13	21
Deferred tax receivables	66	79	75	19	42
	20	17	/0	40	42
Trade receivables & other receivables	20	251	100	40 252	100
Capitalized operating loace	1002	1002	203	252	198
Capitalized operating lease	1882	1882	1557	1560	1089
Total Operating Assets	<u>3555</u>	<u>3649</u>	<u>3497</u>	<u>3367</u>	<u>2901</u>
Operating Liabilities					
Deferred tax liability	73	95	99	103	99
Trade payables & other liabilities	62	650	627	576	582
Current income tax liabilities	0	0	0	0	0
Provisions (short term)	41	38	46	28	73
Provisions (long term)	69	82	87	73	, 9
Deferred income	341	0	0	, 5	0
Accruals realtd to other expenses	169	0	0	0	0
Employe henefit related accruals	105	0	0	0	0
		0	0	0	0
Total Operating Liabilities	<u>849</u>	<u>866</u>	<u>859</u>	<u>780</u>	<u>754</u>
Invested Capital (Net Operating Assets)	<u>2706</u>	<u>2783</u>	<u>2638</u>	<u>2587</u>	<u>2147</u>
Financing side					
Total shareholders' equity	692	786	753	853	854
Interest-bearing debt					
Interest-bearing liabilities (Long-term)	411	414	516	678	637
Pension obligation	11	1	0	3	0.57
Interest-bearing liabilities (Short term)	208	174	230	99	202
Liabilities attributable to assets held for sale	200	2/1	230	0	202
Derivative financial instruments	29	0	0	0	0
Capitalized operating lease	1882	1882	1557	1560	1089
Total Interest-bearing debt	<u>2543</u>	<u>2473</u>	<u>2303</u>	<u>2339</u>	<u>1928</u>
Interest-bearing assets					
Investments in associates companies	8	12	14	8	8
Other financial assets	336	364	354	485	598
Cash & Cash equivalents	123	67	50	42	9
Assets held for sale	18	32	0	71	19
Derivative financial instruments	44	0	0	0	0
Total Interest-bearing assets	<u>52</u> 8	<u>475</u>	<u>417</u>	<u>605</u>	<u>63</u> 5
Not interest bearing debt	2014	1000	1006	1724	1202
interest-bearing debt	2014	1998	τααρ	1/34	1293
Invested Capital	2706	<u>2783</u>	<u>2638</u>	<u>2587</u>	<u>2147</u>

Lufthansa reorganized Income Statement

Million Euro	2013	2012	2011	2010	2009
Revenues					
Passenger revenue	21743	21766	20534	19186	15430
Freight and mail	2822	3027	3245	3082	2174
Other Revenue	5463	5342	4955	5056	4679
Other operating income	2042	2785	2324	2655	2531
Changes in inventory	158	113	139	165	225
Total revenue	<u>32228</u>	<u>33033</u>	<u>31197</u>	<u>30144</u>	<u>25039</u>
Staff costs	-7350	<u>-7052</u>	<u>-6678</u>	-6659	-5996
Fuel	<u>-7058</u>	<u>-7392</u>	<u>-6276</u>	<u>-5158</u>	-3645
Other operating expenses					
Raw materials	-2212	-2157	-2127	-2175	-2028
Purchased goods	-440	-455	-432	-396	-374
Fees	-5154	-5167	-5000	-4582	-3762
Charter expenses	-429	-568	-617	-671	-592
MRO services	-1045	-997	-1105	-1112	-1066
In-flight services	-317	-339	-342	-340	-250
External IT-services	-166	-141	-129	-117	-106
Other services	-615	-617	-567	-573	-539
Other operating expenses	-4753	-4885	-5293	-5193	-4597
Total other operating expenses	<u>-15131</u>	<u>-15326</u>	<u>-15612</u>	<u>-15159</u>	<u>-13314</u>
EBITDAR	2689	3263	2631	3168	2084
Operating lease payments	-74	-113	-136	-246	-338
Reported EBITDA	2615	3150	2495	2922	1746
Implied interest on capitalized	33	33	57	68	123
Adjusted EBITDA	2648	3183	2552	2990	1869
Depreciation, amortization and	-1766	-1839	-1722	-1682	-1475
EBIT	882	1344	830	1308	394
Tax on EBIT	-354	-93	-292	221	-222
<u>NOPAT</u>	<u>528</u>	<u>1251</u>	<u>538</u>	<u>1529</u>	<u>172</u>
Result of equity investments	125	94	71	104	58
Interest income	162	168	190	198	181
Interest expense	-508	-486	-478	-555	-506
Other financial items	-83	-48	-110	-9	-233
Implied interest on capitalized	-33	-33	-57	-68	-123
NFE	<u>-337</u>	<u>-305</u>	<u>-384</u>	<u>-330</u>	<u>-623</u>
Tax shield	135	21	135	-56	351
NFE AT	<u>-202</u>	-284	<u>-249</u>	<u>-386</u>	<u>-272</u>
Profit/loss attributable to mino	-13	-13	-17	-12	-12
Profit/loss from discontinued o	0	36	-285	0	0
Net Earnings	<u>313</u>	<u>990</u>	<u>-13</u>	<u>1131</u>	<u>-112</u>

