Valuation of Norwegian Air Shuttle ASA

Master's Thesis

Copenhagen Business School

May 17th 2016

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Number of standard pages: 120

Number of characters: 261 398

1 Executive summary

Purpose of this thesis:

Norwegian Air Shuttle ASA's strategic direction is to become the first successful long-haul low-cost airline, with a staggering 267 new aircraft on order (current fleet, 99 aircraft) at year-end 2015. Based on this, we will estimate the fair value of Norwegian Air Shuttle ASA per 12.04.2016.

Analytical framework:

We will conduct a strategic analysis to assess the external and internal environment that Norwegian Air Shuttle ASA operates in an extract the key value drivers for change. Then we reformulate our peer groups financial statements (e.g. adjust for operating leases) to perform a profitability and financial strength analysis of our peer group. Our findings to this point will be summarized in a SWOT matrix. After that, we use our findings to create a pro forma income statement and a pro forma balance sheet to construct a pro forma cash flow statement. The final valuation will utilize the pro forma statements in a DCF model to obtain a share price estimate. Finally, we conduct a sensitivity analysis to determine key value drivers' impact on the share estimate.

Key findings:

The strategic analysis uncovered that the overall airline industry in a historical perspective has destroyed value for its equity investors, which we also found to be evident in Norwegian Air Shuttle ASA history. Possible reasons for this phenomenon were found to be a sum of macro and micro factors. Our findings indicate that airlines are becoming more similar, making it hard to differentiate on other factors than ticket prices (Business Model and Strategy). This was supported by an unprofitable industry structure due to price-sensitive customers and low entry barriers (Five Forces analysis). The airline industry is also highly reactive to macro factors such as oil price and GDP growth (PESTLE-analysis). The profitability analysis showed that Norwegian Air Shuttle ASA is so far underperforming compared to other low-cost carriers, in addition to higher liquidity and insolvency risk. Our DCF valuation indicated a share price of NOK 278, highly sensitive to WACC, fuel and payroll costs. A Monte Carlo Simulation showed the probability of 44 % for a negative equity value. A liquidation value indicated that there would be zero left for the owners in a possible bankruptcy.

Conclusions:

DCF model estimated a share price estimate of NOK 278, indicating a downside potential of – 21 %. We conclude with a sell recommendation on Norwegian Air Shuttle ASA per 12.04.2016.

Contents

2. Introduction

Norwegian Air Shuttle ASA (NAS) is a Norwegian Low-Cost Carrier (LCC) founded in 1993. During the last two decades, NAS has powered aggressive expansion and succeeded in rapidly growing their business. In 2012 the company made its biggest investment so far, ordering 222 state of the art aircraft from Boeing and Airbus. From becoming the third largest low-cost carrier in Europe, NAS aims to become the first successful low-cost long-haul airline in history. The company initiated the first long-haul routes to New York, Fort Lauderdale and Bangkok in 2013.

In an industry characterized by fierce competition, NAS has struggled to deliver expected returns to shareholders. The industry is sensitive to several external factors, especially to Gross domestic product (GDP) and oil prices. The impact of the financial crisis had devastating effects. Many airlines went bankrupt, and others needed financial rescue packages from government institutions[1]. In desperate times, the LCCs seemed to thrive, as e.g. Ryanair and EasyJet captured an increasing market share from the more traditional airlines.[2]

The purpose of this paper is to obtain a fair value of NAS' share price. Historically, we see a positive development in NAS' share price. We will in this thesis investigate how value is created for shareholders and assess on whether the share price is over-, fair or undervalued. The following figure shows the development in NAS' share price since the IPO in 2003.

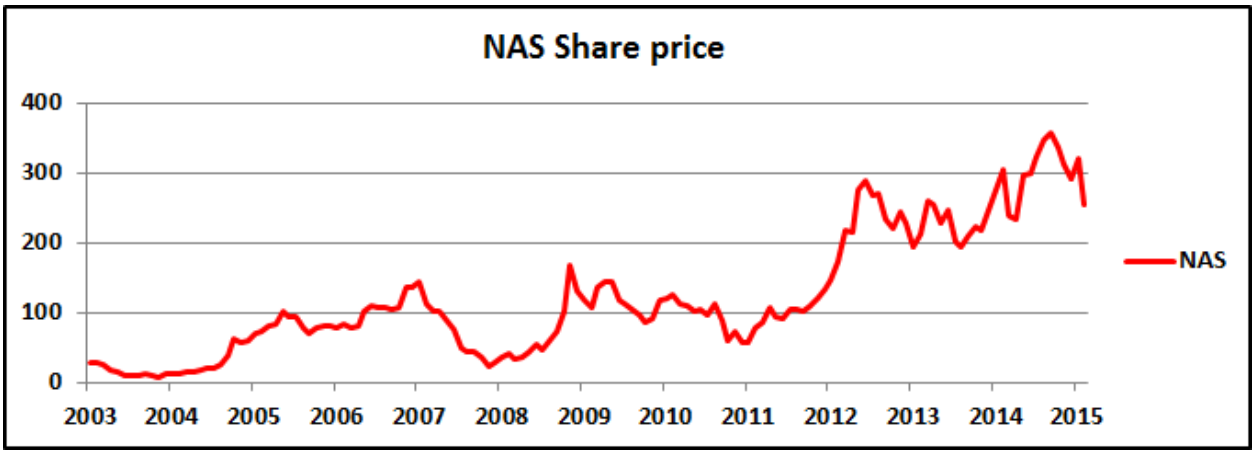


Figure 1: Historical Share price. *Source: Datastream. Own creation*

[1] Europarl (2009) http://www.europarl.europa.eu/document/activities/cont/200911/20091111ATT64267/20091111ATT64267EN.pdf (Accessed 45.04.16)
[2] Centre for Aviation (2013) http://centreforaviation.com/analysis/ryanair-europes-lowest-cost-producer-wins-again-reporting-record-profit-of-eur569-million-110543 (accessed 03.05.2016)

2.1 Problem Statement

In this thesis, we will conduct a valuation of NAS. The foundation consists of recognized models combined with our understanding of NAS and its environment. To achieve a proper valuation, we have decided upon the following overall problem statement:

What is the fair value of Norwegian Air Shuttle ASA on April 12th, 2016?

To find out what drives value in airlines and arrive at fair value, we have decided to investigate the following sub-elements:

Company Overview:

- How has the historical development of NAS' led to its current strategy?
- Who are NAS' main competitors?

Strategic analysis:

- Why has the airline industry been characterized by value destruction and will NAS be able to create future value for its shareholders?
- What type of business models and strategy developments has been evident in a historical perspective, and how can the current development impact the future value of NAS?
- What are the positive and negative macro- and microeconomic factors that have an impact on NAS' current growth strategy?
- Do NAS possess internal resources that provide a competitive advantage?

Financial analysis:

- What are the key financial value drivers in the airline industry?
- How do financial ratios compare to the peer-group?
- How does the growth strategy affect NAS' liquidity?
- What is the probability of default?

Future performance:

- What is the financial outlook of NAS?
- Will NAS manage to accommodate shareholders required rate of return

Valuation:

- How sensitive are the value drivers in the valuation?
- How will important factors affect NAS' share price in a Monte Carlo simulation?

2.2 Methodology

This section will elaborate on different models and data we have applied in the different parts of this thesis.

2.2.1 Data Collection

This thesis will take the investor's perspective and will be based only on publicly available data and information. From this point of view, it would be unreasonable to believe that any investor has any inside information. The challenge in obtaining a fair value of NAS will be done through examination and understanding of the extensive publicly available information rather than a search for inside information. Furthermore, we assume based on recognized theory that semi-strong market efficiency characterizes the market.[3]

The thesis will consist of a strategic and financial analysis, where both qualitative and quantitative data will be applied. Since the thesis is based on public information and with no direct communication with NAS, all data will be critically assessed. The primary information source will be the annual reports of NAS and its peer-group. These are all prepared in accordance with the International Financial Reporting Standards (IFRS). EU has implemented this as its standard reporting method. Based on this we consider the reliability to be high.

The information from annual reports will be supplemented by statistical data, academic literature, market reports, news articles, information on company websites and other relevant sources. These sources will be subject to diligent judgment regarding validity and reliability. The empirical analyses are primarily based on data obtained from Thomson One Banker and Datastream. Thomson One Banker is a terminal built on information gathered from respected institutions and provides market consensus estimates. Datastream consists of statistics from governmental and other highly regarded market institutions.

Our valuation is based mainly on literature from Koller et al. (2010) and Petersen and Plenborg (2012). We have in our opinion used the most relevant theory from these sources to attain a solid valuation.

2.2.2 Research Design

We will apply commonly used and acknowledged models and frameworks to uncover the core value drivers and influencing factors to create a sound basis for our assumptions in the forecasting section. This will enable us to obtain a realistic share price of NAS. The figure below provides a graphical overview of the structure applied in this thesis:

[3] Investopedia: http://www.investopedia.com/exam-guide/cfa-level-1/securities-markets/weak-semistrong-strong-emh-efficient-market-hypothesis.asp (accessed 16.01.2016)

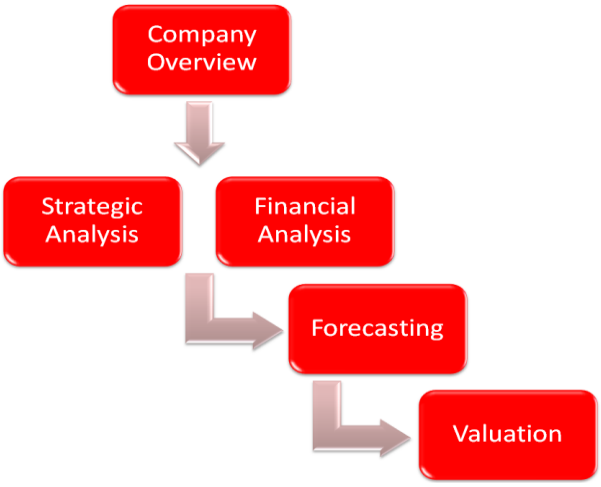


Figure 2: Thesis structure. *Source: Own Creation*

Each component will highlight important elements that need to be analyzed, with a partial conclusion with our most important findings. This is meant to answer the sub-questions listed in our *problem statement*.

The company overview consists of general information regarding NAS along with a presentation of our chosen peer group. The strategic analysis investigates both external and internal factors that affect the value creation in NAS and its industry. Furthermore, our financial analysis will break down the financial reports of the companies in question and expose the most important operational value drivers. We will combine these findings to create a pro forma income statement and a pro forma balance sheet. These will then be used to construct a pro forma cash flow statement. The final valuation will utilize these pro forma statements in different valuation models to obtain a share price estimate of NAS.

2.3 Demarcation

The purpose of this thesis is to estimate a fair share price of NAS per 12.04.2016. All data after this date will therefore be discarded. After careful consideration, we believe this to be a natural cut-off point, as it is the release date of the annual report for 2015.

Financial analysis

- In performing a reformulation of the financial statements we are restricted to the information NAS provide in its notes. In occasions of uncertainty or lack of information, we use thoroughly explained assumptions based on our judgments.
- We are aware that yield is calculated as passenger revenue divided by total ASK. However, since EasyJet recognize i.e. baggage fees as ticket revenue, unlike the others, we applied total revenue over

total ASK to get a comparable yield across all companies. We were not able to separate non-ticket related income from EasyJet's passenger revenue.

- When we performed the EBIT sub-components comparison, we applied the currencies at 12.04.2016 to obtain results in NOK for all companies.

Forecasting

- In our forecasted fuel costs, we applied a regression method we believe yields more realistic future values. As oil prices are hard to forecast, we based this development on a market consensus from IMF, IEA, and OPEC. Fuel costs are denominated in dollars and our predicted increase in future oil prices combined with today's USD/NOK currency would in our opinion yield unrealistic results. The USD/NOK currency relationship is highly affected by changes in oil price, as 40 % of Norway´s export is linked to oil and gas. We ran a regression analysis to obtain an estimate of how changes in oil price affected USD/NOK spot rate and applied our results to forecasted fuel costs. Alternatively, we could have used an average percentage of revenues to predict the future fuel cost. This method would not show the increased fuel efficiency NAS' obtains through its fleet renewal strategy to the same degree, in our opinion.

Future developments

- In NAS annual report of 2015, the company states that some of the new aircraft will be leased out to an Asian airline. There is no additional information to our knowledge regarding the future development in this business area. Therefore, we disregard to speculate in any future lessor obligations. Note that a potential lessor business will contribute to NAS' total revenue with similar effects as it would if the company used all new aircraft in its commercial flight operations, all else equal. Additionally, the aircraft asset value would in either way be included in NAS' balance sheet.

3. Norwegian Air Shuttle ASA - A company overview

NAS is a public limited liability company established in 1993 and listed on Oslo Stock Exchange in 2003. NAS is the largest LCC in Scandinavia and the third largest LCC in Europe and had approximately 5.500 employees in 2015. The Group consists of the parent company Norwegian Air Shuttle ASA and its directly or indirectly fully-owned subsidiaries in Norway, Sweden, Denmark, Finland, Ireland, UK, and Singapore.

NAS currently operates 439 routes to 132 destinations in Europe, North Africa, the Middle East, Thailand and the US. In 2015, NAS carried 25.8 million passengers. NAS' fleet currently consist of a total of 99 aircraft, divided on 91 Boeing 787-800s and 8 Boeing 787-8/9 Dreamliners. Continuous fleet renewal has become an integral part of NAS' business strategy. The current fleet has an average age of 3.6 years, enabling NAS to operate a relatively fuel-efficient aircraft fleet that requires lower maintenance. At the end of 2015, NAS' committed order book consisted of 267 aircraft from both Boeing and Airbus.[4]

NAS has a current fleet of 8 Dreamliners with an additional 30 on firm order with delivery starting in 2016. This shows that the company is positioned for further expansion in the long-haul segment.

3.1 History of the company

NAS was originally established to service the regional routes of Western-Norway on behalf of Braathens S.A.F.E in 1993. In September 2002, the contract between Braathens and Norwegian was terminated following a takeover of Braathens by SAS. NAS responded by re-branding as an LCC, contrary to the former monopolist full-service carrier (FSC) SAS Braathens on the Norwegian domestic market.

Following the public listing of NAS in 2003, the company expanded its operations to include destinations in Europe in 2004. This expansion was in cooperation with FlyNordic and Sterling. In 2005, NAS reached a milestone with the first year in profit. In the period from 2005 to 2009, NAS expanded its route network primarily by adding Scandinavian and Central European destinations, while continuously focusing on renewing its fleet.

NAS first long-haul order was realized when the company acquired Icelandair's order of three 737-Dreamliners in 2011. In January 2012, the company ordered 222 new airlines from Boeing and Airbus. The order comprised

[4] Norwegian Air Shuttle ASA – Annual report 2015

22 Boeing 737-800, 100 Boeing 737 MAX8 and 100 Airbus 320neo. This order is the single largest purchase by an airline ever made in Europe.

NAS was in 2015 awarded the "Best Low-Cost Airline in Europe" and "World's Best Long Haul Low-Cost Airline" for the third time in a row, by the prestigious SkyTrax World Airline Awards.[5]

3.2 Corporate Structure

In 2014, the group reorganized its operations into several new entities to ensure international growth and necessary traffic rights. A key consideration has been to build a structure which maintains Norwegian's flexibility and adaptability when growing and entering into new markets. The operations are divided into *the commercial airline group, an asset group, a resource group* and *other business areas.*

The parent company of the group is responsible for all commercial flights outside Scandinavia while the fully owned subsidiary Norwegian Air Norway AS operates routes from Scandinavian bases. The Group's asset companies are organized in a group of subsidiaries with Arctic Aviation Asset Ltd (100 % ownership) as the parent company, with the responsibility of aircraft leases and ownership. *Other businesses* involve an ownership of 20 % in the company *Norwegian Finans Holding AS (NFH)*. NFH own 100 % of Bank Norwegian. Other businesses involve; *Norwegian Brand Ltd* (100 % ownership, brand, and marketing activities), *Norwegian Cargo AS* (65% ownership, Group's commercial cargo activities), *Norwegian Holiday AS* (100% ownership, holiday packages on web booking). *The resource groups* are fully owned country-specific companies that are in the process of being established, with the intention of offering permanent local employment.[6]

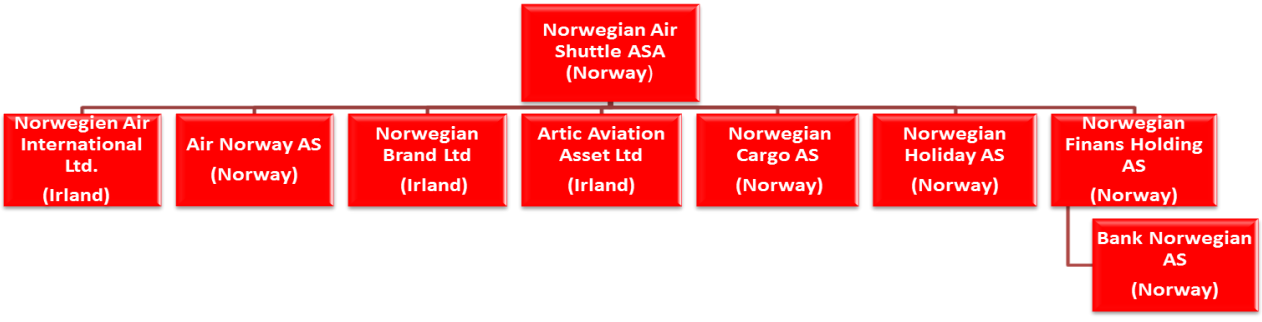


Figure 3: Corporate Structure. *Source: NAS Annual report (2015). Own creation*

[5] Norwegian Air Shuttle ASA: *"Awards and recognitions"* https://www.norwegian.com/en/about/our-story/awards-and-recognitions/ (accessed 16.01.2016)
[6] Norwegian Air Shuttle ASA – Annual report 2015

3.3 Corporate Governance

This section will analyze the corporate governance structure of NAS. Additionally, we will assess if any factors might have a negative or positive impact on the company's share value. This analysis is conducted to provide an overview of the following subjects; *Ownership structure*, *the board of directors* and *management*. We will first briefly summarize the key information and analyze each subject individually. Finally, we make an interdependent overall assessment on how the corporate governance might impact the value of NAS.

NAS states that the ultimate goal of their corporate governance is *"... to maximize shareholder value while creating added value for all stakeholders*".[7]

3.3.1 Ownership structure

NAS is owned by both institutional and private investors, with a total of 9220 shareholders with 35 759 639 shares outstanding at year-end, 2015. The ten largest shareholders control 53.65 % of the company, where foreign ownership is limited to a total of 42.08 %. The single largest owner is the HBK Invest AS, which owns 24.6% of the shares and thus remains a minority shareholder. The owners of HBK Invest are NAS founder and CEO Bjørn Kjos (84.1 %) and the chair of the board of directors Bjørn H. Kise (8.2%)[8].

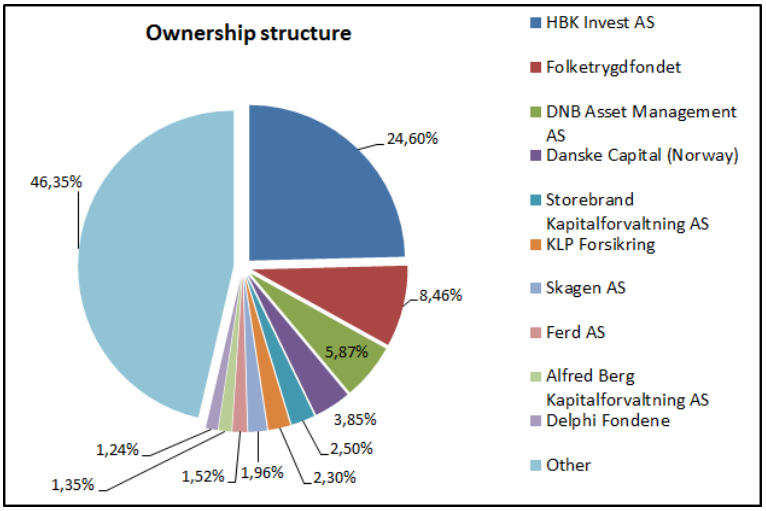


Figure 4: Ownership structure in NAS. *Source: Thomson One Banker. Own Creation*

The aforementioned indicates that there is a fairly dispersed ownership structure in NAS. There is a strong correlation between the size of the shareholders and their financial incentive to monitor management. The institutional investors are supposed to be powerful enough to exercise high levels of control over the activities of the management (i.e. "shareholder activism").[9] On the contrary, the institutional investors are often characterized by portfolio-approach to investments, which aims to achieve targeted return while minimizing risk, thus avoid commitment to their investment. There is no information suggesting that there has been any shareholder activism by institutional owners in NAS' history. The same is evident for private investors, which is heavily dispersed,

[7] Norwegian Air Shuttle ASA – Annual report 2015
[8] Norwegian Air Shuttle ASA: Annual report (2015)
[9] Grossman, S. J., & Hart, O. D. (1980). "Takeover Bids, The Free-Rider Problem, and the Theory of the Corporation". The Bell Journal of Economics, 11(1), 42-64 (accessed 05.04.2016)

and therefore, might not be adequately incentivized to control the activities of the management (i.e. "free rider problem").

The lack of involvement from investors may not possess any risk that can have an adverse impact on the value of NAS. For example, the company only has one class of shares. The absence of ownership structure by dual class share suggests that CEO Bjørn Kjos interests are very much aligned with the rest of the shareholders. Furthermore, the single class of shares (equal voting rights) will easier enable other shareholders to replace the management and board of directors if their actions are considered to be value destructive.[10]

3.3.2 Board of Directors

The primary role of the board of directors in NAS is to address objectives, strategy, and implementation. At the same time, they are supposed to monitor the management on behalf of the shareholders to make sure that the manager's incentives are aligned with the interest of shareholders. NAS' board structure consists of an audit committee, compensation committee, and an election committee.[11]

NAS has a two-tier board, which means neither CEO Bjørn Kjos nor any member of the executive management is a director of the board. This must be considered as positive, as the management cannot effectively monitor own actions. The board of directors has seven members, where three are employee representatives. Additionally, the board consists of three women, which is above the mandate of at least 40% women representation on boards required by Norwegian law.[12] The size of the board is further not considered to be unusual, as there is an estimated average of 7.08 members in Norwegian boards[13]. Moreover, all board members are deemed to be independent of the company's executive personnel and material business contracts[14]. The definition of "independent" is to some extent vague and diffuse, and it is debatable whether the chair of the board Bjørn Kise is independent. For instance, the Norwegian standards to be considered an independent member of the board involve not being in the same circle of friends.[15] Bjørn Kise is a co-founder and friend of CEO Bjørn Kjos, which may raise concerns if he to some extent can be controlled by the CEO Bjørn Kjos and thus make decisions which are *not* in the interest of the company and its shareholders. This concern can be enhanced by the notion

[10] Thomsen, S. & Conyon, M. (2012). Corporate Governance: Mechanisms and Systems. Berkshire: McGraw-Hill Education
[11] Norwegian Air Shuttle ASA: Annual report (2015)
[12] Den norske Regjeringen (2011): *"Kjønnskvotering i styrer"* https://www.regjeringen.no/no/dep/nfd/kontakt/pressekontakter/fakta-ark/fakta-ark-kjonnskvotering-i-styrer/id641431/ (accessed 05.02.2016)
[13] Huse, 2009: *"Styremedlemmene fra uavhengighet til mangfold og dynamisk kompetatnse"* her: https://www.magma.no/styremedlemmene-fra-uavhengighet-til-mangfold-og-dynamisk-kompetanse (accessed 05.02.2016)
[14] Norwegian.no: *"Styremedlemmer":*https://www.norwegian.com/uk/about/company/board-of-directors/ (accessed 22.01. 2016)
[15]NUES, Eierstyring og selskapsledelse (2012): http://www.nues.no/filestore/Dokumenter/Anbefalingene/2012/Norskberiktiget.pdf, page 30 (accessed 22.01.2016)

that the chair of the board holds the most powerful position on the board and the fact that Bjørn Kise at the same time sits on the election committee. However, as the majority of the board of directors is essentially independent indicates that the board is effective, as they are independent of the managers they are supposed to supervise. Furthermore, it seems that that the board composition has diverse experience both from domestic and multinational companies. The board members have competencies in and experience from the transport sector, other competitive consumer sectors, and relevant network connections. In addition, they have experience from finance, capital markets, and marketing. This suggests that the board diversity is adequate to have a sound understanding of business conditions. This will most likely increase the quality of board decision making and thus increase the business performance, according to theory. In addition, it is further beneficial regarding reducing the human cognitive bias "*groupthink*" - a situation characterized by easily reached consensus because of shared similarities.[16]

3.3.3 Management

Given the crucial role incentives have in driving performance, an analysis of the current monetary incentives is conducted. The purpose is to see whether they align the interest of managers with the interest of shareholders.

NAS has a set of guidelines determining the CEO and executive management's remuneration. Compensation made to the executive management primarily consists of a fixed yearly salary with additional compensations such as a company car and standard pension and insurance plan. The executive management can on an individual level be awarded a special compensation for profit enhancing projects. The CEO is however never entitled to receive compensation in the form of performance-based salary or bonuses, except for options in the stock option plan. As previously mentioned, the CEO is the largest shareholder in the company through the ownership of HBK Invest. Therefore, it can be argued that the CEO will be heavily penalized for poor performance and thus has incentives to take decisions that are intended to increase the share price. It is important to mention that the executive management is part of the NAS Group's voluntary stock option plan that is available for all employees. The options granted may be exercised two years after the grant date. As NAS has growth opportunities related to the big expansion of their fleet, they may gain if risk-averse managers can be motivated to invest in more risky, positive NPV projects. An option is providing convex payoffs and thus associated with riskier policies compared to equity-based incentives. Furthermore, these incentives are tied to long-term performance, which will fulfill the needs of institutional investors.[17]

[16] Janis, I. (1973): *"Psycological Studies of Policy decisions and Fiascoes"* http://www.nhmnc.info/wp-content/uploads/fbpdfs2014/Groupthink-Psychological-Studies-of-Policy-Decisions-and-Fiascoes-by-Irving-L-Janis-How-To-Unanimously-Make-Major-Mistakes.pdf (accessed 22.01.2016)

[17] Thomsen, S. & Conyon, M. (2012). *"Corporate Governance: Mechanisms and Systems".* Berkshire: McGraw-Hill Education

3.3.4 Summary

The overall corporate governance mechanism in NAS seems adequate to create shareholder value, as it has been argued that it to a high degree align the interest of the management with those of the shareholders. There has however been found some deviations in this analysis. More specifically, regarding *dispersed ownership structure*, there might be some issues related to "free-riding" problem among both small and large owners related to monitoring the management in NAS. The single class of shares and the absence of a majority shareholder among the management are considered to be a positive governance mechanism. This policy will easier enable other shareholders to replace the management and board of directors if they see their activities as value destroying. Furthermore, regarding the *board of directors,* it has been raised concerns whether the chair Bjørn Kise is truly independent and how his powerful position might be influenced by CEO Bjørn Kjos. If we isolate the latter combined with the notion of low shareholder activism, it can be considered to foster "empire building" (e.g. unnecessary use of company money) in the management at the cost of the shareholder value. We find this unlikely, as chair Kise and CEO Bjørn Kjos are the two single largest shareholders through the mentioned HBK Invest, and since this ownership-post is a significant part of their total monetary value in NAS, it is considered to align their interest with the shareholders.

3.4 Vision and Core Values

The vision of NAS is to provide "affordable fares for all"[18]. They further state that this is achieved through "operational excellence" in combination with helpful and friendly service. The slogan implicitly states that there does not have to be a tradeoff between price and quality and excellent service. This approach to a low-cost strategy combined with quality will be elaborated further in the company's business model.

NAS state that they conduct their business based on their *values*. The main values in NAS are *"Directness, Relevance, and Simplicity".* The meaning behind directness is how Norwegian put efforts in being as honest and transparent as possible. There should be easy to understand NAS and its services. Relevance is interpreted as their never-ending strive to stay relevant regarding developing strategic capabilities that further enhance their efficiency and low-cost structure. Simplicity means it should be easy to book a flight, check-in and pick the services that meet the individual customer's needs without any hassle.[19]

[18] Norwegian Air Shuttle ASA – Annual report (2015)
[19] Norwegian Air Shuttle ASA – Annual report (2015)

3.5 Competitors

3.5.1 Ryanair

Ryanair is an Irish ultra-low cost company founded in 1985 and has headquarters in Dublin, Ireland. The company has service all over Europe, with a total of 200 destinations in 31 countries. In 2015, Ryanair carried over 90 million passengers, and it is expected to cross the 100 million mark in 2016. A tremendous increase from the 5000 passengers carried in 1985.[20] Ryanair is NAS' biggest international competitor. The company serves a few international routes from Norway and has previously tried to enter the domestic market in Norway.[21]

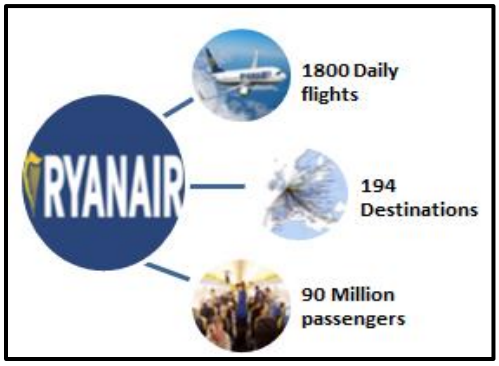


Figure 5: Ryanair Overview. *Sources: Ryanair annual report (2015) & Own Creation.*

Ryanair's business model is based on cost leadership, which yielded profits of approximately EUR 860 million in the fiscal year 2015. The company has successfully established themselves as the biggest and leading low-fare airline in Europe. This extreme cost cutting has also earned Ryanair a reputation of bad service and numerous cancellations.

Furthermore, Ryanair uses a uniform fleet strategy of over 300 Boeing 737-800 aircraft to effectively cut costs through standardization. The company expects a growing demand and has 183 additional 737-800s on order. Ryanair has also ordered 100 of the new generation 737 aircraft, called Max 200s, with an option to increase it to 200.[22]

3.5.2 SAS

SAS is a partly government-owned FSC airline that has its main bases in Oslo, Stockholm and Copenhagen. The company is the market leader in the Scandinavian market, closely followed by NAS. SAS (including Wideroe) and NAS currently have a duopoly on the Norwegian domestic

Figure 6: SAS Overview. *Sources: SAS Annual Report (2015) & Own Creation.*

[20] Ryanair – Annual report 2015
[21] DN.no: "*Fagbevegelsen sier nei til Ryanair på innenriksruter":* 09.01.2013 http://www.dn.no/nyheter/politikkSamfunn/2013/01/09/fagbevegelsen-sier-ne
[22] Ryanair – Annual report 2015

market. Contrary to NAS, SAS targets time-sensitive customers who mainly consist of business travelers. This differentiation strategy consists of offering high-frequency flights, connecting flights and cooperation with other airlines through its Star Alliance membership. SAS has in recent years experienced financial trouble. This was the main rational behind the "4Excellence Next Generation" restructuring plan initiated in 2011[23]. It aimed to reduce cost, secure long-term financing while increasing profitability. We have not seen the full effect of these measures yet, and profits have been fluctuating. Positive profits have also been due to non-operational changes, such as new pension plan arrangements. More recent changes also indicate a stronger focus on price-sensitive customers as well.[24]

SAS currently has a fleet of 152 aircraft, but it is of considerable age, where 28% of their total fleet is over 20 years old.

3.5.3 EasyJet

The last company is our peer group is a British based LCC, with the primary base at Luton Airport, London. EasyJet is a major player in the European market, operating 735 routes to 136 different destinations. In 2015, the company flew over 68 million people. This makes them the second largest LCC in Europe, followed by NAS. EasyJet entered the Norwegian market in 2013, with a route between London and Bergen, this destination was later terminated. To this date EasyJet is not directly present in the Norwegian market. Furthermore, EasyJet has a well-developed network, where the company is currently the largest or second to the largest airline at 22 of Europe's biggest airports.[25] EasyJet has been successful in using the low-cost business model, breaking its profit records five years in a row. This has enabled EasyJet to remain financially stable and flexible regarding exploiting opportunities with significant financial force. Furthermore, EasyJet is a major competitor for NAS, and we argue that this company has the most similarities to NAS. NAS and EasyJet are what we refer to as Pan-European LCCs that offer more additional services than i.e. ultra-cost LCC like Ryanair. EasyJet currently holds a fleet of 241 Airbus A319 and A320, with an order for an additional 286 planes to be delivered in 2017 and onwards where 100 of these are on option.[26]

Figure 7: EasyJet Overview. *Sources: EasyJet Annual Report (2015). Own Creation.*

[23] SAS AB – Annual report 2011/2012
[24] SAS AB – Annual report 2014/2015
[25] EasyJet PLC – Annual report 2015
[26] EasyJet PLC – Annual report 2015

4. Strategic Analysis

The previous chapter provided the reader with a brief understanding of NAS' history and an overview of its closest competitors. We will now conduct a strategic analysis to understand the financial performance of NAS and its competitors. By doing this, we can obtain realistic estimates of future cash flows to perform a proper valuation. The strategic analysis will be conducted on the following well-established frameworks; Macro-environment (PESTLE), micro-environment (Business Model and Strategy, and Porter's Five Forces) and then an internal analysis (VRIO). A summary of the key findings is provided after each analysis. We note that these frameworks serve as guidelines, and further investigation has been conducted beyond the intention of the frameworks when it has been found to add significant value to the assessment of NAS' future share price.

As findings from our strategic and financial analysis to a great extent are interdependent, we will provide summaries both analyses in a SWOT framework presented in section 5.8.

4.1 Overall airline and peer group performance in a historical perspective

The International Air Transport Association (IATA) has stated that airlines continue to create tremendous value for its users, but usually destroy value for its equity investors. Their study has further concluded that the global airline industry has generated one of the lowest returns on invested capital (ROIC) among all industries the past 30-40 years.[27] ROIC has also been persistently below the weighted average cost of capital (WACC). According to traditional economic theory, investors are fully rational and risk-averse. This would indicate that investors would have withdrawn their capital and invested it elsewhere until ROIC is equal or above WACC. As this phenomenon has been evident in the last 30-40 years, it seems that traditional economic theory is unable to provide a sufficient explanation. According to behavioral economic theory, investors make irrational systematic errors. This indicates that investors could be guided by optimism that things will turn around instead of realizing any losses, and thereby continue to invest capital in the hope of eventually earning any profits.

In our opinion, this underperformance might point to system-wide issues affecting all airlines. One way of looking at the historical problem is through the lens of the frameworks above. This will enable the reader with a wider and deeper understanding of what drives the value created in NAS and its peers. We will in this section evaluate the profitability in our peer-group in the historical period from 2010-2015, and will merely serve as a brief starting point for the following discussions and analysis.

[27] IATA: *"Profitability and the air transport value chain": June 2013:*
https://www.iata.org/whatwedo/Documents/economics/profitability-and-the-air-transport-value%20chain.pdf (accessed: 25.01.2016)

There are many metrics to calculate profitability. As the purpose of this paper is to conduct a valuation of NAS', we have taken the perspective of the investor and measured profitability by the Return on Invested Capital (ROIC). The latter can be defined as the payment investors receive for providing capital and, in the case of equity holders, bearing risk. This profitability measure is the one most used by investors and is the overall profitability measure for operations[28]. It is also viewed as an appropriate ratio to make a meaningful comparison between NAS and its peers, as it is not influenced by the significant differences in capital structure. Note that we have used after-tax ROIC, adjusted for operating leases, expressed as a percentage of average invested capital.

To make an assessment of what the 'appropriate' level of ROIC is, we have followed the standard approach which is to compare it with the Weighted Average Cost of Capital (WACC)[29]. The latter is defined as the 'opportunity cost' for what the investor would earn if their capital were invested in an asset outside the airline industry with similar risk[30]. Additionally, we have compared NAS' ROIC with the levels obtained by the remaining peer group. This approach will enable the reader to get a sense of NAS performance compared to its closest competitors, which will be thoroughly analyzed further in this thesis. With regards to the calculation of WACC and its components, we have used the same approach which is thoroughly explained in section 7.1. We have however made a few assumptions when calculating the WACC, which can be seen below.

Assumptions when calculating WACC for NAS and its peer group from 2010 to 2015:

- Tax rates: Based on marginal tax rates from the country of origin.
- Risk-free rates: The nominal 10-year government bond in the country of origin in each particular year at our cut-off date.
- Cost of debt: Debt premiums are held unchanged over time.
- Capital structure: Book values of debt are used as a proxy for market values.
- Market risk premium (MRP): The Norwegian MRP of 5 % in 2015 is used as a proxy for previous years.

By calculating the ROIC and WACC for NAS in our historical period 2010-2015, be obtain the following figure.

[28] Petersen and Plenborg, *Financial statement analysis.* P. 94
[29] Petersen and Plenborg, *Financial statement analysis.* P. 97
[30] Petersen and Plenborg, *Financial statement analysis.* P. 95

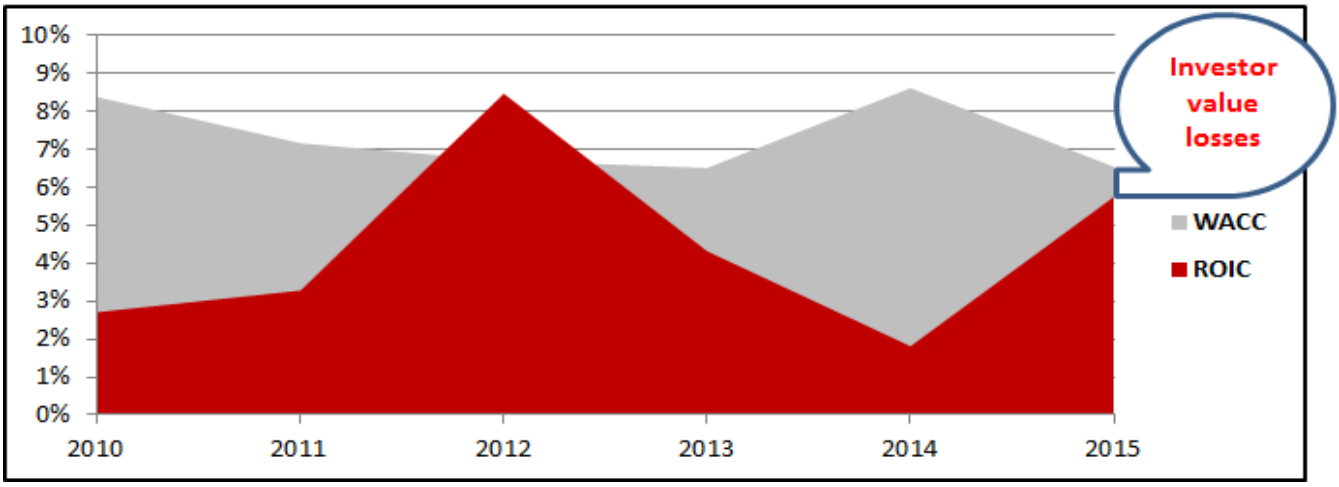


Figure 8: NAS' ROIC and WACC, 2010-2015. *Source: Reformulated financial statements. Own creation.*

From the above figure, it is clear that NAS so far only created value for its shareholders in 2012. In this particular year, ROIC exceeds WACC, which indicates that NAS created excess returns for its shareholders. In the remaining years, where ROIC is less than WACC, the company is eroding value for its shareholders. The ROIC have been relative volatile around its average of 4.4 % and is significantly below the average WACC of 7.3 %. Even though ROIC has a positive development from 2014 to 2015, it seems reasonable to assume that NAS performance regarding ROIC and WACC have been persistently poor. When comparing NAS to its peer group, we obtain the following figure:

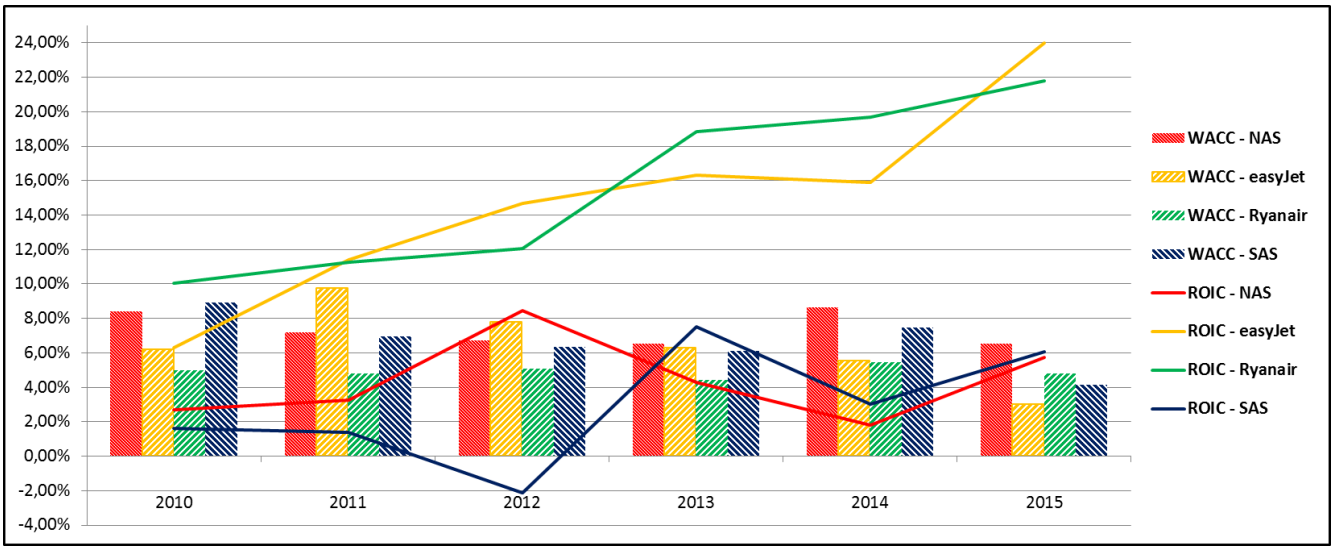


Figure 9: ROIC and WACC for the peer group, 2010-2015. *Source: Own creation based on our reformulated financial statements.*

In our peer group, we see that Ryanair and EasyJet obtain formidable rates. These companies have ROIC's that have increased relative to their WACC through our historical period, indicating more added shareholder value. These companies have been rated by IATA (2011) as two of the world's most profitable airlines. The levels and

development are significantly above the performance of NAS, indicating that Ryanair and EasyJet so far holds some best practices compared to NAS. Note that the companies in our peer group are not truly comparable. For instance, NAS' substantial investment in the renewal of its fleet somewhat distorts the comparison, as larger prepayments for aircraft are recognized as an asset while this investment will not contribute to earnings before the delivery of the aircraft. On the contrary, 28 % of SAS' fleet consists of aircraft that are over 20 years old[31]. These aircraft have been largely deprecated, making the asset value lower which increases ROIC, all else equal.

The profitability has a significant impact on the valuation of NAS, as higher profitability will lead to a higher estimated share price, all else equal[32]. It is therefore crucial to investigate all important factors that drive value in an airline, in addition, to seeing if there are reasons to believe that the historical underperformance in the airline industry and NAS is expected to be persistent. We begin our analysis by assessing the business model and strategy in the airline industry.

4.2 Business Model and Strategy (BMS)

Business model and market strategy are often used interchangeably. The business model can be defined as "*the structural template of how the firm transacts with customers, partners and vendors*" (Zott and Amit: 5)[33] while business strategy can be defined as "*pattern of managerial actions that explains how a firm achieves and maintains a competitive advantage*" (Zott and Amit: 5)[34]. The contingency theory implies that organizational effectiveness (i.e. firm performance) is a function of the fit between business model and strategy. However, Zott and Amit (2007) argue that business model and market strategy are not mutually exclusive or exhaustive. Based on this, we believe trying to separate between the terms will only lead to confusion as the definitions provided imply that business model and business strategy is essentially the same. For simplicity, we will therefore not make any direct distinction between the terms "business model" or "business strategy".

Furthermore, we will in this section provide a description of how the two most important models in the airline history have emerged. We will then assess whether the current models and strategy are sufficient in terms of creating shareholder value.

[31] Annual report SAS (2015)
[32] Petersen and Plenborg, *Financial statement analysis.* P. 94
[33] [35] Christoph Zott, Raphael Amit *"The fit between product market strategy and business model: implications for firm performance"* - Strat. Mgmt. J. Strategic Management Journal - 2007

4.1 The LCC model vs. The FSC model

All airlines before the deregulations were essentially full-service carriers (FSC). The main objective is mainly to focus on quality, providing different pre-flight services like airport lounges, connecting flights and free drinks and snacks. Additionally, the FSC model is characterized by alliances. This created huge networks linked by main hubs that offered connecting flights to destinations not linked by direct flight. To get a satisfactory load factor on connecting flights, several flights from different airports arrived at the same hubs within a short time frame. Locations of main hubs are therefore critical to attracting customers and ability to offer a broad range of destinations. This model provides the customers with almost endless destinations but is also costly. Thus, it contributes to high fares. This partially explains why flying was previously limited to the more fortunate. Based on the previous information, the FSC model is most similar to the *differentiation strategy*, coined by Porter.[35] This is can be explained by traditional FSCs not having price-sensitive customers as the main segment, but rather tries to gain advantage through offering an enormous network and other additional services.

The LCC models emerged when the American airline industry was deregulated in the US following 1978. The deregulation enabled new opportunities for innovative business models, which were driving factors to the emergence of LCCs. One of the first movers was Southwest Airlines, established in 1971. Southwest offered low fares on point-to-point routes within the state of Texas. Its focus on keeping everything simple and to a minimal created lower fare tickets that captured market shares from the FSCs. Additionally, it increased overall demand as it was affordable to a larger portion of the public. It is clear that the LCCs practice a *cost-leadership strategy*, as cost cutting and targeting price-sensitive customers are the top priorities. This model eventually spread to Europe when the airline industry was deregulated in the early 1990s. The figure under emphasize the main differences between FSCs and LCCs in the beginning.

[35] Porter, Michael E. *"Competitive Strategy: Techniques for Analyzing Industries and Competitors."* New York: Free Press, 1980. Page 37.

Model	Low-Cost Carrier (LCC)	Full-Service Carrier (FSC)
Fleet	Uniform fleet with high utilization	Several types of aircraft with lower utilization
Distribution	Direct sales through internet or call centers	More dependent on travel agencies
Distance	Short-haul (1000 km)	All distances
Network	Point-to-point based	Hub-based network
Airports	Secondary and uncongested airports	Focus on main airports
In-flight	Single class High density seating No seat reservation No free snacks	Up to3 different classes Lower seat density Ability to reserve seats In-flight catering
Schedules	Used in order to shift demand High turnaround rate	Response to current demand Lower turnaround rate
Fares	Low simple fares	Higher fares and more complex
Pre-flight	Offers no pre-flight services	Offers fast track through security Offer lounges

Figure 10: Differences between FSC and LCC business model. *Sources: AirlineProfiler.eu*[36] *Own Creation*

4.2.1 Recent developments - Convergence

In later years, it has become harder to distinguish between LCCs and FSCs. The reason for this is the emergence of a "hybrid" between the two counterparts. This hybrid model represents both traits from *differentiation strategy* and *cost leadership strategy*. This tendency started gradually through several efficiency and novelty measures to both the LCC and FSC model. A major contributing factor is the rapid development of internet-related services. This made it easier for customers to e.g switch between airlines and compare ticket prices. Moreover, the LCC model implemented traits from the FSC model, as e.g. more use of primary airports and started to offer international routes as opposed to only offering domestic flights. On the contrary, the FSC model has implemented LCC features such as one-way fares, higher seat density and some have even introduced a cheaper price class where baggage is not included. These changes are probably a reaction to LCCs increasing market shares as seen below.