Lufthansa reorganized Balance Sheet

Million Euro	2013	2012	2011	2010	2009
Financing Side					
Operating assets					
Non-current assets	1100	1102	1101	1500	1511
Other intagible assets	381	375	384	329	378
Aircraft and reserve engines	12354	11838	11592	11153	10444
Spare parts	959	899	840	877	810
Property plant and other equipment	2058	2081	2118	2120	2157
Investments accounted for using the equity method	458	400	394	385	320
Deferred charges and prepaid expenses (non current)	16	25	24	26	31
Effective income tax receivables (non current)	39	52	60	61	69
Deffered claims for income tax rabates	622	44	33	1200	35
Capitalized operating lease	822	822	1130	1360	2460
Current Assets					
Inventories	641	639	620	662	646
Trade receivables and other receivables	3577	3578	3437	3401	3033
Deferred charges and prepaid expenses (current)	146	151	171	146	128
Effective income tax receivables (current)	72	101	128	98	105
Total Operating Assets	23333	22198	22122	22282	22077
Operating Liabilities					
Non-current liabilities					
Other provisions (non-current)	581	586	578	643	620
Advanced paym. received, deferred income, non-financial liab.	1187	1163	1156	1087	1000
Deferred income tax liabilities	146	242	364	405	663
Current liabilities					
Other provisions (current)	2026	911	818	881	1122
Liabilities from unused flight documents	2635	2764	2805	2902	1906
Advance payments received, deferred income, non-financial lia	2055 961	933	939	1066	1008
Effective income tax obligations	247	107	71	237	145
Provisions and liabilities relating to disposal groups					
Total Operating Liabilities	9644	9338	9090	9610	9016
Invested Capital (Net Operating Assets)	<u>13689</u>	<u>12860</u>	<u>13032</u>	<u>12672</u>	<u>13061</u>
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity	<u>13689</u> 6108	<u>12860</u> 8298	<u>13032</u> 8044	<u>12672</u> 8340	<u>13061</u> 6202
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity	<u>13689</u> 6108	<u>12860</u> 8298	<u>13032</u> 8044	<u>12672</u> 8340	<u>13061</u> 6202
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt	<u>13689</u> 6108	<u>12860</u> 8298	<u>13032</u> 8044	<u>12672</u> 8340	<u>13061</u> 6202
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities	<u>13689</u> 6108	<u>12860</u> 8298	<u>13032</u> 8044	<u>12672</u> 8340	<u>13061</u> 6202
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions	<u>13689</u> 6108 4718	<u>12860</u> 8298 2076	<u>13032</u> 8044 2165	<u>12672</u> 8340 2571	<u>13061</u> 6202 2710
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current)	<u>13689</u> 6108 4718 4823	<u>12860</u> 8298 2076 5947	<u>13032</u> 8044 2165 5808	<u>12672</u> 8340 2571 6227	<u>13061</u> 6202 2710 6109
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current)	<u>13689</u> 6108 4718 4823 148	<u>12860</u> 8298 2076 5947 198	13032 8044 2165 5808 128	12672 8340 2571 6227 110	<u>13061</u> 6202 2710 6109 87
Invested Capital (Net Operating Assets) Einancing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capital a constraine (non-current)	<u>13689</u> 6108 4718 4823 148 426 822	<u>12860</u> 8298 2076 5947 198 150 822	<u>13032</u> 8044 2165 5808 128 55 1130	<u>12672</u> 8340 2571 6227 110 111	<u>13061</u> 6202 2710 6109 87 225 2460
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease	<u>13689</u> 6108 4718 4823 148 426 822	<u>12860</u> 8298 2076 5947 198 150 822	13032 8044 2165 5808 128 55 1130	12672 8340 2571 6227 110 111 1360	<u>13061</u> 6202 2710 6109 87 225 2460
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities	<u>13689</u> 6108 4718 4823 148 426 822	<u>12860</u> 8298 2076 5947 198 150 822	<u>13032</u> 8044 2165 5808 128 55 1130	12672 8340 2571 6227 110 111 1360	<u>13061</u> 6202 2710 6109 87 225 2460
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current)	13689 6108 4718 4823 148 426 822 1514	12860 8298 2076 5947 198 150 822 963	<u>13032</u> 8044 2165 5808 128 55 1130 616	<u>12672</u> 8340 2571 6227 110 111 1360 957	<u>13061</u> 6202 2710 6109 87 225 2460 693
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current)	13689 6108 4718 4823 148 426 822 1514 1520	<u>12860</u> 8298 2076 5947 198 150 822 963 1447	<u>13032</u> 8044 2165 5808 128 55 1130 616 1422	<u>12672</u> 8340 2571 6227 110 111 1360 957 1291	<u>13061</u> 6202 2710 6109 87 225 2460 693 1244
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial liabilities (current)	13689 6108 4718 4823 148 426 822 1514 1520 183	<u>12860</u> 8298 2076 5947 198 150 822 963 1447 2	<u>13032</u> 8044 2165 5808 128 55 1130 616 1422 37	<u>12672</u> 8340 2571 6227 110 111 1360 957 1291 103	13061 6202 2710 6109 87 225 2460 693 1244 106
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial linstruments (current) Liabilities related to assets held for sale	13689 6108 4718 4823 148 426 822 1514 1520 183 0	12860 8298 2076 5947 198 150 822 963 1447 2 0	13032 8044 2165 5808 128 55 1130 616 1422 37 716	12672 8340 2571 6227 110 111 1360 957 1291 103 0	13061 6202 2710 6109 87 225 2460 693 1244 106 0
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt	13689 6108 4718 4823 148 426 822 1514 1514 1510 183 0 14154	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u>
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial instruments (current) Derivative financial instruments) Derivative financial instruments Current Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing dest	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u>
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Derivative financial instruments (current) Derivative financial instruments (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730	13061 6202 2710 6109 87 225 2460 693 1244 106 0 13634
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Derivative financial instruments (current) Derivative financial instruments (current) Interest-bearing debt Interest-bearing debt Interest-bearing debt	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0	13061 6202 2710 6109 87 225 2460 693 1244 106 0 13634 3
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to asssets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Investment property Other equity investments	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 0 500	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 12730 0 1128	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3 878
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Uther financial liabilities (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Non-current securities	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 14154	12860 8298 2076 5947 198 150 822 963 1447 2 0 <u>11605</u> 0 413 19	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 12730 0 1128 250	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3 878 349
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Investment property Other equity investments Non-current securities Loans and non-current receivables	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 14154 0 0 500 20 491	12860 8298 2076 5947 198 150 822 963 1447 2 0 <u>11605</u> 0 413 19 1052	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134 616	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 12730 0 12730 0 128 250 620	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3 878 349 506
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to asssets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Investment property Other equity investments Non-current securities Loans and non-current receivables Derivative financial instruments (non-current)	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 14154 0 0 500 20 491 335	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 11605 0 413 19 1052 268	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134 616 343	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 12730 0 1128 250 620 350	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3878 349 506 255
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (non-current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Investment property Other equity investments Non-current receivables Derivative financial instruments (non-current)	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 0 500 20 0 500 20 491 335	12860 8298 2076 5947 198 150 822 963 1447 2 0 <u>11605</u> 0 413 19 1052 268	13032 8044 2165 5808 128 55 1130 6166 1422 37 716 12077 0 898 134 616 343	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 1128 250 620 350	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3878 349 506 255
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Investment property Other equity investments Non-current receivables Derivative financial instruments (non-current) Current assets Derivative financial instruments (non-current) Current assets Derivative financial instruments (non-current)	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 500 20 491 335	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 19 1052 268 215	13032 8044 2165 5808 128 55 1130 6166 1422 37 7166 12077 0 8988 134 616 343 414	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 1128 2500 620 350 484	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3 878 349 506 255 255
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Investment property Other equity investments Non-current assets Derivative financial instruments (non-current) Current assets Derivative financial instruments (non-current) Current assets Derivative financial instruments (current) Current assets Derivative financial instruments (current)	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 14154 0 0 14154 0 0 200 491 3355 460 3146	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 19 1052 268 215 3530	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134 616 343 414 3111	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 1128 250 620 350 484 4283	13061 6202 2710 6109 87 225 2460 693 1244 106 0 13634 3 878 349 506 255 252 23303
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Uther financial liabilities (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing debt Interest-bearing asets Non-current securities Loans and non-current receivables Derivative financial instruments (non-current) Current assets Derivative financial instruments (current)	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 14154 0 0 14154 0 0 200 491 335 460 3146 1550	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 19 1052 268 215 3530 1436	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134 616 343 414 3111 887	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 12730 0 1128 250 620 350 484 4283 1097	13061 6202 2710 6109 87 225 2460 693 1244 106 0 13634 3 878 349 506 255 252 23303 1136