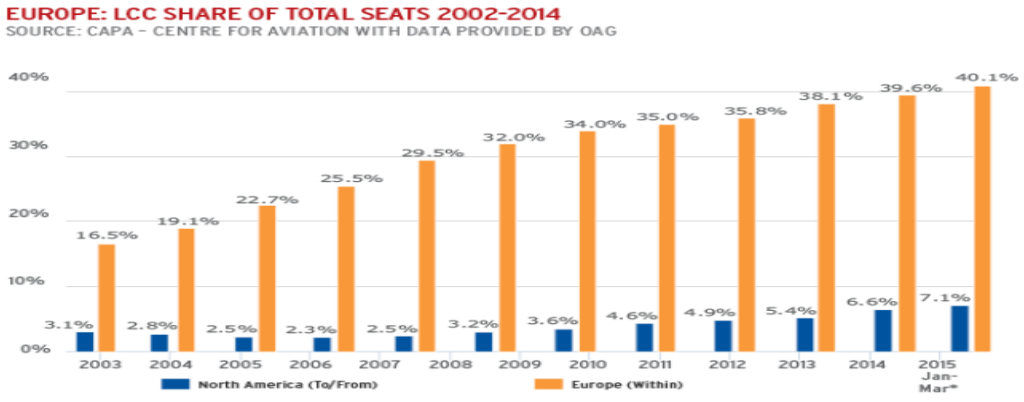


Figure 11: Historical market share development. *Source: Centre for Aviation.*

[36] Airline Profiler – *"International Low-Cost Airline Market Research"* http://www.airlineprofiler.eu/2015/10/international-low-cost-airline-market-research/ 28.10.2015. (Accessed 04.02.2016)

These numbers indicate that customers are increasingly becoming more price-sensitive. It is not only the LCCs who are pushing FSCs to lower operating costs. The entrance of Middle Eastern airlines such Qatar Air and Emirates are offering higher luxury to similar prices as European FSCs. This has arguably led many FSCs to adopt some LCCs traits enabling them to lower cost and differentiate on the ticket price. Lufthansa (an FSC) went even further and acquired GermanWings (an LCC) to use on its short-haul flights. According to Porter, the homogenous development in product, service and quality is decreasing the possibilities to obtain a competitive advantage that is not connected to lower fares and operating costs.

In our peer group, SAS is characterized as an FSC. The remaining companies (NAS, Ryanair and EasyJet) are considered to be LCCs. Note that even though NAS and EasyJet are considered as LCCs, they share some of the characteristics with the FSCs. For example, the companies usually fly to main airports and offer two different ticket price classes in addition to a reward program. Ryanair is closer to an LCC, as the company i.e. has extensive use of secondary airports. Therefore, the company can be considered as an "ultra-low costs" airline, whereas NAS and EasyJet are "low-costs" airlines. However, we will now assess NAS expansion strategy.

4.2.2 Business Strategy & Development

We remember that from the Company Overview that NAS' overall strategy is to become a global low-cost airline. The company has therefore, as of October 2015, ordered 267 short and long-haul aircraft. They actively use introduction pricing (artificially low ticket prices) to create brand awareness and attract new customers in new markets.

Short-haul

NAS and SAS dominate the Scandinavian market, with high competition as they offer the same routes and destination. The European market is characterized by numerous competitors and fierce competition on ticket prices. NAS biggest competitors in this market it other LCCs, primary Ryanair and EasyJet. This market share some similarities with the term "red ocean" market, defined as a competitive situation characterized by intense competition for each available market share and low returns.

According to the annual report in 2015, NAS explicitly state that the majority of future revenue growth will come from long-haul operations.[37] There are many factors to consider when succeeding in this strategy, and we will briefly comment on a few of them. Firstly, it seems reasonable to assume that NAS is dependent on well-functioning operations inside Europe to successful in the long-haul market. A solid European network will probably contribute to achieving higher load factors on long-haul operations. More specifically, NAS European

[37] Norwegian Air Shuttle ASA – Annual report (2015)

operations can be utilized by "feeding" the long-haul aircraft with customers. Secondly, it seems important to try to preserve profitable existing operations to support exploitation of new opportunities that might surface. This task might just be as challenging as implementing long-haul operations.

Long-haul

NAS is the first European LCC to enter the long-haul market. The reasoning behind NAS entering the long-haul market is likely due to low profitability and intense competition in the short-haul market and larger expected growth in markets reached by long-haul aircraft (explained in PESTLE). Another important factor, weaker competition in the long-haul market was probably interpreted as an opportunity to earn satisfactory returns. NAS are essentially trying to take parts of the FSCs remaining pocket of profitability, as it is higher fares offered by FSCs in this market. Pareto reported that up to 90 % of FSCs profits were derived from long-haul operations.[38] This can partially be explained by the three major airline alliances (Star Alliance, Oneworld and SkyTeam) that have controlled almost all transatlantic flights the last 20 years, causing lower competition on ticket prices. NAS are currently experiencing favorable conditions in this particular market. Firstly, the FSCs have a higher cost base, which makes it difficult to offer the same ticket prices as NAS. Secondly, NAS has a uniform fleet of the brand new Dreamliner on long-haul operations, which has higher efficiency and seat density than its peers. Thirdly, other LCCs or FSCs who are eager to enter transatlantic operations are restricted by the availability of modern long-haul aircraft, facing waiting lists of up to 4-5 years.[39]

It is worth mentioning that NAS' low-cost long-haul strategy is not entirely new. Laker Airways was the first charter airline who entered long-haul low-cost operations (1977)[40]. Similar to NAS, Laker Airways was heavily dependent on fuel reduction and other actions to make it profitable. The company went bankrupt five years later after competitors significantly cut ticket prices to drive them out of business. The major difference between NAS and Laker Airways is that NAS have a solid short-haul network within Europe to feed the long-haul operations. The Internet has also increased availability to compare fares, thus decreased barriers to entry.

This initiative is expensive for NAS, as the expansion is heavily debt financed. Thus, NAS rely on high load factors and yield. This must provide reasonable returns to operate current and future debt. Additionally, other LCCs such as Ryanair and EasyJet have stated they most likely will follow NAS in entering long-haul travel when long-distance aircraft become available. These companies have so far some best practice advantage over

[38] Pareto.no: *"Research report Norwegian Air Shuttle (2015)",* 27.05.2015: (accessed 24.03.2016)
[39] Financial times, *"Ryanair board approves plan for transatlantic airline"* 03.2015. Jane Wild. (Accessed 27.03.2016) http://www.ft.com/intl/cms/s/0/4822a29e-c995-11e4-b2ef-00144feab7de.html#axzz48ll8iAOn
[40] - The economist «Freddie Laker launches Skytrain» 27.11.2014. (Accessed 05.03.2016) http://www.economist.com/news/business-and-finance/21635104-low-cost-transatlantic-flights-1970s

NAS, as seen in ROIC and WACC figure 8. One important question is therefore: Will NAS be able to build any sustainable competitive advantage in the long-haul market in order to cope with future competition and market development? How this questions will turn out, remains to be seen.

4.2.3 Partial conclusion - Fit between business model and strategy

After surviving the first obstacle of competition against SAS in the Norwegian domestic market, NAS' succeeded in becoming the third largest low-cost company in Europe. Now they are taking on the three alliances which rule the majority of trans-Atlantic operations while experiencing fierce competition in the European market.

Our findings imply that the airlines models and strategy are converging. In our view, this would probably make it even more difficult for operators in the airline industry to differentiate. This might lead to increased competition on ticket prices in the future. As a result, it can be more difficult in the future for overall airlines to obtain an ROIC above WACC, thus create shareholder value, all else equal.

In our opinion, it is evident that NAS choose to simultaneously pursue cost leadership and product differentiation combined with early market entry.[41] We argue that this approach of applying traits from the FSC model with the LCC model enhance their novelty-centered business model and strive after cost leadership, while simultaneously offering the customer state of the art transportation have a positive effect on each other. So far this fit has taken the company from a local operator in Norway till the third largest LCC in Europe. We believe that from a strictly strategic view that NAS has been able to find a "blue ocean"[42], defined as uncontested market space with no "direct" competition[43], which requires early market entry. This is because NAS is able to provide an equal or even better service than its competitors at a lower price. Furthermore, NAS focus has a point-to-point strategy enables them to lower travelling time and cuts cost by eliminating hubs. Also, NAS has built a solid network in Europe to feed operations and does not have to rely on others, such as airlines in alliances. This might be considered as a temporary competitive advantage, as Ryanair and EasyJet showed sign of similar plans in the future.

[41] Christoph Zott, Raphael Amit *"The fit between product market strategy and business model: implications for firm performance"* - Strat. Mgmt. J. Strategic Management Journal - 2007

[42] Blue Ocean Strategy, W. Chan Kim & Renee Mauborgne
[43] Blue Ocean Strategy, W. Chan Kim & Renee Mauborgne

4.3 PESTLE

The PESTLE framework is designed to systematically identify different macro-environmental factors that may influence business performance and the industry as a whole, now and in the future[44]. We will examine how these factors may have a direct or indirect effect on NAS. These factors should not be viewed as independent of each other, due to changes in one might affect another. This is the reasoning behind why we have combined Political and Legal in addition to Technological and Environmental.

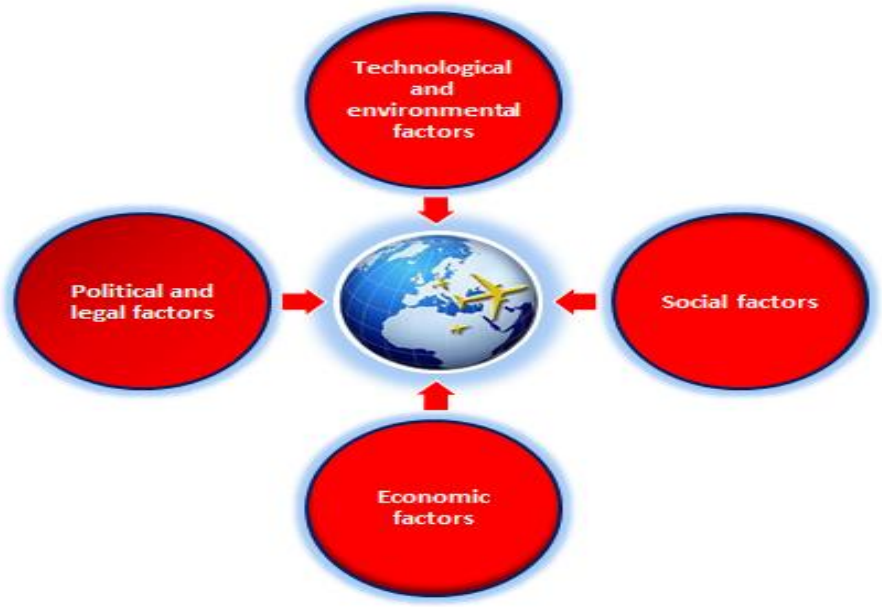


Figure 12: PESTLE framework. *Own creation*

4.3.1 Political and Legal factors

Political and legal factors have the power to influence the airline industry. In our view, the use of more foreign labor, access to traffic rights, deregulation, new regulations and state-backed airlines will affect the future development in NAS. Due to limited space, the aforementioned has been prioritized. Furthermore, we divide the political and legal factors into Scandinavia and the International market.

4.3.1.1 Scandinavian market concerns

The Norwegian airline market is regulated by the fully government-owned institution Avinor. The latter operates most of the commercial and civil airports in Norway. Avinor is responsible for flight permits and has on earlier

[44] Anthony Henry, *Understanding Strategic Management (Oxford Press, 2008, page 51)*

occasions denied Ryanair access due to disputes over reductions in taxes and fees[45]. This limits Ryanair to the smaller and private owned airports in Moss and Sandefjord. Allowing Ryanair access to the more profitable routes would probably change the market dynamics in Norway. This scenario is more likely now as Norway has a right-oriented political party in government. There has been much debate regarding the state ownership and some political parties are pushing for privatization of i.e. Avinor. If this were to happen, it might have an adverse impact on NAS' ability to generate profits in the Norwegian market. Additionally, the Norwegian government can increase environmental taxes and fees that have a negative impact on NAS profitability. A recent example of this is the seat tax which was scheduled to take effect the 1st of April, 2016. This legislation is not yet enforced, as it is being investigated to make sure it is in line with existing EU directives. [46] The potential impact of the seat tax would most likely have a larger negative impact on LCCs than FSCs in the Norwegian transfer market. This is mainly because customers traveling with airlines that are part of an alliance (FSCs) would only have to pay the tax once, while customers that are traveling with two different airlines would have to pay the tax twice.

As previously mentioned, NAS' main rival in Scandinavia is the partly state-owned (50%) airline, SAS. This company has been financially backed by the governments of Norway, Sweden, and Denmark in troubled times. It has been questioned by some of SAS competitors whether such governmental actions have interfered with the free-market assumptions and its possible impact on SAS' ability to avoid bankruptcy. [47]If SAS were to file for bankruptcy or be acquired by another airline, it might increase the competition on the Norwegian market. In such a scenario, other LCCs might enter the Norwegian domestic market and put additional constraints on NAS' profit margins. According to CEO Bjørn Kjos is SAS a preferred competitor as opposed to other LCCs, as it enables NAS to generate profits more easily due to less competition on price[48].

4.3.1.2 International - U.S foreign carrier permit application has created controversy

NAS applied for a foreign flight permit (also known as *"Foreign Air Carrier Permit"*) from its Irish registered subsidiary (NAI) in 2013, which have created significant controversy. The critical issue is related to the Open Skies Agreement between EU and the U.S., an agreement that aims to remove or reduce barriers to competition. NAS' opponents have claimed that NAI is a "flag of convenience," whose only purpose is social

[45] Dagens Næringsliv *,"Fagbevegelsen sier nei til Ryanair på innenriksruter"* 09.01.2013. (Accessed 08.03.2016.) http://www.dn.no/nyheter/politikkSamfunn/2013/01/09/fagbevegelsen-sier-nei-til-ryanair-pa-innenriksruter

[46] Dagens Næringsliv, *"Jensen: Åpner for å utsette flyavgiften"* 10.03.2016. (Accessed 17.03.2016) http://www.dn.no/nyheter/naringsliv/2016/03/10/1534/Luftfart/jensen-pner-for--utsette-flyavgiften

[47]E24, *"*Anmelder SAS-emisjonen*"* 09.02.2010, http://e24.no/makro-og-politikk/sas/sas-emisjonen-anmeldes-av-lavprisselskapene/3509050 (Accessed 17.03.2016)

[48] Finans.dk *"Norwegian-boss: SAS er en god konkurrent",* 11.07.2013, (Accessed 18.03.2016) http://finans.dk/artikel/ECE5714271/Norwegian-boss:-SAS-er-en-god-konkurrent/?ctxref=ext

dumping[49]. The opponents are thus referring to Article 17bis in the Open Skies Agreement. This agreement states that the US and EU acknowledge the importance of good work conditions and salary rates and that none of the parties intends to push these further down as a result of higher competition between the two continents. On the contrary, NAS claim it will only employ cabin crew and pilots from EU and US, and thereby operates on the same terms as competitors such as Delta, Lufthansa and US Airlines. If NAS are not granted the foreign flight permits it will have primary interrelated issues such as 1) limited use of foreign labor, and 2) not access to new EU and US traffic rights. The first issue is crucial for NAS to stay competitive in terms of lower labor costs. Norwegian labor legislation states that crew working on an aircraft registered in Norway must have a Norwegian residency and work permit and thus get paid according to Norwegian salary tariffs. The latter is well above the labor terms in competitor's respective countries. The second issue is crucial for NAS as it is reasonable to assume that the large fleet order rests on the assumption that the company will attain the necessary flight permits to operate new routes and destinations. As Norway is not a member of the EU, a long haul business based in Norway would have significant constraints on route flexibility, and would not have access to several markets, including Africa, Asia and Latin America. According to forecasts by IATA in the period E2015-F2034, the highest expected growth in demand are believed to be in the emerging markets, whereas it is expected lower growth in NAS primary market Scandinavia[50]. This further enhances our opinion of how important it is for NAS to be granted the new flight permits to take full advantage of their large fleet expansion.

The company is currently operating with a temporary flight permit through Norwegian Air Shuttle ASA (parent company), which secures traffic rights to the U.S, but is assumed to be inadequate to cater NAS' future expansion plans. It is worth mentioning that the temporary flight permits are issued by the Norwegian Ministry of Aviation. This approval needs to be renewed every 12 months, thus NAS risk being without a temporary license for its long-haul operation.

In March 2016, NAS received public support from EU in its struggle to obtain approval from the US Department of Transportation (US DoT). The EU's transport chief, Violeta Bulc, has urged the US DoT to approve NAS foreign flight permit application. The EU chief further states that *"The EU is seriously considering all available options to swiftly solve the issue"*[51]. To our knowledge, this is the first time NAS has received public support from the EU. We view this as a step towards securing traffic rights for its long-haul expansion.

[49] Centre for Aviation, "Norwegian Air Shuttle's long-haul business model. *"Flag of convenience" or fair competition?"* 08.01.2014. http://centreforaviation.com/analysis/norwegian-air-shuttles-long-haul-business-model-flag-of-convenience-or-fair-competition-146928, (Accessed 18.03.2016)
[50]IATA, «New IATA Passenger Forecast Reveals Fast-Growing Markets of the Future" (2014)
[51] European Commission (2016) http://europa.eu/rapid/press-release_STATEMENT-16-501_en.htm

4.3.2 Economic factors

This section will review what we believe are the primary economic concerns regarding value creation in NAS. There are several possible causes to investigate, but we will focus on two particular subjects we find most relevant. Firstly, we study oil prices in relation to jet fuel prices as it constitutes a large part of total operating costs. Secondly, gross domestic product will be applied to discuss its relation to external economic conditions and its influence on demand for air travel.

4.3.2.1 GDP and demand for air travel

Gross Domestic Product (GDP) is a performance measure of a nation. It measures the monetary value of all finished goods and services within a country, thus an indicator of the level of economic activity[52]. This section will investigate the link between GDP and demand for air travel.

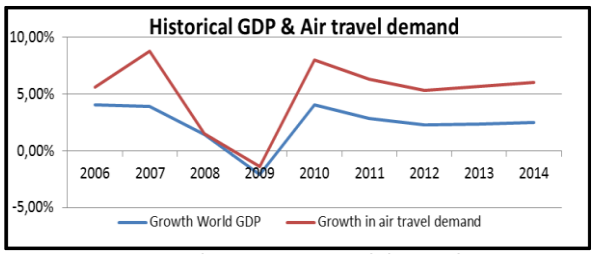


Figure 13: Historical GDP & Air travel demand. *Source: Datastream. Own creation*

A study done by BCG in 2006 argued that demand for air travel highly correlate with the growth in GDP[53]. Although GDP does not necessarily translate directly into the standard of living in a country, it rests on the premise that that the population will benefit from growth in GDP. Moreover, commercial air travel primarily consists of business and leisure travelers. It is reasonable to assume that the activity levels of these groups are heavily related to economic growth. Our findings confirm BCG's conclusion to a high degree, as it clearly shows a high correlation (0.92) between GDP and air travel demand, as illustrated in figure 13. The increasing demand for air travel can be an indirect result of higher purchasing power due to growth in salaries.

4.3.2.2 Scandinavian & European market

According to IATA' forecast of air travel demand in E2015-F2034, Europe is expected to have the lowest growth in terms of percent with an annual growth of just 2.7%[54]. Lower growth in Scandinavia could have an adverse impact on NAS' demand as the company's main bases are located in Scandinavia. This market accounts for a significant share of total revenue (53 % of all

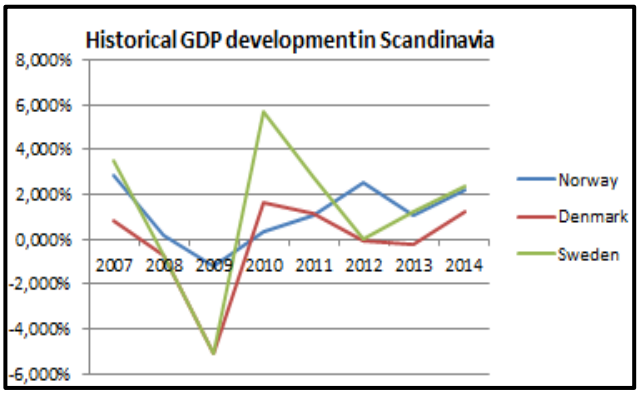


Figure 14: Historical GDP development in Scandinavia. *Sources: Datastream. Own creation*

[52] http://www.investopedia.com/terms/g/gdp.asp?layout=orig
[53] BCG (2006)
[54] IATA (2014)

passengers are Scandinavian)[55]. Macroeconomic changes in this region are therefore important for NAS future operations and profitability. From figure 14, we see a similar trend in the three countries, even though Norway seems to have a more stable development in GDP.

The primary concern regarding the market in Scandinavia is the future development in Norway's GDP. The largest export industry in Norway is related to oil and gas which is currently facing an economic downturn. This will most likely have a negative effect on Norway's GDP. On the contrary, other export industries will benefit from the weaker currency, and thereby probably offset the oil downturn to some extent. As the correlation between GDP and air travel demand seems valid, NAS might experience slower growth in, especially Norway. Denmark is also struggling but constitutes a lower portion of total revenues. This will however most likely be offset by Sweden, which experiences a positive growth in both passengers and GDP.

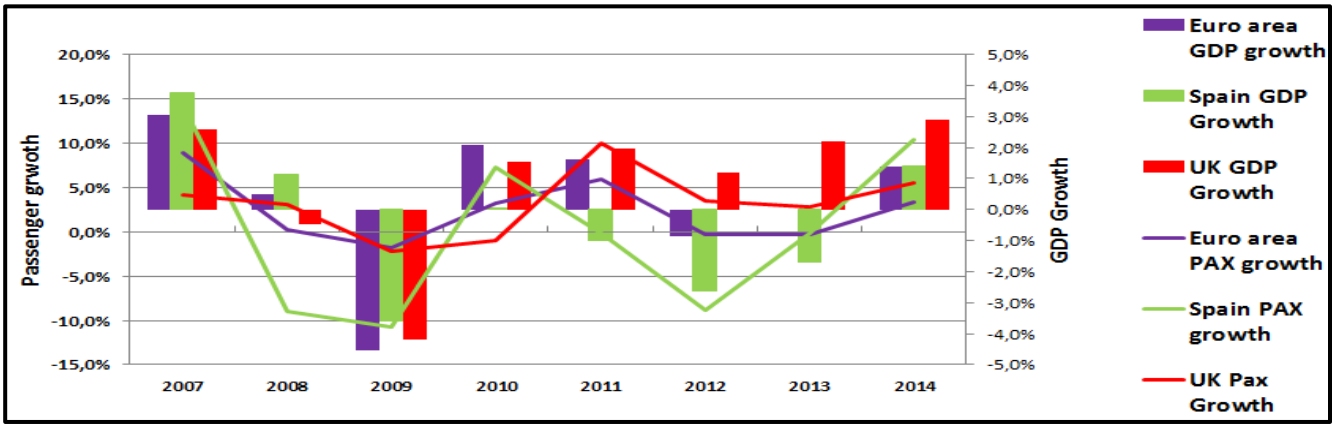


Figure 15: Important growth areas in Europe. *Source: WorldBank. Own creation*

As seen in the figure above, in the period 2008-2014, the overall growth in both GDP and air travel demand in EU has been poor. This is partly due to the aftermath of the financial crisis in 2008, in addition to the financial turmoil in Europe. According to NAS' annual report (2015), it increased its presence in the following European countries: Spain, UK, and Poland. NAS experienced an increase in passenger growth of 17 % in Spain, 27 % in the UK and 43 % in Poland. These markets may provide the majority share of NAS' future growth in Europe.[56] The rapid increase of passenger in the UK is probably due to increased activity in NAS' long-haul operations at Gatwick Airport. Furthermore, we expect the positive growth in Spain to continue as NAS plan to open another long-haul base at El Prat airport.

[55] Norwegian Air Shuttle ASA Annual Report (2015)
[56] Norwegian Air Shuttle ASA – Annual report (2015)

Note that even if there is a high correlation between GDP and passenger growth, there are additional factors which influence the demand for air travel. Some of these factors are e.g. improved infrastructure for commercial air transport, increased capacity and lower prices.

4.3.2.3 International market

Overall world GDP growth has in recent years stabilized around 5 % per year. According to IATA's report (2014)[57] on future air travel demand, growth comes primarily from emerging economies such as China and India. For NAS' long-haul operations the growth in Asia and especially China (5.5 % annually), together with a decent growth rate in the US (3.2 %) will probably have a positive impact on revenues, all else equal. These outlooks might partially explain the rationale behind NAS' long-haul commitment[58].

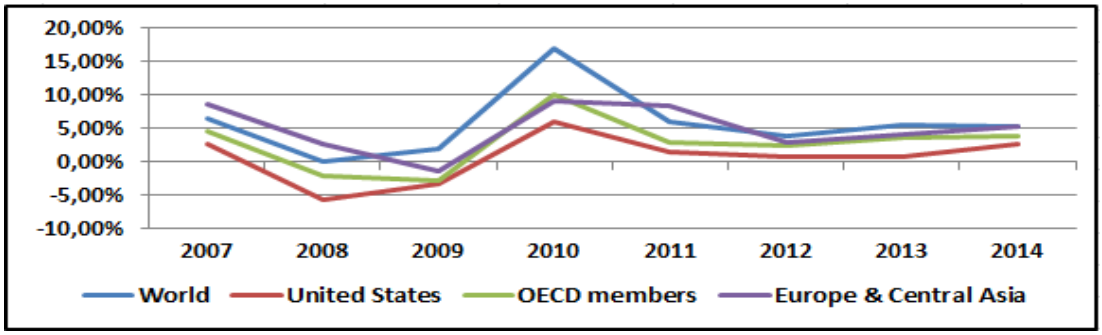


Figure 16: Historical GDP growth in major markets. *Source: WorldBank. Own creation.*

4.3.2.4 Fuel prices

After a short analysis of factors that affect the demand in the airline industry. We will now investigate the primary macroeconomic concern regarding future operation costs in NAS, focusing on jet fuel. To gain a deeper understanding of how fuel prices will affect NAS, we need to identify what drives the fuel price. The most commonly used jet fuel is A-1, which is a mix of kerosene and paraffin. This makes it a product of refined crude oil and explains the correlation between oil and jet fuel prices in figure 17.

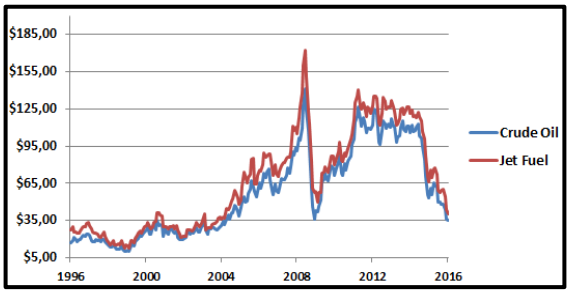


Figure 17: Historical Oil price & Jet Fuel. *Sources: Datastream. Own Creation.*

Supply and demand determine the fuel price. Easily put, the oil price has dropped due to an overwhelming supply compared to demand. This can to some degree be explained by the U.S. becoming self-sufficient and

[57] IATA "*20 year forecast" (2014)*
[58] IATA "*20 year forecast" (2014)*

Organization of the Petroleum Exporting Countries (OPEC) refusing to lower production. Furthermore, the sanctions on Iran have been lifted, granting, even more, oil into the international market.

The International Energy Agency (IEA), International Monetary Fund (IMF) and OPEC's provide individually forecasts that signal an increase in future oil price over the next years, as seen in figure 18. The price drop has activated forces that probably will rebalance the market. This can be partially explained by several interdependent factors. For example, IEA estimates that world's demand for oil increases by 900 thousand barrels a day[59], but the low price has led to lower growth in supply. In January 2015, there were 1929 active oil rigs in the U.S and in 2016 the number had dropped to 480.[60] The plunging price has made several projects unprofitable and even more projects are put on hold. In addition to this, there has been an overall significant cutback in oil company's investments and exploration budgets. These developments will over time most likely normalize the relationship between supply and demand, which we believe will cause an increase in oil price. Furthermore, IEA energy report (2015) states that oil demand from the aviation industry increase at the fastest pace compared to other industries. This is partly caused by rapid increase in air travel in emerging markets as mentioned above and lack of any viable fuel substitutes.

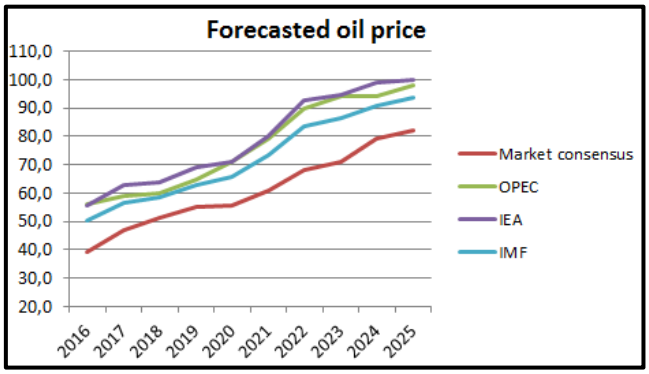


Figure 18: Forecasted market consensus estimates - Oil price. *Sources: IMF, IEA & OPEC. Own creation*

Historically, we notice in figure 19 that jet fuel has a major impact on costs among airlines. The correlation shows that higher oil price explicitly affects operation costs. IATA predicted a total fuel cost of 180 billion in the airline industry (2015), which on average accounted for 27 % of total operating costs[61]. This is a 20 % decrease from 2014, clearly showing the positive impact of lower oil prices. This can partially explain the positive increase in our peer-groups ROIC from 2014 to 2015 as seen in figure 9.

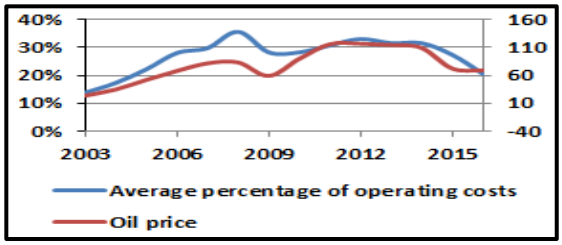


Figure 19: Historical average % of operations costs & Oil price. *Source: Annual reports peer group*

[59] World Energy Outlook (2015) - IEA

[60] Bloomberg "Watch Five Years of Oil Drilling Collapse in Seconds" http://www.bloomberg.com/graphics/2016-oil-rigs/ 26.02.2016 (Accessed 03.03.2016)

[61] IATA (2015) *"Economic performance of the airline industry"*

While we see a consensus among the leading experts and institutions that the oil price will increase over the next ten years, many uncertainties affect oil prices. These uncertainties are related to e.g. China's future growth, OPEC changing its policy, natural disasters, epidemics, and political uncertainty may radically change future developments.

In a comparison of our peer-group, fuel costs are of particular interest. Figure 20 reveal that changes in fuel price have a larger impact on LCCs compared to SAS. Ryanair's fuel costs represent 48.3 % of total operating costs while NAS and EasyJet follow with 28.3 % and 32%, respectively. SAS has the lowest percentage of 24.7% of total operating costs. This is explained by SAS having higher total operating costs related to e.g. labor, service and quality. A higher percentage of fuel in relation to total costs could imply that the airline operates with an extremely fuel inefficient aircraft fleet, or that other costs are generally low. We believe the latter explains these findings. This suggests that LCCs are more sensitive to changes in fuel price as it would give a relatively bigger change in total operating costs compared to FSCs.

Fuel in % of total operating cost	2010	2011	2012	2013	2014	2015
Norwegian	28,1%	33,3%	35,0%	35,4%	35,6%	28,3%
SAS	16,9%	21,1%	23,1%	24,6%	25,7%	24,7%
Ryanair	39,6%	44,6%	48,2%	50,4%	51,3%	48,3%
easyJet	28,1%	30,7%	34,6%	33,3%	33,8%	32,0%

Figure 20: Fuel costs in % of total operational costs, peer group. *Source: Annual reports. Own Creation*

If NAS is to experience a major increase in fuel prices, they are more vulnerable to financial distress due to the higher leverage ratio (explained in section 5.6) compared to the other LCCs. NAS may seek to reduce the effects of increasing fuel prices by e.g. passing them onto customers, which again can decrease demand.

A factor that decreases the negative impact of higher fuel prices for NAS is the negative correlation between oil price and USD/NOK currency. Norway's export consists of 40 % oil and gas[62]. These commodities are mainly traded in dollars, which results in a negative correlation between oil price and USD/NOK currency. Historically, Figure 21 shows that a higher oil price has generally resulted in a

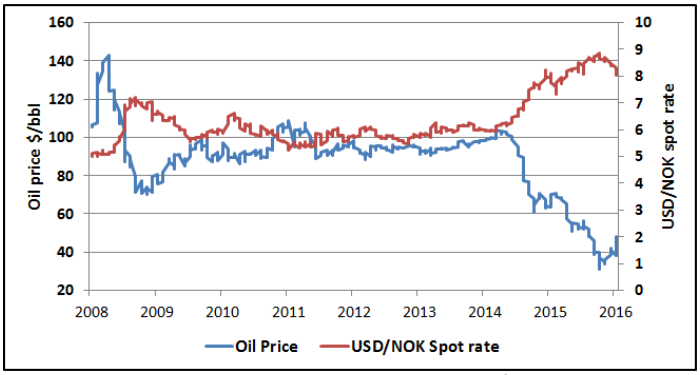


Figure 21: Correlation between Oil price and USD/NOK spot rate. *Sources: Thomson One Banker. Own Creation.*

[62] Norsk Petroleum http://www.norskpetroleum.no/en/production-and-exports/exports-of-oil-and-gas/ (accessed 05.04.2016)

stronger NOK against the USD. This indicates that a potential increase in oil prices will be partly offset by a stronger NOK against USD in the case of NAS.

4.3.3 Social factors

4.3.3.1 Consumer patterns affected by economic changes

As previously mentioned, overall GDP growth will contribute to an increase in leisure travel and business activity. The more interesting part of overall consumer patterns are when the world experiences economic downturns. Empirical evidence in figure 22 show that an increasing shares of business travelers' changed to LCCs to cut costs after the financial crisis.[63] As market consensus suggests a future increase in oil price, in addition to a slow growth in Eurozone GDP we might see LCCs capturing a larger part of the market. This might to some degree offset any negative effects that slow GDP growth has on leisure travelers.

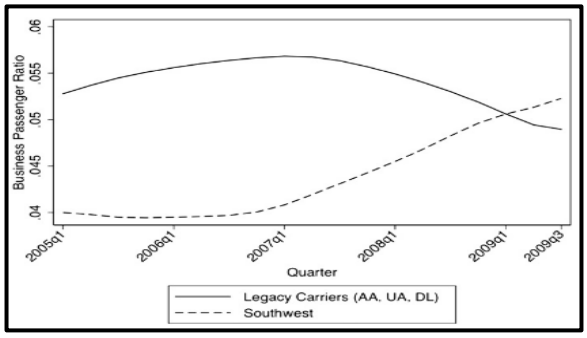


Figure 22: Change in consumer patterns in economic downturns. *Source: Neal and Kassens-Noor (2011).*

4.3.4 Technological and Environmental factors

The following sections cover both technological and environmental factors, because they have become quite interlinked in the aviation industry. The heavily debated issue with climate change has resulted in more focus on developing technology that is more environmentally friendly. These developments are crucial for the future performance of NAS as it will rely on the ability to utilize technological innovation.

4.3.4.1 Aircraft Innovation

The airline industry has become more efficient and environmentally friendly in later years in terms of decreasing i.e. fuel and maintenance costs. Moreover, airline companies need to accommodate stricter emission regulations. By reducing fuel consumption in aircraft, manufacturers have managed to improve both areas of concern. The following graph shows the most used long-haul aircraft that are in service with the year of the first flight in parenthesis. We notice a significant decrease in consumption per

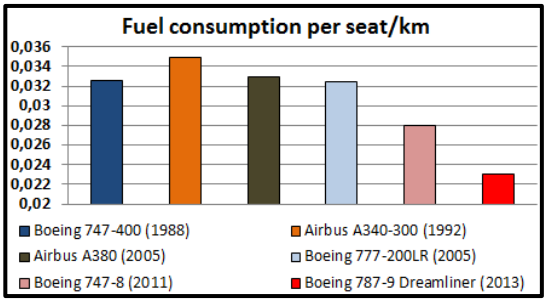


Figure 23: Reduced fuel consumption in new aircrafts. *Source: Boeing & Airbus. Own Creation.*

[63] Zachary P. Neal and Eva Kassens-Noor, Comparing legacy carriers and Southwest during a national recession, 2010

seat/km for new generation aircraft. On average, we calculated that the Dreamliner is up to 28 % more fuel efficient. Note that these are manufacturer provided consumption numbers, which might deviate from actual consumption.

4.3.4.2 Alternative fuel

NAS carried out their first flight using biofuel in 2014. The results were a decrease of 40 % in emissions[64]. Although NAS currently does not operate any flights on biofuel on a regular basis the industry is experiencing a small increase in use of several alternative fuels. The primary challenges regarding alternative fuels are the price gap in relation to traditional fuel and full compatibility with existing engines. Although research is providing promising results, researchers believe any implementation of new fuels is unlikely in the immediate future.[65]

4.3.4.3 EU Emissions Trading Scheme

In 2005, the EU initiated the Emissions Trading Scheme (ETS) as a part of its new climate policy. The ETS consist of 31 countries, including the EFTA states (Iceland, Lichtenstein and Norway). The purpose of ETS is to reduce the emission of CO2 and other greenhouse gases, by making large emitters required to report yearly emission to their respective governments. The system is based on a "cap and trade" solution. This means that companies are given allowances to emit greenhouse gases and are rewarded if they are able to cut emissions enough that they are able to sell any excess allowances to other companies who are in need of more[66]. If a company exceeds its allowance they receive a fine from the EU. NAS state in their annual report that their operations are well within the national and international restrictions. In addition, NAS put emphasis on the average fleet age of 3.6 years and thus making them one of the most environmentally friendly operators in the world.[67] This is in favor of NAS, whom might be able to sell any excess allowances.

4.3.4.4 Disruptive events

When NAS' expands to become global, there is an increased risk of being affected by extraordinary environmental events. Major events such as the terrorist attack (9/11) and the financial crisis in 2009 had tremendously adverse effects on the airline industry. For example, the fear of flying after 9/11 caused a

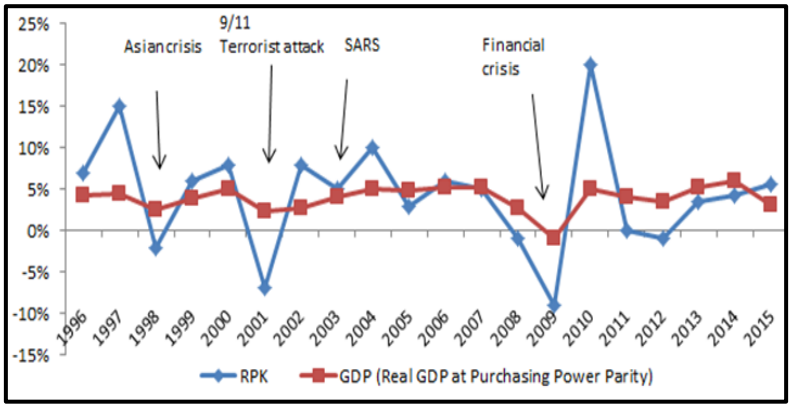


Figure 24: Disruptive events affecting commercial flights. *Source: US Bureau of Transportation & Datastream. Own Creation*

[64] Norwegian Air Shuttle AS - Annual report 2014
[65] IATA "IATA 2015 Report on Alternative Fuels" (Decembe
[66] European Commission –" The EU Emissions Trading System (EU ETS)" http://ec.europa.eu/clima/policies/ets/index_en.htm (Accessed 07.04.2016)
[67] Norwegian Air Shuttle AS – Annual report 2015

significant drop in revenue per kilometer flown (RPK) and had one particularly severe impact on American airlines, where it took two weeks for commercial flights for resume normalcy in the US.[68] Another example was the ash cloud from Iceland in 2010. It did not have the same global effect, but it was the main reason for e.g. Air Berlin's negative EBIT in 2010.[69] These events are usually impossible to predict and have an adverse effect on all airlines involved. When considering NAS' high leverage ratio, it could have more adverse implications on NAS compared to others.

4.4 Porter's Five Forces Model

This model identifies the underlying drivers of industry profitability. The airline industry structure is considered to offer a higher profit potential the higher the overall bargaining power of airlines is deemed to be. We will therefore use *bargaining power of consumers, bargaining power of suppliers, the threat of entry, the threat of substitutes* and *the completive rivalry* to determine whether the underlying airline industry structure seems attractive regarding profit potential for investors[70].

4.4.1 Bargaining power of customers

The bargaining power of customers refers to the extent customers can influence the ticket prices, quality and service in the airline industry[71]. We have identified that the combination of *low switching costs*, *price sensitivity* and *low differentiation of products* indicates a high bargaining power of consumers in the airline industry.

There is a high degree of price transparency making switching between airlines very easy and cost efficient. For instance, extensive search engines make a comparison and booking easy. On the contrary, it can be argued that different reward programs for frequent travelers to some extent lower incentives to switch airlines.

The price sensitivity is highly dependent on differentiation of products. It seems reasonable to assume that air transport to a great extent can be viewed as a standardized product, as it transports passenger from one place to another. It has been argued in the BMS analysis that the development of airline strategies are towards a more homogeneous model, making it even more difficult for customers to differentiate between airlines. Lower differentiation of products means fewer constraints on customer's choice of airline. This indicates that the majority of customers to a high degree differentiate the airlines by price.

[68] IATA *"The Financial Impact of 9.11"*
[69] Centre for Aviation " Air Berlin sees improved revenues and margins as demand and yields" 27.08.2010. (Accessed 11.04.2016)
[70] [66] Robert Grant, *Contemporary Strategy Analysis* (John Wiley & Sons, 2010). p.71

It can be further argued that the factors such as low switching cost, price-sensitivity and low differentiation of products are interdependent factors, and when all are present, they further enhance customers bargaining power. This might explain a significant part of the intense ticket price competition made especially in the LCC segment, as increasing prices will most likely result in fewer customers.

Note that leisure travelers tend to be more price sensitive and time flexible compared to business travelers. Therefore, it can be argued that the leisure travelers have more bargaining power than the business travelers. We do however consider the overall customer to have the considerable bargaining power that forces airlines to compete intensely on ticket prices.

4.4.2 Bargaining power of suppliers

Suppliers with high bargaining power can lower the industry profitability by increasing the cost level[72]. NAS' dependency on suppliers has grown in the recent years in line with its expansion strategy. This exposes the company to risk that quality and availability issues and/or unexpected costs associated with suppliers might have an adverse effect on NAS. This section is based on the largest cost items in the airline industry: *Payroll cost, fuel*, and *airport charges*. Additionally, we have included the biggest investment item, *purchase of aircraft*.

4.4.2.1 Airplane manufacturers

NAS is expanding its fleet with aircraft ordered from the manufacturers Boeing and Airbus. The relationship with these manufacturers should be considered as long-term, as the deliverance of the airplanes and the subsequent maintenance and upgrades will occur in the coming decades.

These two manufacturers are the world's biggest airplane manufacturers and can be considered to have a concentrated duopoly on the market for both medium-haul and long-haul sized aircraft. This duopoly is however expected to be challenged by Commercial Aircraft Corporation of China (COMAC) in the coming years. In 2016, COMAC will release the C919, which is meant to compete in the market for single-aisle jets currently dominated by Airbus A320 and Boeing 737[73]. Other manufacturers such as Embraer and Canadair are so far not able to deliver the type of aircraft that NAS and its competitors require.

[72] Robert Grant,"*Contemporary Strategy Analysis"* (John Wiley & Sons, 2010).

[73]Traynor, P.*"China unveils jetliner in bid to compete with Boeing, Airbus":* 02.10.2015: http://finance.yahoo.com/news/china-unveils-jetliner-bid-compete-boeing-airbus-052152396.html (accessed 07.04.2016)

The suppliers are considered to have higher power the more concentrated (fewer).[74] The current duopoly might give the suppliers high bargaining power, as the prices on aircraft may increase as a result of a joint price-strategy between the two companies. The bargaining power of suppliers may also be enhanced by the lack of direct substitutes for aircraft. Additionally, Boeing and Airbus had 5 500[75] and 6 787[76] aircraft on firm order at year-end 2015, which are record high order books serving numerous customers. The higher demand than supply for aircraft and fairly dispersed customer base should increase the manufactures power. There are however arguments that support lower supplier power, namely direct substitutes among aircraft and large orders, which will be elaborated upon in the following sections.

There is evidence of fierce competition between the two companies. They deliver planes of high similarity, which represent direct substitutes. This can be exemplified by Airbus A350 versus the Boeing 787 Dreamliner, Boeing 747 versus the Airbus A380 and the Airbus A320NEO versus the Boeing 737-MAX. Another factor that stimulates competition is the mentioned trend of large orders and the uniform fleet strategy that have been evident in the airline industry. This should provide incentives for the manufacturers to pursue economies of scale benefits and lower the costs. Moreover, it is reasonable to assume that larger orders provide the customer with a higher degree of bargaining power. NAS probably negotiated favorable deals when placing their major order in 2012, as it is arguably important for the manufacturers to have a well-known customer to vouch for their new aircraft releases.

Based on the arguments presented, it can be argued that e.g. the effect of a current duopoly and no direct substitutes should increase the suppliers bargaining power. However, we conclude that Boeing and Airbus hold medium power as there is evidence of fierce competition and significant orders.

4.4.2.2 Labor unions and crew

An important input to the production of air travel is skilled labor. The employees have historically been one of the groups that have been most successful in extracting profits created by the airline industry[77]. This can be largely explained by the high bargaining power of unions in negotiating e.g. employee salary, as they have the ability to disrupt operations.

[74] Robert Grant, "*Contemporary Strategy Analysis"* (John Wiley & Sons, 2010).
[75] Boeing, 2015: "*deliveries":* http://www.boeing.com/commercial/
[76] Airbus, 2015: *"deliveries"*: http://www.airbus.com/company/market/orders-deliveries/
[77] Avjobs, 2011. *"Airline economics"*: http://www.avjobs.com/history/airline-economics.asp (accessed: 23.03.2016)

In the following sections will we discuss and analyze these subjects: 1) Union disputes in a historical perspective and the probability of future strikes, 2) strategic implementation of the expansion strategy and 3) identify demand and availability of skilled labor. A summary of the main findings and its implications for NAS' share price can be found in *Recap and concluding remarks*.

Union disputes in a historical perspective and the probability of future strikes in NAS

The majority of NAS' 5 500 current full-time employees are unionized with collective labor agreements[78]. There can however be no assurance that NAS' future agreements with labor unions can be negotiated to the long-term benefit of NAS regarding creating shareholder value. This involves the outcome of new negotiations and mediations on terms consistent with managers' expectations or comparable to agreements entered by other airlines.

The unions have historically not been reluctant to exercise their power at the expense of NAS' operations and brand. In February 2015, it was an 11-day labor strike in NAS which affected approximately 2.000 flights and 200.000 travelers. The strike incurred losses and extra costs to the company of approximately NOK 350 million, according to NAS' calculations[79]. In our opinion, it seems reasonable to assume that NAS also incurred costs related to its brand. The dispute between the airline and its pilots was related to proposed payroll cuts and demand for the pilots to be formally employed by the parent company and not by its subsidiaries. The Norwegian Pilot Union (Parat) claimed that NAS tried to evade obligations that the employees have earned through many years, and filed a suit against NAS[80]. Should Parat win the suit, it might impact the organizational flexibility (e.g. less rigid employee conditions). Employee disputes are evident in NAS history, with examples such as the pension obligation disputes in 2012[81] and 2014[82]. These disputes also received significant publicity, especially in Norway. Furthermore, there are also examples where Parat have expressed concerns beyond their regional responsibility. In 2010, it was a labor dispute regarding NAS and its Estonian pilots operating in Finland. Parat accused NAS of social dumping by its pilots. The pilots in NAS did not accept that their Estonian colleagues would work under poorer conditions and claimed that the company violated the terms of earlier work agreements. On the contrary, the CEO Bjørn Kjos argued that NAS not violate one single rule and further stated that the pilots were receiving a competitive salary according to Estonian labor requirements. These examples

[78] Norwegian Air Shuttle ASA – Annual report (2015)
[79] Norwegian Air Shuttle ASA (Annual report 2015)
[80] Halvorsen, M: *"Parat saksøker Norwegian"*: 04.05.2015: http://www.dn.no/nyheter/politikkSamfunn/2015/05/04/1725/Norge/parat-saksker-norwegian (accessed 14.03.2016)
[81] Fredriksen, A: "*Kabinansatte tar krav om tapt pensjon til retten"20.05.2012"* http://e24.no/boers-og-finans/norwegian-air-shuttle/konflikten-i-norwegian-fortsetter-i-retten/22993778 (accessed 14.03.2016)
[82] Kaspersen, L: *"Overhengende fare for Norwegian-streik"*: 25.04.2014: http://www.dn.no/nyheter/naringsliv/2014/04/25/Luftfart/-overhengende-fare-for-norwegianstreik (accessed 14.03.2016)

show that labor unions are not reluctant to exercise their power and should in our opinion be considered a possible threat to the profitability of NAS.