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current securities Loans and non-current receivables Derivative financial instruments (non-current) Current assets Derivative financial instruments (current) Liabilities Derivative financial instruments (current) Current securities Loans and non-current receivables Derivative financial instruments (current) Current assets Derivative financial instruments (current) Assets held for sale	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 1520 183 0 14154 335 460 3146 1550 71	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 19 1052 268 215 3530 1436 110	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134 616 343 414 3111 887 686	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 12730 0 12730 0 128 250 620 350 484 4283 1097 186	13061 6202 2710 6109 87 225 2460 693 1244 106 0 13634 106 0 13634 3 878 349 506 255 252 3303 1136 93
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Uabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Investment property Other equity investments Non-current securities Loans and non-current receivables Derivative financial instruments (current) Current assets Derivative financial instruments (current)	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 14154 0 0 14154 0 0 14154 335 460 3146 1550 71 6573	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 19 1052 268 215 3530 1436 110 7043	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134 616 343 414 3111 887 686 7089	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 12730 0 12730 0 12730 484 4283 1097 186 8398	13061 6202 2710 6109 87 225 2460 693 1244 106 0 13634 1244 106 0 13634 3 878 349 506 255 252 3303 1136 93 6775
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to asssets held for sale Total Interest-bearing debt Interest-bearing assets Non-current assets Investment property Other equity investments Non-current securities Loans and non-current receivables Derivative financial instruments (non-current) Current assets Derivative financial instruments (current) Securities Cash Assets held for sale Total Interest-bearing assets	13689 6108 4718 4823 148 426 822 1514 152 1514 153 0 14154 0 500 20 491 335 460 3146 1550 71 6573	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 199 1052 268 215 3530 1436 110 7043	13032 8044 2165 5808 128 55 1130 6166 1422 37 716 12077 0 898 134 616 343 414 3111 887 686 7089	12672 8340 2571 6227 110 111 1360 957 1291 00 12730 0 12730 0 12730 0 12730 484 4283 1097 186 8398	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3878 349 506 255 252 3303 1136 93 <u>6775</u>
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial liabilities (current) Derivative financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing assets Non-current securities Loans and non-current receivables Derivative financial instruments (non-current) Current assets Derivative financial instruments (current) Consequence (current) Current assets Derivative financial instruments (current) Securities Cash Assets held for sale Total Interest-bearing assets Not interest-bearing assets Net interest-bearing debt	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 14154 0 0 500 20 0 491 335 460 3146 1550 71 <u>6573</u> 7581	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 19 1052 268 215 3530 1436 110 7043 4562	13032 8044 2165 5808 128 55 1130 6166 1422 37 716 12077 0 898 134 616 343 414 3111 887 686 7089 4988	12672 8340 2571 6227 110 111 1360 957 1291 00 12730 0 12730 0 12730 0 12730 0 128 250 620 350 484 4283 1097 186 <u>8398</u> 4332	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3878 349 506 255 252 3303 1136 93 6775 6859
Invested Capital (Net Operating Assets) Financing Side Total shareholders' equity Interest-bearing debt Non-current liabilities Pension provisions Borrowings (non-current) Other financial liabilities (non-current) Derivative financial instruments (non-current) Capitalized operating lease Current liabilities Borrowings (current) Other financial instruments (current) Liabilities related to assets held for sale Total Interest-bearing debt Interest-bearing assets Non-current receivables Derivative financial instruments (non-current) Current assets Investment property Other equity investments Non-current receivables Derivative financial instruments (current) Current assets Derivative financial instruments (current) Current assets Non-current securities Cash Assets held for sale Total Interest-bearing assets Net interest-bearing debt Interest-bearing assets Investment Current proceivables Derivative financial instruments (current) Securities Cash Assets held for sale Total Interest-bearing debt Interest-bearing debt Interest-bearing assets Net interest-bearing debt Interest-bearing assets Investment Current proceivables Interest-bearing assets	13689 6108 4718 4823 148 426 822 1514 1520 183 0 14154 0 500 200 201 335 460 3146 1550 71 6573 7581	12860 8298 2076 5947 198 150 822 963 1447 2 0 11605 0 413 199 1052 268 215 3530 1436 110 7043 4562 12262	13032 8044 2165 5808 128 55 1130 616 1422 37 716 12077 0 898 134 616 12077 0 898 134 616 1414 3111 887 686 7089 4988 12055 12055 12055 120 12055 120 12055 12055 120 12055 12055 1205 12055 1205 12055 1205 1205 1205 1205 1205 1205 1205 1205 1205 1205 1205 1205 1205 1205 1205 1205 1207 120777 12077 12077 1	12672 8340 2571 6227 110 111 1360 957 1291 103 0 12730 0 12730 0 1128 2500 620 350 484 4283 1097 186 8398 4332	13061 6202 2710 6109 87 225 2460 693 1244 106 0 <u>13634</u> 3878 349 506 255 252 3303 1136 93 6775 6859