Interestingly, the current reorganization and relocation of employees within and outside Norway are of larger scale compared to NAS' history. The company states that this is a strategic move to cut costs as the new legal entities outside of Norway will allow for local employment. CEO Bjørn Kjos further states that these employees will not be given the same benefits and conditions that the current Norwegian employees enjoy[83]. It seems, therefore, reasonable to assume that there is a heightened risk of strikes in a short and long-term perspective. This assumption is based on the fact that labor unions and NAS have had several similar disputes in the past, and the current and future implications of the expansion strategy are arguably of larger scale. In our opinion, this can further be supported by the concerns raised at the beginning of 2016 by NAS' workgroup in the USA.[84] This group demand to be employed by the parent company NAS, and not by NAS' newly acquired recruiting company, OSM Aviation Group (explained in *demand after skilled labor)*. This is the same fundamental issues that ended in the previously mentioned pilot strike in 2015. In our view, the outcome of this mediation might create repercussions for NAS' and OSM operations in e.g. Ireland and the UK. It can therefore be considered a threat to the company's expansion strategy. One might argue that the heightened risk of strikes can be a sign of weak executive leadership, as NAS preliminary conflicts with the pilots and crew would in the worst case lead to bankruptcy.

The next section will discuss and analyze the concept of "strategic implementation" in terms NAS expansion strategy with a focus on the executive management and its subordinates relationship. This will provide the reader with a wider and deeper understanding of the underlying potential threat in NAS' growth plans in the coming decade.

Strategic implementation analysis

The previous section showed that NAS have a history of employee disputes, often ending in costly strikes. As the expansion strategy will continue to require NAS to restructure its operations, it will in our opinion be fundamental for NAS to have a strategic implementation that is efficient to create shareholder value.

[83] The Economist: *"Here come the Vikings": 27.04.2013:* http://www.economist.com/news/business/21576672-bjorn-kjos-norwegian-air-shuttles-boss-success-may-depend-ruthlessness-here-come (accessed 14.03.2016)
[84] Hustadnes, H. *"Kjos for smekk I tvist med Norwegians kabinpersonell I USA"* Dagbladet.no: http://www.dagbladet.no/2016/04/21/nyheter/luftfart/norwegian/43943728/ (accessed 15.04.2016)

The concept of "strategic implementation" is both broad and diffuse, as it involves almost endless components. The confusion surrounding the understanding of this concept can be seen in the statement made by Martin (2015: 1), "*It is impossible to have a good strategy poorly executed. That's because execution is actually strategy - trying to separate the two only leads to confusion".* The statement indicates that the strategy implementation is not a linear process, i.e. planned and then precisely executed, but rather an iterative process with an almost endless number of decisions. This is supported by Hambrick and Cannella (1989), who argues that the tendency to separate strategy and implementation is the main reason to why companies fail. For the purpose of this analysis, it will therefore not be made any direct distinction between the term "strategy" and "implementation", as the statement suggests that strategic planning is essentially the same as implementation.

We will in the following sections discuss and analyze what "effective strategic implementation" is, based on well-established theory, and then apply it to NAS' expansion strategy.

Dissemination of strategic plans

One important step in attaining effective strategic implementation is to ensure commitment and that the initiative becomes part of the employees' mindset[85]. This reasoning is closely related to what Floyd and Wooldridge (1992) define as managing strategic consensus. They argue that successful implementation mean acting on a common set of strategic priorities, and achieving it depends on upon the degree of shared understanding and joint commitment. Even though it may be optimistic to assume that NAS' managers can obtain complete universal agreements with its subordinates related to the expansion strategy, it will nevertheless be important to get some kind of strategic consensus - as the employees will be more receptive and thus committed to the strategic implementation.

It may be speculative to draw a conclusion on the ability of NAS to reach strategic consensus in a historical and future perspective. It seems, however, reasonable to assume that they have previously managed it to a certain degree, based on the mere fact that the company has grown from a small Norwegian-based company to the third largest low-cost carrier in Europe since 1993. Thus, it would be difficult (or even impossible) for NAS to have such significant growth if there was no strategic consensus at all. However, as we remember from the previous section, the expansion strategy is probably causing higher probability for employee disputes and strikes. This suggests that NAS' management and its subordinates might have lower strategic consensus on NAS new strategic direction. Furthermore, we remember that NAS is currently working on relocating its workforce to become more region specific to decrease total payroll costs. It is therefore reasonable to assume that this

[85] Simon HA (1993). "*Strategy and organizational evolution".* Strategic Management Journal 14: 131-142

reallocation of human resources may cause a slower strategic implementation as it is lower strategic consensus on this particular issue in addition to the complex process of changing cultures.

The strategic consensus will be highly affected by the executive management's ability use clear and consistent communication as a tool to gain support from the subordinates regarding the strategic direction of NAS[86]. It will also be important to maintain the support of key employees. Communication is therefore a crucial factor deciding if the strategic implementation in NAS is going to be effective or not, and subordinates understanding of the direction is required. For the executive management to gain support for its strategic direction, there need to be mutual respect and trust between the parties. It is evident that CEO Bjørn Kjos has repeatedly gone out in the public and criticized the subordinates in NAS, for example in his autobiography "High and Low" published in October 2015. In this book, CEO Bjørn Kjos claims that many employees try to sabotage the company's operations and their long-haul commitment. He further states that he is left with a constant feeling of betrayal. On the contrary, the employee representative (Halvor Vatnar) has argued that CEO Bjørn Kjos fail to achieve a meaningful dialogue with his subordinates, in addition, to being lacking confidence and failing in personnel policy[87]. This line of communication can be viewed as a factor that might make it harder to reach strategic consensus, especially to gain support from otherwise resistant constituencies.

Clarifying decision rights and goal congruence

The previous section showed the critical role of communication and strategic consensus when trying to achieve an efficient strategic implementation, and the possible challenges NAS might face on this particular issue. To gain further insight into effective strategic implementation in NAS, we want to assess the importance of decision rights and goal congruence.

Management theory argues that clarifying decision rights is fundamental to achieve and effective strategic implementation[88]. The basic idea is to ensure that everyone in the company knows which decisions and actions they are responsible for. Additionally, clarifying decision rights may be more important in a large established firm as NAS, as it becomes increasingly unclear where a person's accountability begins and another end when company size increase. NAS has extensive use of teamwork, where key personnel are given clear decision-making authority and rights. This indicates that acknowledging the importance of clarified decision rights should

[86] Hambrick & Cannella (2009) "*Strategic leadership: theory and research on executives, top management teams, and boards"* Oxford University Press.
[87] Verdens Gang: *"Norwegian ansatte føler seg tråkket på"*: 28.10.2015: http://www.vg.no/nyheter/innenriks/luftfart/norwegian-ansatte-foeler-seg-traakket-paa/a/23551022/ (accessed: 16.04.2016)
[88] Neilson GL, Martin KL, Powers E. 2008. *"The secrets to successful strategy execution"*, Harvard Business Review 86(6): 60-70.

be a real variable in NAS' effective strategy implementation. A failure to constantly clarify decision rights in NAS might further increase overall disgruntled employees.

Research in goal setting theory emphasizes the importance of conscious goals[89]. There is evidence that suggests goal-performance commitment is strongest when employees are committed to their goals. Additionally, study suggests that letting subordinates participate in goal setting, improve the motivation and importance of attaining the particular goals. This is crucial for NAS, as a lower commitment to goals implies slower adaption of strategy implementation, thus making NAS less flexible and rapid when changing the global growth plan as the environment changes. Admittedly, there exists to our knowledge no public information available that allows us to draw any clear conclusions regarding goal setting in NAS. However, we previously showed that NAS to a certain degree has issues related to reaching strategic consensus. If we see this in relation to goal setting, it seems reasonable to assume that NAS might face motivational issues in implementing the expansion strategy. We find it is reasonable to assume that employees, who largely disagree with the direction of the company, will to some extent be less motivated to reach particular goals for the company to succeed in its new strategy.

Demand after skilled labor

According to a forecast made by Boeing (2015-2034), the aviation industry will need to supply more than one million new aviation personnel. These are divided among 558.000 commercial airline pilots and 609 000 maintenance technicians, which need years of training. Additionally, the demand for flight attendants is expected to be very high in the future. The main reason for the substantial growth in demand for qualified personnel is the anticipated growth in forecasted passengers. Historically, the regional markets have relied on recruiting pilots from outside their home location. It is however expected that the airlines will increasingly require developing and train qualified personnel locally. The following figures represent the forecasted demand for pilots and technicians by region. [90]

[89] Locke EA, Latham GP. 2002. *"Building a practically useful theory of goal setting and task Motivation: A 35-year Odyssey".* American Psychologist 57(9), 705-717.

[90] Boeing (2015), *"Demand unprecedented for pilots and technicians"*. Long-term market look.http://www.boeing.com/commercial/market/long-term-market/pilot-and-technician-outlook/ (accessed 17.04.2016)

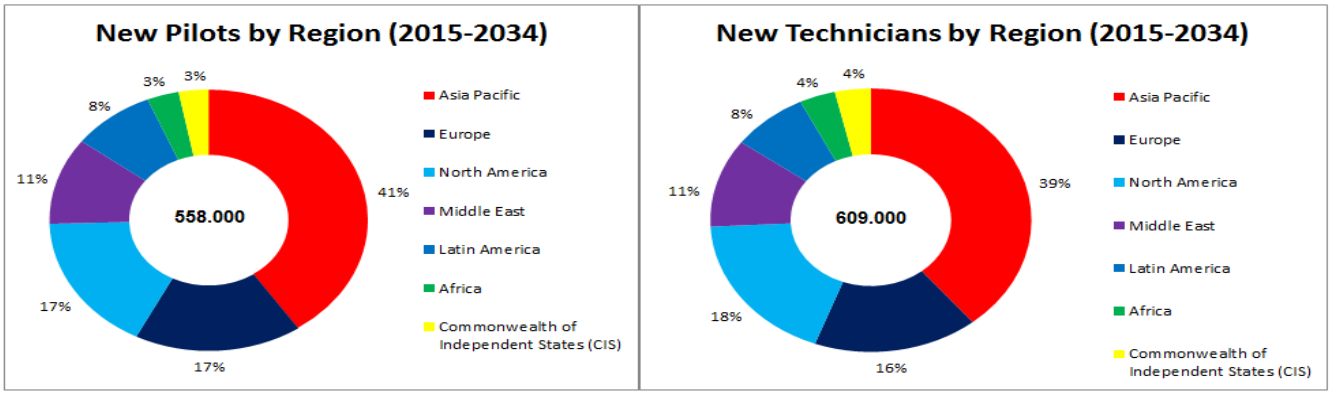


Figure 25: New pilots and technicians (2015-2034). *Source: Own creation based on data from Boing.*

We note that NAS has taken strategic steps towards ensuring that the expansion of their fleet will be in line with the increased demand for skilled labor, namely through a 50 % acquisition of OSM Aviation Global. The goal of this partnership is to establish a global company that will provide skilled labor for NAS' future fleet in its respective countries. However, there can be no assurance that NAS will be able to retain employees in key positions or recruit a sufficient number of new employees at a cost which enables NAS to remain competitive. As previously mentioned, NAS have a history of employee disputes in the media. Factors like this can make it harder to attract skilled labor, as endless lawsuits from the employees can make NAS' competitors a more attractive workplace.

Recap and concluding remarks

The previous sections have provided the reader with knowledge about the employee's impact on NAS expansion strategy. The main findings are summarized below.

From the first section, we assessed NAS' employee disputes in a historical perspective and the probability of future disputes and strikes. Our findings from this section suggested a heightened risk of strikes. This assessment was mainly based on factors such as relocation and reorganization of employees that had resulted in heavy disputes and strikes in the past. The current and future relocation and reorganization of employees is arguably of larger scale, which in our opinion should indicate a high future risk of disputes and possibly strikes. Negative events are considered to be damaging in terms of costs when the aircraft are on the ground, in addition to possible cost related to lower brand value.

The next section referred to NAS' ability to obtain an effective strategic implementation of its expansion strategy with focus on executive management and employee relations. This was achieved by borrowing insights from well-founded theory that indicated that the diffuse term "effective strategic implementation" involved fundamental factors such as: reaching strategic consensus, which was ideally well communicated with clarified

decision rights and goal congruence. These factors were then applied to the case in NAS, and the main findings are summarized below.

There are concerns related to reaching overall strategic consensus, which can explain some of the prior and future possibilities of employee and union disputes discussed above. This is mainly based on our opinion that executive management and its subordinates might have different expectations to how the change should be carried out. Additionally, the complex process of changing cultures might also result in lower strategic consensus. Our findings further suggest issues related to communication, as both CEO Bjørn Kjos and his subordinates (represented by the employee representative, Halvor Vatnar) have had several public disputes claiming e.g., lack of leadership and employee's trying to sabotage the expansion strategy. In terms of clarifying decision rights, we found that NAS' probably does this in line with what theory considers as best practice. Admittedly, we had no information to draw any clear conclusions regarding goal congruence. We do however believe it will be more difficult to motivate employees to attain goals that are not in line with their own perception of the strategic direction. Finally, strategic implementation was considered to be an iterative process and not a linear process. This suggests that it is important for NAS to take the fundaments of effective strategy implementation into account, as a failure in one of them will most likely hinder the expansion strategy, or in worst case disregard the approach in the future.

The last section identified the demand of skilled labor. Our main findings showed that NAS has taken strategic steps in order to ensure a sufficient number of new employees to the new fleet. On the contrary, NAS might have difficulties recruiting an adequate number of new employees at a comparable cost to their competitors, due to factors such as constantly employee disputes in the media. A summary can be seen below:

Risk factors related to labor	
Factors	*Risk of negative events*
Future disputes and strikes	High
Strategic consensus	High
Communication	High
Clarifying decision rights	Low
Goal congruence	High
Demand and availability of skilled labor	Medium
Total	**High**

Figure 26: Risk factors NAS. *Source: Own Creation*

4.4.2.3 Fuel suppliers

As seen in the PESTLE-analysis, the airline industry is heavily fuel-intensive and the price of oil is traded at a global market price. The fuel price is therefore subject to supply and demand. We also remember that the price of oil and jet fuel is highly correlated. Thus, the airlines have little power to influence the jet fuel price. Hedging can however be used as a tool to neutralizing the power of the supplier by obtaining stable costs. Based on the

lack of negotiation on prices in addition to hedging, we consider the bargaining power of fuel suppliers to be neutral.

4.4.2.4 Airports

EU wanted to ensure fair competition among all airlines due to many years of favorable deals for bigger airlines. This resulted in an EU directive from 2009, which requires airports to increase transparency in order to justify calculation of airport charges. Additionally, airports are not allowed to charge airlines differently if they provide identical services, unless airlines are more environment friendly (also referred to as "*behavior reduction pricing").*[91] This indicates that the bargaining power of airports in the EU region is low. Furthermore, the airport bargaining power in Asia and the US can differ from destination to destination, as each airport represent different market positions. As NAS expansion will involve larger presence outside EU, we consider the overall bargaining power of airports to be moderate.

4.4.3 Threat of new entrant

The threat of new entrants affects the industry in terms of increased capacity and competition for market shares. If an industry has a persistent ROIC above WACC, it will in theory attract firms outside of the industry. As previously mentioned, the overall airline industry has suffered from persistently poor ROIC compared to WACC. Based on this, we would expect the threat of entry to be low as long as there is absence of new airlines that can significantly challenge the current way of operating an airline. Interestingly, this is not the case, as we will see that there are numerous new entrants every year.

To get further insights into the overall profitability of NAS and its peers, we will examine how potential new competitors will react to the entry barriers, if any, in the airline industry. We consider the following factors to be most relevant in the airline industry; *capital requirements*, *economies of scale*, *alliances* and *airport capacity*.

4.4.3.1 Capital requirements

An airline requires substantial investments in several aircraft to be competitive. This could lead one to believe intuitively that the capital requirements to start up an airline are high. There are however many ways to finance aircraft that indicate lower capital requirements in the industry.

A common way to fund aircraft purchases are through traditional financing, e.g. from banks or syndicates of banks. This is relatively cheap and easy to obtain. Porter (2008: 5) even uses the airline industry as an example when he discusses capital requirements: *"For aspiring air carriers, for instance, finance is available to purchase*

[91] EC Europa: *"Airport charges":* http://ec.europa.eu/transport/modes/air/airports/airport_charges_en.htm (accessed 20.04.2016)

expensive aircraft because of their high resale value, one reason why there have been numerous new airlines in almost every region."

A second way to finance aircraft is through "export credit loans". The export credit agencies (ECAs) remove risk and uncertainty of payment to manufacturers when exporting outside their respective countries. Examples of ECAs relevant for airlines are the Export-Import Bank of the United States Bank (Ex-Im), Export Credit Guarantee Department (UK) and Coface (France). These have secured loans for many of Boeing's and Airbus' customers. It can be argued that the governments supporting ECAs have a vested interest in export, as aircraft manufacturers typically employ many workers and airlines are critical for infrastructure. Note that this is the primary financing source for NAS.

A third way to finance aircraft is through 'private placements'. The latter is a way of raising capital by the sale of securities to a relatively small number of selected investors, e.g. large banks, mutual funds or pension funds.

A fourth way to finance aircraft is leasing. This is a common approach, as over a third of the world's airline fleet consists of leased aircraft. A leasing agreement enables airlines to operate an aircraft without investing equity or raise debt from banks, bonds or similar ways of financing. It can be considered ideal for many start-up airlines that cannot afford to order a bulk of brand new aircraft. There are several different types of leasing, where wet leases are arguably the simplest, as airlines only need the necessary operating licenses and permits to lease a plane. The lessor is in this lease agreement responsible for the aircraft, maintenance, crew and all other expenses. Additionally, airlines can use dry-lease, which is a very common way to provide long-term financing for aircraft. In this lease agreement, the lessee uses its cabin crew and accounts for all operating expenses.

In general, we consider the capital requirements in the airline industry to be low. This should decrease the overall profitability as the barriers in this aspect do not seem sufficient to keep possible entrants away. Furthermore, the low capital requirements might partially explain why there have been approximately 1300 new established airlines in the past 40 years.

4.4.3.2 Airport capacity

Air traffic is limited by the infrastructure of airports and the number of slots available for aircraft arrivals and departures. NAS' growth is dependent on access to the right airports in the geographical markets the company has chosen and with a level of costs in accordance with their low-cost strategy. Conditions that delays, limits or

defers NAS access to airport or slot positions, which NAS already serves or wishes to provide services in the future, will present barriers to NAS expansion strategy.

Rules issued by IATA governs the slot allocations. The most basic principle of slot allocation is that an airline is entitled to the same slot the following year if they fulfill the requirement of at least 80 % usage of the time. This is referred to as "grandfather rights", enabling the established airlines to continue to operate their most profitable routes. This will only become a barrier if airports experience capacity problems, as it raises the barriers for new entrants to gain slots at the most lucrative times and airports. For example, NAS' has most frequent flights in and out of Oslo Gardermoen Airport. This airport is close to operating at maximum capacity and is currently expanding its terminals. This expansion is however based on the growth rates of the existing operators like NAS and SAS, and it raises the barriers for new entrants to gain access to the Norwegian market.

Airport capacity will differ significantly from different airports. Therefore, the overall entry barriers related to airport capacity is considered to be medium.

4.4.3.3 Airline Alliance and frequent flyer programs

Frequent flyer schemes like NAS' Norwegian Reward and SAS' Eurobonus might be an entry barrier for new entrants. The most frequent flyers will to some extent prefer the airline they hold bonus points in, as long as there are no significant deviations in the ticket prices. In the period from 2002-2013, the Norwegian competition authorities prohibited the use of frequent flyer points on domestic flights. This was done to increase domestic competition. Moreover, traveling with FSCs gives other benefits beyond bonus schemes, and is mainly related to connecting flights and more flexibility when flights are delayed or canceled. For example, the so-called "code sharing" enables FSCs in an airline alliance to share the same flights. These types of alliances have so far not been conducted among the LCCs. It seems, however, reasonable to assume that the LCCs would not have captured such large market shares if the airline alliances were of significant threat to new entrants.
We therefore conclude that entry barrier caused by bonus schemes and airline alliances to be low.

4.4.3.4 Economies of scale

Economies of scale can regarding the airline industry be defined as the unit cost decrease as the size of the network or number of routes increases. More specifically, it is believed to exist because the airlines can spread fixed costs like administration or marketing over more units. In addition, the trend of placing a large bulk order of aircraft makes it possible to obtain a larger discount for larger airlines. These are advantages that might only be achieved by large and established airlines.

The focus on achieving economies of scale seems to be evident in NAS. CEO Bjørn Kjos have stated that the expansion strategy is crucial for the survival of the company in terms of increased volume. This will ideally enable the company to keep unit costs down, which will give NAS and other airlines with larger fleets a relative advantage over airlines with smaller fleets. However, we have previously showed that the capital requirements in the industry are a low entry barrier, which indicates that there might be quite easy to expand the fleet to take advantage of economies. Based on this, we consider the economies of scale as an entry barrier to be moderate.

4.4.4 Threat of substitutes

A substitute is defined as something that performs or has the same functions as the industry's product or service. The threat of a substitute is considered high if it offers an attractive price-performance trade-off and the switching costs are low. Especially leisure travelers are free to choose between different types of transportation if flying is deemed too expensive. For time-sensitive travelers like in the business segment, air travel might be the only viable option if other options such as train cannot compete on e.g. time. In the following sections, we will elaborate on alternative methods of travel and alternative methods of communication.

4.4.4.1 Norwegian market

Trains, boats and automotive are substitutes that can perform the same function as aircraft. When looking at these alternatives, one must consider factors such as time-consumption, price and complexity of products. If we examine the operations of NAS, and the primary market Norway, there seem to be few means of travel that are truly substituted for aircraft. However, trains, boats and automotive might be considered as a high threat on medium distances (>150 km). The latter may be of less relevance as the majority of all flights have a distance longer than 300 km. This gives airlines a superior advantage due to geographical boundaries and so far poor infrastructure. Moreover, three of the top eleven busiest air routes in Europe are between relatively scarcely populated Norwegian cities, namely Gardermoen (Oslo) - Værnes (Trondheim), Gardermoen - Flesland (Bergen) and Gardermoen - Sola (Stavanger)[92]. On these routes are trains and automotive an option, which further underlines their weak position. It is worth mentioning that there is no information to our knowledge indicating a development of high-speed railways (HSR) that can challenge NAS in this market.

4.4.4.2 Scandinavian market

If we look at HSR development in other countries in Scandinavia, like Denmark and Sweden, it might possess a high threat to NAS' operations on particularly domestic flights. The fourth largest cities in Denmark are expected to be connected to a HSR network by the end of 2018. This will probably not affect NAS' notably, as the company only operates one route between Copenhagen and Aalborg that might be affected by the new HSR

[92] EuroStat: http://appsso.eurostat.ec.europa.eu/nui/show.do (accessed 21.04.2016)

commitment. NAS has many domestic flights in Sweden, e.g. 6 routes from Arlanda (Stockholm). The majority of the Swedish government supports a significant investment in HSR networks, where the goal is to connect the metropolitan regions in Sweden by 2035[93]. How this will eventually impact NAS' operations remains to be seen, but it is reasonable to assume that this initiative probably will impact the company's operations negatively in the future.

4.4.4.3 European market

In rest of the Europe, it is information indicating that a constant development of the HSR network may become a viable threat. In many countries distances are shorter and urban population density higher compared to Scandinavia. If we account for time spent getting to the airport and time spent there, HSR networks might offer a decent trade-off. Furthermore, several countries are either considering or have already developed HSR infrastructure, and a trans-European HSR network is a stated goal of the EU[94]. Large markets like Germany, United Kingdom, France and Spain are already connected to a cross-border HSR network. These networks are expected to become larger and more interconnected in the coming years, and additional countries are expected to be connected to the network. This is considered to be a viable threat to the airline industry, as research suggests that well-developed HSR networks take market shares from airlines. For example, the Spanish railway system captured 85 % of the market share on the Madrid - Seville route and more than 70 % of the Madrid - Malaga route when finished in 2009[95]. Furthermore, due to significant distances, we consider the threat of alternative travel to be zero with regards to NAS' long-haul commitment. We conclude on the basis of the relevant sections that the threats from substitutes like HSR networks to be low in Norway, and moderate in rest of the Europe in addition to zero on the long-haul commitment.

4.4.4.4 Video conference

Technology has provided new forms of conducting business without travel. One form of technology that can provide several benefits is a video conference. It is a flexible, time- and cost-efficient way of communication and at the same time environmental friendly. It can therefore be an effective substitute for business travelers. It is however reasonable to assume that informal ties are still important in business, which suggests that video conference is not an entirely perfect substitute. With regards to leisure travelers, we believe video conferencing is not an option, as it cannot substitute a visit to a family member or flying to an exotic destination. The overall

[93] European Railway Review: http://www.europeanrailwayreview.com/24901/past-issues/issue-5-2015/the-future-of-high-speed-rail-in-sweden/ (Accessed 21.04.2016)
[94] EC Europa: *"Infrastructure"* http://ec.europa.eu/transport/themes/infrastructure/studies/doc/2010_high_speed_rail_en.pdf (accessed 22.04.2016)
[95]Albalate, D. Fageda, X (2014): *"Competition and cooperation between rail and air transport services in Europe": Journal of Transport Geography.* (accessed 22.04.2016)

conclusion is that video conference is not a significant threat to the airline industry, even though it might serve as an efficient tool for the business segment.

4.4.5 Industry rivalry

A high level of rivalry limits the profitability of an industry. The rivalry is considered high if the following factors are present: high competition on price, numerous competitors, low marginal costs and high fixed costs in addition to high exit barriers.[96]

According to Porter is rivalry especially destructive when it leads to price competition[97]. We have previously shown that the airline industry is prone to price wars that have been overall unprofitable for the airlines. The main reasons for the intense competition on ticket prices are a low differentiation between airlines, low switching costs and high price transparency. The industry has successfully halved units' costs in real terms over the past 40 years[98], indicating that the extra profit has been largely transferred to the customers. Furthermore, we have reason to believe that low marginal costs and high fixed costs are present in the airline industry. One example of this is the perishable products. This means that transportation capacity is available only for a period of time, no matter if it is used or not. This indicates that the transportation cost for providing capacity is largely sunk in the short term. Moreover, the aircraft has a fixed number of crew and uses more or less the same amount of fuel on flights regardless of the number of passengers. This indicates that adding more passengers are subject to low marginal costs. However, based on the arguments presented so far, we partially conclude that the rivalry is high because of fierce price competition.

The Nordic market consists of few airlines, where NAS and SAS are the dominant players. The overall competition is however considered to be high, as they to a great extent offer the same destinations, resulting in direct competition and rivalry. The international markets are also subject to similar offers but with numerous competitors. Additionally, NAS have higher competition from EasyJet and Ryanair in this market, as they target the same segment of customers, namely the price-sensitive. Regarding the long-haul commitment, currently dominated by large FSCs such as British Airways and American Airlines, may be subject to even more fierce competitions as NAS will increase its participation in the following years. If NAS succeed in this market, other LCCs will most likely follow, which will put even more pressure on the profitability. We therefore partially conclude that the competitive intensity is high because of numerous competitors.

[96] Porter,(2008): *The Five Competitive Forces That Shape Strategy.* p. 85.
[97] Porter (2008): *The Five Competitive Forces That Shape Strategy.* p.19
[98] Porter, Michael (2009). *The Five Competitive Forces That Shape Strategy.* Harvard Business School Publishing Corporation, 2008.

With regards to exit barriers, the aircraft capacity usually remains in the industry and the low exit of companies (less than 1 % of the airlines exit market in an average year) indicates high exit barriers.

The sum of our partial conclusions indicates that the airline industry has characteristics which make industry rivalry high.

4.4.6 Summary of Porter's Five Forces

The main findings are summarized in the following model:

Threat level	Low	Moderate	High
Bargaining power of suppliers		X	X
Bargaining power of buyers			X
Threat from new entrants			X
Threat from substitutes	X	X	
Industry rivalry			X

Figure 27: Summary of Porter's Five Forces. *Source: Own creation*

We can see that the "5-forces" in the airline industry is considered to be overall high. The latter suggests that the airline industry is less attractive. One indication that the industry structure may be important causes of persistently poor profitability is that the industry has successfully halved units' costs in real terms over the past 40 years. All these efficiency gains seem to have passed to customers in lower ticket prices. Interestingly, it appears that the airline industry is not behaving according to theory. For example, one would expect to see lower rates of entrants when the overall ROIC is persistently below WACC. This should based on theory, require the airline industry in general to improve its ROIC or it may be difficult to e.g. attract necessary capital to fund the high expected growth[99]. The investors should have incentives to withdraw capital until ROIC are equal or above WACC. This should be evident in NAS as they suffer from poor ROIC, which might indicate future difficulties in obtaining funds for its expansion. However, behavioral economic theory suggests that unprofitable airlines can continue to get funding as investors make irrational choices.

4.5 VRIO-Analysis

Our strategic analysis has so far focused on NAS' external environment. We will now present what we believe to be the most important internal resources and capabilities in NAS. We will do this by using the VRIO framework to see whether the resources and capabilities are value adding (V), rare (R), imitable (I) or well organized (O)

[99] PESTLE analysis

and thus create any competitive advantage.[100] In our view, this is a meaningful step in order to gain further insight needed to evaluate the future profitability of NAS.

4.5.1 Brand and reputation

We have previously argued that price is the most important factor when customers are choosing among primary LCCs. Nevertheless, brand and reputation are to some extent important for customers as well as NAS' ability to attract skilled personnel in the future. It can be argued that brand and reputation will play an even more important role in the future. This is based on the knowledge obtained from previous analysis, both the BMS and Five Forces analysis. The BMS analysis showed the trend among airlines to converge its strategies to become more alike regarding what services it will offer, airline fares and cost basis. We also know from the Five Forces analysis that it is difficult for customers to differentiate between airlines and that this is one of the main reasons why particularly LCCs compete on fares. These findings give us reason to believe that as the airlines become more homogeneous, they may try to utilize brand and reputation to a larger extent to differentiate from competitors and attract customers.

Several prestigious organizations have recognized NAS' brand and reputation[101]. The fact that most of the prizes are based on customer voting indicates that NAS currently has a strong brand. We note that these awards might be due to introductory pricing as NAS have used this price-strategy when entering new markets where they have less brand awareness. Furthermore, there has been events that might damage NAS' brand, e.g. the long-haul operations did not have a smooth start and caused fury among stranded customers. Future events similar to this might have an adverse effect on NAS' brand.

4.5.2 Aircraft fleet

NAS currently has an aircraft fleet with an average fleet age of 3.6 years. This translates into one of the world's most environmentally friendly and fuel efficient fleet. For example, the new Dreamliner provides several advantages from both an operational and customer perspective. Larger windows, reduced noise and cabin pressure simulation of 1800 meters compared to the traditional 2400 meters. The latter reduces "jet lag" symptoms like a headache and muscle pains.[102]

NAS is also the first user of the Dreamliner in Europe. This gives them a head start compared to other LCCs interested in transatlantic operations. CEO of Ryanair David O´Leary stated that his company and EasyJet would

[100] Strategic Management Insight "*VRIO Framework"* (2016):https://www.strategicmanagementinsight.com/tools/vrio.html (accessed: 13.02.2016)
[101] Norwegian Air Shuttle ASA (Annual report, 2015)
[102] Boeing (2016): *"Boeing 787"* http://www.boeing.com/commercial/787/ (accessed 13.02.2016)

not be able to get their hands on a Dreamliner in 4-5 years.[103] In 2017, NAS will be the first customer to receive the new generation of 737-series. This will further improve the current fuel efficient and environmentally friendly fleet.

4.5.3 Strong position in key markets and first mover advantage

As previously mentioned, NAS share the majority of the Scandinavia market with its competitor SAS. This "duopoly" serves NAS well and protects them to some extent from direct competition with LCCs in this market. However, future developments might radically change this market position as new competitors might enter Scandinavia's domestic markets in the future.

The launch of long-haul routes might enable NAS to benefit from some first mover advantages such as less direct competition in the first years and ability to exploit opportunities in emerging markets in Asia and Africa. Note that the outcome of this strategic initiative remains to be seen.

VRIO	Valuable	Rare	Hard to imitat	Organized	Competitive Advantage
Brand and reputation	Yes	Yes	No	No	Sustainable
Aircraft Fleet	Yes	No	No	Yes	Temporary
Strong market position	Yes	No	Yes	Yes	Temporary
First mover advantage	Yes	Yes	No	Yes	Temporary

Figure 28: Summary of the VRIO analysis. *Source: Own creation*

[103] Financial Times: *"Ryainair board approves plan for transatlantic airline"* http://www.ft.com/intl/cms/s/0/4822a29e-c995-11e4-b2ef-00144feab7de.html#axzz48EybO7DN (accessed 13.02.2016)

5.0 Financial Analysis

The strategic analysis explained the factors affecting the industry and will now be linked to NAS' financial performance. The purpose of the financial analysis is thus to examine NAS' historical operational performance, by capturing the operational value drivers of NAS. This section will investigate what drives income and costs, and how they affect each other. Additionally, we have included an interdependent analysis of NAS' liquidity and insolvency risk and reviewed these ratios with NAS' financial flexibility and availability. The combination of strategic and financial analysis will provide us with a solid basis for forecasting.

5.1 Accounting policies

We have to ensure that the financial statements are reliable before we transform them to give information benefitting analytical purposes. NAS reports consolidated financial information pursuant to International Financing Report Standards (IFRS) and IFRIC interpretations, as adopted by the EU. There are strict rules regarding most estimates, but we note that IFRS sometimes require management to exercise its judgment in their estimations. For the most part, the management judgments in NAS are regarding provisions and impairment of intangible assets. It is important to evaluate whether the assumptions made in their calculations are realistic, but this does, however, fall out of the scope of this paper. We use the assessment made by others, as the external audit report states that the "*financial performance and its cash flows for the year ended in accordance with the IFRS*"[104]. As seen in the Corporate Governance analysis, NAS is subject to monitoring by several large institutional investors that would not hesitate to act if the accounting policies in NAS were below par. We find it safe to use the financial statements in NAS.

We note that the other companies in the peer-group also disclose their statements in accordance with IFRS, in addition to external auditing and are being closely monitored by institutional investors.

5.2 Reformulation of financial statements

We have in the previous section concluded that the accounting policies are unbiased. We must now make adjustments to the financial statements, so they become useful for analytical purposes, as financial statements under IFRS are not recorded in a way that reflects operating performance. Thus, in order to compare the financial performance of different companies, we have separated operating and financial activities. We do this because the operating activities are the primary driver of value creation.[105] In the income statement, we have calculated the NOPAT. This measure reflects a company's profit from its core business regardless of how it has

[104] Norwegian Air Shuttle ASA – Annual report 2015
[105] Petersen & Plenborg (2012), "*Financial Statement Analysis"* p 68

been financed. In the balance sheets, we have separated operating assets and liabilities from the financial side. The reformulated income statement and balance sheet can be found in Appendix 2-13.

5.2.1 Reformulated Income Statement

Total revenues include *passenger revenue, ancillary revenue,* and *other revenue* and are classified as operational. *Passenger revenue* consists of ticket sales while *ancillary revenue* consists of other services directly generated from ticket sales such as baggage fees and seating. *Other revenue* consists of sales that are not directly linked to tickets, but to cargo and wet lease.[106] Wet leases and cargo are utilization of capacity, and it is thus reasonable to assume that it should grow proportionally with the fleet development.

Most of the cost items can be regarded as being operational and directly linked to NAS' core operation without further discussion. These include *aviation fuel, airport charges, sales and distribution costs, handling charges, technical maintenance, payroll* and *other operating expenses*.

In addition, some costs are regarded as non-operational or transitory. These are *other losses / (gains) - net* and *other income*. Additionally, the item *share of profit/loss from associates companies* is considered as financial. We note that these items are not easily classified as either operational or financial, so we have approached these items carefully and briefly commented on them below. Lastly, we provide a thorough review of our adjustments to *operational lease.*

Share of profit/loss from associated companies is NAS' part of the profit from its mentioned ownership in *Norwegian Finans Holding ASA (NFS),* the parent company of *Bank Norwegian*. Owning a bank is clearly not something that is essential for an airline to conduct its business. In a situation where it should not be regarded as a core business, it should be considered as a financial item, i.e. excess cash not needed to operate the company. There are arguments that suggest this item should be regarded as part of NAS core business. NAS' customer loyalty program is run and administered in cooperation with the bank, and this investment is considered long-term. However, according to Koller et al. this item is a non-consolidated subsidiary and therefore should be measured and evaluated separately from invested capital.[107] The argumentation is based on the fact that the subsidiary's income is consolidated, but not its revenue and costs. Furthermore, its assets will only be listed as a singular item, making it unattainable to track the subsidiary's assets. Note that a valuation of a financial institution is widely different from methods of valuation concerning an airline. We believe including this

[106] Norwegian Air Shuttle ASA – Annual report 2015
[107] Koller et al. "*Valuation: Measuring and Managing the Value of Companies*" p 271.

investment into invested capital would bias obtained results compared to competitors. In our opinion, the best practice solution is to value NFS separately and add it to the value of NAS' operating enterprise value.

In the period 2010-2013, *other income* includes gains from sale of assets. These are transitory in nature and are not considered to have any effect on NAS' future operations. We have therefore treated this item as a special item and subtracted it from the NOPAT in the reformulated income statement.

Other losses / (gains) - net is related to losses and gains on financial assets and financial liabilities. This item relates to change in the value of financial assets and is thus classified as financial.

We have made adjustments to *operational lease*. At year-end 2015, NAS had 45 of their 99 aircraft under operational lease contracts. As seen from the Five Forces analysis, airlines use operational lease to avoid large capital investment when acquiring aircraft. This solution also increases flexibility in capacity due to seasonal fluctuations. Contrary to financial lease or debt financing, where asset and the corresponding debt are recognized in the balance sheet, operating lease is an off-balance sheet form of financing. Thus, the only item recognized is the lease payment. An operational lease reduces profits, but total asset value is correspondingly low. Even though these effects to some extent offset each other, it still distorts the relationship between NOPAT and invested capital.[108] The consequence is artificially high capital productivity. Therefore, it is necessary to adjust both the income statement and balance sheet by capitalizing the operational lease to avoid that the financial ratios calculated at a later stage are biased. There are several different approaches to calculate the capitalized lease, and some of these will be discussed below.

Koller et al. suggest that the most accurate method to obtain the asset value of an operating lease is by applying the following formula[109]:

$$Asset\ Value_{t-1} = \frac{Rental\ expense_t}{k_d + \frac{1}{Asset\ life}}$$

We can see from the formula that the asset value is based on the relationship between rental expenses, cost of debt and asset life (k). There are inconsistencies in the literature regarding the risks when calculating the cost of debt. Koller et al. argue that the cost of debt should be the secured cost of debt (operational lease liabilities) as

[108] Petersen & Plenborg (2012*),"Financial Statement Analysis"* p.421
[109] Koller et al. Valuation "Measuring and Managing the Value of Companies", p. 567

the lease is secured by the value of the aircraft. The cost of debt could then be estimated using AA-rated 10-year bond yields. On the contrary, Damodaran argues that operating lease should be viewed as insecure and fairly risky debt[110]. Regardless of the two different approaches to estimate cost of debt, it is necessary to know the lease payments for 2016 in order to calculate the capitalized lease for 2015. NAS annual report of 2015 does not include accurate enough budgeted lease payments needed to use this method. We had to further investigate other approaches for operational lease capitalization.

According to Moody's[111], the value of debt derived from operational leasing commitments can be calculated in two ways. The first way is to find the present value of budgeted future lease payments. As previously mentioned, NAS does not include accurate information about future lease payments in its annual reports, so we discard this method. We applied the second method, which is to multiply lease payments with a capitalization rate to capitalize operating leases. This is according to Moody's adapted as a standard among practitioners. The calculations, assumptions and the related adjustments to the financial statements are explained below. See Appendix 14 for a full overview of calculations for NAS and rest of the peer group.

In order to obtain the operational leasing commitments, we multiplied lease payments with a capitalization rate of 7 to capitalize operating leases. The capitalization rate of 7 is used since SAS and EasyJet state that they apply this rate in their annual reports[112]. No information regarding capitalization rate can be found in NAS' annual reports, and we use the rate provided by SAS and EasyJet as a proxy for the remaining peer group. We then obtain a capitalized lease asset value of approximately NOK 15.4 billion in 2015. We further obtained the interest costs by multiplying the cost of debt (explained in section 7.1.3) with the capitalized value of the leased asset. This is the cost that would occur if the leased aircraft were financed by debt. Finally, we subtract the lease interest from the lease payment to obtain the depreciation. We then had the available data at hand to make the necessary adjustments in the financial statements. The lease interest expenses are classified as financial and subtracted from the operating profit in the reformulated income statement. The remaining costs are treated as depreciation and therefore included in the operational costs and thus included in NOPAT. Finally, the capitalized leasing costs are added to tangible assets and the equivalent financial liabilities in the reformulated balance sheet. We note that we have applied the same method for the remaining peer group in order to keep consistency high.

[110] Aswath Damodaran (2012) "Investment Valuation", p.180
[111] Moody´s: https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_181430
[112] SAS & EasyJet annual report 2015

We have so far classified the different items as either 'operational' or 'financial', in addition to making the necessary adjustments to operating leases. The next step is then to calculate NOPAT, which is one of the key measures used in the profitability analysis that will be conducted in later sections. We therefore sum up total revenues and total operating costs to achieve EBITDA. We then subtract the mentioned lease depreciation and *depreciation & amortization* to find EBIT. In order to find NOPAT, we subtract the operating tax, which is the sum of reported tax and tax shield.

As we now have obtained NOPAT, we need to calculate the invested capital to conduct the profitability analysis. The following section will therefore address the reformulation of the balance sheet.

5.2.2 Reformulated Balance sheet

In this section, we will identify the operating assets and liabilities in order to calculate the invested capital. The latter is according to Petersen and Plenborg[113] the amount a firm has invested in its operating activities which it requires a return on. We regard many of the items as easily being either 'operational' or 'financial'. These items will simply be given their classifications. The remaining items will be given explanations.

5.2.2.1 Non-current assets

Items regarded as an operational asset without further discussion are: *"intangible assets", "equipment and fixtures", "financial lease assets"* and *"aircraft, parts, and installations on leased aircraft".* Additionally, the item *"financial assets available for sale (long-term)"* is regarded as a financial asset.

Deferred tax assets in NAS, regards to previous tax credits that are carried forward. These are expected to be utilized by future taxable profits. NAS does however not provide information that enables us to decide if these items are connected to financial or operational activities. We therefore include *deferred tax assets* in the operational side as this item in most cases relate to operations.[114]

Prepayment to aircraft manufacturers is the classification of the payments made to the aircraft manufacturers before delivery of the aircraft. When the aircraft is delivered, it is credited from this item and debited as *aircraft, parts, and installation on leased aircraft.* This is merely a periodic adjustment from when the aircraft is paid for, and when it is delivered. We regard this item as operational.

[113] Petersen and Plenborg, Financial Statement Analysis, page 74
[114] Petersen and Plenborg, Financial Statement Analysis, page 88

Investment in associate: This item has been previously discussed under *"profit/loss from associates"* in the "reformulated income statement" section. We therefore conclude that this item should be regarded as financial in the balance sheet.

In the item *buildings*, it is important to evaluate whether the investments were made for speculative reasons, or if it is used in the operations. The item consists of apartments to house crew and trainees, and should be regarded as an operating asset.[115]

5.2.2.2 Current assets

We treat *"inventory"* and *"trade and other receivables"* as operating items, and *"financial assets available for sale (current)"* as a financial item without further discussion.

Cash and cash equivalents often consist of operating and excess cash. There is impossible to distinguish these two when looking at NAS' annual report. As Petersen and Plenborg[116] argue that the consequence of reclassification of operating cash as excess cash is likely to be modest, we regard this item as financial.

Derivative financial instruments assets/liabilities address NAS' forward foreign exchange contracts and forward commodity contracts in relation to NAS' hedging strategy. These contracts are used to minimize risk related to aircraft lease, fuel and other operating costs denominated in USD. In theory, we should classify the hedges related to fuel as operational and currency as financial. We lack information in the annual reports to make this distinction. Based on recommendations by Petersen and Plenborg[117], we classify derivative financial instruments as financial.

5.2.2.3 Non-current liabilities

The items *"long-term borrowings"* and *"financial lease liabilities"* are regarded as financial liabilities, whereas *"provision for periodic maintenance"* is regarded as operational without any further discussion.

Pension liabilities are regarded as a financial liability given that it is valued on a net present value basis (i.e. discounted). This item is 0 in 2012, as NAS transferred all pensions from a defined benefit plan to a defined contribution plan (also referred to as the "401 K plan"). The main difference between these two pension plans is that the benefit plan makes a promise regarding the pension the employee will receive at retirement while with a contribution plan the company makes a promise regarding the amount it will pay the pension fund on behalf of

[115] Norwegian Air Shuttle ASA – Annual report 2015
[116] Petersen and Plenborg, Financial Statement Analysis, page 77
[117] Petersen and Plenborg, (2012) Financial Statement Analysis, page 78

the employee. NAS has then no obligations concerning what the employee receives at retirement given that the company has made the yearly contributions to the pension fund. All else equal, a defined contribution plan provides therefore less security for the employee and less obligation for NAS. In Q4 2013, NAS issued a new defined benefit pension plan according to a settlement with the previously mentioned pilot union, Parat. Note that the large majority of employees belong to the defined contribution plan. In a defined contribution plan, the contributions (e.g. to a pension fund) are recognized as an expense in the period in which they are incurred. If NAS matches the amount and timing of its contributions to obligations for each accounting period, it is not necessary to recognize further liabilities. As the item *net recognized pension liabilities* is due more than a year after the end of the accounting period in which the employee rendered his/her service, the future payments need to be discounted. We therefore regard this item as a financial liability.[118]

Deferred tax liabilities is the net of all deferred tax liabilities/assets excluding tax loss carry forwards that are not expected to be utilized the following year. As deferred tax liabilities relate to NAS intangible and tangible assets, we regard it as an operating liability.

5.2.2.4 Current liabilities

We regard *"short-term borrowings"* as a financial liability, whereas *"trade and other payables"* and *"air traffic settlement liabilities"* are treated as operational without further discussion. The item *"derivative financial instrument"* is previously discussed and is regarded as financial.

Tax payable arises if a company pays too little in tax on the account during the fiscal year. According to Petersen and Plenborg[119], this item should be regarded as operational unless tax authorities impose an interest charge on tax payable. This is not the case with NAS, and we regard this item as operational.

5.3 Profitability Analysis

We will now use the reformulated financial statements from the previous section in order to analyze the profitability of NAS and its peers. The profitability is important for a company's survival and to ensure a satisfactory return to shareholders. The below figure shows an illustration of operating profit through a Du-Pont model provided by Petersen and Plenborg[120]:

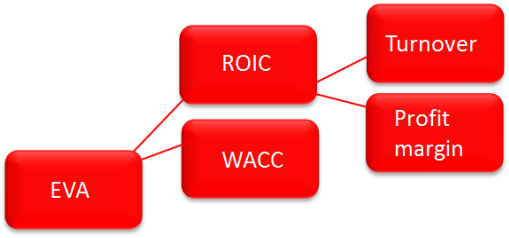


Figure 29: EVA - Du-Pont model. *Source: Petersen and Plenborg. Own Creation*

[118] [16]Petersen and Plenborg (2012), "*Financial Statement Analysis"*, page 79

[120] Petersen and Plenborg (2012) *"Financial Statement Analysis",* p. 94

As seen from the figure, Economic Value Added (EVA) is divided into two main components: Return on invested capital (ROIC) and the weighted average cost of capital (WACC). We have chosen to focus mainly on ROIC, as the purpose of this part of our analysis is to compare NAS' operational performance to its peers. By including WACC and its decomposed factors such as return on equity (ROE), we will include both the operational and the financial performance of NAS and its peers. It only makes sense to compare ROE for companies with similar relationships between equity and net interest bearing debt. In our peer group, the companies have in our view significant different gearing (net interest-bearing debt/equity) and will have ROE that differs because of that. Thus, including financial performance will in our view give a distorted picture of performance. We will therefore decompose ROIC and investigate the most important value drivers behind this ratio. The WACC will be elaborated on in the valuation section.

5.3.1 Decomposition of Return on Invested Capital (ROIC)

As we remember from section 4.1, ROIC is the overall profitability measure for operations.[121] This measurement is in a valuation context a significant factor because a higher ROIC will lead, all else equal, to a higher estimated value. As mentioned in the Five Forces analysis, NAS has only received financing for some of the aircraft order placed in 2012. This explicitly entails that the company will have a significant need of financing in the following years. When acquiring new debt, it is advantageous to have positive ROIC-WACC spread. This relationship gives the lender more faith in the company being able to pay it back, and thereby demand a lower premium (interest). The company will accordingly be able to achieve cheaper financing.

Since we in the reformulated financial statements have isolated the operational and financial effects, we can use the following equation to calculate ROIC for the peer group:

$$ROIC = \frac{Net\ operating\ profit\ after\ tax}{Average\ invested\ capital} * 100$$

It should be noted that the calculations are based on averages of invested capital, thus not based on the beginning of the year or end of year invested capital. This calculation is deemed the most accurate if there is a steady development in invested capital over the year. For example, if an airline acquires an aircraft in the middle of the year, ROIC would be overestimated if one used the beginning of the year invested capital, or underestimated if one used the end of year invested capital.