Appendix 7 – SAS Trend Analysis and Common Size Income Statements

МЅЕК	2009	2010	2011	2012	2013	2013 modified
Traffic revenue						
Passenger revenue	100,0	91,6	93,3	96,7	94,7	94,7
Charter	100,0	88,8	86,0	90,1	93,8	93,8
Mail and freight	100,0	151,3	143,3	134,3	125,4	125,4
Other traffic revenue	100,0	102,0	114,0	128,9	118,8	118,8
Other operating revenue	100,0	75,3	76,0	69,7	63,7	63,7
Total revenue	100,0	90,7	92,2	94,3	91,4	91,4
Payrall expenses	100.0	74.0	70 7	76.0	565	FF 7
let fuel expenses	100,0	<u>74,5</u> 85.0	<u>72,7</u> 101 1	<u>70,0</u> 122.1	<u> </u>	<u>55,7</u> 115 0
Other operating expenses	100,0	63,9	<u>101,1</u>	122,1	<u>115,5</u>	<u>115,5</u>
Selling costs	100.0	77 9	393 3	402.9	394 9	394 9
Government user fees	100.0	95.4	91.9	94.8	92.8	92.8
Catering costs	100.0	73.2	69.3	77.3	80.6	80.6
Handling costs	100,0	96,9	96,7	92,3	93,0	93,0
Technical aircraft maintenance	100,0	, 82,0	, 79,3	83,5	, 87,3	87,3
Computer and telecommunications costs	100,0	85,6	51,1	49,7	46,4	46,4
Other	100,0	136,9	69,7	79,5	67,1	67,1
Total other operating expenses	<u>100,0</u>	<u>102,1</u>	<u>87,6</u>	<u>92,0</u>	<u>88,3</u>	<u>88,3</u>
Share of income in affiliated companies	100,0	204,7	-33,3	116,5	90,2	100,0
Income from the sale of shares in						
subsidiaries and affiliated companies	100,0	-17,0	0,0	93,2	-86,3	163,4
Income from sale of aircraft and build.	100,0	246,4	-12,4	259,4	131,9	131,9
EBITDAR	100,0	160,8	426,9	247,7	499,0	624,6
Rental lease expense	100,0	78,3	67,3	69,2	, 79,5	79,5
Reported EBITDA	100,0	193,9	447,3	286,9	487,3	597,2
Implied interest on capitalized op. lease	100,0	86,0	70,0	90,3	90,3	90,2
Adjusted EBITDA	100,0	414,0	1321,3	774,8	1527,5	1939,5
Depreciation, amort. and impairment	100,0	101,2	130,8	92,6	86,4	86,4
EBIT	100,0	146,6	258,9	208,5	327,9	390,3
Tax on EBIT	100,0	140,5	191,1	207,6	519,7	675,8
NOPAT	<u>100,0</u>	148,4	<u>279,7</u>	<u>208,8</u>	<u>269,1</u>	<u>302,8</u>

SAS Trend Analysis Income Statement
SAS Common Size Income Statement

MSEK	2009	2010	2011	2012	2013	2013 modified
Traffic revenue						
Passenger revenue	72,7%	73,5%	73,6%	74,6%	75,4%	75,4%
Charter	4,8%	4,7%	4,5%	4,6%	5,0%	5,0%
Mail and freight	2,3%	3,8%	3,5%	3,2%	3,1%	3,1%
Other traffic revenue	4,2%	4,7%	5,1%	5,7%	5,4%	5,4%
Other operating revenue	16,0%	13,3%	13,2%	11,8%	11,2%	11,2%
Total revenue	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Pavroll expenses	-40.1%	-33.1%	-31.6%	-32.3%	-24.8%	-24.4%
Jet fuel expenses	-17.1%	-16.2%	-18.8%	-22.2%	-21.7%	-21.7%
Other operating expenses						
Selling costs	-1,3%	-1,1%	-5,7%	-5,7%	-5,7%	-5,7%
Government user fees	-9,8%	-10,3%	-9,8%	-9,9%	-9,9%	-9,9%
Catering costs	-2,6%	-2,1%	-2,0%	-2,2%	-2,3%	-2,3%
Handling costs	-3,9%	-4,2%	-4,1%	-3,9%	-4,0%	-4,0%
Technical aircraft maintenance	-6,5%	-5,9%	-5,6%	-5,8%	-6,2%	-6,2%
Computer and telecommunications costs	-4,7%	-4,5%	-2,6%	-2,5%	-2,4%	-2,4%
Other	-11,6%	-17,5%	-8,8%	-9,8%	-8,5%	-8,5%
Total other operating expenses	<u>-40,6%</u>	-45,7%	-38,6%	-39,6%	<u>-39,2%</u>	<u>-39,2%</u>
Share of income in affiliated companies Income from the sale of shares in	-0,6%	0,0%	0,1%	0,1%	0,1%	0,1%
subsidiaries and affiliated companies	1,0%	-0,2%	0,0%	0,9%	-0,9%	1,7%
Income from sale of aircraft and build.	-0,2%	-0,6%	0,0%	-0,6%	-0,3%	-0,3%
EBITDAR	2,4%	4,3%	11,2%	6,3%	13,2%	16,5%
Rental lease expense	-5,2%	-4,5%	-3,8%	-3,8%	-4,5%	-4,5%
Reported EBITDA	-2,8%	-0,2%	7,4%	2,5%	8,7%	12,0%
Implied interest on capitalized op. lease	2,0%	1,9%	1,5%	1,9%	2,0%	2,0%
Adjusted EBITDA	-0,7%	1,7%	8,9%	4,5%	10,7%	14,0%
Depreciation, amort. and impairment	-4,1%	-4,6%	-5,8%	-4,0%	-3,9%	-3,9%
EBIT	-4,8%	-2,9%	3,1%	0,4%	6,8%	10,1%
Tax on EBIT	1,1%	0,7%	0,1%	-0,1%	-4,0%	-5,9%
NOPAT	<u>-3,7%</u>	<u>-2,1%</u>	<u>3,2%</u>	<u>0,3%</u>	<u>2,8%</u>	<u>4,2%</u>

Appendix 8 – Airport passenger throughput growth between 2002-2012



Source: European Commission, 'Annual analyses of the EU air transport market 2012', p.23