[121] Koller et al. Valuation (Measuring and Managing the Value of Companies, page 166

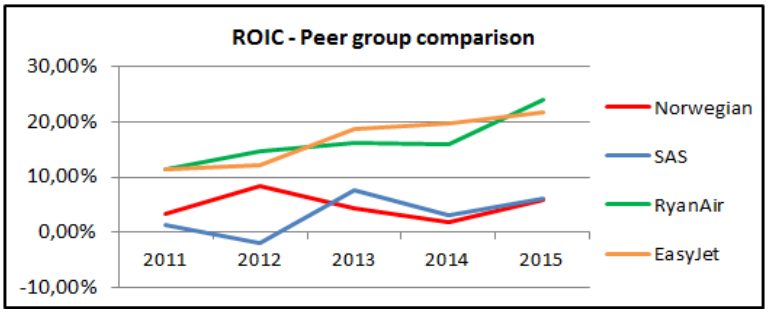


Figure 30: ROIC - Peer group. *Sources: Reformulated statements. Own Creation*

As the ROIC in our peer group is analyzed in section 4.1, we continue to investigate why EasyJet and Ryanair are performing better than NAS. The next step will therefore be to explain whether the profitability is driven by a revenue and expense relation (PM) and/or capital utilization (TR). However, for structural reasons, we first review how the following sections will be carried out.

We present our ROIC decomposition structure (RDS) below, which shows what we believe to be a relevant approach to analyzing ROIC for airline companies. The purpose behind this approach is to show how all value drivers are connected to ROIC. A more detailed explanation of each sub-component will follow after the figure.

Figure 31: ROIC decomposition structure. *Source:* Financial statements & Koller et. al. Own Creation

5.3.2 Turnover rate of invested (TR)

This ratio expresses a company's ability to utilize invested capital, i.e. how much revenue the invested capital is able to generate. All else equal, high TR values are attractive. By dividing net revenue and invested capital, we obtain the following historical cross-section analysis of the TR in the peer group.

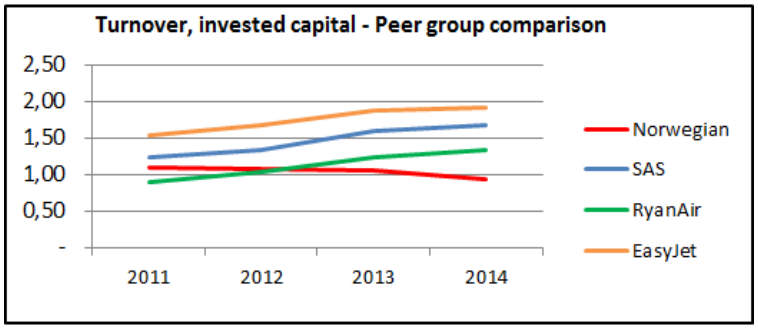


Figure 32: Turnover, invested capital -Peer group. *Sources: Reformulated statements. Own Creation*

As seen from the graph, we see a positive development in the TR in EasyJet, SAS and Ryanair. On the contrary, NAS have the worst TR levels in the peer group and the development is negative throughout the period 2011-2015. The negative trend needs to be viewed in the light of the company's large aircraft order in 2012. All else being equal, it seems reasonable to assume that newer aircraft will have a higher book value than an older one, thus making the turnover lower.

5.3.3 Operating profit margin (PM)

As previously mentioned, PM describes the revenue and expense relation. This measurement is very useful when comparing companies in the same industry, as a higher PM is usually achieved due to a product/service with special properties that are difficult to imitate and/or because of certain cost advantages compared to its competitors. By dividing NOPAT on net revenues, we obtain the following historical cross-section analysis of the PM in the peer group.

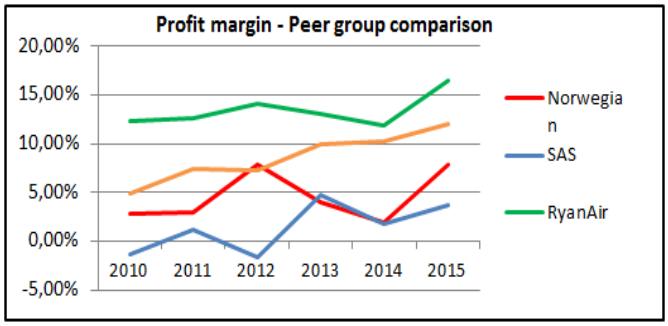


Figure 33: Profit margin - Peer group. *Sources: Reformulated statements. Own Creation*

As we see, Ryanair has a significantly higher PM than its competitors. This can to a certain degree be explained by the findings from the BMS section, which shows that Ryanair is an ultra-low cost company compared to low-cost companies like NAS and EasyJet. This means that Ryanair has cost advantages regarding for example secondary airports and lower taxes (12.5%), which NAS and EasyJet do not benefit from. As seen from the Five Forces analysis, the airline industry is very competitive, which put pressure on margins. In Europe (2014), the average PM was approximately 2 % for the airline industry, where LCC models were superior to the legacy models. When using 2% European operating profit margin as a benchmark, we see that Ryanair and EasyJet has formidable rates. We further see that the PM for all the companies increased significantly in 2015. We know

from the PESTEL analysis that the fuel prices surged during the first half of 2014, thus a partial explanation for the increased PM can be more favorable fuel prices despite some portions being hedged. Additionally, in the case of NAS, the constant renewal of the fleet allows for a more fuel efficient fleet that reduces fuel costs. SAS has the worst performance, despite their high turnover on invested capital.

We have now the available data at hand to conclude whether the ROIC is affected by a revenue and expense relationship (profit margin) and/or capital utilization (turnover rate). The graph below summarizes the previous measures in the case of NAS.

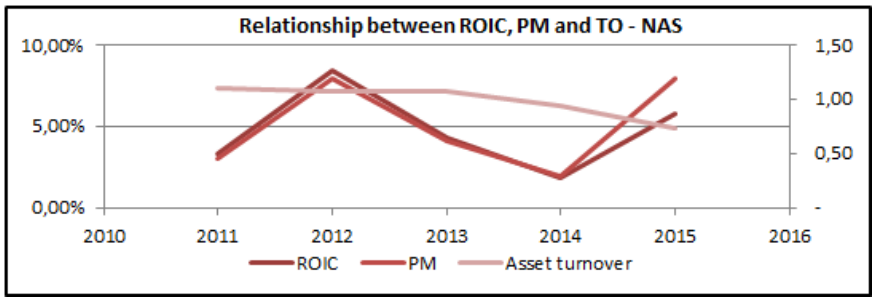


Figure 34: Relationship between ROIC, PM, and TO. *Sources: Financial statements. Own Creation*

We see that there is evident that NAS' PM fluctuated with the same pattern as ROIC. PM is however vague in the description of the evolution of the ratios. To deepen our understanding of what drives the PM, we have to further decompose the PM in line with our RDS. Note that we do this based on the EBIT-margin rather than the above PM based on NOPAT-margin. The only difference between these two ratios is that EBIT-margin is calculated before tax. This will enable us to compare the companies "as they were operating out of the same country", as the differences in the tax levels obtained by our peer groups respective countries will to some degree distorts the ratios calculated in the following sections. First, for structural purposes, we can review where we are in our RDS, we will now elaborate on EBIT-margin and its sub-components:

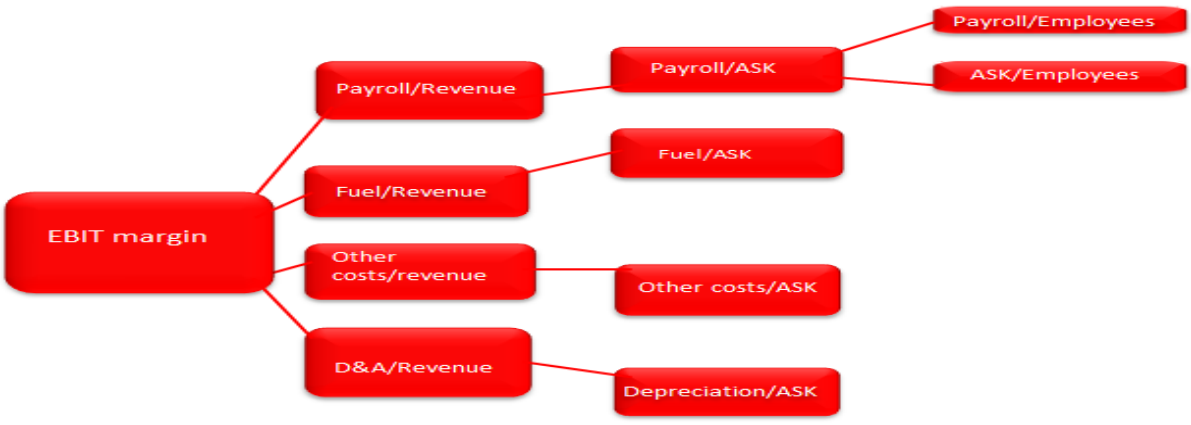


Figure 35: EBIT-margin decomposed. *Source: Financial statements. Own creation*

In order to conduct a detailed and thorough analysis of the sub-components of the EBIT-margin, we need to understand what drives them. The operational drivers are largely determined by airline specific ratios (ASR). We will therefore first provide an overview of the most important ASRs before we return to our analysis of what drives EBIT margins.

5.4 Airline Specific Ratios (ASR)

5.4.1.1 - ASK

Available seat kilometers (ASK) represents the total capacity of an airline. ASK is derived from the number of seats multiplied by the distance flown by each aircraft. This shows the full potential capacity of the airline, but it does not take actual passenger load into account. This ratio is useful to see if the airline is increasing the number of planes in the fleet or if they are decreasing the fleet. An increase in ASK is not necessarily positive, as it depends on whether the airline can fill increasing ASK with passengers. A cut in ASK is usually due to closing unprofitable routes.

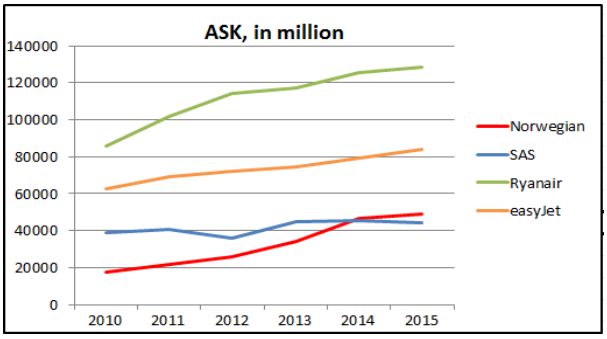


Figure 36: Historical ASK development - Peer group. *Source: Annual reports. Own Creation*

In figure 36, we see that NAS has experienced an average growth of 23 % since 2010. This is the largest increase measured in percent in our peer group. This ratio is expected to increase further, due to the expansion strategy. This caused NAS to surpass SAS regarding capacity in 2014. SAS is the only company in our peer group that experienced negative growth. Ryanair has the largest capacity at 128 billion ASKs in 2015, although in later years we see a diminishing growth rate.

5.4.1.2 - RPK

Revenue per Passenger per Kilometer (RPK) measures the volume of passengers carried. We arrive at this number by multiplying occupied seats with distance flown. In comparison to ASK, RPK shows more accurately an airline's ability to generate revenue. RPK will always be lower than ASK, as it is impossible to always fill all seats.

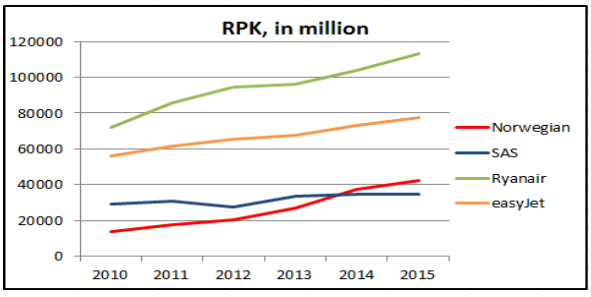


Figure 37: Historical RPK development - Peer group.
Source: Annual reports. Own creation

Figure 37 show that RPK follows the same trend as ASK. SAS has also experienced a decline in RPK and a rather flat development since 2013. This is most likely caused by SAS attempts to make existing operations more profitable through its 4Excellence program, as opposed to expansion. On the contrary, NAS is experiencing growth in RPK. The long-haul operations have opened very attractive routes for customers in Norway, Sweden, Denmark and the UK. Ryanair has a larger increase in RPK than in ASK, which implies the improvement comes from a better load factor. This also seems to be the case for EasyJet.

5.4.1.3 - RASK

Revenue per available seat kilometer (RASK) shows how much revenue a single seat generates on average per kilometer flown. RASK is calculated as revenue divided by total ASK. The logic behind SAS being on top is because of higher ticket prices. Therefore, we will look at RASK in comparison to cost per available kilometer (CASK) to get a more accurate impression. RASK can be further decomposed since it is a product of load factor multiplied with yield.

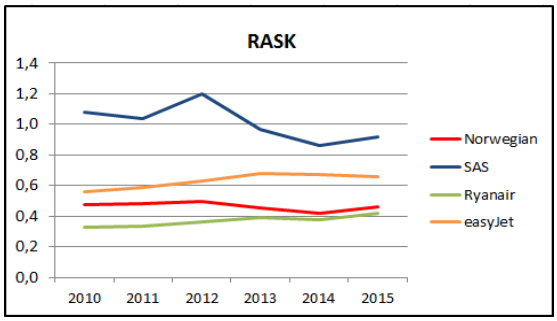


Figure 38: Historical RASK development - Peer group. *Source: Financial statements. Own creation*

5.4.1.4 - Load factor

Load factor describes how much of actual capacity is used on average. A high load-factor is therefore a measure of how well capacity is utilized. Figure 39 clearly shows that LCCs target high load factors to achieve low unit costs. NAS has been able to make further improvement to its load factor and is catching up with Ryanair. A high load factor is essential for the LCCs to make a profit. SAS is not as dependent on load factor because it has higher fares, although an increase in load factor would improve SAS' performance. EasyJet's is the top performer, achieving a load factor above 90 % since 2012. We believe EasyJet benefits from being largest or second to largest on 22 of Europe largest airports.

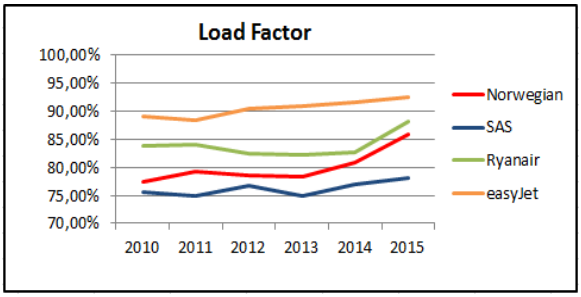


Figure 39: Historical load factor development - Peer group. *Source: Annual reports. Own creation*

5.4.1.5 - Yield

Yield is a product of revenue divided by RPK and measures revenue per passenger per kilometers flown. More easily put, the yield is a measure of average ticket price paid per passenger, per kilometer. Figure 40 shows

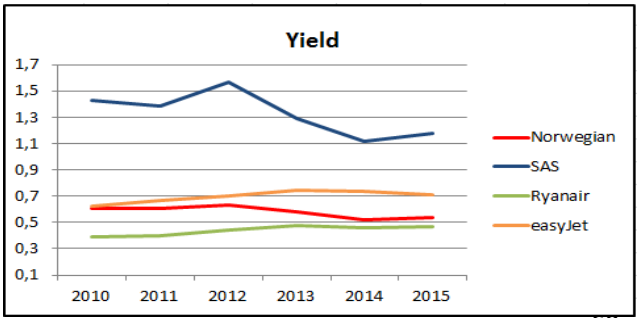


Figure 40: Historical yield development - Peer group. *Source: Financial statements and annual reports. Own creation*

the yield development of our peer group. It explains why EasyJet has a significantly higher RASK than NAS. EasyJet has been able to charge higher fares and still achieve better load factors compared to NAS. Furthermore, this figure shows that Ryanair has the lowest fares on average. We notice that the average ticket price for NAS is lower than EasyJet. This is probably done to boost load factors in the form of introductory pricing and/or because of lower operating costs (2012-2015).

5.4.2 EBIT margin sub-components

We have now examined what we reckon as the most important ASR's that drive revenues. This section will connect the ASR's to sub-components (costs) of the EBIT margin. The goal is to assess whether the differences in financial performance between the companies in the peer group are sustainable.[122]

We will look into the following ratios:

- Payroll/Revenue
- Fuel/Revenue
- Depreciation and Amortization/Revenue
- Other Costs/Revenue

5.4.2.1 Payroll/Revenue

The table below illustrates how much payroll cost constitutes of total revenue.

Payroll / Revenue	2010	2011	2012	2013	2014	2015	Average
Norwegian	18,21%	17,44%	16,11%	15,98%	16,42%	15,27%	16,57%
SAS	33,83%	31,61%	32,11%	26,81%	24,16%	24,27%	28,80%
Ryanair	11,21%	10,36%	9,45%	8,92%	9,20%	8,89%	9,67%
easyJet	12,34%	12,51%	12,40%	12,14%	12,50%	10,78%	12,11%

Figure 41: Historical Payroll / revenue development - Peer group. *Source: Financial statements. Own creation*

As revealed in the BMS analysis, SAS has the highest payroll costs compared to revenue. It is almost triple the amount achieved by Ryanair. This clearly shows the one of the differences between the FSC and LCC models.

Figure 42: Payroll / revenue decomposition. *Source: Koller et al. Own creation*

[122] Koller et al. Valuation (2010). *"Measuring and Managing the Value of companies"* p 169.

Payroll/Revenue can be further decomposed into Payroll/ASK divided by RASK. Payroll/ASK can be even further broken down to payroll/employees by ASK/employees.

Payroll / ASK	2010	2011	2012	2013	2014	2015	Average
Norwegian	0,086	0,084	0,080	0,072	0,069	0,070	0,077
SAS	0,366	0,327	0,385	0,259	0,208	0,222	0,295
Ryanair	0,037	0,035	0,034	0,035	0,035	0,037	0,036
easyJet	0,069	0,074	0,078	0,082	0,084	0,071	0,076

Figure 43: Historical Payroll / ASK development. *Source: Financial statements. Own creation*

The table above shows how many NOKs the airlines have to use to generate one ASK. As explained above, this is a function of employee productivity (ASK/Employees) and wage level (Payroll/Employees). Figure 44 is a graphical presentation of employee productivity and wage level.

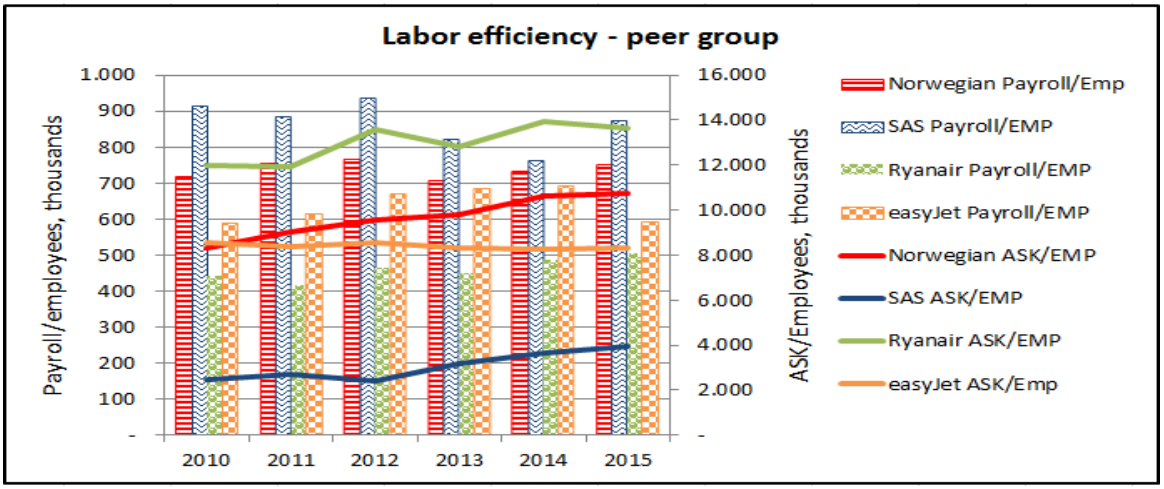


Figure 44: Historical labor efficiency - Peer group. *Source: Financial statements and annual reports. Own creation*

If we look at the columns (left axis) we notice that NAS and SAS have the highest average pay. SAS has the highest payroll costs and at the same time lowest ASK/Employee ratio in our peer group. This means that SAS is currently paying its staff higher wages, but still has the lowest ASK productivity per employee (left axis). The reason for this is partly due to additional services that do not generate ASKs (i.e. lounges). In 2015, NAS has a slightly higher wage level than EasyJet, but are currently able to generate more ASK per employee. This implicitly means a quite similar total payroll cost. We further notice that Ryanair obtains formidable rates. The company achieves the lowest average payroll cost and still gets the highest productivity per worker.

5.4.2.2 Fuel/Revenue

Fuel / Revenue	2010	2011	2012	2013	2014	2015	Average
Norwegian	24,90%	29,38%	29,13%	30,35%	32,35%	23,05%	28,19%
SAS	16,07%	18,76%	21,72%	21,45%	23,17%	21,26%	20,40%
Ryanair	29,92%	33,81%	36,30%	38,61%	39,97%	35,23%	35,64%
easyJet	17,79%	26,56%	29,81%	27,76%	27,63%	25,59%	25,86%

Figure 45: Fuel / Revenue - Peer group. *Source: Reformulated financial statements. Own creation*

As expected, we know from the PESTLE analysis that LCCs usually have higher ratios than FSCs. It is reasonable to assume that if an airline has a relatively high fuel to revenue ratio, the other costs are well managed. The reason behind this is that it is practically impossible to reduce costs to a lower level than a modern aircraft technology or effective risk management (hedge) allows.

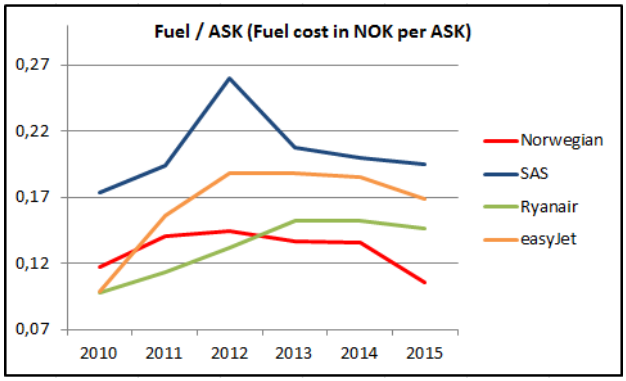


Figure 46: Fuel / ASK in NOK per ASK – Peer group. *Source: Reformulated financial statements. Own creation*

Based on the argument above, it is therefore important not only to examine the level of fuel to revenue ratio but also how well the fuel costs are distributed over ASK. Figure 46 shows the amount of NOKs it costs to produce one ASK. NAS seems to have a temporary advantage, as the company received the first Dreamliner's. We believe this is the driving factor behind lower fuel costs per ASK.

SAS has the oldest fleet that consumes more fuel compared to the remaining peer group. Note that different hedging strategies will probably impact this ratio to some extent. The declining ratio is true for all companies and is probably caused by lower fuel prices.

5.4.2.3 Depreciation and Amortization/ Revenue

This ratio shows depreciation and amortization, including operational lease depreciation in percent of total revenue.

Depreciation & Amortization/Revenue	2010	2011	2012	2013	2014	2015	Average
Norwegian	6,318%	6,278%	6,559%	7,079%	8,009%	9,393%	7,27%
SAS	7,355%	8,184%	6,337%	6,580%	7,299%	7,790%	7,26%
Ryanair	10,603%	9,935%	8,805%	8,463%	8,703%	8,330%	9,14%
easyJet	5,679%	5,034%	4,569%	4,390%	4,622%	4,693%	4,83%

Figure 47: Depreciation & Amortization / Revenue - Peer group. *Source: Reformulated financial statements. Own creation*

Ryanair seems to have the highest percentage of depreciation and amortization in comparison to revenue. This does not reflect previous trends among the peer group. One explanation might be Ryanair's other operational costs are significantly lower, making the depreciation and amortization higher in percent in relation to revenue. In order to compare this cost to a more relevant driver, we break it down to depreciation in comparison to ASK. To examine this further we decompose depreciation and amortization even further since the following equation holds:

$$\frac{Depreciation\ \&\ Amortization}{Revenue} = \frac{\frac{Depreciation}{ASK}}{RASK} + \frac{Amortization/ASK}{RASK}$$

Our operational lease depreciation has been calculated using Moody's method as explained in section 5.2.1.

Depreciation & Amortization/ASK	2010	2011	2012	2013	2014	2015	Average
Norwegian	2,98%	3,01%	3,25%	3,20%	3,37%	4,31%	3,35%
SAS	7,96%	8,47%	7,60%	6,36%	6,29%	7,14%	7,30%
Ryanair	3,48%	3,34%	3,19%	3,34%	3,31%	3,47%	3,36%
easyJet	3,17%	2,96%	2,88%	2,97%	3,11%	3,10%	3,03%

Figure 48: Depreciation & Amortization / ASK - Peer group. *Source: Reformulated financial statements & Annual report. Own creation*

The table above can be interpreted as cost of depreciation and amortization in NOKs it takes to produce one ASK. We see that EasyJet utilize its aircraft fleet more efficiently than the remaining peer group. We notice a negative development in NAS' utilization of the fleet. This may be caused by the more expensive Dreamliner or differences in depreciation schemes.

ASK / Aircraft	2010	2011	2012	2013	2014	2015	Average
Norwegian	312,35	354,16	381,18	399,05	489,25	495,22	405,20
SAS	244,35	278,59	249,14	321,07	327,23	291,45	285,31
Ryanair	370,91	374,87	389,41	384,28	422,20	416,39	393,01
easyJet	321,15	339,79	337,30	342,04	351,88	347,91	340,01

Figure 49: ASK / Aircraft - Peer group. *Sources: Annual reports. Own creation*

ASK per aircraft is also a good indicator of how efficient our peer group are able to utilize its fleets. Ryanair was surpassed by NAS in 2013 and has fallen behind. This is most likely due to NAS receiving its first Dreamliner in 2013. The Dreamliner is used on long routes and is able to achieve more block hours (hours in the air) per day, in comparison to short/medium haul aircraft on shorter routes. This partially explains why NAS has become superior in terms of getting the largest amount of ASKs out of each aircraft. This implies that NAS' long-haul operations somewhat distort the comparison.

5.4.2.4 Other operational costs/Revenue

Other operational cost contains all operational costs with the exception of fuel, payroll and depreciation and amortization .This will give us an insight into how well costs related to operational activities are managed in NAS and our peer group.

Other costs / Revenue	2010	2011	2012	2013	2014	2015	Average
Norwegian	45,54%	41,49%	38,10%	39,41%	42,18%	43,15%	41,64%
SAS	45,08%	38,57%	40,04%	38,87%	42,93%	40,68%	41,03%
Ryanair	34,34%	31,71%	29,58%	29,01%	28,75%	28,81%	30,37%
easyJet	51,89%	48,09%	45,20%	44,88%	43,61%	43,58%	46,21%

Figure 50: Other costs / Revenue - Peer group. *Sources: Reformulated financial statements. Own creation*

As expected, we see that Ryanair has strict cost control in all areas and are even 10 percentage points below the two other LCCs. We further decompose other costs in order to examine other costs against ASK.

Other costs /ASK	2010	2011	2012	2013	2014	2015	Average
Norwegian	0,22	0,20	0,19	0,18	0,18	0,20	0,19
SAS	0,49	0,40	0,48	0,38	0,37	0,37	0,41
Ryanair	0,11	0,11	0,11	0,11	0,11	0,12	0,11
easyJet	0,29	0,28	0,29	0,30	0,29	0,29	0,29

Figure 51: Other costs / ASK - Peer group. *Source: Annual reports and reformulated financial statements. Own creation*

As seen from table X, EasyJet has three times the rate compared its main competitor Ryanair. NAS has stabilized around 0.18-0.20 NOK per ASK, which is a far better than EasyJet. Once again, Ryanair is the top performer.

5.4.2.5 - CASK

Our last ASR is CASK. This ratio represents all the costs we have examined above in relation to ASK. This ratio reflects the total costs for each company to produce one unit of ASK. We obtain CASK by using the following equation:

$$CASK = \frac{Fuel\ costs + Payroll\ costs + Other\ Costs + Depreciation\ \&\ Amortization)}{ASK}$$

Figure 52 summarizes all previous ratios into one measure. It is therefore not unexpected that SAS has a significantly higher overall operational cost. Meanwhile, Ryanair confirms its position as an ultra LCC and achieves cost leadership in our peer group. NAS has achieved a slight but continuous improvement since 2011 and has a cost advantage over its most comparable competitor, EasyJet.

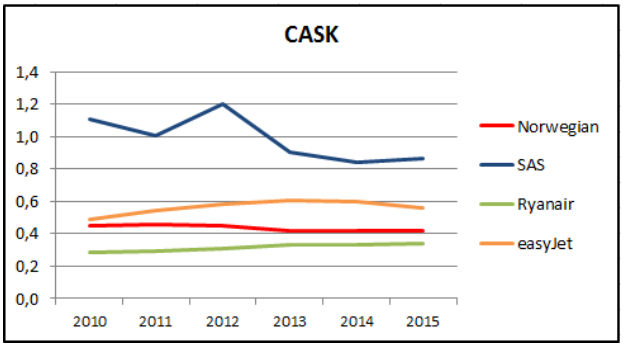


Figure 52: Historical CASK development - Peer group.
Source: Financial statements. Own creation

5.4.2.6 EBIT Margin - RASK/CASK

Finally, to provide a full context of revenue and costs we show how the relationship between RASK and CASK is a function of EBIT-margin. The relationship is expressed through the following equation:

$$EBIT\ margin = 1 - \frac{CASK}{RASK} = 1 - \frac{1}{\frac{RASK}{CASK}}$$

A ratio value above 1 represents a positive EBIT margin and below signals a negative EBIT result.

All companies have had positive EBIT margin in our periods, except SAS in 2010 and 2012. We notice that the LCCs are experiencing more stable EBIT margins, especially Ryanair

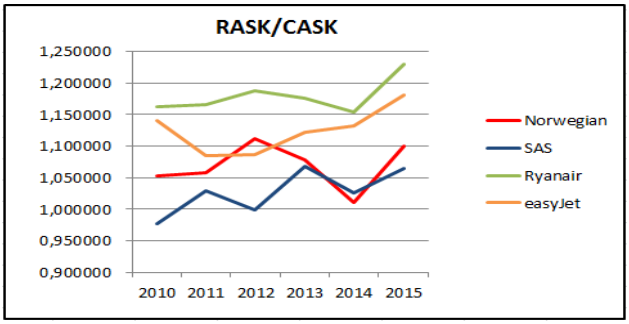


Figure 53: Historical RASK/CASK development – Peer group
Source: Financial statements. Own creation

and EasyJet. They have superior EBIT margins and can provide decent operational profits compared to industry standards.[123] NAS' recent development is positive and might be attributable to its long-haul expansion. Additionally, oil prices decreased dramatically from 2014 to 2015 and may affect EBIT margins positively.

5.5 Partial conclusion

Through the reformulated financial statements we obtained NOPAT and invested capital, which was used to calculate our main financial performance ratio, ROIC. From this ratio, we found that NAS' is outperformed by its competitors Ryanair and EasyJet regarding historical profitability. SAS obtains similar ROIC as NAS in 2015. We then had to decompose ROIC to understand the drivers behind profitability. The reason for Ryanair and EasyJet's so far best practice advantage over NAS is that they have both a higher profit margin and capital turnover than NAS. Additionally, we found that the fluctuations in ROIC was mainly driven by the profit margin, i.e. a revenue and expense relation rather than capital utilization. We therefore chose to continue the profitability analysis by decomposing the EBIT-margin with industry specific ratios.

By analyzing the EBIT-margin, we found that Ryanair and EasyJet are top-performers in almost every value driver. NAS are only the top performer in fuel efficiency, which is a result of the mentioned fuel efficient fleet. In our opinion, Ryanair has the highest ROIC due to a clear cost leadership advantage. For example, the company has payroll cost per employ approximately 50 % lower than the other LCCs. Additionally, the company's employees are more efficient in terms of ASK production per employee, indicating that each overall employee also contributes more to revenues than employees working for the remaining peer-group.

EasyJet is the second-best performer regarding ROIC mainly due to its ability to charge the highest prices among the LCCs, but at the same time has the highest load factor. The small premium can partially be explained by EasyJet's strong market position in many of Europe's most popular airports.

This analysis indicates that NAS is neither a cost leader or has any sustainable competitive advantage that enables them to obtain a similar yield and load factor relationship that the other LCCs. However, NAS' has an overall cost advantage over EasyJet. This can, for example, be explained by lower fuel costs and higher aircraft utilization per aircraft.

[123] IATA: *"Profitability and the air transport value chain": June 2013:*
https://www.iata.org/whatwedo/Documents/economics/profitability-and-the-air-transport-value%20chain.pdf (accessed: 14.04.2016)

5.6 Financial strength analysis

We have so far analyzed the peer-group profitability in terms of ROIC and its underlying components. To fully understand NAS' financial situation and the consequences of its aggressive expansion strategy, we need to assess its liquidity risk. This is done because growth often entails a draw on liquidity that in some cases might lead to e.g. increased financial costs, reduce profitable investments opportunities and in the worst case a potential bankruptcy. The following analysis can therefore be connected to the development in ROIC and WACC later used to determine the share price with the DCF-model. However, we will in this section first analyze both short- and long-term liquidity risks before we conduct an insolvency analysis. Finally, we will discuss the above findings with NAS financial flexibility and availability with the possible implication for the future share price.

Note that the financial ratios are based on ending balances rather than average of the beginning and ending balances. We do this because ending balances contains the most updated data, as there could be significantly changes from beginning to ending values[124]. Since ratios in this section can be industry specific in relation to e.g. capital structure and capital intensity, we use relative performance against peers instead of applying "rule of thumbs" assessments. As recommended by Petersen and Plenborg, we have used market values instead of book values as these are usually closer to realizable values.[125] One exception has been made regarding the latter, as financial leverage in long-term liquidity will show somewhat different interpretations based on either book or market values.

5.6.1 Liquidity analysis

5.6.1.1 Short-term liquidity

We will now assess the short-term liquidity by the use of the Cash flow from operations (CFO) to current liabilities ratio. By using this ratio, we can assess if NAS' CFO is sufficiently large enough to pay off its current liabilities. We note that this ratio is almost the same as the well-known Current ratio (CR). The main difference is that CR uses potential cash flows, whereas CFO uses actual cash flows. By replacing current assets with CFO, the convertibility-to-cash problem is avoided. By dividing the CFO with current liabilities, we obtain the following current ratios:

CFO to current liabilities						
	2010	2011	2012	2013	2014	2015
NAS	0,2638	0,2015	0,4173	0,4501	0,0304	0,2196
Ryanair	0,5624	0,4280	0,5621	0,5354	0,4593	0,5049
easyJet	0,3413	0,3602	0,2065	0,4467	0,2775	0,3445
SAS	0,0173	0,0571	0,0922	0,1346	0,0346	0,1929

Figure 54: Historical CFO ratios - Peer group. *Source: Financial statements. Own creation*

[124] Petersen and Plenborg (2012), *"Financial statement analysis"*.
[125] Book value of debt is used as proxy for market values.

We see from the table above that NAS' CFO ratio has so far been relatively volatile with an overall negative trend in the period 2010-2015. The ratio is approximately 22 % in 2015. This indicates that the company can only pay 22 % of its current liabilities from its operating cash flows on an annual basis, i.e. it takes 4.5 years to repay current liabilities. Furthermore, NAS' levels are significantly below Ryanair and EasyJet in the period from 2013 to 2015. Ryanair's 2015 ratio of approximately 50 % is more than twice the size compared to NAS' level. When comparing NAS levels to the other LCCs, it might indicate that NAS' short-term liquidity risk is relative high. By reviewing the formulas components by the use of the annual report in 2015, we see that the ratio arguably could be adjusted. The item *"air traffic settlement liabilities"* represent 37.5 % of total current liabilities, and as we remember this is prepaid tickets recognized as a liability until the corresponding flight is conducted. In other words, this liability does not require cash to be met like installments and a loan do. By removing this item would give NAS a ratio of 0.35 % in 2015. Thus, removing this item does not change the fact that the CFO's are not adequate enough to meet either *"short-term part of borrowings"* or *"trade or other payables"*.

By reviewing NAS' ratio to the remaining peer-group and by its own components, we believe NAS short-term liquidity risk to be relatively high. However, as this only explains parts of NAS historical financial position, it should be linked to NAS long-term liquidity risk, which is the subject of the next section.

5.6.1.2 Long-term liquidity risk

We will use financial leverage and interest coverage ratio (ICR) as indicators for the long-term liquidity risk in NAS. By dividing total liabilities by equity, we get the following financial leverage for our peer-group:

Financial leverage ratio						
Market values:	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
NAS	1,65	4,53	2,18	1,96	2,48	2,82
Ryanair	0,70	0,88	0,72	0,52	0,41	0,34
easyJet	1,29	1,41	0,74	0,29	0,26	0,19
SAS	3,31	8,02	9,68	3,82	5,11	5,08
Average	1,74	3,71	3,33	1,65	2,07	2,11
Book values:	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
NAS	4,49	5,25	5,35	5,68	12,74	12,14
Ryanair	1,32	1,51	1,33	1,32	1,18	1,30
easyJet	1,35	1,21	0,90	0,69	0,66	0,58
SAS	1,71	1,95	1,98	7,46	5,24	4,41
Average	2,22	2,48	2,39	3,79	4,96	4,61

Figure 55: Financial leverage ratio. *Source: Financial statements. Own creation*

The first graph shows that NAS' financial leverage based on market values have slightly increased in the period from 2012 to 2015, and even though they are below SAS levels they are significantly above the levels obtained by the other LCCs during our historical period. The same pattern can be seen when assessing the book values. This indicates that NAS' long-term liquidity risk is relative high. Interestingly, we see that the book values are

significantly higher than the market values obtained in 2014 and 2015. In 2015, NAS' obtains a financial leverage of 12.15 and 2.82 when using book and market values, respectively. This indicates a higher risk from 2014 to 2015 based on market values and a lower risk from 2014 to 2015 based on book values. On one hand, this might suggest that the book values give incorrect conclusions as market values are closer to the realizable value. On the other hand, if the market does not capture the fundamental value of the company, market values may provide misleading signals. The differences in book and market values are thus based on investors optimism related to the development in NAS share price. We do however believe that the levels and overall development in both book and market values indicates that NAS have relatively high liquidity risk when comparing it to the other LCCs. In order to further understand the long-term liquidity risk in NAS, we have included a peer-group analysis of the ICR.

The ICR measures a company's ability to meet its net financial expenses. In other words, this ratio measures how many times operating profit covers net financial expenses. It is usually measured as operating profit (EBIT), or cash flow from operations (CFO) divided on net financial expenses. As both operating income and interest expenses are affected by the capitalization of lease, the following adjusted interest coverage ratio is used:

$$Adjusted\ interest\ coverage\ ratio = \frac{Operational\ income + Lease\ expense - Lease\ depreciation}{(Interest\ expense + pretax of\ debt * PV\ of\ losses)}$$

We note that cost of capital and the iterations problems regarding this formula is thoroughly described in section 7.3.1. By applying the above formula, we get the following graph:

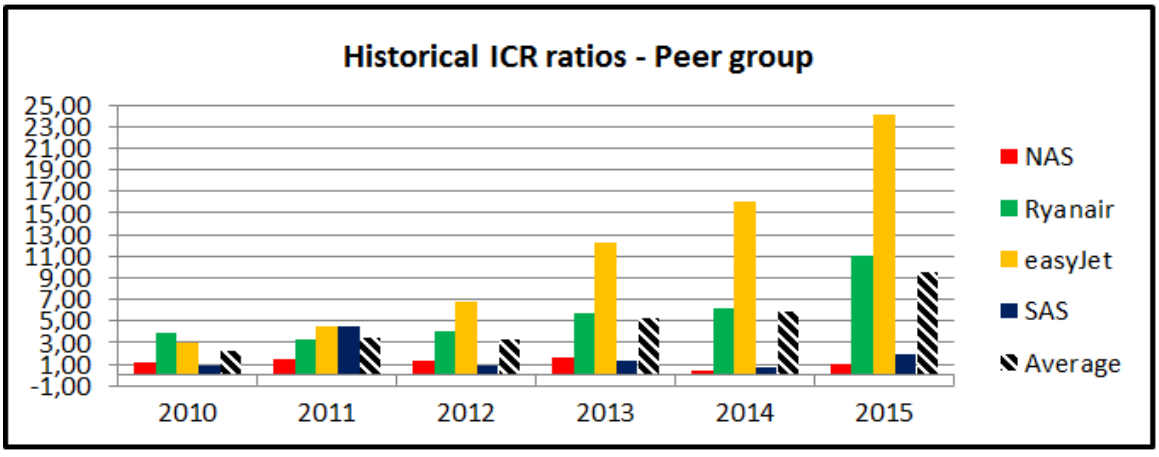


Figure 56: Historical ICR ratios - Peer group. *Sources: Reformulated financial statements. Own Creation*

We see from the table that NAS' ICR have fluctuated around its average of 1.18, with 2015 levels being 1.0. When comparing NAS' ratio to the other LCCs, we get the same conclusions as we did when we assessed the

financial leverage ratio. Both Ryanair and EasyJet have a positive development with levels significantly above the levels obtained by NAS in our historical period.

Based on both financial leverage and ICR, we conclude that NAS' long-term liquidity risk is relatively high. As both short-term and long-term liquidity risk is considered to be high, it might indicate that suspension of payment is likely in the future. We therefore believe it is meaningful to include an analysis of NAS' insolvency risk, as we e.g. remember that NAS funds its renewal of the fleet on an ongoing basis. High liquidity and insolvency risk might indicate difficulties for NAS to obtain adequate funds to continue its expansion strategy, or at least with the same cost of debt.

5.6.2 Insolvency risk

We will use the Altman's Z-Score model to review the insolvency risk in the peer-group, as this is a recommended ratio to use on airlines[126]. This model was developed nearly 30 years ago and should be used with caution, as the business environment has changed over the past decades. We will therefore include a Synthetic Credit Rating that in our opinion will decrease the probability of unbiased conclusions.

5.6.2.1 Altman's Z-score and Synthetic Rating Model

Investors can use the Altman's Z-Score model to help determine if they should buy or sell a particular stock if they are concerned about the underlying financial strength of a company.[127] The model attempts to predict defaults from the following accounting ratios:

- *X1: Working capital/Total Assets,*
- *X2: Retained Earnings/Total assets,*
- *X3: EBIT/Total Assets*
- *X4: Market value of equity/Book value of total liabilities and*
- *X5: Sales/Total assets.*

The Z-Score is calculated as:

$$Z - Score = 1{,}2X1 + 1{,}4X2 + 3{,}3X3 + 0{,}6X4 + 0{,}999X5$$

A Z-score below 1.8 means the company is probably headed for bankruptcy while companies with scores above 3.0 are not likely to go bankrupt. The higher the score is, the lower likelihood of bankruptcy and vice versa.

[126] *Morell, Peter. "Airline Finance" Ashgate Publishing, 1997*
[127] Investopedia: http://www.investopedia.com/articles/fundamental/04/021104.asp (accessed 14.04.2016)

The calculation of synthetic credit rating is thoroughly explained in section 7.3.1. The difference is that the credit spreads in 2015 have been used as proxies for the previous years. Note that leasing is included. By calculating the models we obtain the following results in 2015:

Model:	NAS	Ryanair	easyJet	SAS
Z-Score	0,76	2,70	4,61	1,19
Syntethic rating	CCC	AAA	AAA	B+

Figure 57: Synthetic rating and Altman Z-score results - Peer group (2015). *Sources: Reformulated financial statements. Own creation*

We can see from the above table that NAS and SAS' ratios in 2015 are below 1.8. Thus, they are probably heading towards bankruptcy according to the Altman's Z-score. Additionally, we see that NAS' Z-score is the lowest in the peer group. The same conclusions can be drawn when assessing the synthetic credit risk, as NAS get the lowest credit rating which also are below investment grade (hence, BBB). The latter means that NAS and SAS are considered to have low credit quality. In order to deepen our understanding of insolvency risk, we have calculated the development in the two ratios from 2011 to 2015 as seen below.

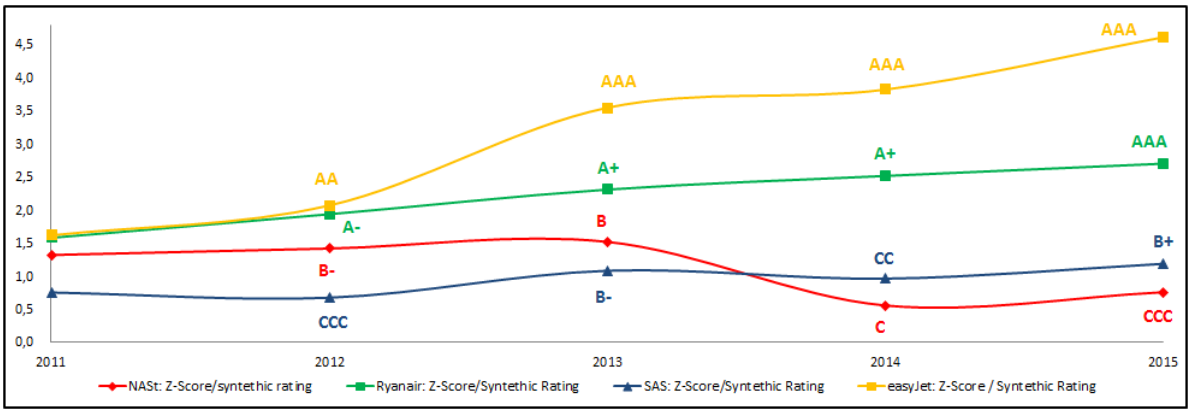


Figure 58: Credit rating and Z-Score development. *Sources: Own creation and reformulated financial statements.*

The development above shows the same trends, namely higher Z-score indicates higher credit rating, which strengthens our belief that our approach yields unbiased results. We further see that Ryanair and EasyJet have decreased their insolvency risk over the past years while NAS overall ratios indicate an increased insolvency risk. Even though SAS have relative high insolvency risk, they have managed to decrease its risk slightly over our historical period.

Our findings from the liquidity and insolvency analysis indicate that NAS' might have future difficulties in pursuing their international expansion. Interestingly, NAS has so far received the adequate financing to support its substantial fleet expansion from 2012, even though our estimates indicates relatively high liquidity and insolvency risk in those particular years. We will therefore review these findings with NAS' financial flexibility

and availability before we draw any final conclusions of NAS financial strength and its future impact on the share price.

5.7 Discussion of findings

There are particular conditions in the airline industry which make it reasonable to adjust the findings slightly from this section. For example, Koller et al. argue that aircraft have significant value to new owners, as it is easily deployed by another company[128]. They argue that this is the reason why airlines can sustain high leverage, despite their generally low return and high risk. When reviewing this argument with our findings from our previous analysis, it might indicate that NAS' financial flexibility and availability yields higher credit strength compared to our previous analysis.

The findings from the Five Forces analysis shows that the major aircraft manufacturers Boeing and Airbus have full order books that make it nearly impossible to get hold of new modern aircraft in the next years unless they are acquired from the secondary market. The high demand for future aircraft can be supported by the expected growth in passenger demand found in the PESTLE-analysis. Additionally, the Five Forces analysis indicated that NAS had been able to get discounts on its large aircraft order in 2012. We therefore find it reasonable to assume that NAS can improve its financial strength if this is deemed necessary. Firstly, NAS could use sale and leaseback agreements to beneficial prices. This action would allow NAS to continue its expansion plans, all else equal. Secondly, NAS could sell its new modern aircraft in the secondary market, which is assumed to be liquid as we previously concluded that there are low capital requirements in the airline industry. Thirdly, NAS has previously used Export Credit Loans to finance its expansion. We therefore find it reasonable to assume that this source of financing would still be available as this has been evident in airlines with poorer financial strength in the past.

5.7.1 Partial conclusion – Financial strength

We have so far concluded that NAS are falling behind its largest competitors Ryanair and EasyJet regarding higher liquidity and insolvency risk. The overall development in our historical period suggests that NAS is constantly facing higher risks, which can partially be explained by increased debt financing of the fleet expansion. These findings alone might limit NAS' management freedom of action, reduce the possible business opportunities in short and long haul operations, increase financial expenses as well as lead to suspension of payment and possible bankruptcy[129].

[128] Koller et al. *"Valuation – Measuring and Managing the Value of Companies",* p. 492
[129] Petersen and Plenborg, "*Financial Statements Analysis*", p. 150

In our opinion, the arguments provided in the above section indicate that NAS' financial flexibility and availability to some extent offset the poor financial strength obtained in the liquidity and insolvency analysis. We do however believe that NAS' higher risk levels and overall negative development compared to other LCCs might result in higher financial expenses regarding higher cost of debt. This is based on our assumption that investors are *risk averse* compared to government-backed fundings such as Export Credit Loans. The higher cost of debt indicates higher WACC, which decreases the share price, all else equal. Note that NAS' future borrowings and financing arrangements may be subject to covenants which limit the company's operating and financial flexibility.

5.8 Partial conclusion – SWOT:

We have summarized all the most important findings from Strategic Analysis and Financial Analysis in the SWOT table below. The SWOT framework highlights NAS' internal strengths and weaknesses, in addition to external threats and opportunities. Note that the main findings are important parameters for projecting NAS future development.

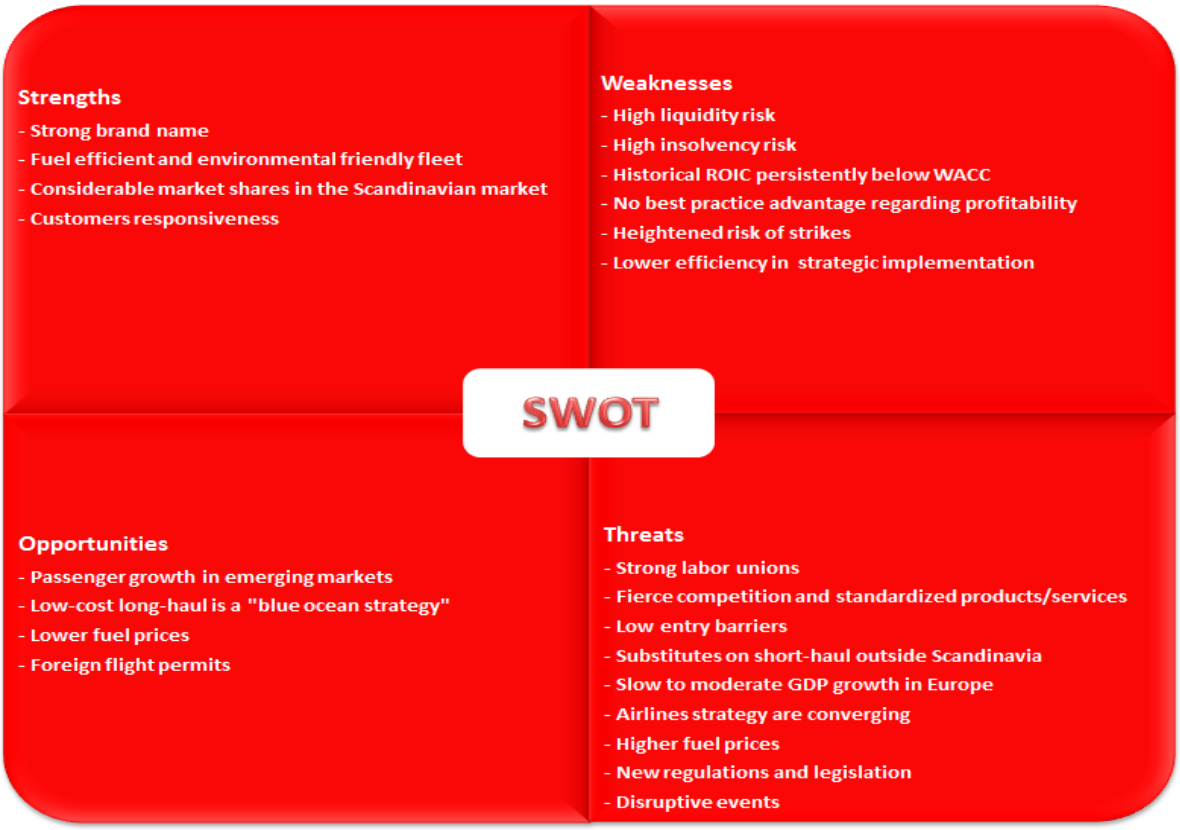


Figure 59 SWOT: Summary of the strategic and financial analysis. *Own creation*

We have now performed several analyses to understand what drives value in an airline. Additionally, we have seen if the persistently poor profitability is expected to continue in the foreseeable future.

The macro-environment was examined by the use of the PESTLE-framework. The external factors that have the largest impact on NAS future value were considered to be GDP growth, fuel prices, foreign flight permits and disruptive events. The GDP growth and fuel prices will partially determine NAS' future development in both revenues and operating costs. Even though NAS and its competitors are benefitting from a lower fuel price today, our analysis suggests that this is probably only a temporary cost advantage that is not sustainable in the long-run. Moreover, if NAS is not granted the new flight permits, it might undermine the expansion strategy. We also saw how disruptive events such as terrorist attacks and natural disasters had a negative impact on the airline industry's operations.

In the Five Forces analysis, we examined what seemed to be an unattractive industry for investors in terms of low ROIC. Even though the overall airline industry have managed to halved units costs in real terms over the past 40 years, it seems that these efficiency gains has been passed onto customers in lower ticket prices. The fierce competition, especially among LCCs on ticket prices, might be a result of relatively standardized product/services, low switching costs, high price transparency and price-sensitive customers. We thoroughly explained that the industry has strong labor unions, especially in Norway resulting in higher labor costs for NAS compared to its competitors. As NAS current and future expansion strategy will involve reallocation and reorganization of employees, it will most likely cut total payroll costs. These strategic initiatives were however considered to heighten the risk of future strikes, which can have negative events related to e.g. cost when aircraft are grounded and potential cost related to lower brand value. Additionally, our strategic implementation analysis focusing on executive management and employee relations, found concerns that might hamper NAS expansion strategy. The main findings suggested that there was overall lower strategic consensus and weak communication between management and its subordinates. This may be a result of weak leadership that could further increase the risk of new strikes. Other factors such as low entry barriers due to low capital requirements are also partial explanations why the industry has had persistently low profitability. Summarized, the competitive level is high, and there is no information (to our knowledge) that suggests there will be any major change in the industry structure that will enable NAS to achieve excess profit in the future.

The main finding from our BMS analysis explains the overall tendency for airline's strategy is to converge against each other. In other words, many airlines are becoming increasingly similar. This might make it more difficult for airlines to gain a competitive advantage that is not based on cost-leadership. We further argued that

NAS might have a temporary competitive advantage through its differentiation measure of long-haul low-cost operations as this market currently resembles a “blue ocean.”

The internal analysis was guided by the VRIO model. Our findings indicate that NAS has a temporary competitive advantage in its fuel efficient and environmentally friendly fleet and brand name. It is reasonable to assume that it is fairly easy to duplicate NAS’ fleet, as we e.g. know it is low capital requirements in the airline industry. NAS has so far a strong brand name according to prestigious awards. We also noted that some of these prices might have been heavily influenced by NAS’ introduction price strategy in new markets. This strategy might make NAS’ price/performance ratio artificially high, allowing for better ratings. Additionally, NAS target price-sensitive customers, making it reasonable to assume that a strong brand name will not allow them to charge premium prices above the levels of its competitors. To summarize, we do not believe NAS so far possess any sustainable competitive advantage in the long-term enabling the company to earn excess profits in the future.

The decomposing of ROIC showed than NAS’ is underperforming compared to Ryanair and EasyJet. Our main findings indicate that NAS is neither a cost leader nor utilize any competitive advantage that enables them to obtain a similar yield and load factor relationship as the other LCCs. NAS’ total operating costs are also above the levels obtained by the other LCCs, partially explained by higher payroll cost and lower efficiency per employee. NAS’ are only able to outperform its competitors regarding fuel efficiency.

From the analysis of our peer-groups financial strength, we found that NAS has higher liquidity risk and insolvency risk than Ryanair and EasyJet. The overall development in every ratio applied showed the same negative tendency for NAS in terms of lower financial strength. We note that NAS financial flexibility to some extent offset the poor financial strength.

6. Forecasting

After analyzing the drivers of NAS' historic profitability, combined with a thorough review of the micro- and macro-environment surrounding the company. By connecting acquired knowledge from the strategic analysis with value drivers revealed in the financial analysis, we should be able to create a realistic forecast regarding the future financial performance of NAS.

To achieve a realistic valuation of NAS, the assumptions and techniques we apply are crucial. We will therefore review how we have approached this forecasting task.

As recommended by Petersen and Plenborg, we have built our forecast upon three periods, namely the historical, the explicit forecast and the terminal period.[130] The historical period acts as the foundation for future forecasting by providing information about trends and levels of our financial value drivers. The explicit period is also based on historic information, but we integrate future expectations obtained through qualitative analysis and anticipated macroeconomic events. The terminal period represents what we believe will be the "steady state" environment, where it is assumed that every level remains constant for all foreseeable future. Hence, the choice of explicit forecast should reflect the time it takes to reach a steady rate. Based on our expectations that the large aircraft order will be fully delivered by 2022, we believe that NAS will not experience abnormal growth from this point and onwards. This coincides with Koller et al. recommendation of an explicit forecast of 10 years, where the first 5-7 forecast years are detailed. The remaining years are treated in a more simplified manner to avoid what Koller et al. refer to as "false precision".[131] NAS management has not signaled any further aircraft order of major magnitude over the next ten years, based on this we believe this time interval will produce a realistic and unbiased share price.

In the subsequent sections, we will compose a pro forma income statement and a pro forma balance sheet. The outcome from these statements will serve as our basis when we forecast the cash flow statement. Finally, we will reassess our output to assure quality and credibility remains at the highest possible level.

6.1 Pro forma: Income statement

In the financial analysis, we examined and showed the connection to how the main operating drivers in the airline industry relate to profitability. In general, many valuations would base its forecast on the relationship between cost items and revenue to obtain future profits. While this method is commonly used, we believe that

[130] Petersen and Plenborg, "*Financial Statement Analysis*", p. 177.
[131] Koller et al. *"Valuation – Measuring and Managing the Value of Companies"* p. 188.

forecasting of revenue based on aggregate components of operational drivers is better suited to separate price and volume effects. This conclusion is based on Koller et al. findings during the early 2000s[132]. Airline companies experienced diminishing demands, hence lower fares. As a result, costs as a percentage of revenues increased. As previously shown with the ASR's, we can show that EBIT-margin is driven by the relationship between RASK and CASK. This method would have enabled us to see that the decline in profitability was caused by impaired ability to generate revenue per seat kilometer produced (lower RASK) and not because of increasing cost per seat kilometer produced (higher CASK). On these grounds, we believe that forecasting the income statement based on drivers linked directly to revenue may yield a distorted picture of future developments in the airline industry. Our forecast will therefore rely heavily on the relationship between each item and production levels (ASK). We will therefore start our forecasting by analyzing the ASK development for NAS based on future fleet capacity.

6.1.1 ASK development - Number of planes

As mentioned in the financial analysis, ASK is the airline's full potential capacity. It is calculated by taking a total number of seats and multiplying it with total distance flown. Hence, it is to a great extent influenced by the number of aircraft in service. According to the annual report (2015), NAS expect the 2012 order to be fully delivered over the next seven years. The average forecasted fleet growth is 16% until 2022, including aircraft retirement, based on projected deliveries and our assumptions. This allows us to obtain quite detailed information regarding the future development of ASK. These calculations are based on NAS' committed fleet plan until 2022.[133] The following years are obtained by using similar growth ratios to arrive at the expected fleet size in 2022.

Fleet size	Detailed forecast								Simplified forecast		
Type	2015	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
Short-haul	91	108	134	149	170	192	214	240	240	240	240
Long-haul	8	12	21	28	33	38	38	38	38	38	38
Total fleet	99	120	155	177	203	230	252	278	278	278	278

Figure 60: Estimated fleet development. *Sources: Norwegian annual report & own assumptions. Own Creation*

6.1.1.2 ASK per plane

After carefully putting together a realistic fleet plan we will now analyze future development in ASK per plane to obtain total expected ASK production. We know that ASK productivity is affected by several factors, namely *sector length, type of aircraft, and frequency of flight (including turnaround time).* As we remember from the strategic analysis, NAS has focused heavily on the long-haul routes to Asia and the U.S. These long-haul

[132] Koller et al. *"Valuation – Measuring and Managing the Value of Companies"* p. 206.
[133] Norwegian Air Shuttle ASA – Annual report 2015

Dreamliner´s have a significantly higher productivity compared to the most used short-haul aircraft 737-800. Based on this we have divided ASK production into long and short/medium-haul regarding ASK contribution.

We calculated the long-haul production of ASK on two highly popular long-haul routes, namely Oslo – Oakland and Stockholm – New York. We applied 290 seats per Dreamliner version 8 and not the 344 seats in the Dreamliner 9 version. This is because it is still uncertain if NAS will exploit the seating capacity to its full extent. A round trip to Oakland (8250 km sector length) would yield 4.785 billion ASK while the New York (6000 km sector length) round trip would produce 3.48 billion ASK. We assume both routes will make one round trip within approximately 24 hours, and we know the turnaround time is two hours.[134] We apply 350 operative days a year. The average production per Dreamliner on these two routes gives us a total of 1.465 billion ASK per year. On the short-haul aircraft, we apply the sector length in 2012, before the Dreamliner's entered the fleet.[135] This provides us with 1050 kilometers multiplied with 186 seats, under the assumption that these routes make three roundtrips a day.[136] We also applied 350 operative days and use 4.10 billion yearly ASK production per short-haul plane.

Year	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
Fleet	120	155	177	203	230	252	278	278	278	278
ASK pr short haul	410	410	410	410	410	410	410	410	410	410
ASK pr long haul	1465	1465	1465	1465	1465	1465	1465	1465	1465	1465
Long-haul contribution	17577	30760	41013	48337	55661	55661	55661	55661	55661	55661
Short-haul contribution	44280	54940	61090	69700	78720	87740	98400	98400	98400	98400
Total ASK (million)	58834	70600	84720	101664	121997	143401	154061	154061	154061	154061

Figure 61: Total ASK development. *Sources: Norwegian Annual Report 2015 & Own assumptions. Own Creation*

6.1.2 Revenue

In the financial analysis, we showed how revenue can be decomposed from revenue per ASK (RASK), into the factors yield and load factor. Our previous findings in the strategic and financial analysis will now be implemented into the components of RASK.

6.1.2.1 - Yield

The yield represents the average fare paid per passenger. In our strategic analysis, we concluded that ticket price was the driving competitive item, contrary to in the 1990s were diversification was a more relevant contributing competitive driver.

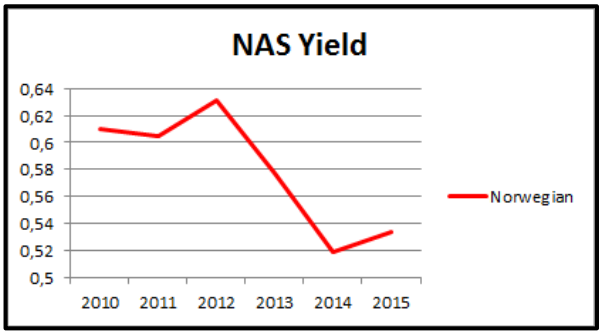


Figure 62: NAS' Historical yield development. *Source: Annual reports. Own creation*

[134] Norwegian.no & Flightradar – Checking tickets and tracking planes
[135] Norwegian Air Shuttle ASA – Annual report 2012

The overall markets where NAS is present have several airlines and limited growth. This has resulted in a diminishing yield, especially since the long-haul routes started the yield has decreased. We assume this is caused by lower introductory prices than planned and reimbursements due to delays.

The renewing of the entire fleet is a long-term cost saving strategy. It allows for lower maintenance costs, lower fuel consumption and a fleet better equipped to meet future environmental regulations. We also believe an increasing fleet size will further improve ability to exploit any economies of scale, thus further decreasing fixed operating costs. We do however believe that these cost reductions will benefit the customer and thereby decrease the yield. This is based on our findings from the Five Forces analysis, that the airline industry is characterized by fierce competition on ticket prices as e.g. customers are primarily price sensitive and standardized products. If we see this in light of our BMS analysis, which showed a tendency for airlines to increasingly similar, it suggests that the future competition will probably increase as passengers will have even more difficulties to differentiate between airlines. Based on these findings we believe any cost reductions will contribute to lower fares and therefore decrease yields.

We expect a slight decrease in short-haul yield due to the factors such as strong competition, moderate expected growth in Europe and because NAS is expanding its fleet at a rapid rate. To maintain a high load factor, we expect fares to be kept low or even be lowered. Furthermore, we believe that long-haul operations face lower competition and those introductory prices to wear off, this will contribute positively to the long-haul yield. However, this is based on current yields that are lower than short-haul yields and still constitute a small portion of passenger revenue. In total, we believe it is reasonable to assume that the yield will decrease by 1.3 % throughout our detailed forecast until it stabilizes around 49.02 øre in 2022. This will enable NAS' yield to approaching the levels obtained by Ryanair.

6.1.2.2 Load Factor

Load factor represents the amount of seats occupied on average, per flight. This development is affected by growth in passengers and ticket prices. Our findings from the PESTLE analysis support moderate growth in Europe. We expect NAS to be less affected than its competitor SAS

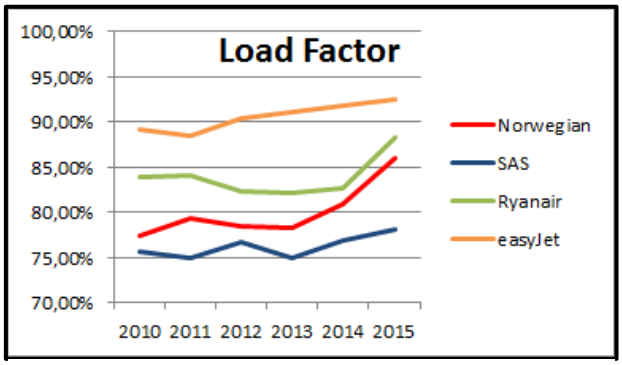


Figure 63: Historical Load Factor - Peer group. *Source: Annual reports. Own creation*

since a larger portion of business travelers switch to LCCs in uncertain economic times.[137] Furthermore, findings form our strategic analysis indicate that NAS are currently operating in a "blue ocean"[138] (little to no direct competition) concerning low-cost long-haul operations. We believe no FSCs have the opportunity of competing directly on price with NAS. In addition, we know based on statements from Ryanair that Dreamliner's will not be available for other LCCs over the next 4-5 years.[139]

Even with these quite positive outlooks, we must remember that we anticipate an average annual ASK growth of 17 %. We believe it is very unlikely that total passengers growth can grow at the same pace. This will affect the load factor in a negative manner. This may be offset by what we discussed in the previous section, that lower operating costs will benefit the customer in terms of lower fares. This might enable NAS to a capture market shares and thereby achieve the current load factor. Our historical trends show that NAS has been able to increase load factor while expanding. However, we argue it would be naive to expect this to continue. Moderate growth in Eurozone GDP combined with fierce competition will in our opinion weaken future load factors by an average of 0.6% annually, as some of the negative effects are partially offset by the decrease in yield, which stimulates demand.

6.1.2.3 - Revenue & RASK

We remember that RASK is a product of yield and load factor. This section will use our forecasted estimates of yield, load factor and ASK to obtain our forecasted revenue in the detailed seven-year period. To avoid what Koller[140] refers to as "false precision", we apply the expected GDP growth in Norway of 2.5 % for the simplified forecast period. A detailed forecast for revenues is presented below:

Total revenues										
	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
Load factor	0,84	0,83	0,83	0,82	0,82	0,82	0,82	N/A	N/A	N/A
Yield	0,53	0,52	0,51	0,51	0,50	0,49	0,49	N/A	N/A	N/A
RASK	0,44	0,43	0,43	0,42	0,41	0,41	0,40	N/A	N/A	N/A
Total ASK (million)	58834	70600	84720	101664	121997	143401	154061	N/A	N/A	N/A
Revenues (million)	**25944**	**30504**	**36027**	**42472**	**50320**	**58290**	**61872**	**63446**	**65060**	**66715**

Figure 64: NAS' forecasted revenues. *Source: Own calculations. Own creation*

[137] Neal and Kassens-noor (2010), "*southwest during a national recession*", Journal of Air Transport

[138] R. Mauborgne and WC. Kim – Harvard Business Review (2005)

[139] CAPA: http://centreforaviation.com/analysis/long-haul-lccs-on-the-north-atlantic-ryanairs-michael-oleary-has-talked-eur100-fares-219313

[140] Koller et al. *"Valuation – Measuring and Managing the Value of Companies"*, p. 188

6.1.3 - Operating Costs

Our operating costs will mainly be forecasted on the basis of the primary operational activity indicator, namely ASK. We will in this section pay special attention to the development of *fuel costs*, *payroll cost* and *lease cost.* The remaining cost items will be discussed in *Other costs.* Some of the ratios obtained for each cost item to ASK are subject to change based on our strategic- and financial analysis, which we will be explained in the following sections.

6.1.3.1 - Payroll costs

This section will be divided into Payroll/Employee and ASK/Employee. As we remember from our financial analysis, we can divide Payroll/Employee with ASK/Employee to find Payroll/ASK. We can then estimate total payroll cost by multiplying Payroll/ASK with ASK.

Payroll/Employee

We measure this ratio as average payroll per employee. The PESTLE-analysis discovered that NAS the last 2.5 years has used a temporary flight permit for its long-haul operations. The temporary flight permit has a negative impact on NAS' expansion strategy in terms of not being able to fully utilize foreign labor subject to lower local payroll levels in addition to new routes and destinations. As EU has publicly supported NAS', we view this as a step change for NAS towards receiving the traffic rights for its long-haul operations.

When assuming NAS will obtain the flight permits, they will most likely face lower Payroll/Employee ratios. This is a result of NAS' total crew will hold a higher portion of a crew from e.g. Thailand and USA, who are subject to lower work conditions and salary levels compared to Scandinavia. According to NAS' annual reports, we already see a trend towards cutting employees in Scandinavia, and we expect this trend to continue. Additionally, CEO Bjørn Kjos has stated that NAS need to lower its payroll costs to remain competitive. However, as mentioned in the Five Forces analysis, NAS face high bargaining power from its employees. We also concluded that there is a heightened risk of strikes primarily from the Norwegian workforce. This was based on several findings, e.g. information suggesting it is overall low strategic consensus and weak communication between management and its subordinates. These findings might indicate that NAS' payroll/employee ratio to remain relatively high compared to Ryanair.

Historically, we have seen that NAS' Payroll/Employee ratio have been among the highest in its peer group. The 2015 numbers were at NOK 750.372 thousand with an average for the historical period of NOK 737.620 thousand. Based on the arguments presented above, it seems too optimistic to assume that NAS will obtain the

same levels as Ryanair outlined in the financial analysis. We therefore assume this ratio will decline with approx. 2 % per year in the forecast period and stabilize at this rate in 2022.

ASK/Employee

This ratio is a measurement of employee efficiency. We know that the long-haul aircraft Dreamliner to a certain degree will enhance ASK/Employee ratio. This is based on the facts that the long-haul operations will contain longer distances, more passengers per crew member and increased cohesive work hours. As we remember from the PESTLE-analysis, NAS is subject to strict Norwegian labor laws. We believe the labor laws in Norway to some extent will restrict employee productivity above the current levels. In long-haul operations other laws apply, indicating an increase in efficiency per employee. We expect the same trend in NAS' short-haul operations, as the assumed approval of the flight permit will as give further access to new traffic rights in EU and US. This will be in line with NAS expected fleet expansion and increase the portion of routes and destinations outside of Norway. This further contributes to a higher ASK/Employee ratio, as we assume the employees will be working longer hours compared employees in Norway.

When examining the historical ratios, we find the average to be 9.676 with high and low values of 10.741 and 8.331 in 2015 and 2010, respectively. We believe the average increase of 3.85 % per year since NAS launched its expansion strategy in 2012 to be representative of the future. We therefore apply an increase of 3.85 % per year from the ASK/Employee ratio obtained in 2015 for the whole explicit forecast period.

We have now estimated the components needed to obtain total payroll costs. The below table provide a summary of this section and our detailed forecast:

Payroll forecast								
Payroll cost forecast	2015	F2016	F2017	F2018	F2019	F2020	F2021	F2022
ASK	49028	58834	70600	84720	101664	121997	143401	154061
ASK/Employee	10.714	11.126	11.555	12.000	12.462	12.941	13.440	13.957
Payroll/employee (TNOK	750	735	721	706	692	678	665	651
Payroll/ASK	0,070	0,066	0,062	0,059	0,056	0,052	0,049	0,047
Total payroll (million)	**3434**	**3888**	**4403**	**4986**	**5646**	**6394**	**7092**	**7190**

Figure 65: NAS' forecasted payroll costs. *Source: Own calculations. Own creation*

6.1.3.2 Fuel costs

Our fuel cost forecast is based on NAS' capacity, namely ASK. It is connected through multiplying estimated ASK with a Jet Fuel/ASK ratio. The latter can be decomposed into average price per barrel times ASK/Barrel. We believe the function of these components provides a reliable estimate.

ASK/Barrel

In the PESTLE analysis, we provided information regarding the new and more fuel efficient fleet NAS was currently receiving. In 2014, the last Boeing 737-300 was phased out, and the transition over to 737-800 is almost complete. Furthermore, NAS receive brand new Airbus 320neo's in 2016 and onwards. NAS believe a cost competitive strategy is sustained by continuous fleet renewal. That is the rationale behind the transition to the even more efficient Boeing 737-Max 8 in 2017.

We have calculated these efficiency improvements by obtaining information on fuel consumption regarding NAS' current and future fleet. The ASK/barrel ratio has been calculated by estimating fuel efficiency improvements based on the expected composition of NAS' fleet. The composition of the fleet will have major impact on the forecasted ASK/barrel production as seen below:

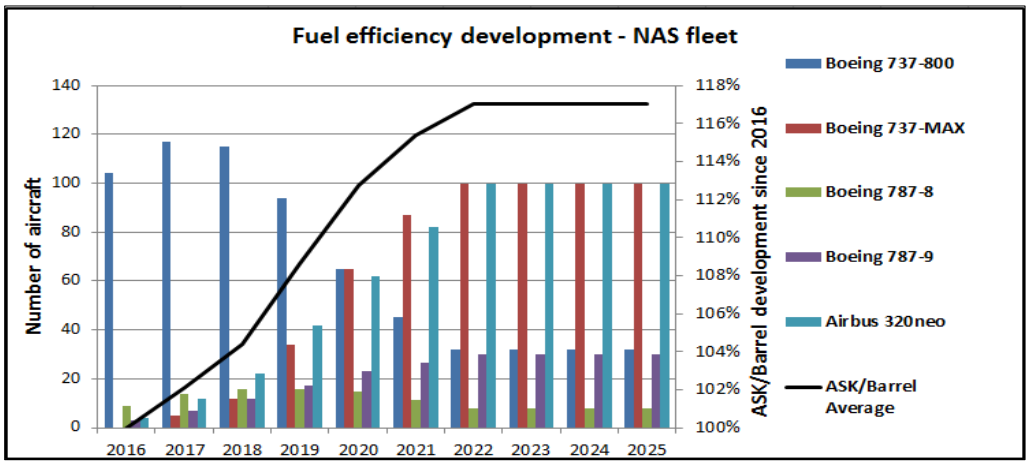


Figure 66: Fuel efficiency development. *Source: Own calculations, Boeing & Airbus. Own creation*

The right axis shows improvement in percent compared to 2016 numbers. The left axis represents the fleet composition. The total increase in fuel efficiency from indexed levels in 2016 to 2022 is 17%. This has a great impact on future fuel costs.

Note that we have used the NAS' committed fleet plan until 2018. From this point on we have applied the following assumptions:

- NAS will receive all Airbus 320neo by 2022, receiving 20 Airbus 320neo's per year from 2018 until 2022.
- NAS reach its goal of 38 Dreamliners in 2022, which consist of 8, 787-8 and 30, 787-9.[141]

[141] Norwegian Air Shuttle ASA – Annual report 2015

- A gradual decrease in 737-800's is offset by new 737-Max8 as the transition continues until 737-800 reach 34 aircraft in 2022. These are kept constant from 2022-2025.

Detailed calculations are found in Appendix 44.

Future fuel costs

In our PESTLE analysis, we expected an increase in oil price due to the effects of several market forces. Increasing demand for oil and lowered supply will probably result in a higher oil price. As oil price development is highly speculative, we combined two approaches which we believe yield the most unbiased estimates.

Firstly, we collected future projections on oil price from the three major institutions that are assumed to have a global overview of factors driving the oil price. We therefore obtained forecasts from IMF, IEA and OPEC to make a market consensus estimate for future oil prices. To use increasing oil price forecasts, we were faced with concerns regarding the future development of currency. We remember for the PESTLE analysis that the development in USD/NOK currency is highly affected by changes in oil price, as 40 % of Norway's export is related to oil and gas. Figure 67 indicates that a higher oil price would strengthen the NOK against the dollar. We therefore performed a regression analysis on changes in USD/NOK versus changes in oil prices and obtained a correlation of -0.45. Furthermore, we obtained a USD/NOK beta of -0.2218 about changes in oil price. We applied this beta to the currency each year as the fuel price increased. This enabled us to recreate somewhat the USD/NOK and oil price relationship as described in figure 67.

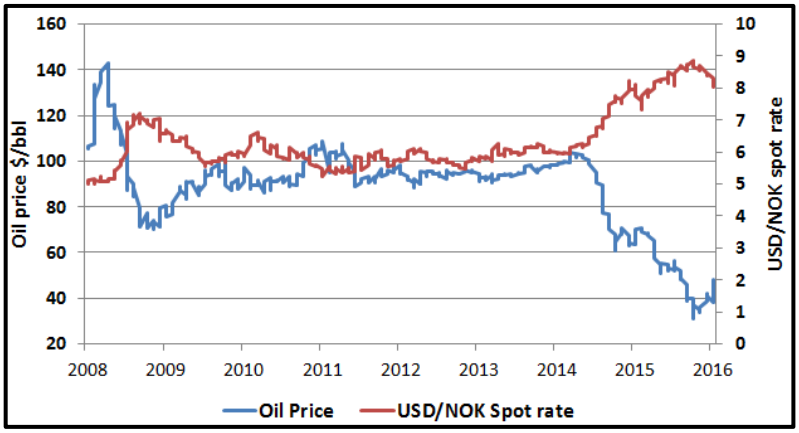


Figure 67: Correlation between oil price and USD/NOK spot. *Sources: Thomson One Banker. Own creation*

The last step in this forecast was then to incorporate the price premium on jet-fuel. The latter has been traded at a premium compared to crude oil. By running a regression analysis of jet fuel prices versus crude oil prices we can create the following equation:

$$Jet\ Fuel = 3{,}3730 + 1{,}1485 * Oil\ Price$$

Our regression results indicate that jet fuel is traded at a premium of approximately 14.85 % compared to crude oil. However, by plugging the different consensus estimates into this equation, we obtained an expected jet fuel price of NOK 501 per barrel in 2016. The remaining results for the detailed forecast can be seen below:

Detailed forecast - Fuel Costs							
	2016	2017	2018	2019	2020	2021	2022
ASK	58833600000	70600320000	84720384000	101664460800	121997352960	143400500000	154060500000
USD/NOK	8,20	7,99	7,92	7,80	7,71	7,62	7,25
Jet fuel price per barr	61,1	67,7	70,4	74,8	78,6	82,9	99,9
Price per jet fuel barr	501	541	558	584	606	631	724
ASK/Barrel	5569	5689	5813	6051	6280	6427	6518
Fuel/ASK	0,090	0,095	0,096	0,096	0,097	0,098	0,111
total barrel	10564040	12410669	14574398	16800200	19427849	22312874	23635986
Fuel cost	**5.296.646.789**	**6.715.610.479**	**8.129.567.997**	**9.808.059.530**	**11.776.486.570**	**14.077.903.795**	**17.119.720.602**

Figure 68: Detailed forecast -Fuel cost. *Source: Own calculations. Own creation*

Admittedly, the method used in this thesis is simplified and speculative. We do however believe it is closer to actual values than the alternative of e.g. using the ASK/Barrel ratio in 2016 constant throughout our forecast period. This would most likely underestimate NAS' fuel cost. We could also have kept USD/NOK currency constant, and only increased the ASK/barrel ratio with the expected increase in oil prices. This would however probably overestimate NAS' fuel costs. Alternatively, we could have applied a historical fuel cost divided on total revenue. This method would not allow us to incorporate the future fuel efficiency of NAS' fleet in a detailed manner.

6.1.3.3 Lease cost

Lease cost was thoroughly described in the financial analysis. As previously mentioned, the annual report of 2015 includes a committed fleet plan until 2018. When comparing the latter with the historical amount of leased aircraft, we see that the total amount has remained stable around its average of 44 leased aircraft per year:

	Historical lease						Committed lease		
Year	2010	2011	2012	2013	2014	2015	E2016	E2017	E2018
Number of leased aircraft	45	42	40	49	47	45	45	46	44

Figure 69: Historical and future committed lease. *Source: Annual reports. Own creation*

We do not have detailed information about future leases beyond the committed fleet plan (2015-2018). We therefore assume that the levels in 2018 are constant for all the remaining years in the forecasting period. To forecast lease cost, we will use a ratio that examines the leasing cost per leased aircraft. Historically, the ratio have had an average of NOK 29.591 million per leased aircraft with high and low values of NOK 49.184 million and NOK 17.298 million in 2010 and 2015, respectively. The increase in cost per aircraft can be explained by NAS' leasing of the Boeing 787-800, which is significantly more expensive than the Boeing 737-300. As NAS' strategy is to add new Boeing 787-8 and 787-9 to its fleet, we believe the lease cost levels obtained in 2015 are more representative of the future. The next step is to calculate the total leasing costs, which

is the estimated number of leased aircrafts multiplied with the estimated lease cost per aircraft. The remaining steps to find the capitalized lease, followed by depreciation and interest costs are as we remember from section 5.2.1. Note that depreciation is considered operational while interest is seen as financial. The following table shows the forecasted lease.

Forecasted Lease										
tNOK	E2016	E2017	E2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
Leased aircrafts	45	46	44	44	44	44	44	44	44	44
Leasing cost per aircra	49184	49184	49184	49184	49184	49184	49184	49184	49184	49184
Total leasing costs	2213300	2262484	2164116	2164116	2164116	2164116	2164116	2164116	2164116	2164116
Capitalized costs	15493100	15837391	15148809	15148809	15148809	15148809	15148809	15148809	15148809	15148809
Deprication	1002854	1025140	980569	980569	980569	980569	980569	980569	980569	980569
Lease interest	1210446	1237344	1183547	1183547	1183547	1183547	1183547	1183547	1183547	1183547

Figure 70: Forecasted lease development. *Source: Annual reports & Own calculations. Own creation*

6.1.3.4 Other Costs

Airport Charges

Airport charges are highly linked to operational activity and capacity, hence a variable cost. Based on this information we link development in airport charges to NAS' total capacity (ASK). By assessing historical numbers, we find this item to fluctuate between 6-7 % of total ASK, with a recent decrease the last three years. In the Five Forces analysis, we concluded that airports have a moderate bargaining power. Additionally, this item did not increase in 2015, even though e.g. airport slots are auctioned and negotiated more freely in the U.S and Asian markets were NAS increased its presence. We apply the average ratio of 0.0608 the last three years throughout the detailed forecast period.

Handling Charges

As mentioned in our Five Forces analysis, NAS outsource its handling services to independent companies with moderate bargaining power. This item has historically been stable around its average of 0.0436 % of ASK. We therefore apply this ratio throughout our detailed forecast.

Sales and Distribution Costs

This cost item consists mainly of distribution-enhancing software, which NAS' upgraded in 2008. This item will also be linked as a percentage of ASK. The ratio has been stable around its historical average of approximately 1 % of total ASK, which is applied in our detailed forecast period.

Technical Maintenance

As mentioned in the PESTEL analysis, a modern fleet requires less maintenance and thereby reduces technical maintenance costs. Airlines have to follow a strict set of rules to comply with safety regulations. This means maintenance checks will still be the same, but we expect a decrease in repairs. We however notice an increase in technical maintenance from an all-time low of 0.0270 % of ASK in 2013 to 0.0350 % in 2015. This could be

partially explained by unexpected technical problems with the introduction of the Dreamliner. We therefore use the average of 0.0299 % of ASK the three last years as a proxy for future maintenance costs. We believe it will decrease 0.5% per year as technical problems with the Dreamliner is expected to be solved.

Other Operating Expenses

This item contains costs that are not directly linked to flight operations. It consists of back office, marketing and other costs supporting activities. This item has been constant around its average of 4 % of ASK. We have no reason to believe that supporting activities would not grow at the same rate as ASK. We believe a three-year historical average of 0.0408 % of ASK best reflects the further development since long-haul was introduced in 2013.

Depreciation and Amortization

As recommended by Koller et al[142], We forecast depreciation as a percentage of tangible assets. As depreciation is directly linked to a particular asset, they argue it should follow capital expenditures and not e.g. revenue. We use a similar approach when forecasting the amortization, and link this item to definite intangible assets. We use the average ratios, thus assuming that the relative book value of the assets will remain at the historical period.

6.2 Pro Forma Balance Sheet

This section will show and explain how we forecast the items in the balance sheet. Our assumptions in the forecasted balance sheet will reflect our forecasted values in the income statement. We will review the following items: *Net working capital, tangible/intangible assets* and *non-current operating liabilities*. The goal of this thesis is to estimate the entire enterprise value, i.e. cash flows available for investors/creditors, we do not focus on forecasting non-operating assets or liabilities. To ensure a high plausibility we integrate the future target capital structure and forecast all non-operating items. Note that this will not affect enterprise value, and these items will therefore not be explained.

6.2.1 Net Working Capital

Net working capital consist of the following items: *Inventory, trade and other receivables, trade and other payables* and *air traffic settlement liabilities.* These items will be discussed below.

6.2.1.1 Inventory

The *inventory* consists of "consumables" and "parts for heavy maintenance". This suggests that the item "technical maintenance" in the income statement could be used as a driver. The item "consumables" has however historically accounted for the majority of inventories (approximately 84 % and 87 % of total inventories

[142]. Koller et al. "*Valuation - Measuring and Managing the Value of Companies*," p. 658

in 2014-2015). We will therefore use ASK as a proxy for production levels. This is because we find it reasonable to assume that inventories will increase at a similar pace as production levels in NAS. For example, an aircraft is subject to heavy maintenance after a given level of kilometers flown, which is directly linked to ASK. The historical ratio of inventory has been on average 0.2 % of ASK. This ratio is applied in our detailed forecast period.

6.2.1.2 Trade and Other Receivables

As explained in the reformulated balance sheet, we know that this item primarily consists of ticket sales made through use of credit cards. Since we have anticipated a decreasing yield it might provide a distorted result if it is linked to ASK. Revenue growth will therefore not be able to keep up with increased ASK capacity, thus linking this item to ASK will provide an overestimated forecast. Based on this logic we link this item directly as a percentage of revenues and assume the portion of tickets bought with credit cards remains constant. Based on this information we use the historical average of 10.28 % of revenues.

6.2.1.3 Trade and Other Payables

This item mainly consists of accrual adjustments connected to different operating costs, such as trade payables. It is therefore reasonable to assume that this item is driven by the development in operating costs. Historically, this item has been fairly stable around its average of 14.58 % of operating cost, with high and low values of 15.62 % and 13.24 % in 2015 and 2011, respectively. We believe 15.62 % best reflect the future development, and apply this ratio in our detailed forecast.

6.2.1.4 Air Traffic Settlements Liabilities

After the air transport has been carried out, a ticket sale is recognized as *passenger transport revenue*. The value of ticket sales that is still valid but not used by the reporting date is recognized *as air traffic settlement liabilities*. This item is therefore only reduced when NAS completes the transportation. As customers usually pay for their tickets in advance, NAS need to make this accrual adjustment.[143] We assume that the average number of days between purchase and travel remains identical. We therefore use the historical average of air traffic settlements liabilities ratio of 14.32 % of revenue in our forecast period.

6.2.2 Non-current Operating Assets

In order to finalize the forecast of invested capital we have to cover tangible/intangible assets and non-current liabilities.

[143] Petersen and Plenborg (2012), *"Financial Statements Analysis",* p. 53

6.2.2.1 Tangible Assets

This post contains *Aircraft, parts and installations on leased aircraft, Prepayments to aircraft manufacturers, buildings, financial lease assets* and *equipment and fixtures*.

The item *Aircraft, parts and installations on leased aircraft* is forecasted using owned aircraft as a proxy driver. The approach has a resemblance to how we forecasted lease costs. By dividing *aircraft, parts and installations on leased aircraft* on number of aircraft owned we notice that this ratio has been increasing. This makes sense as NAS has shifted from 737-300 to 737-800, which are more expensive. As every airline has to negotiate own terms with Boeing and Airbus, these are kept confidential. We therefore forecast this item based on our 2015 ratio, thus assuming that the average fleet age will remain constant.

The item *Prepayments to aircraft manufacturers* is the payments before actual delivery to Boeing and Airbus. According to Peter Morell (1997), it is common to pay 2-5 % of the total order on the signature date. In addition, the airlines pay approximately 30 % of total price 18-24 months before actual delivery. When the airlines receive the aircraft, the corresponding value is transferred from *prepayments to aircraft manufacturers* to *aircraft, parts and installation on leased aircraft*. According to NAS, these payments are set to follow a predefined payment schedule. This obviously contains sensitive information and is therefore not publically available. Our fleet delivery plan indicates a quite steady rate of deliveries from 2016 to 2022. We therefore chose 2015 levels as a percentage of ASK, which is affected by increased capacity as our best estimate in the detailed forecast period. In the simplified forecast period from 2022 to 2025, we assume NAS' will reduce its prepayments to keep an assumed average fleet age of 7 years in the simplified forecast. This entails selling of 38 aircraft and buying 38 new aircraft every year, 30 % of this cost will be assigned to *prepayments to aircraft manufacturers*. Furthermore, we assume that the net effect the item will remain zero due to new additions and transfers to *aircraft, parts and installations of leased aircraft.* We see an increase in prepayments with a current peak of 12.11 % in 2015 and argue this ratio best represents the future developments. We apply 12.11 % of ASK as prepayments throughout our detailed forecast period.

It is reasonable to assume that *buildings* are connected to ASK. As ASK increases, number of employees' increase. This implies a need for buildings related to the housing of crew, trainees and general administrative staff. As NAS started expanding its foreign bases to a larger extent the two previous years, we believe this average ratio is more representative for the future given what we know about its strategy to use more local employment in the future. The average buildings to ASK ratio of 0.56 % from 2014-2015 are used in the detailed forecasting period.

The *financial lease assets* consist of a de-icing equipment acquired in 2009 and sold in 2015. As this type of lease agreement have only occurred one time, and there is no information suggesting similar agreements in the future, we regard this item as non-recurring and remove it from our forecast period.

6.2.2.2 Intangible Assets

This item consists of software, goodwill and other intangible assets related to previous acquisitions. We have not discovered any future plans for acquisitions in our previous analysis, and other intangible assets with an indefinite life are according to NAS annual report of 2015 not subject to amortization. Based on this, we believe goodwill and other indefinite intangible assets to remain constant at 2015 levels of NOK 123 million for our forecast period. We forecast the remaining software as a percentage of ASK, as we believe this is our best estimate of size. In other words, we believe NAS will increase its investment in software proportionally with the expected expansion strategy. The historical average ratio of software to ASK is 0.22 %, which is applied throughout the forecasting period.

6.2.2.3 Capitalized Lease

This item was covered when we conducted the forecasting of lease payments in section 6.1.3.3.

6.2.2.4 Deferred Taxes

This item is related to the temporary difference in book value and the tax value of assets. Plenborg and Petersen recommend using revenue as a good value driver. By assuming a deferred tax is a function of activity in the company, we use the 2015 ratio.

6.3 Partial Conclusion

We have now obtained what we believe to be a realistic estimate to forecast the nominal values for the income statement and balance sheet. A review of our forecasted income and balance sheet statements can be found in Appendix 32 and 34. In order to continue our assessment of forecasted numbers, we provide a budget control sheet to ensure its quality.

Budget control																
Historical						Detailed Forecast							Simplified Forecast			
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average
Revenue growth	25,2%	22,0%	20,8%	26,0%	15,1%	15,4%	17,6%	18,1%	17,9%	18,5%	15,8%	6,1%	2,5%	2,5%	2,5%	15,1%
EBITDA margin	11,4%	11,7%	16,7%	14,3%	18,5%	22,6%	20,7%	20,1%	19,4%	19,1%	18,3%	14,8%	14,8%	14,9%	14,9%	16,8%
EBIT margin	4,9%	5,3%	10,0%	7,1%	9,0%	14,5%	12,6%	11,8%	11,3%	11,3%	10,7%	6,9%	7,5%	7,7%	7,9%	9,2%
NOPAT margin	3,0%	7,9%	4,0%	1,9%	7,9%	10,6%	9,2%	8,6%	8,2%	8,3%	7,8%	5,1%	5,4%	5,6%	5,8%	6,6%
ROIC	3,3%	8,5%	4,3%	1,8%	5,7%	6,9%	5,6%	5,1%	5,0%	5,3%	5,1%	3,5%	4,0%	4,2%	4,4%	4,8%
Turnover, invested capital	1,10	1,07	1,07	0,93	0,73	0,65	0,61	0,60	0,61	0,63	0,66	0,69	0,73	0,75	0,77	0,77

Figure 71: Budget control. *Source: Own calculations & Pro forma statements. Own creation*

As seen from the table above, we conclude that there are no unrealistic or extreme values. As our estimates have been discussed and forecasted quite extensively, we believe they are solid enough to estimate the future cash flow. In the table below we present the forecasted cash flow statement:

Cash Flow Statement										
	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
NOPAT	2749	2801	3099	3503	4168	4550	3134	3456	3648	3845
Depreciation	2031	2404	2906	3322	3782	4274	4700	4515	4515	4515
Amortization	59	70	84	101	121	143	153	153	153	153
Gross CF	**4839**	**5276**	**6089**	**6926**	**8071**	**8967**	**7988**	**8124**	**8316**	**8514**
Change in current assets	-131	-493	-596	-697	-848	-862	-390	-162	-166	-170
Change in current liabilities	-22	1.294	1.510	1.776	2.133	2.225	1.308	431	442	453
Change in non-current liabilities	600	347	417	497	598	626	306	22	23	23
Change in networking capital	**447**	**1.148**	**1.330**	**1.577**	**1.884**	**1.988**	**1.224**	**292**	**299**	**307**
Change in tangible assets	-8.457	-13.166	-10.041	-11.089	-11.868	-10.292	4.475	0	0	0
Change in intangible assets	-134,581316	-146	-176	-207	-251	-256	-118	0	0	0
Change in capitalized lease	0	-344	689	0	0	0	0	0	0	0
Depreciation	-2031	-2404	-2906	-3322	-3782	-4274	-4700	-4515	-4515	-4515
Amortization	-59	-70	-84	-101	-121	-143	-153	-153	-153	-153
Gross Investment	**-10.681**	**-16.130**	**-12.518**	**-14.719**	**-16.022**	**-14.965**	**-496**	**-4.668**	**-4.668**	**-4.668**
FCFF	**-5.396**	**-9.706**	**-5.099**	**-6.216**	**-6.067**	**-4.010**	**8.715**	**3.748**	**3.947**	**4.152**
Sanity check										
NOPAT	2.749	2.801	3.099	3.503	4.168	4.550	3.134	3.456	3.648	3.845
Change in invested capital	-8.145	-12.507	-8.198	-9.719	-10.235	-8.560	5.581	292	299	307
FCFF	**-5.396**	**-9.706**	**-5.099**	**-6.216**	**-6.067**	**-4.010**	**8.715**	**3.748**	**3.947**	**4.152**

Figure 72: Cash flow statement. *Source: Own calculations & Pro forma statements. Own creation*

Our estimates provide the free cash flow we apply to our valuation in the following chapter. The free cash flow is negative from 2016 until 2022. The main contributing factor to this is NAS' extensive capital expenditures. The positive FCF in 2022 is caused by the sudden drop in aircraft investments. This is the end of NAS' expansion period. As mentioned before we assumed that NAS would from this point on invest at a rate that enables them to keep its fleet size constant with an average fleet age of 7 years, causing the change in tangible assets remains zero from 2022 until 2025.

This thesis has now examined both the strategic and financial environment that surrounds NAS. The purpose of this chapter was to connect information and findings from these analyses to obtain realistic forecast estimates we can build our valuation upon.

7. Valuation

The outline of this chapter will be the following: Firstly, we will discuss and obtain the cost of capital, which then will be used in the DCF-model to estimate NAS' share price per 12.04.2016. We then perform a sensitivity and Monte Carlo analysis of our result. Secondly, we stress test the DCF-model by applying different multiples. Finally, we use the liquidation model to understand further what triggers the share price, in addition to assessing whether it will be any disbursement to the investors in a hypothetical bankruptcy.