Appendix 9 – Days on Hand

SAS

Operating assets	2009	2010	2011	2012	2013
Non-current assets					
Intangible assets	10,4	12,5	14,7	16,3	15,8
Tangible fixed assets					
Land and Building	3,5	3,3	4,3	3,0	2,1
Aircraft	104,9	111,8	103,2	95,4	77,2
Spare engines and spare parts	10,4	12,3	11,9	11,5	1,3
Workshop and aircraft servicing equipment	1,3	0,8	0,7	0,9	1,0
Other equipment and vehicles	1,5	1,1	1,1	1,0	0,9
Investment in progress	1,3	1,0	0,6	0,3	0,2
Prepayments relating to tangible fixed assets	1,9	0,2	1,3	1,4	2,2
Financial fixed assets					
Long-term receivables from affiliated companies					
Deferred tax assets	9,3	10,5	11,6	5,1	4,7
Other long-term receivables	5,8	21,0	8,8	10,6	19,7
Current Assets					
Expendable spare parts and inventories	6,1	6,0	6,1	5,8	3,1
Prepayments to suppliers					0,0
Current receivables					
Accounts receivable	12,7	11,3	11,1	11,1	12,1
Receivables from affiliated companies	0,7	0,0	0,1	0,0	0,0
Other receivables	38,3	25,6	22,4	11,9	7,6
Prepaid expenses and accrued income	8,5	7,4	8,1	7,4	7,5
Total Operating Assets	216,6	225,1	205,9	181,8	155,5
Operating Liabilities					
Long-term liabilities (non-current)					
Deferred tax liability	-22,7	-20,4	-18,7	-8,6	-8,2
Other provisions	-17,1	-18,9	-14,5	-16,7	-11,9
Other Liabilities (non-current)	-3,0	-1,3	-0,5	-1,1	-1,4
Current liabilities					
Prepayments from Customers	-0,1	-0,1	-0,2	0,0	-0,1
Accounts Payable	-13,9	-15,5	-13,4	-16,4	-14,8
Liabilities to affilitated companies					
Tax Payable	-0,2	-0,2	-0,2	-0,3	-0,3
Unearned Transportation revenue	-25,9	-31,8	-30,0	-36,5	-34,5
Current Portion of other provisions	-6,8	-5 <i>,</i> 8	-3,7	-10,1	-7,5
Other Liabilities (current)	-16,9	-18,3	-10,1	-8,8	-6,3
Accrued expenses and prepaid income	-26,2	-24,4	-25,5	-27,2	-30,0
Total Operating Liabilities	-132,8	-136,6	-116,8	-125,7	-115,1
Capitalized operating lease	145,5	137,9	122,8	174,2	179,8
Invested Capital (Net Operating Assets)	<u>229,3</u>	<u>226,3</u>	<u>211,8</u>	<u>230,3</u>	<u>220,1</u>

Norwegian

Operating assets	2009	2010	2011	2012	2013
Intangible assets	9,4	8,8	8,1	6,7	5,2
Deferred tax assets	0,0	0,0	0,1	0,1	0,7
Aircraft	48,0	87,6	132,3	156,2	173,9
Equipment and fixtures	1,5	1,1	1,1	1,6	1,7
Buildings	0,2	0,4	0,3	0,3	0,3
Prepayment Boeing contract	69,5	83,9	72,7	79,6	58,1
Other receivables	1,3	2,2	3,9	3,8	4,6
Inventory	2,0	2,8	2,8	1,9	1,7
Trade and other receivables	40,9	35,3	36,7	30,7	37,5
Total Operating Assets	172,8	222,0	257,8	280,9	283,7
Operating Liabilities					
Provisions	-3,5	-4,0	-2,8	-4,9	-9,5
Deferred tax liability	-0,9	-3,7	-4,6	-8,4	-10,3
Trade and other payables	-36,8	-44,5	-42,1	-43,8	-45,1
Air traffic settlement liabilities	-39,0	-40,0	-41,3	-48,7	-59,3
Tax payable	-5,5	0,0	0,0	#####	0,0
Total Operating Liabilities	-85,6	-92,2	-90,8	-105,9	-124,2
Capitalized operating lease	383,4	347,4	371,6	399,5	329,8
Invested Capital (Net Operating Assets)	470,6	477,2	<u>538,7</u>	<u>574,6</u>	<u>489,4</u>

Aer Lingus

Operating assets	2009	2010	2011	2012	2013
Non-current assets					
Property, plant and equipment	236,0	225,2	215,4	191,5	174,2
Intangible assets	1,7	1,3	3,5	3,2	3,6
Investment in joint venture	0,0	0,0	0,0	2,8	3,5
Deferred tax asset	1,4	4,0	1,4	0,3	0,0
Trade and other receivables			4,7	4,1	10,9
Deposits	30,2	38,0	35,9	30,9	25,7
Non-current assets held for sale	0,0	0,0	2,7	0,0	0,0
Current Assets					
Inventories	0,2	0,4	0,4	0,6	0,6
Trade and other receivables	22,6	24,4	22,2	21,7	18,6
Current income tax receivables	0,0	0,0	0,0	0,0	0,0
Deposits	189,9	124,6	128,4	111,8	142,3
Total Operating Assets	482,2	418,0	414,7	366,9	379,5
Operating Liabilities					
Non-current liabilities					
Provisions for other liabilities and charges	-34,4	-23,7	-13,4	-14,2	-14,6
Deferred tax liability	0,0	0,0	0,0	0,0	-1,0
Current liabilities	0,0	0,0	0,0	0,0	0,0
Trade and other payables	-101,7	-88,6	-82,0	-73,3	-73,8
Provisions for other liabilities and charges	-17,5	-21,2	-9,4	-7,7	-4,8
Total Operating Liabilities	-153,5	-133,5	-104,8	-95,2	-94,2
Capitalized operating lease	154,0	130,0	136,2	129,7	126,8
Invested Capital (Net Operating Assets)	482,6	<u>414,5</u>	446,1	<u>401,4</u>	<u>412,1</u>