7.1 Weighted Average Cost of Capital

Before we can apply the DCF-model, we must obtain NAS' weighted average cost of capital (WACC). We can then discount the forecasted free cash flows with WACC to obtain the present value of NAS. The WACC represent the relationship between the weighted average cost of equity and net interest bearing debt. This can be seen in the following formula:

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

The components of the equation are:

$r_d = Required\ return\ on\ NIBD$
$r_e = Return\ on\ equity$
$NIBD = Average\ (market\ value\ of) Net\ interest - bearing\ debt\ from\ 2010 - 2015$
$E = Average\ (market\ value\ of) Equity\ from\ 2010 - 2015$
$t = Corporate\ tax\ rate$

In the following sub-sections, the cost of equity, cost of debt and capital structure will be discussed. Finally, we will use these variables to calculate the WACC.

7.1.2 Cost of Equity

The cost of equity can be defined as the rate of return required by the company's investors to compensate for the risk they undertake by investing their capital. We need to estimate this ratio as the expected return on equity is unobservable in the market. The most common way is by using the Capital Asset Pricing Model (CAPM), which is shown by the following equation:

$$E(r_e) = r_f + \beta_e * MRP$$

$r_e = Owners\ required\ rate\ of\ return$
$r_f = Risk - free\ rate$
$\beta_e = Beta\ of\ stock, systematic\ risk\ on\ equity$
$MRP = Market\ risk\ premium$

The general idea behind CAPM is that investors require being compensated in two ways: *time value of money* and *risk*. Risk-free rate (r_f) in the formula compensates the investor for undertaking any investment over time. The remaining half of the formula represents risk and calculates the amount of compensation the investor needs for bearing the additional risk. This is calculated by taking a risk measure (β_e) that compares the returns of the asset to the market over a specific period of time and to the market premium (r_{m-r_f}). To calculate the cost of equity we need first to find the different components in the CAPM.

7.1.2.1 Risk-Free Rate

The risk-free rate is defined as how much an investor can earn without bearing any risk (beta equals zero). Petersen and Plenborg argue that the most accurate method to estimate the risk-free rate is to estimate the expected return on a zero-beta portfolio. This method has however been deemed too costly and difficult, thus proven to be less useful in practice. The most common method applied by practitioners is therefore to use a government bond as a proxy for the risk-free rate. Petersen and Plenborg further argue that the government bond rate should match the cash flow's maturity. This is an advanced method, and as a result, most professional analysts use a single yield to maturity that best suits the cash flow. It is further recommended to use a government bond with the same currency as the cash flow to handle issues such as inflation.

Based on the arguments provided above, we chose a 10-year Norwegian government bond as a proxy for the risk-free interest rate. The average for this bond was 1.26 % per 12.04.2015.

7.1.2.2 Market Risk Premium

The MRP is the excess returns over the risk-free rate required by investors to hold the market portfolio. This definition is based on the underlying assumption that all investors are rational and thus risk averse. Furthermore, there seems to be no single universally accepted method to calculate the MRP. However, a study conducted by PWC states that the majority of professional practitioners expected the future MRP to be 5 % in 2016. The MRP used in the valuation of NAS is therefore 5 %.

7.1.2.3 Estimating Systematic Risk

According to CAPM theory, stocks expected return is driven by the company's beta, which indicates the relative risk for the company of interest in relation to the market portfolio. As the beta of a company is non-observable, we need to estimate it. The most commonly used approach is to calculate the company's raw beta by using regression. As recommended by Koller et al., we therefore apply the following market model formula:

$$R_i = \propto + \beta r_m + \varepsilon$$

The following components are: R_i is the stock's return, $\propto$ is the expected return if the market's return is zero, r_m is the market's return, and ε is the firm-specific risk (or non-systematic risk). According to Koller et al., the CAPM is a one period model that lack guidance on how to use it in valuation. There is however three different criteria for adapting beta estimation to valuation methods that we need to consider.

The first criteria addressed the choice of a measurement period. As it seems to be no common standard for a proper measurement period, a consensus estimate from several researches suggests that a five-year period is appropriate. The second criterion considers the choice of measurement frequency, and Koller et al. recommends using monthly data. This is considered an adequate solution to problems arising if a stock is rarely traded. The third criteria to consider are the choice of which index to use as a proxy for the unobservable true market portfolio. Koller et al. recommends the use of well-diversified indexes and discourage the use of local indexes that are heavily weighted by only a few industries or companies.

Based on the arguments presented above, we use a time horizon of 5 years with monthly returns. As a result, we plot 60 months of NAS' stock return against Dow Jones Global, S&P Global 1200 and MSCI World. These are well-diversified indexes, in contrast to the Oslo Stock Exchange that is highly dominated by oil-related companies. This means that the stock exchange is most likely positively correlated with the oil price. All else equal, a drop in the oil price would probably increase NAS' share price as a large portion of the company's total cost are fuel consumption. In other words, if we were to use Oslo Stock Exchange in our regression, we would not measure market-wide systematic risk, but rather NAS' sensitivity to a few industries.

The table below presents a selection of regression against different indexes.

RAW Beta NAS			
MSCI-World	S&P Global 1200	Dow Jones Global	OSEBX
1,7991	1,7854	1,7726	0,8361

Figure 73: Raw beta. *Source: Datastream & Own calculations. Own creation*

We obtain an average raw beta of 1.7857. The raw-beta estimates show a similar result for the well-diversified indexes. As previously expected the raw-beta from our regression of NAS' returns against Oslo Stock Exchange is much lower and is therefore not used in our estimation of the raw beta. Note that the effect of leases should be incorporated into this beta. As mentioned, the beta is determined by the stock returns, and should therefore be more volatile the larger amount of fixed commitments the specific company has.[144]

[144] Damodaran, A. (1999). *"Dealing With Operating Leases in Valuation*." Stern School of Business, New York

Koller et al. recommend the use of a smoothing process for further improving the raw beta. This technique is based on the assumption that all betas revert to the mean, i.e. 1. A raw beta is observed while an adjusted beta is an estimate for the future beta. The adjusted beta seems therefore more suitable to use in a future cash flow. In order to calculate the adjusted beta, we apply the following formula:

$$Adjusted\ beta = 0{,}33 + 0{,}67 * Raw\ beta$$

We then obtain a beta of 1.5264, which implies that an investment in NAS has a higher risk than the overall market portfolio.

We can now use our findings from the previous sections to calculate the cost of equity by applying the CAPM model. A risk-free rate of 1.26 %, an MRP of 5 % and a beta of 1.5264 gives us a cost of equity of 8.89 %.

7.1.3 Cost of Debt

The cost of debt is defined as the effective rate a company pays on its interest bearing debt. We have applied the two following methods to estimate NAS' cost of debt: the company's average weighted effective interest rate and a synthetic credit rating. Finally, we used the average of these two methods to find the cost of debt. An explanation of the different calculations is provided below.

In our first approach, we looked at the interest rates stated in the annual report for 2015. Note 22 contain information regarding effective interest rates for each classification of the company's borrowings. By weighting the different rates, we calculated the effective cost of debt to be 3.92 % after tax. The pre-tax cost of debt is consequently 5.37 %.

We are uncertain if the effective cost of debt stated in the annual report in 2015 reflects NAS' true cost of capital. We know from the Financial Strength analysis that NAS' liquidity and insolvency risk is significantly higher than the other LCCs. The overall development in every ratio is negative, indicating higher financial risks as NAS started to increase its debt levels relative to equity in order to fund its expansion strategy. Additionally, our previous findings suggest that NAS will not obtain any sustainable competitive advantage that would yield the company any overall excess returns in the foreseeable future. We also remember that NAS need significantly new financing in order to renew its fleet in the following decades. This implies that new financing might only be achieved if they are at a higher interest rate than current financing. We believe that the cost of debt might be underestimated when solely relying on rates reported in the annual report. In order to improve our estimate, we

therefore use a second approach where we conduct a synthetic credit rating to estimate the cost of debt by finding the credit rating of NAS' debt. This approach is used to determine the default spread of NAS' debt, and by adding the risk-free rate we obtain the pre-tax cost of debt.

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

In order to apply the above formula, we need first to calculate its components. We therefore follow the approach used by credit agencies, such as Moody's and Standard & Poor's, and base our credit risk upon financial ratios. One ratio widely accepted among practitioners when estimating credit rating is the interest coverage ratio. This ratio is usually estimated as EBIT divided by net interest expense. As both operating income and interest expenses are affected by the capitalization of lease commitments, we apply the same formula as in section 5.6.1.

We applied a model made by Damodaran as a starting point and adjusted it to use a capitalization rate to find the debt value of leasing instead of calculating the present value of future leasing commitments. The next step was then to estimate the coverage ratio, which is partially based on the pre-tax cost of debt. In order to solve this circular problem, we used iterations in Excel. We then obtained an interest coverage ratio of approximately 0.99. We note that the Norwegian credit market is relatively small, and obtaining estimates of credit spreads to risk-free interest rate is not commonly available. We believe doing calculations on this subject falls out of the scope of this paper. We therefore use the US corporate yield spread over US Treasuries in January 2016 as a proxy. We then obtain a credit spread of 9 %, which equals a credit rating of CCC. Adding the spread to the risk-free debt gives us a pre-tax debt of 10.26%.

The two approaches give us divergent rates of 5.37 % and 10.26%, respectively. As we mentioned above, the airline industry is in our view risky. We do however feel that the cost of debt of 10.26 % is too high, as the company has the reported cost of debt is 5.51% in the annual report of 2015. According to Penman, it's important to take the lifecycle and industry into consideration when estimating a credit rating. As NAS is in a growth phase and the airline industry is capital intensive, it could be argued that our credit rating of NAS could be slightly adjusted to a better rating. We therefore choose to operate with a cost of debt equal to an average of the two approaches. The cost of debt is then estimated to be 7.81%. Note that the same approach has been applied to the rest of the peer group as seen in Appendix 15-22.

7.1.4 Capital Structure

The estimation of WACC is dependent upon the capital structure as it illustrates the weights of a cost of equity and debt. Koller et al. recommend that the capital structure should rely on target weights instead of current weights. This since current weights may not reflect expected changes in future capital structure. As recommended by Koller et al., we apply the three following approaches to find a realistic capital structure: *Management statements*, *market-value based capital structure* and *comparison to our peer group*.

Statements from NAS' management clearly indicate that the company has a target debt ratio, as they state in the annual report that the ratio is calculated as equity divided by total assets. Additionally, the capital management policy is always to adjust debt and equity to maintain an optimal capital structure.

If we examine the historical debt to invested capital ratio, we obtain the following results:

NAS debt to invested capital ratio							
Year	2010	2011	2012	2013	2014	2015	**Average**
Average debt to invested capital:	78,94%	81,66%	81,90%	82,51%	91,96%	91,67%	**84,77%**

Figure 74 NAS debt to invested capital ratio. *Source: Own creation based on annual reports*

We see from the table above that the average debt to invested capital is 84.77 %. It has remained stable in the period 2010-2013, before it increased in 2014. NAS responded to negative earnings and aircraft deliveries in 2014 by decreasing its equity relative to debt, which explains the increased ratio from 2013 to 2015. Using the average debt to invested capital ratio give us a good indication of the realistic level of future debt. We are however interested in the relationship between the market value of debt and the market value of equity.

We will therefore acquire a reasonable target level for equity and debt by applying the market-value based capital structure method. We note that book value of debt is used as a proxy for market value. The calculations are done by dividing book value of NIBD and debt equivalents by the sum of NIBD and debt equivalents and market value of equity at 31st of December each year. The market value of equity is then obtained by multiplying shares outstanding with the market share price. As a result, we obtain the following figure of debt ratio in the peer group.

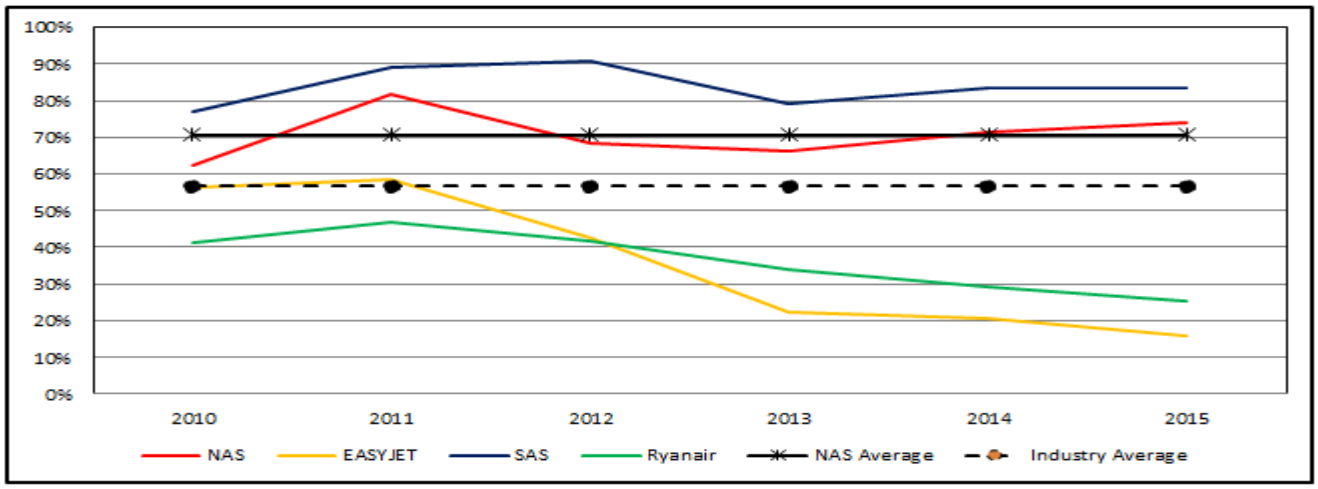


Figure 75 Market value based debt ratio – Peer group. *Source: Reformulated financial statements. Own creation*

We see that NAS is substantially more leveraged that the other LCCs. Additionally, it is problematic to identify any reliable industry standard. The historical development in NAS' debt ratio has however remained fairly stable around its average of 70.7 %. In our opinion, we believe that this is the best estimate as market values usually reflect the realizable value better than book values. This must be seen in relation to information clearly stating that NAS' management has an implicit target ratio related to its assets. We believe this is more realistic than letting the debt ratio approach the lower levels of Ryanair and EasyJet over time. In our view, this can be partially explained by the fact that NAS is growing its fleet at a significantly higher pace than Ryanair and EasyJet. As a result, e.g. pre-delivery payment has a larger impact on NAS' capital structure than the other LCCs. Given that these assets are not contributing to earnings before delivery of aircraft, it distorts the comparison, in our view. After careful consideration guided by the three approaches, we base our estimate on management statements and use the five-year average of market-based debt ratio. The debt and equity target ratio are therefore set to 70.7 % and 29.3 %, respectively.

7.1.5 Estimating Weighted Average Cost of Capital

As we have obtained a cost of equity of 8.89 %, cost of debt of 7.81 % and the target capital structure of 70.7 % debt and 29.3% equity, we proceed to calculate the WACC. We note that the corporate tax rate in Norway per 2015 is 27 %. By inserting these values into the WACC formula presented in section 7.1, we obtain a weighted average cost of capital of 6.64 %.

7.2 Obtaining a share price

7.2.1 Enterprise Discounted Cash Flow

The enterprise DCF model discounts the free cash flows available to all investors at weighted average cost of capital (WACC)[145]. All investors include equity holders, debts holders and other non-equity holders. By deducting the net interest-bearing debt from the enterprise value (EV), we can obtain an estimated equity value. This model is considered by Petersen & Plenborg and Koller et al. to be the most accurate and flexible model for valuation purposes. The model produces results close to an intrinsic stock value, assuming unbiased estimates. It also uses future expectations in estimating value, which allows strategic initiatives such as NAS expansion strategy to be accounted for. As the model includes cash flow from the explicit forecast period along with a terminal period, it is classified as a two-period model. The terminal value is treated separately from the explicit forecast, as it represents the expected cash flow beyond the explicit forecast period.

The equation below highlights the most important inputs in the process of obtaining enterprise value:

$$Enterprise\ value_0 = \frac{FCFF_t}{(1+WACC)^t} + \frac{FCFF_{n+1}}{WACC - g} * \frac{1}{(1+WACC)^n}$$

The FCFF is the free cash flow to the firm, WACC is the average cost of capital, g is the constant terminal growth and n is the last year in the budget period. We assume that the stable growth rate is the target of the Norwegian Central Bank of 2.5 %. Note that ROIC is below WACC in the terminal period, as our analysis suggests that NAS will not obtain any sustainable competitive advantage from its expansion strategy that allows the company to earn excess profits in the future. We have thoroughly analyzed NAS and its environment, and the sum of our findings indicate that the poor historical ROIC in the industry and NAS is expected to continue in the future. In economic theory, investors are characterized as being risk averse and rational. This indicates that investors should have incentives to withdraw their investment in NAS, and look for alternative investments that would yield higher returns for the same level of risk. Based on this, it implies that NAS at some point in time will file for bankruptcy unless NAS can obtain an ROIC equal or above WACC. On the contrary, by borrowing insights from the behavioral economic theory, suggests that investor optimism towards NAS future development might indicate that capital will be available despite our findings explained above.

We are interested in the value of the company per 12.04.2016, and not per 31.12.2015. To adjust for our cut-off date and get an estimated price to the same date we apply the following formula:

[145] Petersen & Plenborg, "*Financial statement analysis"* p. 216

$$(1 + WACC)^{\frac{Number\ of\ days\ into\ the\ year}{365}}$$

We now apply our estimated FCFF from the cash flow statement assembled in the forecasting section:

Enterprise DCF										
mNOK	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
t	1	2	3	4	5	6	7	8	9	10
FCFF	-5.396	-9.706	-5.099	-6.216	-6.067	-4.010	8.715	3.748	3.947	4.152
WACC	6,64%	6,64%	6,64%	6,64%	6,64%	6,64%	6,64%	6,64%	6,64%	6,64%
Discount factor	0,94	0,88	0,82	0,77	0,73	0,68	0,64	0,60	0,56	0,53
PV	-5.060	-8.535	-4.205	-4.807	-4.399	-2.727	5.558	2.241	2.213	2.183

Sum PV	-19.721
PV terminal	56.259
EV	36.538
NIBD	-32.628
BV net financial assets	3.367
NFH	2.522
Equity value	9.798
Number of shares	35.759.640
Share price	**278**
Actual share price	355

Figure 76: Obtained share price with DCF model. *Source: Own calculations. Own creation*

As mentioned above, we first obtain the enterprise value and then subtract net interest-bearing debt to get an equity value. Furthermore, the book value of financial assets and the market value of the investment in NAS' associate, Norwegian Finans Holding ASA are added to the equity value. We divide our total equity value by the number of shares outstanding and get a share price of 278 NOK per 12.04.2016.

We obtained the market value of Norwegian Finans Holding (Bank Norwegian) by using the market value per share of NOK 72.80 on 12.04.2016. NAS hold 34.638.942 shares, making the market value of its *investment in associates* NOK 2.522 billion.

The *financial assets* consist of financial assets available for sale and excess cash. The book value of these items is assumed to reflect market values as we concluded that the management's estimations seemed precise in our assessment of accounting policies in the financial analysis section.

Koller et al. recommend adjusting the EV for hybrid securities and minority interests.[146] The non-consolidated subsidiary has been accounted for, and NAS holds 100 % ownership in all its consolidated subsidiaries. Based on this, we conclude that minority interest is not an issue. Additionally, all options were exercised or terminated at year-end 2015. There is also no convertible debt or convertible preferred stock associated with the company.

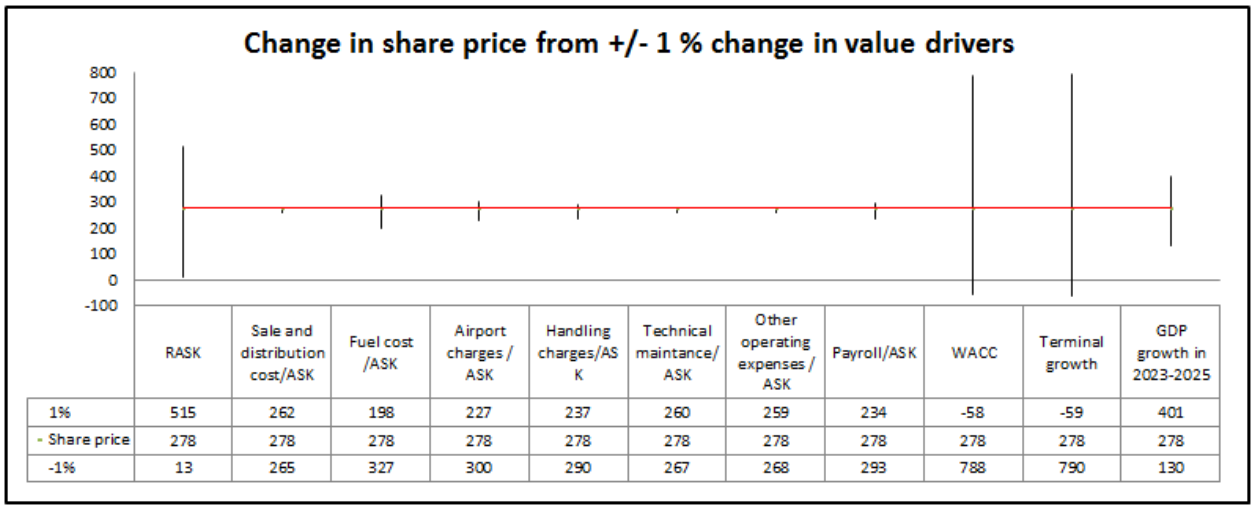
[146] Koller et al., *Measuring and Managing the Value of Companies*, p.280

7.3 Sensitivity Analysis

The obtained share price is a result of numerous qualified assumptions about the future. Our estimated value of NAS is thus highly uncertain. It is therefore reasonable to conduct a sensitivity analysis to understand which value drivers have the largest impact on the valuation of NAS. From the investor's perspective, this shows which inputs to investigate further and monitor more closely.

7.3.1 Input-by-Input Sensitivity Analysis

As recommended by Koller et al., we start the sensitivity analysis by examining how each value driver affects the DCF model. By changing one input at a time with +/- 1 percentage change, we can determine which value drivers have the largest effect on the valuation of NAS. Note that a +/- 1 percentage point is chosen for WACC, terminal growth rate and GDP growth. The results can be seen in the figure below.



	RASK	Sale and distribution cost/ASK	Fuel cost /ASK	Airport charges / ASK	Handling charges/ASK	Technical maintance/ ASK	Other operating expenses / ASK	Payroll/ASK	WACC	Terminal growth	GDP growth in 2023-2025
1%	515	262	198	227	237	260	259	234	-58	-59	401
- Share price	278	278	278	278	278	278	278	278	278	278	278
-1%	13	265	327	300	290	267	268	293	788	790	130

Figure 77: an Input-by-input sensitivity analysis. *Source: Pro forma statements. Own creation*

The results show that WACC, terminal growth, GDP (2023-2025) and RASK have the highest impact on NAS stock price. Out of the operating costs, the most important value drivers are fuel and payroll costs. This analysis underlines that the DCF model is highly dependent on the underlying assumptions and therefore the analyst's individual opinions. It further shows that it is crucial to monitor the most important value drivers for value estimation in NAS.

We remember from the financial analysis that jet fuel constitutes approximately 28 % of the total operating cost in 2015. The change in jet fuel is externally set, which emphasizes the importance of effective risk management concerning fuel hedges and the transition to a more fuel efficient fleet. Additionally, our findings from the

financial analysis showed that NAS have significantly higher payroll costs than Ryanair in our peer group. This explains NAS' necessity to cut these cost to increase its share value.

The input-by-input analysis increases our knowledge about which inputs drive the valuation in NAS. We must however acknowledge that its use is limited. First, one important limitation is that inputs rarely change in isolation. It is for instance reasonable to assume that an increase in RASK is often followed by an increase in operating costs. Second, when two inputs are changed simultaneously, interactions can cause the combined effect to differ from the sum of the individual effect. Therefore, you cannot compare a 1 % increase in RASK with a 1 % increase in operating expenses. If there are interactions in the movement of inputs, the one-by-one analysis will miss them. Additionally, our findings from the Five Forces analysis indicated a heightened risk of employee disputes. It is therefore reasonable to assume that ongoing disputes could impact other value drivers as they have the ability to disrupt operations.

To avoid the limitations of the input-by-input approach, we need to build a Monte Carlo simulation that tests multiple changes at a time. This is thus the subject of our next section.

7.3.2 Monte Carlo Sensitivity Analysis

Our valuation model is built on forecasts that have been developed through careful analysis, but we must acknowledge that the prediction of the actual future value drivers is still associated with a high degree of uncertainty. We will therefore use a Monte Carlo simulation to further investigate our share price estimates sensitivity to changes in the inputs applied in the DCF-model. Monte Carlo simulations are a probability analysis done by running many variables through a model to determine the different outcomes. This method has a vast array of potential applications, and we have used it in our DCF-model to determine the probability of an equity value above 0. This is interesting to analyze as we have through our analysis showed the negative development in NAS financial strength. We chose to simulate the value drivers seen in figure 77, as these uncertain variables have the largest impact on NAS' share value in our DCF-model. Even though we are comfortable that our forecasts reflect the most likely future developments, we have taken into account that our estimates to a large degree can be inaccurate. We note that most of the standard deviations are based on the highest historical fluctuations in our value drivers. As discussed in the forecasting section, it is difficult to estimate the development in fuel costs, as this item is highly dependent on exchange rate fluctuations and movements in fuel prices as seen in our PESTLE-analysis. We have therefore used a standard deviation of 22.5 % for each year, indicating that e.g. fuel cost will with 95 % probability be in the interval of approximately NOK 4.0 billion to

NOK 6.5 billion in 2016. Note that we have applied software made available by Crystal Ball to build our Monte Carlo simulation, and we ran 20 000 trials with normally distributed parameters.

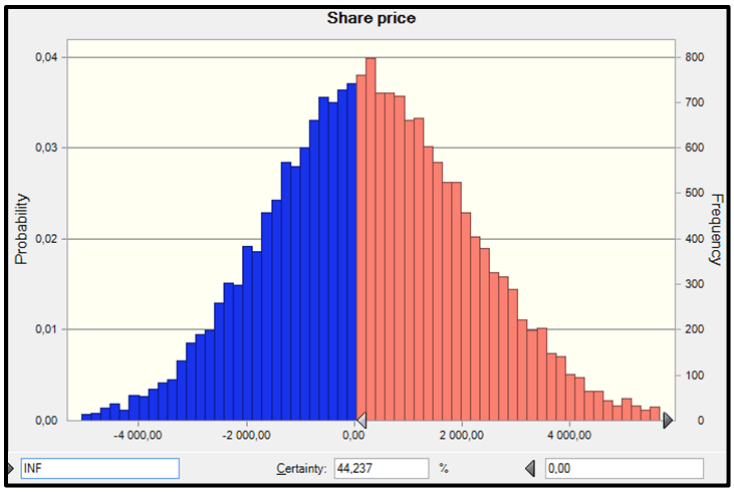


Figure 78 Monte Carlo Simulation of DCF-model. *Source: Own calculations & Crystal ball. Own creation*

We see from the figure above that it is approximately 44 % probability of a negative equity value in NAS. Note that it is not a negative equity value that results in bankruptcy, but the inability to repay the debt to creditors. However, we believe this finding further support our notion from the financial strength analysis, that it is considerable risk related to NAS expansion strategy.

7.4 Relative Valuation Models

Petersen and Plenborg argue that the DCF model is the most accurate and flexible model for valuation purposes. This is supported by and Koller et al. However, they further argue that stress-testing a DCF valuation through multiples to ensure higher accuracy. This might be false precision because a solid DCF valuation is only as accurate as its forecasts. The idea behind multiples is to relate the performance of similar companies to our company at hand. To ensure high quality, we follow Plenborg & Petersen recommendation to keep calculations as consistent across companies and compare with as similar competitors as possible (peer group).

Koller et al. argues that EV/EBITA provide the best results when comparing similar companies. As this multiple takes the most important value drivers into consideration and excludes effects of capital structure. We have decided to use the EV/EBITDAR multiple as it takes aircraft rental expenses into account. Additionally, we apply EV/Revenue and EV/Invested capital to compare any major differences and to provide a wider perspective in our comparison. These multiple calculations are performed in a consistent manner to obtain as comparable results as possible. The respective multiple values and obtained share prices from this relative valuation can be seen below. Calculations can be found in Appendix 36.

Multiple Valuation - Results			
Peer group	EV/EBITDAR	EV/Revenue	EV/Invested capital
	Dec. 2015	Dec. 2015	Dec. 2015
SAS	4,52	0,62	1,07
easyJet	6,76	1,36	3,26
Ryanair	11,79	3,19	6,14
NAS	10,02	1,86	1,26
Average	8,27	1,76	2,93
Median	8,39	1,61	2,26
Harmonic mean	7,22	1,25	1,82
Share price average	190,81	331,45	2.147,05
Share price median	204,52	236,96	1.476,50
Share price harmonic mean	68,40	14,30	1.040,64

Figure 79: Relative Valuation – multiples. *Sources: Own calculations. Own creation*

The share prices we obtained yields mixed results. Some results are not that far off our DCF value while some yield more extreme share prices. The EV/Invested capital shows that the peer group is in different stages of the life-cycle, i.e. SAS is for example not engaged in an expansion such as NAS. NAS' high invested capital compared to the peer group thereby distorts the results, as they are not truly comparable. A meaningful relative valuation would probably require extensive adjustments and a higher degree of comparable companies. We therefore chose not to draw any conclusions whether NAS is under or over-valued by comparison with our peer group.

7.5 Liquidation approach

The liquidation approach is the estimated value a company can be sold for if all assets were sold and liabilities settled off[147]. It differs fundamentally from the DCF-model and multiples, as the liquidation approach values a company as it is going out of business.[148] It is therefore not a true option for NAS, but this approach is included to further understand what triggers NAS' value. In our Financial Analysis, we expressed concerns regarding NAS' financial strength regarding high liquidity and insolvency risk. We have also seen that NAS have an ROIC persistently below WACC, making incentives for potential investors to look for other investment opportunities and withdraw their current investment. We therefore find it relevant to see what NAS' shareholders could expect to get in return in a case of liquidation.

As the owners would not accept a price below the liquidation value, it informs us about the minimum value of NAS. There are two types of liquidation values that depend on the time available for the liquidation process[149]:

[147] Petersen and Plenborg, *"Financial statement analysis"* p. 235
[148] Petersen and Plenborg, *"Financial statement analysis"* p. 236
[149] Petersen and Plenborg, *"Financial statement analysis"* p. 235

1) *The orderly liquidation value:* Assumes that owners have the necessary time to sell its assets in the appropriate season. This enables the owners to get the highest price available.
2) *The distress liquidation value:* Assumes limited time and owners have to sell its asset as fast as possible.

This section will be conducted by the following liquidation template made available by Petersen and Plenborg (2012):

Book Value of Equity	
+/-	The difference between the liquidation and book value of assets
+/-	The difference between the liquidation value and book value of liabilities
+/-	The liquidation value of off-balance sheet items
-	Fees to lawyers, auditors, etc.
=	Liquidation value

7.5.1 Assumptions

Firstly, we assume that this is an *orderly liquidation*, meaning that none of the assets are sold during distress. Note that this will most likely lead to a higher liquidation value as opposed to the *distressed liquidation.* Secondly, we will trough the liquidation process look at how much is left for the equity holders and not what various creditors receive of the liquidation value. Thirdly, book values of liabilities serve as a proxy for market values. We assume in our liquidation that these liabilities have to be settled at 100 % of book values. Additionally, we will put more emphasis on the items that we find most crucial in a liquidation process. We therefore aggregate some of the balance sheet items to maintain our focus on the most important aspects. Our main results from the liquidation model are summarized at the end of the Liquidation analysis while a more detailed description of all the items in the balance sheet can be found in Appendix 39.

7.5.2 Liquidation analysis

The book value of assets is used as a starting point before we adjust the book values to reflect the liquidation value.

<u>Assets</u>

The two largest items are *Aircrafts, parts and installations* (58.5 % of total assets) and *Prepayment to aircraft manufacturers* (19 % of total assets). We remember from our Financial Analysis that aircraft are quickly deployed by other airlines and that the secondary market for aircrafts is assumed to be liquid. We also know from the Five Forces analysis that NAS most likely obtained discounted prices on the large order of aircraft in 2012. Additionally, Boeing and Airbus have full order books resulting in long delivery times for the new cost-efficient aircraft. Our findings from the PESTLE-analysis suggested that the overall demand for airline services

will grow in the coming decades. Based on the sum of these findings, we assume the items *Aircrafts, parts and installation* and *Prepayment aircraft manufacturers* are liquidated at a value equal to book value.

The item *Deferred tax assets* (1.9 % of total assets) stems in NAS' case mostly from tax loss carried forward before netted against *Deferred tax liabilities*. As it is reasonable to assume that NAS will not be able to utilize the benefit of the tax asset in liquidation, we set the liquidation value to be 0.

As previously mentioned, the item *Investment in Associate* (1 % of total assets) consist of NAS' 20 % stake in Norwegian Finans Holding ASA (NFH), which again owns 100 % of Bank of Norwegian (BN). There is reasonable to assume the carrying amount recognized in the balance sheet is significantly below its true liquidation value. For example, the share price has increased by 49 % in the period 02.01.2016 – 12.04.2016 and 271 % from 02.01.2015- 12.04.2016[150]. We will therefore estimate the liquidation value based on the market values as we believe this is closer to the realizable value. Furthermore, it can be argued that BN to some degree are dependent on NAS as a going concern, as it is evident that BN's marketing on i.e. the homepage are based on NAS loyalty program to attract customers[151]. This indicates that NAS' 20 % stake cannot be realized to current market values. We also know that the stock is traded on the "over the counter" (OTC) marketplace at Oslo Stock Exchange. The phrase "over the counter" means that the stock is traded via a dealer network as opposed to on a centralized exchange. This might make it difficult for NAS to realize the values to the market price, as it can be hard finding buyers willing to pay the same price. When assessing the stocks liquidity, we see that the stock traded at a total volume of NOK 23.6 million with 17 different trades on our cutoff date (12.04.16). In the same day, NAS' 20 % stake was valued at NOK 2.5 billion. Note that we get the same conclusions when we take random samples on other trading days. Based on this, it seems like the BN stock is less liquid. NAS' will therefore probably have difficulties to realize the stock values without any discounts. Based on the sum of these findings, we believe that the obtainable value of these stocks is 60 % of market values on our cut-off date. This indicates a significant adjustment of NOK 1.513 billion as opposed to book values of NOK 328 million.

The item *buildings* (0.9 % of total assets) consist of three apartments in Berlin (2007), one apartment in Seattle (2010) and one apartment in Florida (2013). The residual value of these apartments is equal to the acquisition costs. NAS also acquired a hangar at Gardermoen airport in (2015)[152]. The hangar is estimated to have a useful life of 50 years and is depreciated linearly over its economic life with a residual value of NOK 0. Since it is

[150] Netfonds*: "share price Bank Norwegian"* http://norma.netfonds.no/analysis.php?paper=BANK.OTC (accessed 03.05.2016)
[151]Bank of Norwegian: *"marketing"* https://www.banknorwegian.no/ (accessed 03.05.2016)
[152] Norwegian Air Shuttle ASA (Annual Report 2015)

impossible to separate the different investments by the use of the annual reports, we find it difficult to estimate the true market value. This is also taking into consideration the development of the European real estate index (MSCI) and iShares US Real Estate (IYR). These indexes are designed to serve as proxies for direct real estate investments[153], and the development from 2000-2015 can be seen in Appendix 43. The European real estate index indicates that the apartments acquired in Berlin (2007) probably have lower market value than carrying value. On the contrary, the US real estate index shows high growth after the acquisition date in Seattle (2010) and Florida (2013). These apartments have therefore probably higher market values than carrying value. Based on these factors, we believe that liquidation value equal to book value is our best estimate.

The item *Inventory* (0.3 % of total assets) consists of parts for heavy maintenance. NAS sold obsolete parts from aircraft engines in 2014 and 2015 on the secondary market. It is reasonable to assume that parts for heavy maintenances are easily deployed by other companies, as many airlines use aircrafts from either Airbus or Boeing. We also believe that NAS' competitors will take advantage of the hypothetical bankruptcy in terms of getting discounts. As a result, we obtain a liquidation value of 80 % of book values.

Intangible assets (0.7% of total assets) largely consist of software and goodwill, which are without physical content and cannot be detached. We therefore set the liquidation value of this item to be 0. The item *equipment and fixtures* (0.3 % of total assets) has useful lives ranging from 3-9 years, with straight-line depreciation and a residual value of 0. As we have no information regarding the e.g. type of equipment or its liquidity, we assume for simplicity that the liquidation value is 0 since the residual value is 0. Furthermore, we believe NAS will be able to retrieve 100 % of the items current *Trade and other receivables* (8.1 % of total assets) and non-current *Other receivables* (1.6 % of total assets). The item *Cash and cash equivalents* (8.1 %) consists of NAS cash and bank reserves. NAS is expected to recover 100 % of this item in liquidation, due to high liquidity of such assets.

Off-balance sheet items

In liquidation, we believe it would be fair to assume that NAS would have to pay the net present value of the outstanding lease commitments. We previously estimated that NAS' operating lease commitments have a total value of NOK 15.493 billion in 2015 (Appendix 14). However, it can be argued that NAS in a liquidation

[153] Dow Jones U.S Real Estate Indexes: http://www.djindexes.com/mdsidx/downloads/fact_info/Dow_Jones_US_Select_Real_Estate_Indexes_Fact_Sheet.pdf (assessed 05.05.2016)

process will probably renegotiate the leasing contracts, which might lead to a reduction of the lease obligations. It is also possible that the remaining lease contracts will be acquired by other companies, based on the same arguments as presented in *Aircrafts, parts and installations*. The last option would probably decrease the leasing commitments substantially. Still, we presume that NAS has to pay the net present value of future lease commitments.

Additional fees related to the liquidation

It seems nearly impossible to calculate the direct costs (e.g. fees to lawyer or auditor) of bankruptcy in the case of NAS. There are however several studies on the direct costs related to bankruptcy, restricted to publicly listed companies. One of them is Weiss (1990)[154], who evaluates 37 *Chapter 11 bankruptcies* between 1980 and 1986, finding the average direct costs of bankruptcy to be 3.1 % of book values of debt plus the market value of equity. Another study conducted by Ang. et al. (1982)[155] Reported direct bankruptcy cost to be 7.5 % of the total liquidation value of assets for 86 liquidations between 1963 and 1979. As these studies might be outdated, we apply the 1.4 % of assets reported by LoPucki and Doherty (2004) as a proxy for NAS' other liquidation costs[156].

The key takeaways from the liquidation analysis are summarized in the table below.

Estimation of liquidation value	Book value	Liquidation value
Total assets	31.634.114	31.877.034
Total non-current liabilities	-17.935.772	-17.935.772
Total current liabilities	-10.733.029	-10.733.029
Value of off-balance sheet item (leasing commitments)	0	-15.493.100
Additional liquidation costs (fees to lawyers, auditor, etc.), 1.4 % of book value of assets	0	-442.878
Liquidation value		**-12.727.744**

The liquidation approach	
Book value of equity	2.965.312
+/- The difference between the liquidation and book value of assets	242.920
+/- The difference between the liquidation value and book value of liabilities	0
+/- The liquidation value of off-balance sheet items	-15.493.100
- Fees to lawyers, auditors, etc.	-442.878
Liquidation value	**-12.727.745**
Share price	0

Figure 80: Result of Liquidation approach. *Source: Reformulated financial statements. Own creation*

[154] Weiss, L. A. (1990). Bankruptcy resolution: Direct costs and violation of priority of claims. Journal of Financial Economics, 27(2), 285 - 314.

[155] Ang, J. S., Chua, J. H., & McConnell, J. J. (1982). The administratve costs of corporate bankruptcy: .Journal of Finance, 37(1), pp. 219-226.

[156] The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases http://onlinelibrary.wiley.com/doi/10.1111/j.1740-1461.2004.00004.x/full

Our findings show that there are insufficient funds to cover all of NAS' liabilities. This leaves the company's equity holder with 0 disbursements. Furthermore, the liquidation value shows that NAS' current share price is triggered by the expectations of future growth rather than its current status. As mentioned in section 4.1, we discussed that behavioral economic theory might explain why unprofitable airlines continue to fly. It suggests that investors would be more served with injecting capital to keep the airline "in the air" in the hopes that the company's operation would eventually turn a profit, as opposed to liquidation it, knowing that they certainly would lose all their money. NAS seems to be a good example of this.

In our opinion, *lease commitments* constitute the highest degree of uncertainty in the liquidation value. This because different assumptions regarding lease commitments would yield major deviations in liquidation values. As previously mentioned, we assumed NAS had to pay the net present value of outstanding lease commitments in a hypothetic bankruptcy. As discussed under *lease commitments*, there can be multiple outcomes, one of them being another company acquiring NAS lease obligations. A potential buyer would most likely be able to exploit NAS' bankruptcy situation to obtain discounts. The sum of this makes it reasonable to assume that NAS would be able to incur losses on the net present value of lease commitments less 95 %, 90 % and 85 %. The table below shows the deviations in liquidation value and share price based on the two different assumptions:

The liquidation approach	Base case liquidation	95%	90%	85%
Book value of equity	2.965.312	2.965.312	2.965.312	2.965.312
+/- The difference between the liquidation and book value of assets	242.920	242.920	242.920	242.920
+/- The difference between the liquidation value and book value of liabilities	0	0	0	0
+/- The liquidation value of off-balance sheet items	**-15.493.100**	**-774.655**	**-1.549.310**	**-3.098.620**
- Fees to lawyers, auditors, etc.	-442.878	-442.878	-442.878	-442.878
Liquidation value	**-12.727.745**	**1.990.700**	**1.216.045**	**-333.265**
Share price	0	56	34	0

Figure 81: Liquidation approach, new assumption regarding lease commitments. *Source: Own calculations. Own creation*

We see that the two different assumptions yield significant different liquidation values, all else equal. As mentioned in the Five Forces Analysis, leasing is a common way for airlines to finance its aircraft fleet with approximately 1/3 of the world's current aircrafts being financed in this way. Our above findings show that users of the liquidation value need to approach off-balance sheet items like *lease commitments* with caution when looking at airlines.

8. Conclusion

This thesis has been constructed for the purpose of answering the problem statement: "*What is the fair value of NAS per 12.04.2016?"* We will now relate our findings from each section to ensure that the share estimate we obtained is based on our initial problem statement.

It is important to understand the historical development of NAS' strategy and its closest competitors to determine the value of the company. We learned that NAS has experienced significant growth since the company was listed on Oslo Stock Exchange in 2003. The company has become the third largest low-cost carrier in Europe, with a current fleet of 99 aircraft with an additional 267 aircraft on firm order at year-end 2015. The large orders are part of NAS' strategy to become the first successful low-cost long-haul airline. NAS' growth has made it a major opponent to SAS in the Scandinavian market, in addition to large low-cost carriers Ryanair and EasyJet in the European market.

We conducted external and internal analysis to understand the environment in which NAS operates. A brief introduction to this chapter characterized the airline industry and NAS' historical performance as persistently poor based on ROIC below WACC. As traditional economic theory with risk-averse and fully rational investors did not provide a sufficient answer to this phenomenon, an alternative explanation based on behavioral economic theory was provided. This theory assumes investors make irrational choices. Thus, the phenomenon might be explained by investors guided by i.e. over optimism.

In the Business Model and Strategy analysis, we found that the overall tendency for airlines was to converge against each other. In other words, many airlines are becoming increasingly similar. This was seen as a threat to the future possibility for airlines to gain a competitive advantage that is not based on cost-leadership. We also argued that NAS might have a temporary competitive advantage through its differentiation measure of long-haul low-cost operations as this market currently resembles a "blue ocean."

The PESTLE-framework examined the macro environment. We found that factors such as GDP growth, oil prices and disruptive events had a large impact on NAS' future development. Additionally, we got a deeper understanding of the advantages the fleet-modernization will give NAS. State of the art aircraft will enable NAS to increase fuel efficiency and lower emissions substantially. We also understood the importance of NAS to be granted the necessary flight permits for its long-haul operations. This would allow NAS to use more foreign labor subject to lower payroll cost in addition to access to new destination and routes.

The Five Forces model guided the micro-environment. We examined what seemed to be an unattractive industry for investors regarding low ROIC. Factors like price-sensitive customers and low entry barriers will probably

contribute to fierce competition on ticket prices and increased cost focus in the future. An in-depth analysis of NAS' employee relationships suggested a heightened risk of future disputes and strikes as a response to the company's strategic direction. Our strategic implementation analysis focusing on executive management and employee relations indicate overall low strategic consensus and weak communication. This might be a sign of weak leadership and was seen as contributing factors that might hamper NAS' growth ambitions. In the internal VRIO analysis, the aircraft fleet was considered as a temporary competitive advantage.

The financial performance of NAS was found to be below EasyJet and Ryanair and similar to SAS. To understand the performance differences in our peer group, a thorough analysis of the ROIC was conducted. Airline specific rations were developed and found to be important value drivers of an airline. The available seat kilometers (ASK) ratio was established as a core driver. Regarding financial strength, we found that NAS has higher liquidity risk and insolvency risk than Ryanair and EasyJet, and similar to SAS. The overall development in every ratio applied showed the same negative tendency for NAS regarding lower financial strength as the company started increasing its debt levels to fund the expansion strategy. We also found that NAS' financial flexibility to some extent offset the high liquidity risk and insolvency risk.

With the establishment of solid value drivers, we could forecast the future performance of NAS. A 10-year forecasting period, with seven years being detailed and three years being simplified, was found suitable to capture NAS' share value. By combining our findings from the strategic and financial analysis with the value drivers, we obtained realistic estimates of future cash flows and performance of NAS.

We could then conduct a valuation of NAS, which was the purpose of this thesis. We chose the DCF model, supplemented by multiples. The use of multiples yielded extreme values. These results were disregarded, due to the absence of the basic assumptions needed for a correct application of multiples. Additionally, we used the liquidation approach to understanding further what triggered NAS share value in addition to finding investors disbursements in a possible bankruptcy.

A sensitivity analysis was included in the final section of this thesis. The results indicate a share price highly sensitive to the WACC and the operational cost items fuel and payroll. Our Monte Carlo simulation showed that there was a 44 % probability of a negative equity value in NAS, reflecting high underlying risk in the company's share price based on the DCF model. Through the DCF model, we obtained an estimated share price of Norwegian Air Shuttle ASA per 12.04.2016 of NOK 278. This represents an overvalued share with a downside potential of -21 %. In a hypothetical liquidation, it will be zero left for investors. In our opinion, this might show investors optimism towards NAS expansion strategy. Based on the findings from this thesis, we conclude with a sell recommendation on Norwegian Air Shuttle ASA per 12.04.2016.

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10. Appendix

Appendix List

Appendix 1: Definitions

ASK – Available seat kilometer

RPK – Revenue per kilometer

Yield – Average ticket price

Load factor – Percentage of seats occupied on average

Sector length – Distance from one destination to another (one way)

RASK – Revenue per available seat kilometer

CASK – Operating costs per seat kilometer

Block hours – operating hours in the air per day

Turnaround time – The time from aircraft arrival until next departure

Slot – Refers to the use of gates

Ultra-low cost carrier – E.g. Ryanair, uses mainly secondary airports and offer little to no frills.

LCC – Low cost carrier

FSC - Full service carrier

RDS – ROIC decomposition structure

Appendix 2: NAS reformulated Income statement

Norwegian reformulated income statement						
Amount in tNOK	2010	2011	2012	2013	2014	2015
Passenger revenue	7.210.161	9.097.228	11.201.072	13.381.460	16.254.622	18.505.800
Ancillary revenue	1.034.006	1.224.744	1.405.495	1.757.887	2.727.439	3.275.200
Other revenue	162.172	206.688	234.624	371.871	557.978	710.100
Total Revenues	8.406.339	10.528.660	12.841.191	15.511.218	19.540.039	22.491.100
						-
Sales and distribution cost	-167.859	-198.930	-274.954	-339.376	-469.111	-595.200
Aviation fuel	-2.092.859	-3.093.514	-3.740.508	-4.707.203	-6.321.053	-5.184.500
Airport charges	-1.295.913	-1.561.369	-1.730.217	-2.182.645	-2.723.910	-2.949.300
Handling charges	-863.551	-982.191	-1.077.334	-1.339.417	-1.854.844	-2.336.800
Technical maintainance	-697.196	-711.597	-792.565	-927.820	-1.290.035	-1.716.500
Payroll	-1.531.211	-1.836.194	-2.068.202	-2.478.295	-3.208.987	-3.433.700
Other operating expenses	*-803.522*	-914.565	-1.017.268	-1.323.061	-1.904.808	-2.106.700
Total operating cost	-7.452.111	-9.298.360	-10.701.048	-13.297.817	-17.772.748	-18.322.700
EBITDA	954.228	1.230.300	2.140.143	2.213.401	1.767.291	4.168.400
Lease depreciation	352.701	375.925	468.018	581.964	836.402	1.002.854
Depreciation & Amortization	186.707	293.950	385.244	529.825	748.138	1.133.300
EBIT	414.820	560.425	1.286.881	1.101.612	182.751	2.032.246
Tax	72.214	44.416	166.535	115.817	-557.284	-171.100,0
Tax shield	-111.751	-202.343	-105.843	-358.765	-359.430	-428.367
Operating tax	-183.965	-246.759	-272.378	-474.582	197.854	-257.267
NOPAT	230.855	313.666	1.014.504	627.030	380.605	1.774.978
Special items						
Share of profit/loss associated companies	6328	19518	32840	46597	57631	103400
Other losses / (gains) - net	29.732	305.720	-336.385	502.148	-583.751	-474.100
Other income	191.328	3.471	17.851	68.326	-	
Total special items	227.388	328.709	-285.694	617.071	-526.120	-370.700
Earnings before interest - after special items	458.243	642.375	728.810	1.244.101	-145.515	1.404.278
Financial items	26.600	-268.911	186.888	-578.874	-274.139	-376.100
Leasing interest	-425.710	-453.742	-564.897	-702.431	-1.009.538	-1.210.446
Net financial items	-399.110	-722.653	-378.009	-1.281.305	-1.283.677	-1.586.546
Financial tax	111.751	202.343	105.843	358.765	359.430	428.367
Profit	170.884	122.065	456.643	321.561	-1.069.762	246.100

Appendix 3: NAS reformulated Balance sheet, operational

Norwegian Reformulated balance sheet - Operational						
Amount in tNOK	2010	2011	2012	2013	2014	2015
NON-CURRENT ASSETS						
Intangible assets	210.293	236.216	237.774	225.270	206.826	206.675
Deferred tax asset	270	2.069	4.293	28.517	518.915	593.626
Non-current intangible operating assets	**210.563**	**238.285**	**242.067**	**253.787**	**725.741**	**800.301**
Aircrafts, parts and installations on leased aircrafts	2.092.136	3.869.159	5.579.757	7.526.707	12.527.932	18.507.706
Equipment and fixtures	26.175	31.991	58.476	72.972	83.687	79.508
Buildings	9.525	9.525	9.525	14.966	252.236	285.674
Financial lease assets	31.203	27.882	24.562	21.242	19.234	0
Prepayment aircraft manufactures	2.002.600	2.126.954	2.844.359	2.514.882	4.102.664	5.939.281
Total tangible assets	**4.161.639**	**6.065.511**	**8.516.679**	**10.150.769**	**16.985.753**	**24.812.169**
Total operating non-current assets	**4.372.202**	**6.303.796**	**8.758.746**	**10.404.556**	**17.711.494**	**25.612.470**
Capitalized operating leases	5.448.877	5.807.669	7.230.405	8.990.765	12.921.580	15.493.100
TOTAL NON-CURRENT ASSET ADJUSTED FOR LEASE	**9.821.079**	**12.111.465**	**15.989.151**	**19.395.321**	**30.633.074**	**41.105.570**
CURRENT ASSETS						
Inventory	66.191	81.994	68.385	74.135	82.851	104.141
Trade and other recievables	842.143	1.072.497	1.096.558	1.623.079	2.173.522	2.550.716
Total current operating assets	**908.334**	**1.154.491**	**1.164.943**	**1.697.214**	**2.256.373**	**2.654.857**
TOTAL OPERATING ASSET	**10.729.413**	**13.265.956**	**17.154.094**	**21.092.535**	**32.889.447**	**43.760.427**
OPERATING LIABILITIES						
Provision for periodic maintenance	94.961	81.865	175.306	412.737	835.480	1.177.513
Defered tax liabilites	89.483	134.646	301.042	443.991	169.851	0
Other long-term liabilities						80.338
Total non-current operational liabilities	**184.444**	**216.511**	**476.348**	**856.728**	**1.005.331**	**1.257.851**
Trade and other payables	1.063.436	1.230.935	1.564.955	1.949.691	2.680.445	2.862.566
Air traffic settlement liabilities	954.232	1.208.326	1.739.681	2.566.519	2.965.427	4.014.428
Tax payable	976	488	0	0	2.211	32.123
Total current operating liabilities	**2.018.644**	**2.439.749**	**3.304.636**	**4.516.210**	**5.648.083**	**6.909.117**
TOTAL OPERATING LIABILITIES	**2.203.088**	**2.656.260**	**3.780.984**	**5.372.938**	**6.653.414**	**8.166.968**
INVESTED CAPITAL	**8.534.266**	**10.609.696**	**13.373.210**	**15.719.598**	**26.236.032**	**35.593.459**
Average invested capital		*9.571.981*	*11.991.453*	*14.546.404*	*20.977.815*	*30.914.746*

Appendix 4: NAS reformulated Balance sheet, financial

Norwegian Reformulated balance sheet - Financial						
Amounts in tNOK	2010	2011	2012	2013	2014	2.015
LIABILITIES						
Capitalized operational leases	5.448.877	5.807.669	7.230.405	8.990.765	12.921.580	15.493.100
Net recognized pension liabilities	121.672	151.187	-	127.821	201.883	134.516
Long-term borrowings	1.943.903	2.682.888	4.166.854	5.736.896	9.950.228	16.543.405
Short-term borrowings	520.972	1.551.918	1.349.459	768.401	3.330.387	3.041.388
Derivative financial instrument (liability)	15.003	539	190.356	-	458.958	782.523
Financial lease liability	20.007	15.485	10.853	6.860	3.227	0
Total financial liabilities	**8.070.434**	**10.209.686**	**12.947.927**	**15.630.743**	**26.866.263**	**35.994.932**
ASSETS						
Derivative financial instruments (asset)	43.395	242.790	-	37.389	-	0
Other long-term receivables	53.242	113.061	135.562	199.036	421.060	501.811
Financial assets available for sale (non-curre	2.689	2.689	2.689	82.689	82.689	82.689
Financial assets available for sale (current)	-	-	10.172	11.158	-	0
Investment in associate	62.272	82.091	116.050	164.575	223.594	328.127
Cash and cash equivalents	1.178.416	1.104.946	1.730.895	2.166.126	2.011.139	2.454.160
Total financial assets	**1.340.014**	**1.545.577**	**1.995.368**	**2.660.973**	**2.738.482**	**3.366.787**
EQUITY						
Share capital	3.457	3.488	3.516	3.516	3.516	3.576
Share premium	1.055.083	1.075.463	1.093.549	1.093.549	1.093.549	1.231.632
Other paid-in equity	54.521	63.365	63.365	72.744	87.221	94.362
Other reserves	-	-9.639	-9.335	-11.102	455.099	876.192
Retained earnings	690.785	812.910	1.269.556	1.591.121	468.866	759.550
Total equity	**1.803.846**	**1.945.587**	**2.420.651**	**2.749.828**	**2.108.251**	**2.965.312**
Net interest bearing debt	**6.730.420**	**8.664.109**	**10.952.559**	**12.969.770**	**24.127.781**	**32.628.145**
Net bearing debt + equity = Invested capital	**8.534.266**	**10.609.696**	**13.373.210**	**15.719.598**	**26.236.032**	**35.593.457**

Appendix 5: SAS reformulated Income statement

SAS - Reformulated Income Statement						
In million SEK	2010	2011	2012	2013	2014	2015
Total revenues	**41070**	**41412**	**42353,80723**	**42182**	**38006**	**39650**
Staff cost	-13894	-13092	-13600	-11307	-9181	-9622
Fuel cost	-6601	-7769	-9198	-9046	-8806	-8430
Other operating costs	-18514	-15972	-16957	-16396	-16316	-16128
Total operating costs	**-39009**	**-36833**	**-39755**	**-36749**	**-34303**	**-34180**
EBITDA	**2061**	**4579**	**2599**	**5433**	**3703**	**5470**
Deprication and amortization	-1885	-2413	-1684	-1658	-1443	-1466
Lease deprication	-1167	-1003	-1028	-1148	-1368	-1667
EBIT	**-991**	**1163**	**-113**	**2627**	**892**	**2337**
Tax	851	-58	32	-290	199	-461
Tax shield	-400	-637	-587	-357	-412	-390
Operating tax	451	-695	-555	-647	-213	-851
NOPAT	**-540**	**468**	**-667**	**1980**	**679**	**1486**
Special items						
Share of income in affiliated companies	12	28	35	25	30	37
Income form sale of shares in subsidiaries, affiliated companies	-73	0	400	700	6	0
Income from sale of aircraft and buildings	-239	12	-262	-118	-16	777
Secondary operating profit	-300	40	173	607	20	814
Income from other holdings of securities	-263	-1469	-925	1	-43	-300
Financial income	174	224	135	50	102	124
Financial expense	-1041	-1030	-1246	-999	-1130	-632
Lease interest	-648	-557	-570	-638	-759	-926
Tax on financial items (tax shield: 22,5 %)	400	637	587	357	412	390
Net financial expense	**-1378**	**-2195**	**-2020**	**-1229**	**-1418**	**-1344**
Profit	**-2218**	**-1687**	**-2515**	**1358**	**-719**	**956**

Appendix 6: SAS reformulated Balance sheet, operational

SAS Reformulated balance sheet - Operational						
mSEK	2010	2011	2012	2013	2014	2015
NON-CURRENT OPERATING ASSETS						
Intangible assets	1.414	1.693	1.922	1.802	1.905	1798
Defered tax asset	1.187	1.340	597	800	1.111	375
Pension fund, net	10.512	11.355	12.232	3.428	3.778	4.368
Equity in affiliated companies	294	317	325	352	395	421
Other long-term receivables	2379	1011	1.250	2.249	1.928	1.951
Land and buildings	375	491	353	241	243	560
Aircraft	12.652	11.866	11.220	8.795	7.535	7.095
Spare engines and spare parts	1.393	1.367	1.349	147	76	31
Workship and aircraft servecing equipment	90	76	110	117	85	101
Other equipment and vehicles	130	123	117	105	128	137
Investment in progress	118	66	34	21	71	190
Prepeyments relating to tangible assets	24	155	160	251	763	1.482
Total non-current operating assets	**30.568**	**29.860**	**29.669**	**18.308**	**18.018**	**18.509**
Capitalized operating leases	11.538	9.917	10.158	11.354	13.521	16.484
TOTAL NON-CURRENT ASSET ADJUSTED FOR LEASE	**42.106**	**39.777**	**39.827**	**29.662**	**31.539**	**34.993**
CURRENT ASSETS						
Expendable spare parts and inventories	678	705	687	359	342	345
Accounts receivable	1.277	1.275	1.311	1.376	1.067	1.249
Receivables from affiliated companies	3	6	3	1	0	2
Other recievables	2.901	2.574	1.399	866	1.263	867
Prepaid expenses and accrued income	839	934	873	858	937	1.093
Prepayment to suppliers	0	0	0	2	8	0
Total current operating assets	**5.698**	**5.494**	**4.273**	**3.462**	**3.617**	**3.556**
Total operating assets	**47.804**	**45.271**	**44.100**	**33.124**	**35.156**	**38.549**
OPERATING LIABILITIES						
Current operating liabilities						
Prepayments from customers	16	24	0	16	4	22
Accounts payable	-66	-20	331	-97	-628	-1.065
tax payable	22	18	32	36	0	0
Unearned transportation revenue	3.598	3.453	4.292	3.932	4.244	4.482
Accrued expenses and prepaid income	3.403	3.491	3.771	4.054	5.114	5.610
Current portion of other provisions	657	428	1.186	855	709	479
Current other liabilites	2.070	1.160	1.033	722	679	964
Total current operating liabilities	**9.700**	**8.554**	**10.645**	**9.518**	**10.122**	**10.492**
Non-current operating liabilities						
Deferred tax liability	2.303	2.154	1.013	0	0	0
Other provisions	2.143	1.673	1.967	1.361	2.088	1.992
Total non-current operating liabilities	**4.446**	**3.827**	**2.980**	**1.361**	**2.088**	**1.992**
Total operating liabilites	**14.146**	**12.381**	**13.625**	**10.879**	**12.210**	**12.484**
INVESTED CAPITAL	**33.515**	**32.890**	**30.475**	**22.245**	**22.946**	**26.065**
Average invested capital		*33.203*	*31.683*	*26.360*	*22.596*	*24.506*

Appendix 7: SAS reformulated Balance sheet, financial

SAS Reformulated balance sheet - Financial						
mSEK	2010	2011	2012	2013	2014	2.015
LIABILITIES						
Capitalized operational leases	12.705	10.920	11.186	12.502	14.889	18.151
Subordinated loans	974	1.019	978	956	1.003	1.104
bond loans	1.503	2.809	2.763	2.641	2.713	2.184
Other loans	6.866	6.179	5.260	5.054	4.419	4.807
Non-current other liabilities	143	55	130	161	161	188
Non-current financial liabilities	**22.048**	**20.982**	**20.317**	**21.314**	**23.185**	**26.434**
Short-term loans	1.073	997	411	231	462	229
Current portion of long-term loans	1.383	2.309	1.403	2.517	2.082	1.264
Liabilities attributed to assets held for sale	132					
Current financial liabilities	**2.588**	**3.306**	**1.814**	**2.748**	**2.544**	**1.493**
Total financial liabilities	**24.636**	**24.288**	**22.131**	**24.062**	**25.729**	**27.927**
NON-CURRENT FINANCIAL ASSETS						
Other holdings of securities	23	23	23	292	273	3
Total non-current financial assets	**23**	**23**	**23**	**292**	**273**	**3**
CURRENT FINANCIAL ASSETS						
Short-term investments	3.281	2.842	366	2.080	3.703	5.151
Cash and bank balance	1.762	966	2.423	2.671	3.714	3.047
Assets held for sale	493					
Total current financial assets	**5.536**	**3.808**	**2.789**	**4.751**	**7.417**	**8.198**
Total financial assets	**5.559**	**3.831**	**2.812**	**5.043**	**7.690**	**8.201**
EQUITY						
Share capital	6.612	6.612	6.612	6.613	6.754	6.754
Other contributed capital	337	337	337	337	494	327
Reserves	627	309	17	-230	181	932
Retained earnings	6.862	5.175	4.190	-3.510	-2.549	-1.674
Non-controlling interests				16	27	
Total equity	**14.438**	**12.433**	**11.156**	**3.226**	**4.907**	**6.339**
Net interest bearing debt	**19.077**	**20.457**	**19.319**	**19.019**	**18.039**	**19.726**
Net bearing debt + equity = Invested capital	**33.515**	**32.890**	**30.475**	**22.245**	**22.946**	**26.065**

Appendix 8: EasyJet reformulated Income statement

Reformulated Income Statement easyJet						
mGDP	2010	2011	2012	2013	2014	2015
Total revenue	**2.973,10**	**3.452,00**	**3.854,00**	**4.258,00**	**4.527,00**	**4.686,00**
Fuel	733,00	917,00	1.149,00	1.182,00	1.251,00	1.199,00
Staff	336,00	407,00	432,00	454,00	479,00	505,00
Other costs	1.542,80	1.660,00	1.742,00	1.911,00	1.974,00	2.042,00
Total operating costs	2.611,80	2.984,00	3.323,00	3.547,00	3.704,00	3.746,00
EBITDA	**361,30**	**468,00**	**531,00**	**711,00**	**823,00**	**940,00**
Amortization	6,20	7,00	8,00	10,00	12,00	13,00
Depreciation	72,50	83,00	97,00	102,00	106,00	125,00
Lease Depreciation	96,34	90,76	79,11	84,93	103,25	94,93
EBIT	**186,26**	**287,24**	**346,89**	**514,07**	**601,75**	**707,07**
Corporate tax	32,70	23,00	62,00	80,00	131,00	138,00
Tax shield	9,35	9,42	7,17	8,66	4,98	5,06
Operating tax	42,05	32,42	69,17	88,66	135,98	143,06
NOPAT	**144,21**	**254,82**	**277,72**	**425,41**	**465,77**	**564,02**
Net financial items	19,60	21,00	14,00	19,00	-	2,00
Lease interest	19,36	18,24	15,89	17,07	20,75	19,07
Total financial expenses	**38,96**	**39,24**	**29,89**	**36,07**	**20,75**	**21,07**
Tax on financial items (24%)	9,35	9,42	7,17	8,66	4,98	5,06
Profit	**114,60**	**225,00**	**255,00**	**398,00**	**450,00**	**548,00**

Appendix 9: EasyJet reformulated Balance sheet, operational

Reformulated balance sheet esayJet - Operational						
mGDP	2010	2011	2012	2013	2014	2015
Non-current operating assets						
Goodwill	365,4	365	365	365	365	365
Other intangible assets	86,8	86	91	102	113	127
Equipment	1928,1	2149	2395	2280	2542	2877
Derivative financial items	8,2	24	21	13	36	44
Other non-current assets	53,5	63	57	185	152	130
Capitalized lease	809,9	763	665	714	868	798
Total non-current assets	**3251,9**	**3450**	**3594**	**3659**	**4076**	**4341**
Current assets						
Asset held for sale	73,2	0	0	0	0	0
Trade and other receivables	194,1	165	241	194	200	206
Derivative financial instruments	52,6	83	73	17	53	128
Total current assets	**319,9**	**248**	**314**	**211**	**253**	**334**
Total operating assets	**3571,8**	**3698**	**3908**	**3870**	**4329**	**4675**
Current liabilities						
Trade and other payables	828,7	916	1021	1093	1110	1114
Derivative financial instruments	9,6	52	26	60	87	368
Current tax	27,5	9	29	58	53	43
Maintainance provisions	71,4	45	59	81	79	64
Total current liabilities	**937,2**	**1022**	**1135**	**1292**	**1329**	**1589**
Non-current liabilities						
Derivative financial instruments	4	27	24	41	23	101
Non-current deferred income	56,6	59	46	68	62	47
Maintainance provisions	144,1	177	141	171	147	165
Deferred tax	147,9	179	198	144	186	176
Other non-current liabilities	0	0	0	0	0	0
Total non-current liabilities	**352,6**	**442**	**409**	**424**	**418**	**489**
Total operating liabilities	**1289,8**	**1464**	**1544**	**1716**	**1747**	**2078**
Invested capital	**2282**	**2234**	**2364**	**2154**	**2582**	**2597**
Average invested capital		*2258*	*2299*	*2259*	*2368*	*2589,5*

Appendix 10: EasyJet reformulated Balance sheet, financial

Reformulated balance sheet easyJet Financial						
mGDP	2010	2011	2012	2013	2014	2015
Liabilities						
Capitalized lease	810	763	665	714	868	798
Borrowings current	127	155	129	87	91	182
Borrowings non-current	1085	1145	828	592	472	322
Total financing liabilities	**2022**	**2063**	**1622**	**1393**	**1431**	**1302**
Assets						
Loan notes	13	11	10	7	4	3
Restricted cash non-curre	33	33	29	12	9	6
Restricted cash current	23	90	130	0	23	6
Money market deposits	260	300	238	224	561	289
Cash and cash equivalents	912	1100	645	1013	424	650
Total financing assets	**1241**	**1534**	**1052**	**1256**	**1021**	**954**
Equity	1501	1705	1794	2017	2172	2249
Net interest bearing debt	**781**	**529**	**570**	**137**	**410**	**348**
Invested capital	**2282**	**2234**	**2364**	**2154**	**2582**	**2597**

Appendix 11: Ryanair reformulated Income statement

Ryanair reformulated income statement						
mEUR	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Scheduled revenues	2324,5	2827,9	3504	3819,8	3789,5	4260,3
Ancillary revenues	663,6	801,6	886	1064,2	1247,2	1393,7
Total revenues	**2988,1**	**3629,5**	**4390**	**4884**	**5036,7**	**5654**
Staff cost	335	376,1	415	435,6	463,6	502,9
Fuel cost	893,9	1227	1593,6	1885,6	2013,1	1992,1
Maintenance	86	93,9	104	120,7	116,1	134,9
Marketing	144,8	154,6	180	197,9	192,8	233,9
Route charges	336,3	410,6	460,5	486,6	522	547,4
Handling charges	459,1	491,8	554	611,6	617,2	712,8
Total operating costs	**2255**	**2754**	**3307**	**3738**	**3925**	**4124**
EBITDA	**733**	**876**	**1083**	**1146**	**1112**	**1530**
Deprication	235,4	277,7	309,2	329,6	351,8	377,7
Lease deprication	81,44216	82,89191	77,34873	83,74471	86,55894	93,29604
EBIT	**416**	**515**	**696**	**733**	**674**	**1059**
Tax	37,5	46,3	72,6	81,6	68,6	115,7
Tax shield	9,39473	10,20101	7,943909	10,21941	10,26763	9,575495
Operating tax	46,89473	56,50101	80,54391	91,81941	78,86763	125,2755
NOPAT	**369**	**458**	**616**	**641**	**595**	**934**
Net financial expenses	61,1	67,3	50,2	67,3	67,2	60,5
Lease interest	14,05784	14,30809	13,35127	14,45529	14,94106	16,10396
Total financial items	**75,15784**	**81,60809**	**63,55127**	**81,75529**	**82,14106**	**76,60396**
Tax on financial items (12,5 %	9,39473	10,20101	7,943909	10,21941	10,26763	9,575495
Profit	**304**	***387***	**560**	**569**	**523**	**867**

Appendix 12: Ryanair reformulated Balance sheet, operational

Ryanair Reformulated balance sheet - operational						
mEUR	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Non current assets	4383,8	5004,4	4975,3	4958,2	5107,5	6072,4
Current tax	0	0,5	9,3	0	1,1	0,8
Inventories	2,5	2,7	2,8	2,7	2,5	2,1
Other assets	80,6	99,4	64,9	67,7	124,2	138,7
Trade recievables	44,3	50,6	51,5	56,1	58,1	60,1
Derivative financial items	122,6	383,8	231,9	78,1	16,7	744,4
Capitalized Lease	668,5	680,4	634,9	687,4	710,5	765,8
Current assets	**918,5**	**1217,4**	**995,3**	**892**	**913,1**	**1711,9**
Total operating assets	**5302,3**	**6221,8**	**5970,6**	**5850,2**	**6020,6**	**7784,3**
Provision	102,9	89,6	103,2	135,9	133,9	180,8
Deferred tax	199,6	267,7	319,4	346,5	368,6	462,3
Derivative financial instruments	35,4	8,3	53,6	50,1	43,2	73,4
Total non-current operating liabilities	337,9	365,6	476,2	532,5	545,7	716,5
Trade and other payables	154,0	150,8	181,2	138,3	150,0	196,5
Accrued expenses and other liabilities	1.088,2	1224,3	1237,2	1341,4	1561,2	1938,2
Current tax	0,9	0	0	0,3	0	0
Derivative financial instruments	41	125,4	28,2	31,8	95,4	811,7
Total current operating liabilities	1.284,1	1.500,5	1.446,6	1.511,8	1.806,6	2.946,4
Total operating liabilities	**1.622,0**	**1.866,1**	**1.922,8**	**2.044,3**	**2.352,3**	**3.662,9**
Invested capital	**3.680**	**4.356**	**4.048**	**3.806**	**3.668**	**4.121**
Average invested capital		4018	4201,75	3926,85	3737,1	3894,85

Appendix 13: Ryanair reformulated Balance sheet, financial

Ryanair: Reformulated balance sheet - Financial						
mEUR	2010	2011	2012	2013	2014	2015
LIABILITIES						
Capitalized lease	668,5	680,4	634,9	687,4	710,5	765,8
Current maturities of debt	265,5	336,7	368,4	399,9	467,9	399,6
Non-current maturites of debt	2690,7	3312,7	3256,6	3098,4	2615,7	4032
Other creditors	136,6	126,6	146,3	127,8	90,4	55,8
Total financing liabilities	**3761,3**	**4456,4**	**4406,2**	**4313,5**	**3884,5**	**5253,2**
ASSETS						
Financial asset available for sale (no-current)	116,2	114	149,7	221,2	260,3	371
Restricted cash	67,8	42,9	35,1	24,7	13,3	6,7
Financial assets: cash	1267,7	869,4	772,2	2293,4	1498,3	3604,6
Cash and cash equivalents	1477,9	2028,3	2708,3	1240,9	1730,1	1184,6
Total financing assets	**2929,6**	**3054,6**	**3665,3**	**3780,2**	**3502**	**5166,9**
EQUITY						
Share capital	9,4	9,5	9,3	9,2	8,8	8,7
Share premium	631,9	659,3	666,4	687,8	704,2	718,6
Retained earnings	2083,5	1967,6	2400,1	2418,6	2465,1	2706,2
Other recievables	123,3	317	230,2	156,2	106,5	600,3
Capital redemption	0,5	0,5	0,7	0,8	1,2	1,3
Equity	**2848,6**	**2953,9**	**3306,7**	**3272,6**	**3285,8**	**4035,1**
Net interst bearing debt	**831,7**	**1401,8**	**740,9**	**533,3**	**382,5**	**86,3**
Invested capital	**3680**	**4356**	**4048**	**3806**	**3668**	**4121**

Appendix 14: Capitalized lease – Peer group

CAPITALIZED LEASE NAS AND PEER GROUP

NAS - Capitalized Lease						
tNok	2010	2011	2012	2013	2014	2015
Capitalization rate	7	7	7	7	7	7
Lease Payment	778.411	829.667	1.032.915	1.284.395	1.845.940	2.213.300
Capitalized operational lease	5.448.877	5.807.669	7.230.405	8.990.765	12.921.580	15.493.100
Cost of Debt	7,81%	7,81%	7,81%	7,81%	7,81%	7,81%
Depreciations on capital lease	352.701	375.925	468.018	581.964	836.402	1.002.854
Interest on capitalized lease	425.710	453.742	564.897	702.431	1.009.538	1.210.446

SAS - Capitalized Lease						
mSEK	2010	2011	2012	2013	2014	2015
Capitalization rate	7	7	7	7	7	7
Lease Payment	1.815	1.560	1.598	1.786	2.127	2.593
Capitalized operational lease	12.705	10.920	11.186	12.502	14.889	18.151
Cost of Debt	5,10%	5,10%	5,10%	5,10%	5,10%	5,10%
Depreciations on capital lease	1.167	1.003	1.028	1.148	1.368	1.667
Interest on capitalized lease	648	557	570	638	759	926

easyJet - Capitalized Lease						
mGDP	2010	2011	2012	2013	2014	2015
Capitalization rate	7	7	7	7	7	7
Lease Payment	116	109	95	102	124	114
Capitalized operational lease	810	763	665	714	868	798
Cost of Debt	2,39%	2,39%	2,39%	2,39%	2,39%	2,39%
Depreciations on capital lease	96	91	79	85	103	95
Interest on capitalized lease	19	18	16	17	21	19

Ryanair - Capitalized Lease						
tEUR	2010	2011	2012	2013	2014	2015
Capitalization rate	7	7	7	7	7	7
Lease Payment	95.500	97.200	90.700	98.200	101.500	109.400
Capitalized operational lease	668.500	680.400	634.900	687.400	710.500	765.800
Cost of Debt	2,10%	2,10%	2,10%	2,10%	2,10%	2,10%
Depreciations on capital lease	81.442	82.892	77.349	83.745	86.559	93.296
Interest on capitalized lease	14.058	14.308	13.351	14.455	14.941	16.104

Appendix 15: NAS – Cost of debt 2015

Synthetic Rating Estimation Norwegian Air Shuttle ASA 2015	
Current Earnings before interest and taxes (EBIT)	347,8
Current interest expenses	349,7
10-Year Norwegian government bond (per. 01.04.2016)	1,26%
Operating lease expense in 2015	2213,3
Capitalization factor Aviation	7
= Debt Value of leases	15493,1
Interest on capitalized lease 2014	1589,59206
Depreciation on leased asset 2014	623,70794
Output	
Interest coverage ratio =	**0,999020261**
Estimated Bond rating =	**CCC**
Estimated Default spread =	**9,00%**
Estimated Cost of Debt =	**10,26%**

Spreads over US treasuries by bond rating, Jan. 2016

>	≤ to	Rating is	Spread is
-100000	0,2	D	20,00%
0,2	0,65	C	16,00%
0,65	0,8	CC	12,00%
0,8	1,25	CCC	9,00%
1,25	1,5	B-	7,50%
1,5	1,75	B	6,50%
1,75	2	B+	5,50%
2	2,25	BB	4,25%
2,25	2,49999	BB+	3,25%
2,5	3	BBB	2,25%
3	4,25	A-	1,75%
4,25	5,5	A	1,25%
5,5	6,5	A+	1,10%
6,5	8,5	AA	1,00%
8,50	100000	AAA	0,75%

Source: Damodaran

NAS - Effective borrowing rates				
mNOK				
Loan Cla	ominal Value	Weights	nterest rate	Weighted interest rate
Bond issue	3221,6	0,1645	6,50%	1,07%
Facility agreement	1477,2	0,0754	4,50%	0,34%
Aircraft financing	14886	0,7601	3,30%	2,51%
Total	19585			3,92%
Pre-tax Cost of Debt				**5,37%**

Average of the two methods **7,81%**

Appendix 16: SAS –Cost of debt 2015

Synthetic Rating Estimation SAS ASA 2015	
Current Earnings before interest and taxes (EBIT)	2225,00
Current interest expenses	632
10-Year Swedish government bond (per 01.04.2016)	0,363%
Operating lease expense in 2015	2593
Capitalization factor Aviation	7
= Debt Value of leases	18151
Interest on capitalized lease 2014	1064,2167
Depreciation on leased asset 2014	1528,7833
Output	
Interest coverage ratio =	**1,93915**
Estimated Bond rating =	**B+**
Estimated Default spread =	**5,50%**
Estimated Cost of Debt =	**5,86%**

Spreads over US treasuries by bond rating, Jan. 2016

>	≤ to	Rating is	Spread is
-100000	0,2	D	20,00%
0,2	0,65	C	16,00%
0,65	0,8	CC	12,00%
0,8	1,25	CCC	9,00%
1,25	1,5	B-	7,50%
1,5	1,75	B	6,50%
1,75	2	B+	5,50%
2	2,25	BB	4,25%
2,25	2,49999	BB+	3,25%
2,5	3	BBB	2,25%
3	4,25	A-	1,75%
4,25	5,5	A	1,25%
5,5	6,5	A+	1,10%
6,5	8,5	AA	1,00%
8,50	100000	AAA	0,75%

Source: Damodaran

SAS - Effective borrowing rates				
mSEK				
Loan Clasal Value		Weights	Eff. Interest rate	Weighted interest rate
Financial Lease lia	837	0,1548	3,24%	0,50%
Convertible bonds	1358	0,2511	3,63%	0,91%
Other loans	3213	0,5941	3,28%	1,95%
Total	5408			3,36%
Pre-tax Cost of Debt				4,34%

Average of the two methods 5,10%

Appendix 17: EasyJet – Cost of debt 2015

Synthetic Rating Estimation EasyJet 2015	
Current Earnings before interest and taxes (EBIT)	688
Current interest expenses	11
10-Year UK government bond (per. 01.04.2016)	1,55%
Operating lease expense in 2014	114
Capitalization factor Aviation	7
= Debt Value of leases	798
Interest on capitalized lease 2014	18,354
Deprication on leased asset 2014	95,646
Output	
Interest coverage ratio =	**24,063**
Estimated Bond rating =	**AAA**
Estimated Default spread =	**0,75%**
Estimated Cost of Debt =	**2,30%**

Spreads over US treasuries by bond rating, Jan. 2016

>	≤ to	Rating is	Spread is
-100000	0,2	D	20,00%
0,2	0,65	C	16,00%
0,65	0,8	CC	12,00%
0,8	1,25	CCC	9,00%
1,25	1,5	B-	7,50%
1,5	1,75	B	6,50%
1,75	2	B+	5,50%
2	2,25	BB	4,25%
2,25	2,49999	BB+	3,25%
2,5	3	BBB	2,25%
3	4,25	A-	1,75%
4,25	5,5	A	1,25%
5,5	6,5	A+	1,10%
6,5	8,5	AA	1,00%
8,50	100000	AAA	0,75%

Source: Damodaran

easyJet- Effective borrowing rates				
mGDP				
Loan Classification inal Value		Weights Eff. Interest rate	Weighted interest rate	
Bank loans	316	0,6270	1,58%	0,99%
Financial Lease	188	0,3730	2,66%	0,99%
Total	504			1,98%
Pre-tax Cost of Debt				2,48%

Average of the two methods 2,39%

Appendix 18: Ryanair – Cost of debt 2015

Synthetic Rating Estimation Ryanair 2015	
Current Earnings before interest and taxes (EBIT)	1.042,9
Current interest expenses	83,2
10-Year Ireland government bond (per. 01.04.2016)	0,847%
Operating lease expense in 2014	109,4
Capitalization factor Aviation	7
= Debt Value of leases	766
Interest on capitalized lease 2014	12
Depreciation on leased asset 2014	97
Output	
Interest coverage ratio =	**11,1**
Estimated Bond rating =	**AAA**
Estimated Default spread =	**0,75%**
Estimated Cost of Debt =	**1,6%**

Spreads over US treasuries by bond rating, Jan. 2016

>	≤ to	Rating is	Spread is
-100000	0,199999	D	20,00%
0,2	0,649999	C	16,00%
0,65	0,799999	CC	12,00%
0,8	1,249999	CCC	9,00%
1,25	1,499999	B-	7,50%
1,5	1,749999	B	6,50%
1,75	1,999999	B+	5,50%
2	2,25	BB	4,25%
2,25	2,49999	BB+	3,25%
2,5	2,999999	BBB	2,25%
3	4,249999	A-	1,75%
4,25	5,499999	A	1,25%
5,5	6,499999	A+	1,10%
6,5	8,499999	AA	1,00%
8,50	100000	AAA	0,75%

Source: Damodaran

easyJet- Effective borrowing rates				
mEUR				
Loan Clanal Value		Weights Eff. Interest rate		Weighted interest rate
Long-term debt af	544,7	0,2247	2,70%	0,61%
Financial Leases	1002,9	0,4138	3,36%	1,39%
Total floating rate	876,1	0,3615	0,79%	0,29%
Total	2423,7			2,28%
Pre-tax Cost of Debt				2,61%

Average of the two methods 2,10%

Appendix 19: NAS – Cost of debt 2010-2014

Norwegian 2010 - Effective borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Bond issue	597368	0,2404	8,60%	2,07%
Facility agreement	367187	0,1478	2,50%	0,37%
Aircraft financing	1319509	0,5310	4,50%	2,39%
Loan facility	175845	0,0708	4,50%	0,32%
Financial lease lia	24973	0,0100	5,60%	0,06%
Total	2484882	1		**5,20%**
Pre-tax				**7,12%**

Norwegian 2011 - Effective borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Bond issue	598708	0,1409	8,80%	1,24%
Facility agreement	648004	0,1525	3,10%	0,47%
Aircraft financing	2858250	0,6725	4,00%	2,69%
Loan facility	124873	0,0294	4,60%	0,14%
Financial lease lia	20456	0,0048	5,60%	0,03%
Total	4250291	1		**4,56%**
Pre-tax				**6,34%**

Norwegian 2012 - Effective borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Bond issue	588948,14	0,104011654	7,50%	0,78%
Facility agreement	929955,79	0,16423558	6,81%	1,12%
Aircraft financing	3893673,68	0,68764533	3,10%	2,13%
Loan facility	97932,07	0,017295371	3,80%	0,07%
Financial lease lia	151818,72	0,026812066	5,90%	0,16%
Total	5662328,4	1		**4,25%**
Pre-tax				**5,91%**

Norwegian 2013 - Effective borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Bond issue	593871	0,091194208	6,90%	0,00629
Facility agreement	147086	0,022586372	8,60%	0,00194
Aircraft financing	5689747	0,873711583	3,30%	0,02883
Loan facility	70978	0,010899307	3,50%	0,00038
Financial lease lia	10475	0,00160853	4,90%	0,00008
Total	6512157	1		**3,75%**
Pre-tax				**5,14%**

Norwegian 2014 - Effective borrowing rate				
Loan Classification	Nominal Value	Weights	Eff. Interest rate	Weighted interest rate
Bond issue	830816	0,0625	6,40%	0,40%
Facility agreement	2567931	0,1931	4,10%	0,79%
Aircraft financing	9877287	0,7428	3,50%	2,60%
Financial Lease lia	20456	0,0015	4,40%	0,01%
Total	13296490			**3,80%**
Pre-tax Cost of Debt				**5,20%**

	Synthetic Rating Estimation				
	2014	2013	2012	2011	2010
	-1.411,0	970,0	404,0	416,0	210,0
	447,241	256,7	118,85	70,246	40,159
	2,84%	2,12%	2,31%	3,86%	3,90%
	1845,94	1284,4	1032,9	829,67	778,41
	7	7	7	7	7
	12921,58	8990,8	7230,4	5807,7	5448,9
	2434,425672	775	709,3	659,75	702,91
	-588,485672	509,39	323,61	169,92	75,506
Interest coverage ratio =	**0,355150608**	**1,6914**	**1,3443**	**1,4736**	**1,2286**
Estimated Bond rating =	**C**	**B**	**B-**	**B-**	**CCC**
Estimated Default spread =	**16,00%**	**6,50%**	**7,50%**	**7,50%**	**9,00%**
Estimated Cost of Debt =	**18,84%**	**8,62%**	**9,81%**	**11,36%**	**12,90%**

	Effective borrowing rates				
	5,20%	5,14%	5,91%	6,34%	7,12%
Average	12,02%	6,88%	7,86%	8,85%	10,01%

Appendix 20: SAS – Cost of debt 2010-2014

SAS - Effective borrowing rate 2011				
Loan classification	Nominal value	Weights	Eff. Rent	Weighted interest rate
Financial lease	2076	0,2550682	1,54%	0,39%
Convertible bonds	1649	0,2026047	7,50%	1,52%
Other loans	4414	0,5423271	3,16%	1,71%
Total	8139	1		**3,63%**
Pre-tax				**4,68%**

SAS Effective borrowing rate 2012				
Loan classification	Nominal value	Weights	Eff. Rent	Weighted interest rate
Financial lease	1079	0,1522936	1,78%	0,27%
Convertible bonds	1625	0,2293578	7,50%	1,72%
Other loans	4381	0,6183486	3,29%	2,03%
Total	7085	1		**4,03%**
Pre-tax				**5,19%**

SAS 2013 - Effective borrowing rate				
Loan classification	Nominal value	Weights	ff. Interest rat	Weighted interest rate
Financial Lease liabilit	627	0,1036	1,62%	0,17%
Convertible bonds	1627	0,2688	7,50%	2,02%
Other loans	3799	0,6276	3,32%	2,08%
Total	6053	1		**4,27%**
Pre-tax				**5,51%**

SAS 2014 - Effective borrowing rate				
Loan classification	Nominal value	Weights	ff. Interest rat	Weighted interest rate
Financial Lease liabilit	505	0,0834	1,48%	0,12%
Convertible bonds	2684	0,4432	5,56%	2,46%
Other loans	2867	0,4734	3,19%	1,51%
Total	6056	1		**4,10%**
				5,29%

Synthetic rating estimation					
	2014	2013	2012	2011	2010
	152,02	1688,00	867,00	952,00	595,00
	1130	999	1055	1030	1041
	2,031 %	1,686 %	1,772 %	3,271 %	2,460 %
	2127	1786	1342	1560	1815
	7	7	7	7	7
	14889	12502	9394	10920	12705
	2089,0756	1148,43372	1011,9217	1339,9932	1455,993
	37,92441	637,56628	330,07832	220,0068	359,007
Interest coverage ratio =	**0,696**	**1,321**	**0,909**	**0,967**	**0,821**
Estimated Bond rating =	**CC**	**B-**	**CCC**	**CCC**	**CCC**
Estimated Default spre	**12,00%**	**7,50%**	**9,00%**	**9,00%**	**9,00%**
Estimated Cost of Debt =	**14,03%**	**9,19%**	**10,77%**	**12,27%**	**11,46%**
Effective borrowing rates					
	5,29%	5,51%	5,19%	4,68%	
Average	9,66%	7,35%	7,98%	8,47%	11,46%

Appendix 21: EasyJet – Cost of debt 2010-2014

EasyJet 2010 - Effective borrowing rate				
Loan classification	Nominel value	Weights	Eff. Interest rate	Weighted interest rate
Bank loans	1057	0,8721	1,99%	1,73%
Financial lease obligation	155	0,1134	1,94%	0,22%
Total	1212	1		**1,95%**
Pre-tax				**2,44%**

EasyJet 2011 - Effective borrowing rate				
Loan classification	Nominel value	Weights	Eff. Interest rate	Weighted interest rate
Bank loans	1079	0,83	1,85%	1,54%
Financial lease obligation	221	0,17	2,26%	0,38%
Total	1300	1		**1,92%**
Pre-tax				**2,40%**

EasyJet 2012 - Effective borrowing rate				
Loan classification	Nominel value	Weights	Eff. Interest rate	Weighted interest rate
Bank loans	752	0,7858	2,66%	2,09%
Financial lease obligation	205	0,2142	2,44%	0,52%
Total	957	0,5		**2,61%**
Pre-tax				**3,27%**

EasyJet 2013 - Effective borrowing rate				
Loan classification	Nominel value	Weights	Eff. Interest rate	Weighted interest rate
Bank loans	484	0,7128	1,86%	1,33%
Financial lease obligation	195	0,2872	2,56%	0,74%
Total		1		**2,06%**
Pre-tax				**2,58%**

EasyJet 2014 - Effective borrowing rate				
Loan Classification	Nominal Value	Weights	Eff. Interest rate	Weighted interest rate
Bank loans	377	0,6696	1,59%	1,07%
Financial Lease	186	0,3304	2,69%	0,89%
Total	563	1		**1,95%**
Pre-tax Cost of Debt				**2,44%**

Synthetic Rating Estimation					
	2014	2013	2012	2011	2010
	581	497	331	269	174
	11	24	25	30	27
	2,35%	1,75%	3,26%	3,74%	3,84%
	124	102	95	109	116
	7	7	7	7	7
	868	714	665	763	812
	26,891	17,821	28,342	38,074	45,383
	97,109	84,179	66,658	70,926	70,617
Interest coverage ratio =	**16,043**	**12,31**	**6,7365**	**4,5109**	**3,0309**
Estimated Bond rating =	**AAA**	**AAA**	**AA**	**A**	**A-**
Estimated Default spread =	**0,75%**	**0,75%**	**1,00%**	**1,25%**	**1,75%**
Estimated Cost of Debt =	**3,10%**	**2,50%**	**4,26%**	**4,99%**	**5,59%**

Effective Borrowing Rates					
	2,44%	2,58%	3,27%	2,40%	2,44%
Average	2,77%	2,54%	3,76%	3,70%	4,01%

Appendix 22: Ryanair – Cost of Debt 2010-2014

Ryanair 2010 - Effective Borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Long-term debt after SWAI	1447,9	0,489784182	4,06%	1,99%
Financial Leases	191,7	0,064846763	2,63%	0,17%
Floating rate debt	1316,6	0,445369055	1,35%	0,60%
Total	2956,2	1		**2,76%**
Pre-tax				**3,15%**

Ryanair 2011 - Effective Borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Long-term debt after SWAI	1757	0,481449005	3,81%	1,83%
Financial Leases	286,6	0,078533458	2,80%	0,22%
Floating rate debt	1605,8	0,440017537	1,86%	0,82%
Total	3649,4	1		**2,87%**
Pre-tax				**3,28%**

Ryanair 2012 - Effective Borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Long-term debt after SWAI	2016,3	0,56	3,59%	2,00%
Financial Leases	294,2	0,08	2,81%	0,23%
Floating rate debt	1314,7	0,36	1,85%	0,67%
Total	3625,2	1		**2,90%**
Pre-tax				**3,31%**

Ryanair 2013 - Effective Borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Long-term debt after SWAI	2016,8	0,57650859	3,36%	1,94%
Financial Leases	301,8	0,086270474	2,81%	0,24%
Floating rate debt	1179,7	0,337220936	0,95%	0,32%
Total	3498,3	1		**2,50%**
Pre-tax				**2,86%**

Ryanair 2014 - Effective Borrowing rate				
Loan classification	Nominal value	Weights	Eff. Interest rate	Weighted interest rate
Long-term debt after SWAI	635,7	0,229147142	3,79%	0,87%
Financial Leases	1098,9	0,396114195	2,81%	1,11%
Floating rate debt	1039,6	0,374738663	1,03%	0,39%
Total	2774,2	1		**2,37%**
Pre-tax				**2,71%**

Syntetic Rating Estimation					
	2014	2013	2012	2011	2010
	658,6	718,2	617,9	488,2	402,1
	83,2	99,3	109,2	93,9	72,1
	0,029	0,038	0,069	0,098	0,048
	101,5	98,2	90,7	97,2	95,5
	7	7	7	7	7
	711	687	635	680	669
	28	34	55	79	44
	73	65	36	19	52
Interest coverage ratio =	**6,2**	**5,7**	**4,1**	**3,3**	**3,9**
Estimated Bond rating =	**A+**	**A+**	**A-**	**A-**	**A-**
mated Default spread =	**1,10%**	**1,10%**	**1,75%**	**1,75%**	**1,75%**
stimated Cost of Debt =	**4,0%**	**4,9%**	**8,6%**	**11,5%**	**6,5%**

Effective borrowing rates				
2,71%	2,86%	3,31%	3,28%	3,15%

Average	3,35%	3,87%	5,97%	7,41%	4,83%

Appendix 23: NAS – Altman Z-Score & Synthetic rating

NAS						
	2010	2011	2012	2013	2014	2015
X1						
Working Capital	-424.476	-1.490.068	-1.938.341	-2.816.417	-5.169.915	-5.624.012
Total assets	6.620.549	9.003.864	11.919.058	14.762.744	22.706.348	31.634.113
X2						
Retained earnings	170.884	122.065	456.643	321.561	-1.069.762	246.100
Total assets	6.620.549	9.003.864	11.919.058	14.762.744	22.706.348	31.634.113
X3						
EBIT	210.169	415.934	403.452	969.658	-1.410.538	347.750
Total assets	6.620.549	9.003.864	11.919.058	14.762.744	22.706.348	31.634.113
X4						
Market value E	4.078.439	1.913.223	5.025.674	6.617.515	9.711.783	11.575.395
Book value D	6.730.420	8.664.109	10.952.559	12.969.770	24.127.781	32.628.145
X5						
Sales	8.406.339	10.528.660	12.841.191	15.511.218	19.540.039	22.491.100
Total assets	6.730.420	8.664.109	10.952.559	12.969.770	22.706.348	31.634.113

	X1	X2	X3	X4	X5	Z-Score	Syntethic rating
NAS 2010	-0,06	0,03	0,03	0,61	1,25	1,68	CCC
NAS 2011	-0,17	0,01	0,05	0,22	1,22	1,32	B-
NAS 2012	-0,16	0,04	0,03	0,46	1,17	1,42	B-
NAS 2013	-0,19	0,02	0,07	0,51	1,20	1,52	B
NAS 2014	-0,23	-0,05	-0,06	0,40	0,86	0,56	C
NAS 2015	-0,18	0,01	0,01	0,35	0,71	0,76	CCC

Appendix 24: SAS – Altman Z-Score & Synthetic rating

SAS						
	2010	2011	2012	2013	2014	2015
X1						
Working Capital	-12.777	-12.158	-12.800	-13.053	-13.684	-13.307
Total assets	41.825	39.185	36.754	35.628	29.325	30.266
X2						
Retained earnings	-2.218	-1.687	-2.515	1.358	-719	956
Total assets	41.825	39.185	36.754	35.628	29.325	30.266
X3						
EBIT	-1.939	646	-286	1.381	1.282	2.225
Total assets	41.825	39.185	36.754	35.628	29.325	30.266
X4						
Market value E	7.435	3.027	2.287	6.300	5.034	5.494
Book value D	24.636	24.288	22.131	24.062	25.729	27.927
X5						
Sales	41.070	41.412	42.354	42.182	38.006	39.650
Total assets	41.825	39.185	36.754	35.628	29.325	30.266

	X1	X2	X3	X4	X5	Z-Score	Syntethic rating
SAS 2010	-0,31	-0,05	-0,05	0,30	0,98	0,57	CCC
SAS 2011	-0,31	-0,04	0,02	0,12	1,06	0,75	CCC
SAS 2012	-0,35	-0,07	-0,01	0,10	1,15	0,67	CCC
SAS 2013	-0,37	0,04	0,04	0,26	1,18	1,08	B-
SAS 2014	-0,47	-0,02	0,04	0,20	1,30	0,96	CC
SAS 2015	-0,44	0,03	0,07	0,20	1,31	1,19	B+