Finnair

Operating assets	2009	2010	2011	2012	2013
Intangible assets	2,869	3,6807	5,118	6,772	8,778
Land	0,104	0,101	0,111	0,123	0,133
Buildings	5,322	5,4128	8,24	9,508	9,939
Aircraft	175,6	181,52	187,5	214,1	232,4
Other equipment	3,85	4,922	35,75	19,58	21,73
Advances paid	9,811	4,7199	1,03	3,403	15,56
Receivables	3,047	4,7777	5,087	2,386	3,903
Deferred tax receivables	9,782	11,201	11,92	8,421	7,997
Inventories	2,958	2,4682	7,749	8,333	7,007
Trade receivables & other receivables	35,25	36,244	44,89	44,26	37,61
Total Operating Assets	248,6	255,05	307,4	316,9	345
Operating Liabilities					
Deferred tax liability	-10,8	-13,7	-15,6	-18,1	-18,9
Trade payables & other liabilities	-9,16	-93,86	-99,4	-101	-111
Current income tax liabilities	0	-0,014	0	-0,05	0
Provisions (short term)	-6,02	-5,514	-7,29	-4,88	-13,9
Provisions (long term)	-10,3	-11,88	-13,8	-12,7	0
Deferred income	-50,7	0	0	0	0
Accruals realtd to other expenses	-25,1	0	0	0	0
Employe benefit related accruals	-14,1	0	0	0	0
Total Operating Liabilities	-126	-125	<u>-136</u>	<u>-137</u>	-144
Capitalized operating lease	279,8	271,68	246,7	273,7	207,4
Invested Capital (Net Operating Assets)	402,3	<u>401,76</u>	418,1	453,8	408,7

Lufthansa

Operating assets	2009	2010	2011	2012	2013
Non-current assets					
Intangible assets with an indefinite useful life	21,72	18,893	13,74	13	13,27
Other intagible assets	4,716	3,9291	4,431	4,087	4,256
Aircraft and reserve engines	150,2	133,2	133,8	129	138
Spare parts	11,65	10,474	9,693	9,797	10,71
Property plant and other equipment	31,01	25,318	24,44	22,68	22,99
Investments accounted for using the equity metho	4,601	4,5979	4,547	4,359	5,116
Deferred charges and prepaid expenses (non curre	0,446	0,3105	0,277	0,272	0,179
Effective income tax receivables (non current)	0,992	0,7285	0,692	0,567	0,436
Deffered claims for income tax rabates	0,503	0,9793	0,381	0,48	6,948
Current Assets					
Inventories	9,288	7,9061	7,155	6,964	7,16
Trade receivables and other receivables	43,61	40,617	39,66	38,99	39,96
Deferred charges and prepaid expenses (current)	1,84	1,7436	1,973	1,646	1,631
Effective income tax receivables (current)	1,51	1,1704	1,477	1,101	0,804
Total Operating Assets		249,86	242,2	233	251,5
Operating Liabilities					
Non-current liabilities					
Other provisions (non-current)	-8,91	-7,679	-6,67	-6,39	-6,49
Advance payments received, deferred income, nor	-14,4	-12,98	-13,3	-12,7	-13,3
Deferred income tax liabilities	-9,53	-4,837	-4,2	-2,64	-1,63
Current liabilities	0	0	0	0	0
Other provisions (current)	-16,1	-10,52	-9,44	-9,93	-9,62
Trade Payables	-36,7	-34,66	-32,4	-30,3	-33,8
Liabilities from unused flight documents	-27,4	-28,53	-27,2	-28,5	-29,4
Advance payments received, deferred income, nor	-14,5	-12,73	-10,8	-10,2	-10,7
Effective income tax obligations	-2,08	-2,83	-0,82	-1,17	-2,76
Total Operating Liabilities	-130	-114,8	-105	-102	-108
Capitalized operating lease	35,37	16,242	13,04	8,961	9,185
Invested Capital (Net Operating Assets)	187,8	151,34	150,4	140,2	152,9