Appendix 25: EasyJet – Altman Z-Score & Synthetic rating

easyJet						
	2010	2011	2012	2013	2014	2015
X1						
Working Capital	450	561	63	69	-159	-489
Total assets	4.003	4.469	4.295	4.412	4.482	4.828
X2						
Retained earnings	115	225	255	398	450	548
Total assets	4.003	4.469	4.295	4.412	4.482	4.828
X3						
EBIT	174	269	332	497	581	688
Total assets	4.003	4.469	4.295	4.412	4.482	4.828
X4						
Market value E	1.566	1.464	2.206	4.794	5.452	6.803
Book value D	2.022	2.063	1.622	1.393	1.431	1.302
X5						
Sales	2.973	3.452	3.854	4.258	4.527	4.686
Total assets	4.003	4.469	4.295	4.412	4.482	4.828

	X1	X2	X3	X4	X5	Z-Score	Syntethic rating
easyJet 2010	0,11	0,03	0,04	0,77	0,74	1,53	A-
easyJet 2011	0,13	0,05	0,06	0,71	0,77	1,62	A
easyJet 2012	0,01	0,06	0,08	1,36	0,90	2,07	AA
easyJet 2013	0,02	0,09	0,11	3,44	0,97	3,55	AAA
easyJet 2014	-0,04	0,10	0,13	3,81	1,01	3,82	AAA
easyJet 2015	-0,10	0,11	0,14	5,22	0,97	4,61	AAA

Appendix 26: Ryanair – Altman Z-Score & Synthetic rating

Ryanair						
	2010	2011	2012	2013	2014	2015
X1						
Working Capital	1513,8	1640,4	2061	1851,9	1169,8	937,7
Total assets	7563	8596	9001	8943	8812,1	12185,4
X2						
Retained earnings	304	387	560	569	523	867
Total assets	7563	8596	9001	8943	8812,1	12185,4
X3						
EBIT	402,1	488,2	683,2	718,2	658,6	1042,9
Total assets	7563	8596	9001	8943	8812,1	12185,4
X4						
Market value E	5.500	5.149	6.271	8.534	9.662	15.430
Book value D	3.857	4.554	4.497	4.412	3.986	5.253
X5						
Sales	2988,1	3629,5	4390	4884	5036,7	5654
Total assets	7563	8596	9001	8943	8812,1	12185,4

	X1	X2	X3	X4	X5	Z-Score	Syntethic rating
Ryanair 2010	0,20	0,04	0,05	1,43	0,40	1,72	A-
Ryanair 2011	0,19	0,05	0,06	1,13	0,42	1,58	A-
Ryanair 2012	0,23	0,06	0,08	1,39	0,49	1,94	A-
Ryanair 2013	0,21	0,06	0,08	1,93	0,55	2,31	A+
Ryanair 2014	0,13	0,06	0,07	2,42	0,57	2,51	A+
Ryanair 2015	0,08	0,07	0,09	2,94	0,46	2,70	AAA

Appendix 27: Capital structure – Peer group

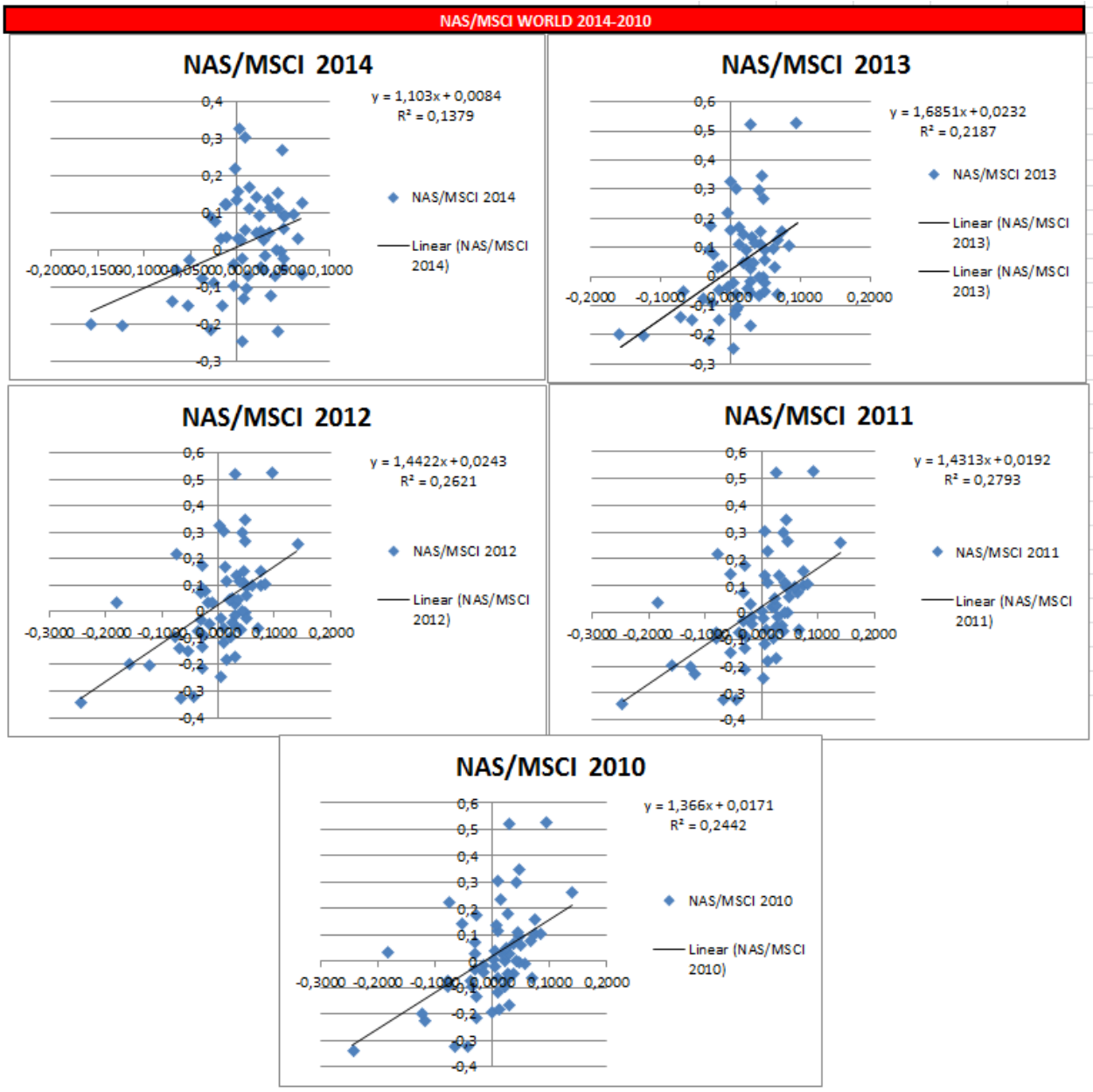
NAS - Debt ratio							
	2010	2011	2012	2013	2014	2015	
Shares outstanding	34.272.595	34.628.464	34.924.769	35.162.139	35.162.139	35.759.639	
Share price 31.12	119,00	55,25	143,90	188,20	276,20	323,70	
Market value equity	4.078.438.805	1.913.222.636	5.025.674.259	6.617.514.560	9.711.782.792	11.575.395.144	
Book value debt	6.730.420.000	8.664.109.000	10.952.559.000	12.969.770.000	24.127.781.000	32.628.145.000	
Sum (Equity + debt)	10.808.858.805	10.577.331.636	15.978.233.259	19.587.284.560	33.839.563.792	44.203.540.144	Average
Debt ratio = debt /(D + market value E)	62,27%	81,91%	68,55%	66,22%	71,30%	73,81%	70,7%

SAS - Debt ratio							
	2010	2011	2012	2013	2014	2015	
Shares outstanding	329.000.000	329.000.000	329.000.000	329.000.000	329.000.000	329.000.000	
Share price 31.10	22,60	9,20	6,95	19,15	15,30	16,70	
Market value equity	7.435.400.000	3.026.800.000	2.286.550.000	6.300.350.000	5.033.700.000	5.494.300.000	
Book value debt	24.636.000.000	24.288.000.000	22.131.000.000	24.062.000.000	25.729.000.000	27.927.000.000	
Sum (Equity + debt)	32.071.400.000	27.314.800.000	24.417.550.000	30.362.350.000	30.762.700.000	33.421.300.000	Average
Debt ratio = debt /(D + market value E)	76,82%	88,92%	90,64%	79,25%	83,64%	83,56%	83,8%

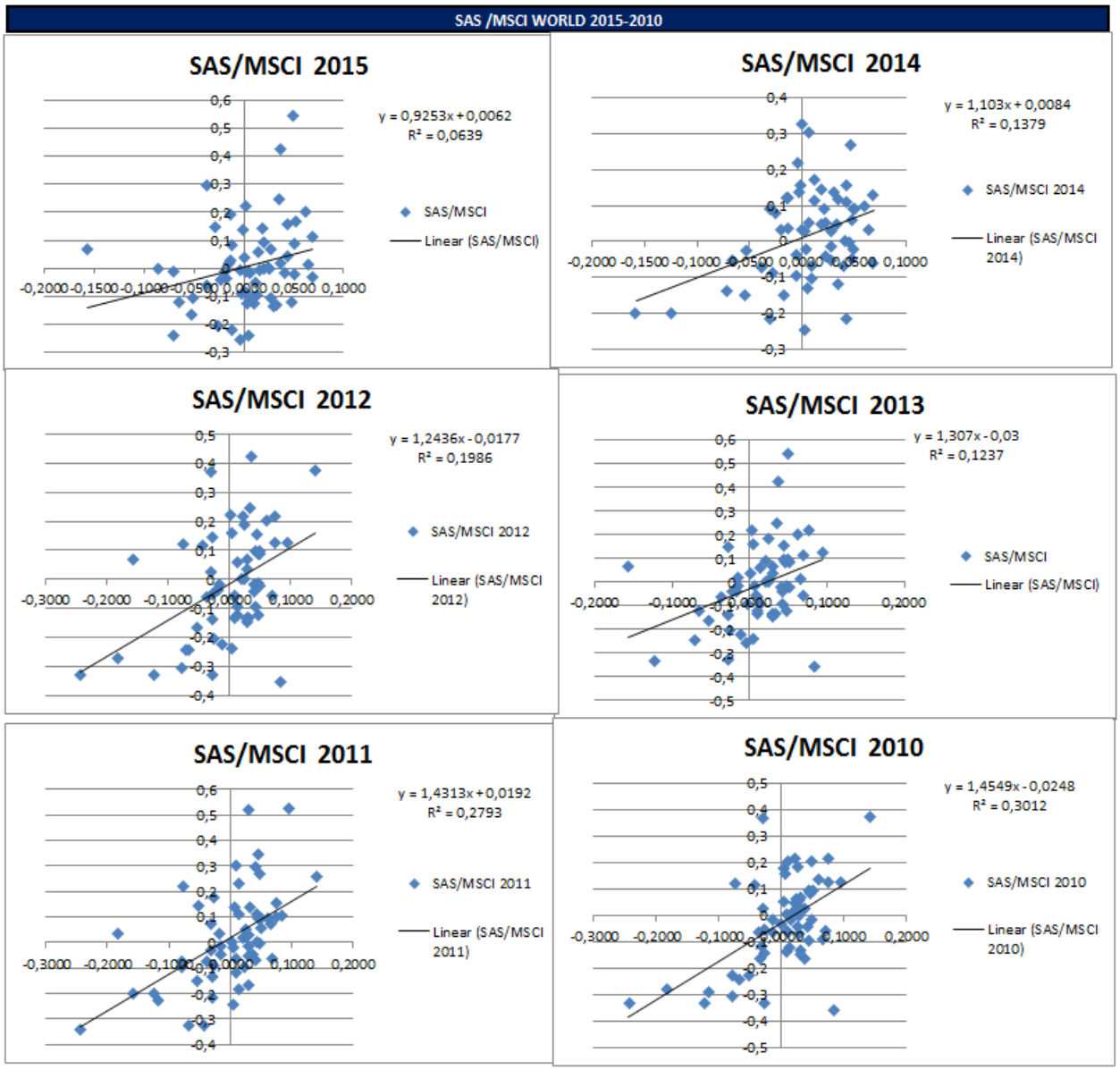
easyJet - Debt ratio							
	2010	2011	2012	2013	2014	2015	
Shares outstanding	426.500.000	429.000.000	408.000.000	393.000.000	393.000.000	397.208.000	
Share price 30.09	3,6715	3,41	5,41	12,20	13,87	17,1265	
Market value equity	1.565.894.750	1.464.348.600	2.206.464.000	4.793.853.300	5.452.364.100	6.802.782.812	
Book value debt	2.021.900.000	2.063.000.000	1.622.000.000	1.393.000.000	1.431.000.000	1.302.000.000	
Sum (Equity + debt)	3.587.794.750	3.527.348.600	3.828.464.000	6.186.853.300	6.883.364.100	8.104.782.812	Average
Debt ratio = debt /(D + market value E)	56,35%	58,49%	42,37%	22,52%	20,79%	16,06%	36,1%

Ryainair - Debt ratio							
	2010	2011	2012	2013	2014	2015	
Shares outstanding	1.476.400.000,0	1.485.700.000,0	1.473.700.000,0	1.443.100.000,0	1.414.600.000,0	1377661859	
Share price 31.03	3,73	3,47	4,26	5,91	6,83	11,2	
Market value equity	5.499.590.000	5.149.436.200	6.270.593.500	8.534.493.400	9.661.718.000	15.429.812.821	
Book value debt	3.856.800.000	4.553.600.000	4.496.900.000	4.411.700.000	3.986.000.000	5.253.200.000	
Sum (Equity + debt)	9.356.390.000	9.703.036.200	10.767.493.500	12.946.193.400	13.647.718.000	20.683.012.821	Average
Debt ratio = debt /(D + market value E)	41,22%	46,93%	41,76%	34,08%	29,21%	25,40%	36,4%

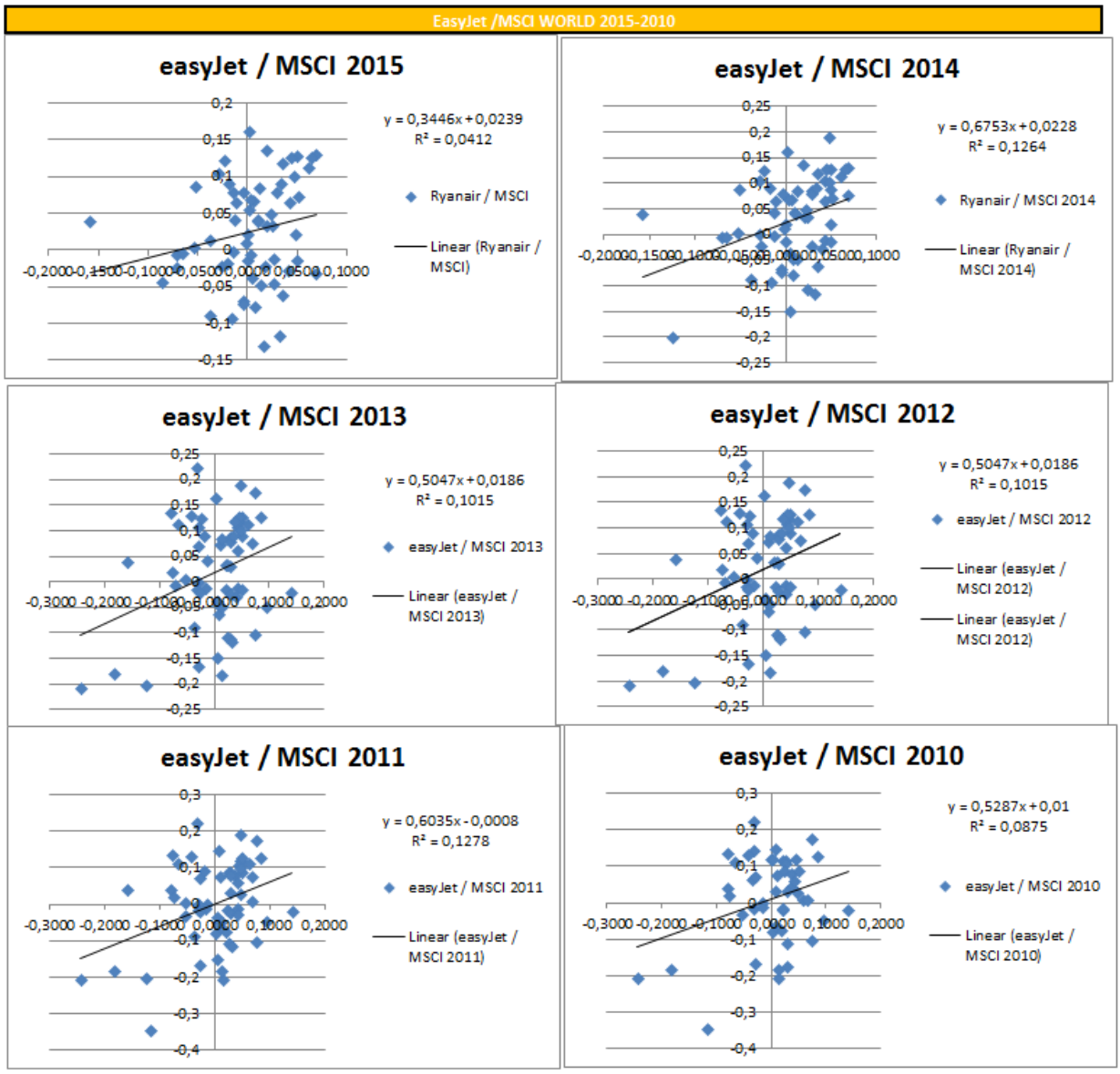
Appendix 28: NAS - Historical beta regression 2010-2014



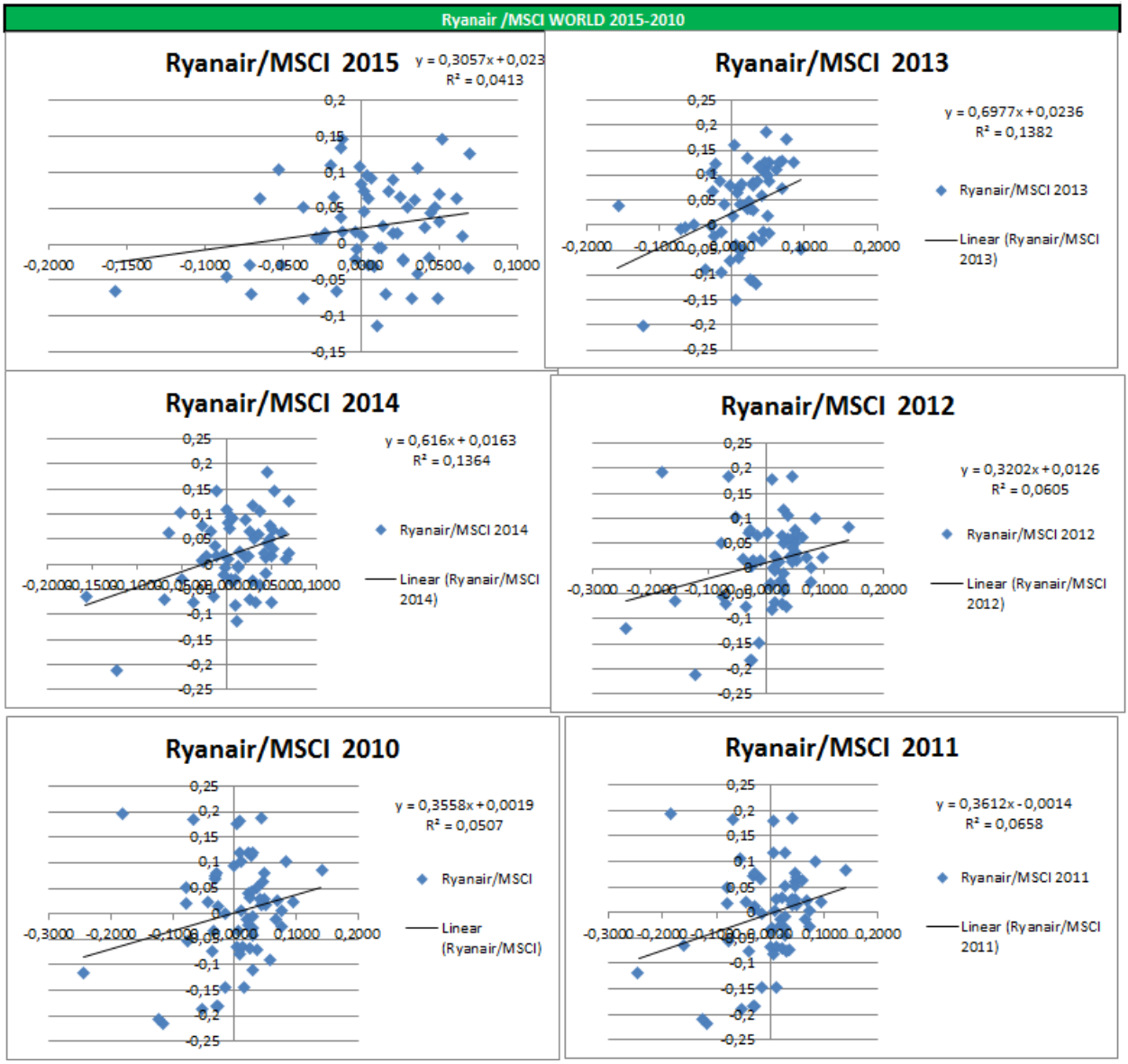
Appendix 29: SAS – Historical beta regression 2010-2015



Appendix 30: EasyJet – Historical beta regression 2010-2015



Appendix 31: Ryanair – Historical beta regression 2010-2015



Appendix 32: NAS – Forecast income statement value drivers

Forecasted Income Statement Value Drivers																	
Historical								Detailed forecast							Simplified forecast		
	2010	2011	2012	2013	2014	2015	Average	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
ASK	17804	21958	25920	34318	46479	49028	32585	58834	70600	84720	101664	121997	143401	154061	154061	154061	154061
no of planes	57	62	68	85	95	99		120	155	177	203	230	252	278	278	278	278
leased	45	42	40	49	47	45		45	46	44	44	44	44	44	44	44	44
owned	12	20	28	36	48	54		75	109	133	159	186	208	234	234	234	234
ASK pr plane	312	354	381	399	489	495	405	490	455	479	501	530	569	554	554	554	554
Yield	0,6103	0,6044	0,6309	0,5770	0,5195	0,5339	0,5793	0,5270	0,5201	0,5134	0,5068	0,5002	0,4937	0,4885	N/A	N/A	N/A
Load factor	0,7736	0,7934	0,7852	0,7833	0,8093	0,8593	0,8007	0,8368	0,8307	0,8283	0,8244	0,8246	0,8233	0,8221	N/A	N/A	N/A
RASK	0,4722	0,4795	0,4954	0,4520	0,4204	0,4587	0,4630	0,4410	0,4321	0,4252	0,4178	0,4125	0,4065	0,4016	N/A	N/A	N/A
Sale and distribution cost/ASK	0,0094	0,0091	0,0106	0,0099	0,0101	0,0121	0,0102	0,0102	0,0102	0,0102	0,0102	0,0102	0,0102	0,0102	2,5%	2,5%	2,5%
Fuel cost /ASK	0,1175	0,1409	0,1443	0,1372	0,1360	0,1057	0,1303	0,0900	0,0951	0,0960	0,0965	0,0965	0,0982	0,1111	2,5%	2,5%	2,5%
Airport charges / ASK	0,0728	0,0711	0,0668	0,0636	0,0586	0,0602	0,0655	0,0608	0,0608	0,0608	0,0608	0,0608	0,0608	0,0608	2,5%	2,5%	2,5%
Handling charges/ASK	0,0485	0,0447	0,0416	0,0390	0,0399	0,0477	0,0436	0,0436	0,0436	0,0436	0,0436	0,0436	0,0436	0,0436	2,5%	2,5%	2,5%
Technical maintance/ASK	0,0392	0,0324	0,0306	0,0270	0,0278	0,0350	0,0320	0,0299	0,0298	0,0296	0,0295	0,0293	0,0292	0,0290	2,5%	2,5%	2,5%
Other operating expenses / ASK	0,0451	0,0417	0,0392	0,0386	0,0410	0,0430	0,0414	0,0408	0,0408	0,0408	0,0408	0,0408	0,0408	0,0408	2,5%	2,5%	2,5%
Payroll/employees (tNOK)	717	754	765	707	733	750	738	735	721	706	692	678	665	651	2,50%	2,50%	2,50%
ASK/employees	8331	9018	9582	9786	10624	10714	9676	11126	11555	12000	12462	12941	13440	13957	2,50%	2,50%	2,50%
Payroll/ASK	0,0860	0,0836	0,0798	0,0722	0,0690	0,0700	0,0768	0,0661	0,0624	0,0589	0,0555	0,0524	0,0495	0,0467	2,50%	2,50%	2,50%
Lease expenses/leased planes (mNOK)	17298	19754	25823	26212	39275	49184	29591	49184	49184	49184	49184	49184	49184	49184	49184	49184	49184
Depreciation/Tangible assets	0,037585	0,0405	0,039	0,04679	0,04109	0,04382	0,04146	0,041457	0,041457	0,0415	0,0415	0,0415	0,0415	0,0415	0,041	0,041	0,041
Amortization/Definitive Intangibles	0,336193	0,2937	0,4513	0,53909	0,60119	0,552471	0,46232	0,462325	0,462325	0,4623	0,4623	0,4623	0,4623	0,4623	0%	0%	0%

Appendix 33: NAS – Forecasted income statement

NAS - Forecasted Income Statement										
Amount in mNOK	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
Total Revenues	**25944**	**30504**	**36027**	**42472**	**50320**	**58290**	**61872**	**63446**	**65060**	**66715**
Sales and distribution cost	-600	-720	-864	-1037	-1245	-1463	-1572	-1611	-1651	-1693
Aviation fuel	-5297	-6716	-8130	-9808	-11776	-14078	-17120	-17548	-17986	-18436
Airport charges	-3576	-4292	-5150	-6180	-7416	-8717	-9365	-9599	-9839	-10085
Handling charges	-2563	-3076	-3691	-4429	-5315	-6247	-6712	-6880	-7052	-7228
Technical maintainance	-1761	-2103	-2511	-2998	-3579	-4186	-4475	-4587	-4702	-4819
Payroll	-3888	-4403	-4986	-5646	-6394	-7092	-7190	-7370	-7554	-7743
Other operating expenses	-2402	-2883	-3460	-4151	-4982	-5856	-6291	-6448	-6610	-6775
Total operating cost	-20088	-24192	-28791	-34250	-40707	-47640	-52725	-54043	-55394	-56779
EBITDAR	5855	6312	7236	8222	9613	10650	9147	9403	9666	9936
Lease depreciation	-1003	-1025	-981	-981	-981	-981	-981	-981	-981	-981
Deprication	-1029	-1379	-1925	-2341	-2801	-3293	-3720	-3534	-3534	-3534
Amortization	-59	-70	-84	-101	-121	-143	-153	-153	-153	-153
EBIT	3765	3837	4246	4799	5710	6234	4293	4734	4997	5268
Tax on EBIT	-1017	-1036	-1146	-1296	-1542	-1683	-1159	-1278	-1349	-1422
NOPAT	2749	2801	3099	3503	4168	4550	3134	3456	3648	3845
Financial items	-2549	-2421	-3112	-3565	-4101	-4666	-5139	-4815	-4798	-4781
Leasing interest	-1210	-1237	-1184	-1184	-1184	-1184	-1184	-1184	-1184	-1184
Tax shield	1015	988	1160	1282	1427	1580	1707	1620	1615	1611
Net finacial costs after tax	-2745	-2671	-3136	-3466	-3858	-4271	-4616	-4379	-4367	-4354
Profit	4	130	-36	37	310	280	-1482	-923	-719	-509

Appendix 34: NAS – Historical Balance sheet value drivers

Historical						
	2010	2011	2012	2013	2014	2015
ASK (thousand)	17804000	21958000	25920000	34318000	46479000	49027000
Working capital						
Inventory/ASK	0,37 %	0,37 %	0,26 %	0,22 %	0,18 %	0,21 %
Trade & Other receivables / Revenue	10,02 %	10,19 %	8,54 %	10,46 %	11,12 %	11,34 %
Trade and other payables / operating cost	14,27 %	13,24 %	14,62 %	14,66 %	15,08 %	15,62 %
Air traffic settlements / ASK	5,36 %	5,50 %	6,71 %	7,48 %	6,38 %	8,19 %
Tangible assets						
Aircraft / owned plane	174345	193458	199277	209075	260999	342735
Equipment / ASK	0,15 %	0,15 %	0,23 %	0,21 %	0,18 %	0,16 %
Buildings / ASK	0,05 %	0,04 %	0,04 %	0,04 %	0,54 %	0,58 %
Financial lease / ASK	0,18 %	0,13 %	0,09 %	0,06 %	0,04 %	0,00 %
Prepayment to aircraft / ASK	11,25 %	9,69 %	10,97 %	7,33 %	8,83 %	12,11 %
Capitalized lease / lease payment	7,00	7,00	7,00	7,00	7,00	7,00
Definite intangible / ASK	0,51 %	0,53 %	0,45 %	0,30 %	0,18 %	0,17 %
Deferred tax liability / revenue	1,06 %	1,28 %	2,34 %	2,86 %	0,87 %	0,00 %
Provision for maintenance/ASK	0,53 %	0,37 %	0,68 %	1,20 %	1,80 %	2,40 %
Trade and other payables / operating costs	14,27 %	13,24 %	14,62 %	14,66 %	15,08 %	15,62 %
Air traffic settlements liabilities / revenue	11,35 %	11,48 %	13,55 %	16,55 %	15,18 %	17,85 %
Deferred tax asset / revenue	0,00 %	0,02 %	0,03 %	0,18 %	2,66 %	2,64 %

Appendix 35: NAS – Forecasted Balance sheet value drivers

Forecasted Balance sheet - Value drivers										
	Detailed forecast							Simplfied forecast		
	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025
ASK (thousand)	58833600	70600320	84720384	101664461	121997353	143400500	154060500	154060500	154060500	154060500
Working capital										
Inventory/ASK	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%
Trade & Other receivables / Revenue	10,28%	10,28%	10,28%	10,28%	10,28%	10,28%	10,28%	10,28%	10,28%	10,28%
Trade and other payables / operating cost	14,58%	14,58%	14,58%	14,58%	14,58%	14,58%	14,58%	14,58%	14,58%	14,58%
Air traffic settlements / ASK	6,60%	6,60%	6,60%	6,60%	6,60%	6,60%	6,60%	6,60%	6,60%	6,60%
Tangible assets										
Aircraft / owned plane	342735	342735	342735	342735	342735	342735	342735	342735	342735	342735
Equipment / ASK	0,18%	0,18%	0,18%	0,18%	0,18%	0,18%	0,18%	0,18%	0,18%	0,18%
Buildings / ASK	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%	0,56%
Financial lease / ASK	0	0	0	0	0	0	0	0	0	0
Prepayment to aircraft / ASK	12,11%	12,11%	12,11%	12,11%	12,11%	12,11%	2,54%	2,54%	2,54%	2,54%
Capitalized lease / lease payment	7	7	7	7	7	7	7	7	7	7
Definite intangible / ASK	0,22%	0,22%	0,22%	0,22%	0,22%	0,22%	0,22%	0,22%	0,22%	0,22%
Deferred tax liability / revenue	1,40%	1,40%	1,40%	1,40%	1,40%	1,40%	1,40%	1,40%	1,40%	1,40%
Provision for maintenance/ASK	2,40%	2,40%	2,40%	2,40%	2,40%	2,40%	2,40%	2,40%	2,40%	2,40%
Trade and other payables / operating costs	15,62%	15,62%	15,62%	15,62%	15,62%	15,62%	15,62%	15,62%	15,62%	15,62%
Air traffic settlements liabilities / revenue	14,32%	14,32%	14,32%	14,32%	14,32%	14,32%	14,32%	14,32%	14,32%	14,32%
Deferred tax asset / revenue	2,64%	2,64%	2,64%	2,64%	2,64%	2,64%	2,64%	2,64%	2,64%	2,64%

Appendix 36: Relative valuation

EV/EBITDAR

$$\frac{Market\ cap. + Debt\ (incl. capitalized\ operating\ leases) + Preferred\ Stock - Cash\ \&\ cash\ equivalents}{Net\ income + Interest + Tax + Depreciation + Amortization}$$

EV/Invested capital

$$\frac{Market\ cap. + Debt\ (incl. capitalized\ operating\ leases) + Preferred\ Stock - Cash\ \&\ cash\ equivalents}{(Book\ value\ of\ equity + Book\ value\ of\ debt\ (incl.\ Capitalized\ operating\ leases) - Cash}$$

EV/Revenue

$$\frac{Market\ cap. + Debt\ (incl. capitalized\ operating\ leases) + Preferred\ Stock - Cash\ \&\ cash\ equivalents}{Total\ revenue}$$

EV/EBITDAR						
	Market Cap. 12.04.2(	NIBD (incl. Operating cap. L	Cash and cash equivaler	Enterprise value	EBITDAR	EV/EBITDAR
SAS	8 027 600 000,00	19 726 000 000	3 047 000 000	24 706 600 000,00	5 470 000 000,00	4,517
easyJet	6 657 206 080,00	348 000 000	650 000 000	6 355 206 080,00	940 000 000,00	6,761
Ryanair	19 136 000 000,00	86 300 000	1 184 600 000	18 037 700 000,00	1 530 000 000,00	11,789
NAS	11 575 395 468,00	32 628 145 000	2 454 160 000	41 749 380 468,00	4 168 400 000	10,016
EV/Invested capital						
	Market Cap. 12.04.2(	NIBD (incl. Operating cap. L	Cash and cash equivaler	Enterprise value	Invested capital	EV/Invested capital
SAS	8 027 600 000,00	19 726 000 000	3 047 000 000	24 706 600 000,00	26 065 000 000	0,948
easyJet	6 657 206 080,00	348 000 000	650 000 000	6 355 206 080,00	2 597 000 000	2,447
Ryanair	19 136 000 000,00	86 300 000	1 184 600 000	18 037 700 000,00	4 121 400 000	4,377
NAS	11 575 395 468,00	32 628 145 000	2 454 160 000	41 749 380 468,00	35 593 459 000	1,173
EV/Revenue						
	Market Cap. 12.04.2(	NIBD (incl. Operating cap. L	Cash and cash equivaler	Enterprise value	Revenue	EV/Revenue
SAS	8 027 600 000,00	19 726 000 000	3 047 000 000	24 706 600 000,00	39 650 000 000	0,623
easyJet	6 657 206 080,00	348 000 000	650 000 000	6 355 206 080,00	4 686 000 000	1,356
Ryanair	19 136 000 000,00	86 300 000	1 184 600 000	18 037 700 000,00	5 654 000 000	3,190
NAS	11 575 395 468,00	32 628 145 000	2 454 160 000	41 749 380 468,00	22 491 100 000	1,856

EV/EBITDAR	Multiple	EV	NIBD (incl. Operating cap. Lease)	NFH	Book value of financ	Stocks	Share price
Average	8,27	34 475 413 528	32 628 145 000,00	2 521 714 948	3 366 787 000	35759640	216,3268555
Median	8,39	34 965 669 502	32 628 145 000,00	2 521 714 948	3 366 787 000	35759640	230,0366125
Harmonic mean	7,22	30 098 146 936	32 628 145 000,00	2 521 714 948	3 366 787 000	35759640	93,91883934

EV/Invested ca	Multiple	EV	NIBD (incl. Operating cap. Lease)	NFH	Stocks		Share price
Average	2,24	79 591 993 301	32 628 145 000,00	2 521 714 948	3 366 787 000	35759640	1477,988879
Median	1,81	64 425 665 791	32 628 145 000,00	2 521 714 948	3 366 787 000	35759640	1053,870306
Harmonic mean	1,57	55 950 013 954	32 628 145 000,00	2 521 714 948	3 366 787 000	35759640	816,8530472

EV/Revenue	Multiple	EV	NIBD (incl. Operating cap. Lease)	NFH	Stocks		Share price
Average	1,76	39 504 748 563	32 628 145 000,00	2 521 714 948,00	3 366 787 000	35 759 640,00	356,97
Median	1,61	36 126 032 046	32 628 145 000,00	2 521 714 948,00	3 366 787 000	35 759 640,00	262,4855562
Harmonic mean	1,25	28 163 564 797	32 628 145 000,00	2 521 714 948,00	3 366 787 000	35 759 640,00	39,8192416

Appendix 37: NAS Beta Regression 2015

NAS/MSCI WORLD

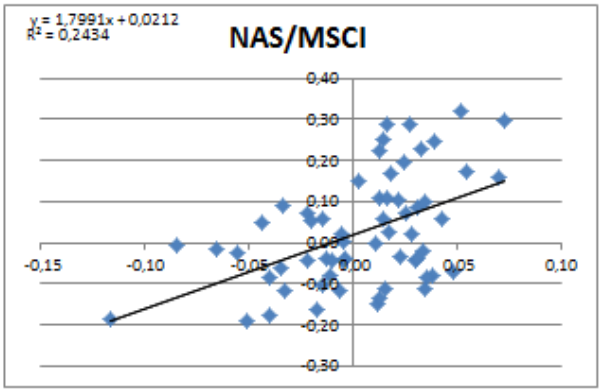
SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,493314
R Square	0,243359
Adjusted R Squar	0,230313
Standard Error	0,117272
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,25655272	0,2566	18,655	6,2063E-05
Residual	58	0,79766448	0,0138		
Total	59	1,0542172			

	Coefficients	*Standard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0,021162	0,01522731	1,3898	0,1699	-0,0093183	0,0516432
X Variable 1	**1,7991**	0,41654394	4,3191	6E-05	0,96528718	2,6328938



NAS/S&P GLOBAL 1200

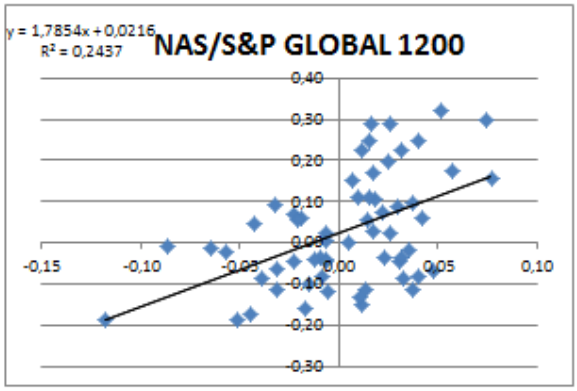
SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,4936944
R Square	0,2437342
Adjusted R Square	0,2306951
Standard Error	0,1172434
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,256948748	0,2569	18,693	6,1134E-05
Residual	58	0,797268455	0,0137		
Total	59	1,054217203			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0,0216392	0,015211999	1,4225	0,1602	-0,008811	0,052089
X Variable 1	**1,78543**	0,41295893	4,3235	6E-05	0,95879875	2,612053



NAS/DOW JONES GLOBAL

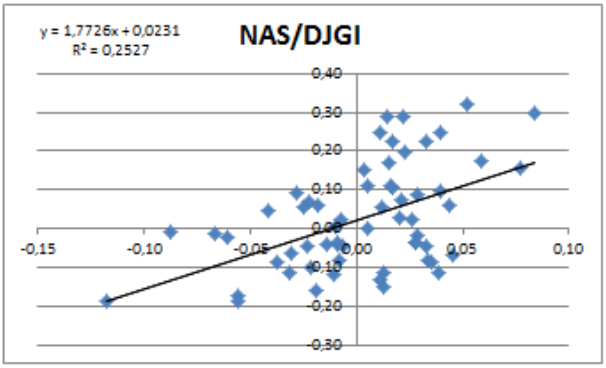
SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,5027157
R Square	0,2527231
Adjusted R Square	0,239839
Standard Error	0,1165445
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,26642506	0,2664	19,615	4,2529E-05
Residual	58	0,78779214	0,0136		
Total	59	1,0542172			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0,0230669	0,01509046	1,5286	0,1318	-0,00714	0,0532737
X Variable 1	**1,77262**	0,40023953	4,4289	4E-05	0,97145373	2,5737867



NAS/OSEBX

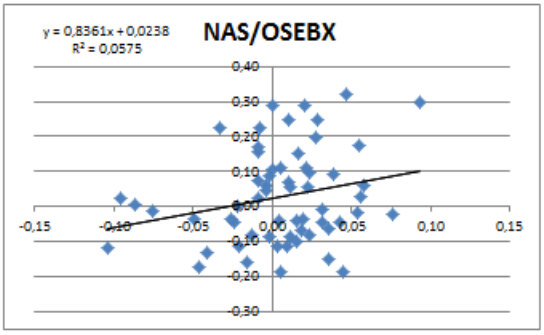
SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,239843947
R Square	0,057525119
Adjusted R Square	0,041275552
Standard Error	0,130883815
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,060644	0,060644	3,5401017	0,06492349
Residual	58	0,9935732	0,0171306		
Total	59	1,0542172			

	Coefficients	*Standard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0,023832834	0,0170559	1,3973358	0,1676354	-0,0103083	0,058
X Variable 1	**0,836113394**	0,4443829	1,8815158	0,0649235	-0,0534156	1,7256



Appendix 38: Liquidation – Before liquidation

NAS 2015 - Before liquidation			
Non-current assets			
Intangible assets	206.675		
Aircrafts, parts etc	18.507.706		
Prepayments to manufactures	5.939.281		
Equipment and fixtures	79.508		
Buildings	285.674		
Other recievables	501.811		
Defered tax assets	593.626		
Financial assets available for sale	82.689		
Investment in associate	328.127		
Total	26.525.097		
Current			
Inventory	104.141		
Cash and cash equivalents	2.454.160	Equity	2.965.312
Trade and other recievables	2.550.716	Non-current liabilities	17.935.772
Total	5.109.017	Current liabilities	10.733.029
Total assets	**31.634.114**	**Total E + L**	**31.634.113**

Appendix 39: Liquidation – Assumptions

Assumptions	*% of total assets*	
	Non-current assets	
0%	Intangible assets	0,7%
100%	Aircrafts, parts etc	58,5%
100%	Prepayments to manufactures	18,8%
0%	Equipment and fixtures	0,3%
100%	Buildings	0,9%
100%	Other recievables	1,6%
0%	Defered tax assets	1,9%
50%	Financial assets available for sale	0,3%
60% - of market value	Investment in associate	1,0%
	Current assets	
80%	Inventory	0,3%
100%	Cash and cash equivalents	7,8%
100%	Trade and other recievables	8,1%
Control	Sum	100,0%

Market value of NFH (12.04.16):	
Share price	72,8
Total shares	173194708
Total market value	12.608.574.742
NAS' 20 % stake, MV	2.521.714.948

Liq.value:	60%
60%	kr. 1.513.028.969,09

Appendix 40: Liquidation – After liquidation

NAS 2015 - After liquidation			
Non-current assets			
Intangible assets	0		
Aircrafts, parts etc	18.507.706		
Prepayments to manufactures	5.939.281		
Equipment and fixtures	0		
Buildings	285.674		
Other recievables	501.811		
Deffered tax assets	0		
Financial assets available for sale	41.345		
Investment in associate	1.513.029		
Total	26.788.845		
Current			
Inventory	83.313		
Cash and cash equivalents	2.454.160	Equity	2.965.312
Trade and other recievables	2.550.716	Non-current	17.935.772
Total	5.088.189	Current liabi	10.733.029
Total assets	**31.877.034**	**Total E + L**	**31.634.113**

Appendix 41: Regression on Jet fuel and Oil price

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,993281678
R Square	0,986608491
Adjusted R Square	0,98655246
Standard Error	4,7212566
Observations	241

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	392489,8704	392489,8704	17608,13028	7,4356E-226
Residual	239	5327,373068	22,29026388		
Total	240	397817,2435			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	3,373047602	0,578812314	5,82753255	1,80996E-08	2,232822415	4,513272789	2,232822415	4,513272789
X Variable 1	1,148536901	0,008655424	132,6956302	7,4356E-226	1,131486241	1,165587561	1,131486241	1,165587561

Appendix 42: Regression on Oil price and USD/NOK spot rate

SUMMARY OUTPUT

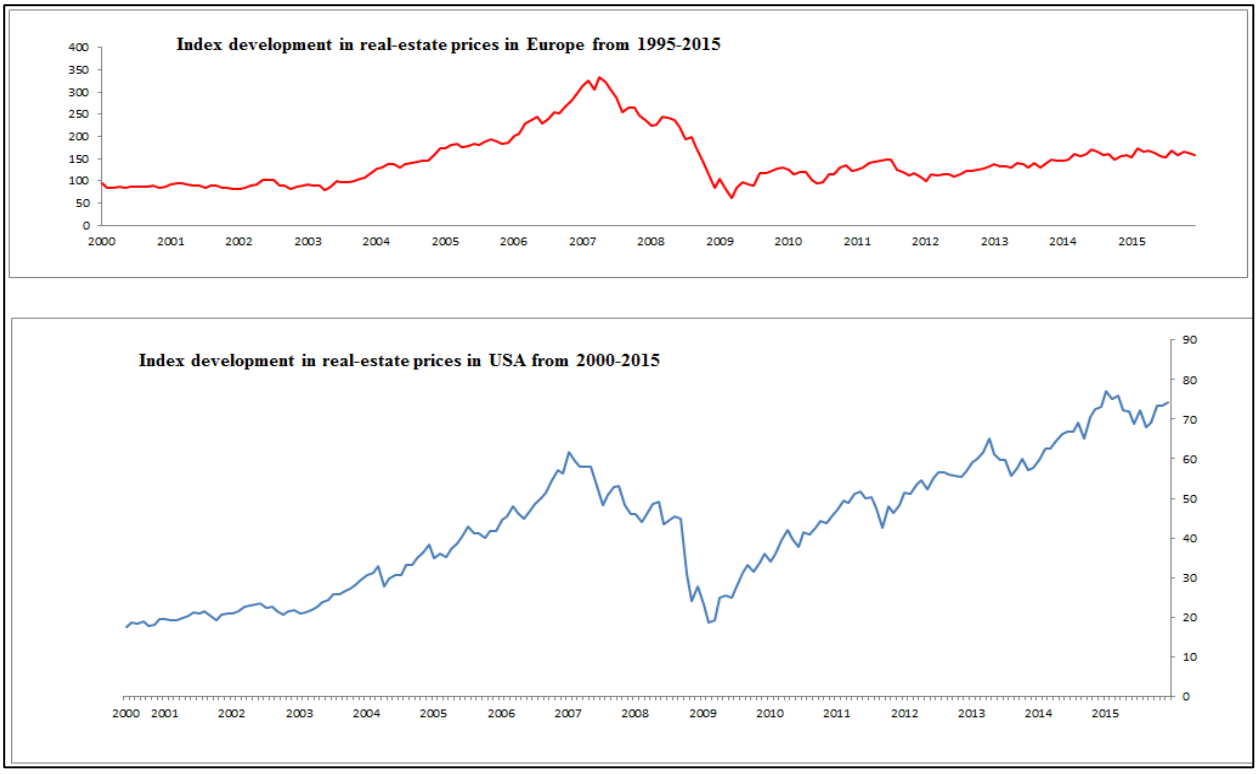
Regression Statistics	
Multiple R	0,461063
R Square	0,212579
Adjusted R Square	0,210672
Standard Error	0,015647
Observations	415

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,027297	0,027297	111,497	3,11E-23
Residual	413	0,101113	0,000245		
Total	414	0,12841			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,000953	0,000769	1,239065	0,216025	-0,00056	0,002464	-0,00056	0,002464
X Variable 1	-0,2218	0,023534	-10,5592	3,11E-23	-0,29476	-0,20224	-0,29476	-0,20224

Appendix 43: Development in the European Real Estate Index US Real Estate Index in the period 2000-2015



Appendix 44: Forecasted fleet development and fuel efficiency

Forecasted fleet development and fuel efficiency							
	Boeing 737-800	Boeing 737-MAX	Boeing 787-8	Boeing 787-9	Airbus 320neo		
Liters per seat km	0,029	0,024	0,0277	0,025	0,0232		
Seats	189	189	291	344	189		
Liters per km	5,5	4,5	8,1	8,6	4,4		
km per barrel	29	35	20	18	36		
ASK/Barrel	5482	6624	5740	6359	6853		
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Boeing 737-800	104	117	115	94	65	45	32
Boeing 737-MAX	0	5	12	34	65	87	100
Boeing 787-8	9	14	16	16	15	11	8
Boeing 787-9	3	7	12	17	23	27	30
Airbus 320neo	4	12	22	42	62	82	100
Total	120	155	177	203	230	252	270
ASK/Barrel total	5569	5689	5813	6051	6280	6427	6518
Index	100%	102%	104%	109%	113%	115%	117%