Appendix 10 – Regression data and analysis for SAS stock beta

			OMX 40 Index	
Date	Closing price SAS weekly	Change	Closing price weekly	Change
2014-08-15	11,65	-0,012875536	1307,98	0,020428447
2014-08-08	11,8	-0,063559322	1281,26	-0,026044675
2014-08-01	12,55	-0,007968127	1314,63	-0,033667268
2014-07-25	12,65	0,011857708	1358,89	0,019258365
2014-07-18	12,5	-0,032	1332,72	0,016807732
2014-07-11	12,9	0,015503876	1310,32	-0,022719641
2014-07-04	12,7	0,039370079	1340,09	0,005260841
2014-06-27	12,2	-0,032786885	1333,04	-0,013412951
2014-06-19	12,6	-0,011904762	1350,92	-0,00673615
2014-06-12	12,75	-0,066666667	1360,02	0,015896825
2014-06-05	13,6	0	1338,4	-0,0012104
2014-05-28	13,6	0,091911765	1340,02	0,002559663
2014-05-21	12,35	-0,016194332	1336,59	0,007100158
2014-05-14	12,55	-0,079681275	1327,1	0,026508929
2014-05-07	13,55	-0,025830258	1291,92	-0,014931265
2014-04-30	13,9	-0,032374101	1311,21	0,009159479
2014-04-23	14,35	0,034843206	1299,2	0,015294027
2014-04-16	13,85	-0,054151625	1279,33	-0,029585799
2014-04-09	14,6	-0,04109589	1317,18	-0,016565693
2014-04-02	15,2	0,0625	1339	0,024129948
2014-03-26	14,25	-0,080701754	1306,69	-0,011081435
2014-03-19	15,4	-0,097402597	1321,17	0,006320156
2014-03-12	16,9	-0,023668639	1312,82	-0,023933212
2014-03-05	17,3	-0,080924855	1344,24	0,001822591
2014-02-26	18,7	-0,058823529	1341,79	0,026844737
2014-02-19	19,8	0,04040404	1305,77	-0,00324/126
2014-02-12	19	0,089473684	1310,01	0,041366096
2014-02-05	17,3	-0,046242775	1255,82	0,001234253
2014-01-29	18,1	-0,055248619	1254,27	-0,04068502
2014-01-22	19,1	-0,109947644	1305,3	0,003054332
2014-01-13	10 0	0,11320/34/	127/ 22	0,020143033
2014-01-06	16,6	-0.054545455	1274,55	0,002997034
2013 12 30	17.4	-0 017241379	1249 16	0.040259054
2013 12 23	17.7	0.084745763	1198 87	-0 018492414
2013-12-09	16.2	-0 12962963	1221 04	-0 022120487
2013-12-02	18.3	-0.043715847	1248.05	0.002828412
2013-11-25	19.1	0 09947644	1244 52	0.001269566
2013-11-18	17.2	0.040697674	1242.94	0.005269764
2013-11-11	16.5	-0 115151515	1236 39	0.007829245
2013-11-04	18.4	0.02173913	1226,71	-0.003611285
2013-10-28	18	-0.1166666667	1231.14	-0.001283363
2013-10-21	20.1	0.049751244	1232.72	0.026137322
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2013-08-26	12,9	-0,019379845	1178,01	-0,006477025
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2013-07-08	12,95	0,011583012	1119,95	0,017938301
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2013-04-29	12,95	0,027027027	1149,7	0,044533357
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2013-02-28	14,6	0,034246575	1165,45	0,011883822
2013-02-21	14,1	0,095744681	1151,6	-0,001311219
2013-02-14	12,75	-0,007843137	1153,11	0,013650042
2013-02-07	12,85	-0,054474708	1137,37	0,013021268
2013-01-31	13,55	-0,099630996	1122,56	0,011883552
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2012-12-21	8,1	-0,080246914	1065,41	0,015787349
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2012-09-28	7,45	-0,053691275	1035,79	-0,015765744
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2012-08-31	6,45	0,015503876	1022,47	-0,017467505
2012-08-24	6,35	0,070866142	1040,33	-0,024050061
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2012-08-03	5,95	0,025210084	1044,37	0,031234141
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2012-02-08	8,7	-0,045977011	997,47	0,024602244
2012-02-01	9,1	0,010989011	972,93	0,030495514
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2012-01-18	9	-0,038888889	954,21	0,022164932
2012-01-11	9,35	0,112299465	933,06	0,015015112
2012-01-04	8,3	0,078313253	919,05	0,04347968
2011-12-28	7,65	-0,026143791	879,09	0,011853166
2011-12-21	7,85	0,031847134	868,67	0,027432742
2011-12-14	7,6	-0,210526316	844,84	-0,051926992
2011-12-07	9,2	0	888,71	-7,87659E-05
2011-11-30	9,2	0,081521739	888,78	0,097650712
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2011-11-16	9,7	-0,015463918	871,18	0,007105305
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2011-09-28	11	-0,013636364	816,25	-0,009666156
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2011-09-07	13,05	-0,114942529	849,91	-0,02429669
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R-kvadrat	0,142341203			
Justerad R-k	0,136/3559			
Standardfel	0,076922293			
Observation	155	<i>K</i> C	N A 14	r
Pogrossion	Jg1	0 1502/0120	0 1502/0120	r 25 20262021
Residual	152	0,130243123	0,130243129	23,33202021
Totalt	153	1 055556126	0,003917039	
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	Koefficienter	Standardfel	t-kvot	p-värde
Konstant	-0,006490493	0,006205166	-1,04598212	0,297218964
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