



Universitetet
i Stavanger

**HANDELSHØGSKOLEN VED UIS
BACHELOROPPGAVE**

STUDIET: Bachelor i økonomi og administrasjon
(B-ØKAD)

OPPGAVEN ER SKREVET INNEN FØLGENDE
TEMATISKE RETNING:
Regnskap og finans

TITTEL: Verdsettelse av Norwegian Air Shuttle etter COVID-19

ENGELSK TITTEL: A Valuation of Norwegian Air Shuttle post-COVID-19

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Summary

This thesis aims to determine the current value of Norwegian Air Shuttle ASA, considering the impact of the COVID-19 pandemic and the company's new business strategy.

As an outcome of the pandemic, Norwegian has gone through a major restructuring, with a renewed focus on profitability rather than growth. This strategy was already implemented in 2019 but was interrupted by the impact of COVID-19. Even though the company accumulated substantial debt in previous years and reported negative financial results, the focus on profitability improved key financial numbers in 2019. However, this development lasted only one year, as travelling was severely impacted by travel restrictions and quarantine laws, bringing the aviation industry to a standstill. As a result, in a matter of weeks, Norwegian went from striving for profitability to relying on government support to survive the crisis.

After many legal processes and restructuring, Norwegian ended 2022, being the first ordinary year, with positive financial results. Although the company has not yet fully recovered to its pre-pandemic state, it is actively seeking new growth opportunities and is committed to its turnaround strategy. Using available information and data, this thesis provides a value of Norwegian's equity as of 21.04.2023 when the stock was valued at 10.01 on the Oslo Stock Exchange. Forecasting future cash flows and using the present value approach, we estimate the company's stock price to be 8.34 NOK. The value was then adjusted by the relative valuation which implied that our present value approach could be too optimistic. With the help of both the present value method and the relative valuation, we estimated the value to be 6.90 NOK. We conclude that the company is overvalued, and we advise selling the stock of Norwegian Air Shuttle ASA. At the same time, we want to emphasize that the valuation is susceptible to changes in the underlying assumptions.

Acknowledgement and Motivation

As a part of our Economics and Administration program at the University of Stavanger, we wrote this thesis as our final project. It provided us with an excellent opportunity to put the knowledge we have acquired over the last three years into practice and deepen it further by understanding the process of valuation. We were highly motivated to find a company relevant to the current times and recent events, giving us both a challenge and an opportunity. Norwegian Air Shuttle ASA, significantly impacted by the pandemic and recent macroeconomic events was a perfect choice for our study.

We would like to express our special gratitude to our supervisor, Olga Aleksandrovna Rabanal. With her advice and helpful criticism, she significantly contributed to the successful completion of this thesis.

Assumptions and Limitations

The intrinsic value was determined using publicly available data and information. As a listed company on the Oslo Stock Exchange, the company's financial data is accessible to both current and potential investors. Our data collection for this thesis was limited to 10.04.2023. While previous years financial numbers were obtained through annual reports, we mainly used quarterly reports and investors presentations to gather the financial numbers for 2022. The numbers were later confirmed with the 2022 annual report published on 27.04.2022. Because the detailed financial statement was published close to the thesis deadline, we were not able to fully implement the new financial information, as this would require changes in parts of the thesis. We did however check for consistency in our text and the financial statement.

Through the thesis, we compare Norwegian to other European airlines. We have chosen to limit the competition to Scandinavian Airlines (SAS) and Lufthansa. SAS is Norwegian's closest and biggest competitor in the Nordic. Despite not being a low-cost airline, the external pressure, mainly from Norwegian itself, has resulted in a drastic reduction of inflight services, particularly on short-haul flights, making it kind of a "hybrid airline". On the other hand, Lufthansa has a significant presence in the Nordic countries and is comparable in terms of relative valuation.

All calculations done for the thesis are available in Attachment 1 and can be found in the appendix.

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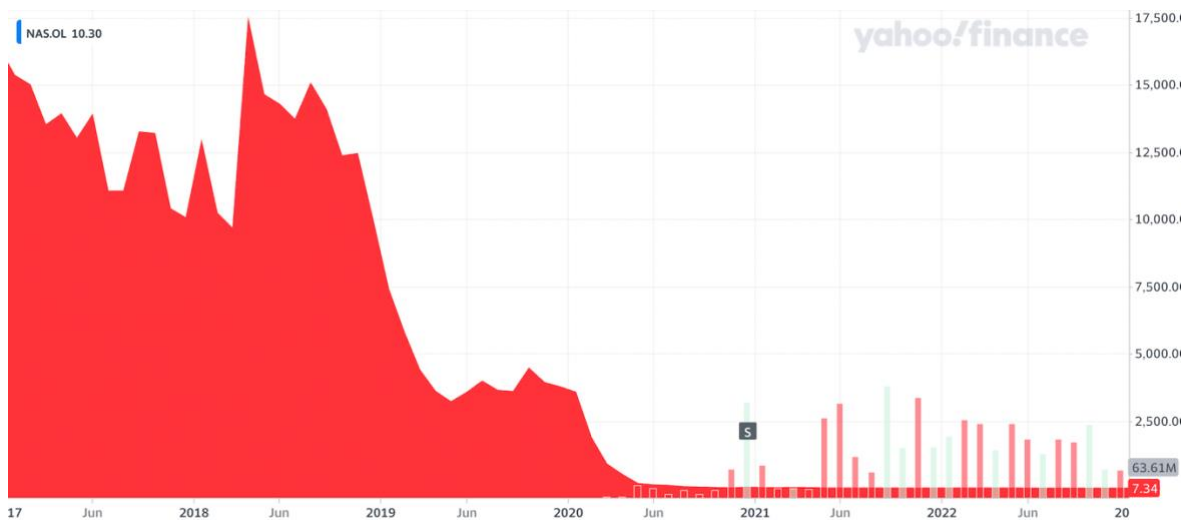
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1 Presentation of Norwegian Air Shuttle ASA

1.1 History

In the early days of its formation, Norwegian operated routes previously held by Braathens SAFE on the west coast of Norway. However, after SAS acquired Braathens in 2002, Norwegian began operating its routes with a fleet of seven Boeing 737. In 2003, the company expanded its route network to include foreign and international destinations and was listed on the Oslo Stock Exchange (Jarslett & Askheim, 2020).

The airline industry is highly competitive and events such as fatal aircraft accidents can have a significant impact on the operations and financial position of airlines. In 2019, the worldwide grounding of the Boeing 737 MAX led to considerable disruption of the company's operations and significant losses (*Reports and Presentations*, 2023). This was one of the leading factors that made the share price drop to 37.75 NOK at the end of 2019.



Graph 1 Historical stock price Norwegian Air Shuttle ASA, 2017-2019 (NAS.OL Interactive Stock Chart / Norwegian Air Shuttle ASA Stock - Yahoo Finance, n.d.)

Despite these challenges, Norwegian had positioned itself as a prominent actor in the European short-haul market, especially within the Nordic countries. In 2019, the company operated more than 500 routes with over 156 aircraft. This drastically changed in 2020 after the extreme dip in demand for travel due to the spread of COVID-19 and government-enforced regulations. The pandemic had a major effect on the operation of the Norwegian, resulting in demand falling by approximately 70% during the first months. This reduced the number of aircraft down to seven at its lowest point (*Reports and Presentations*, 2023). Falling into major financial problems, Norwegian was taken under

bankruptcy protection in Ireland and entered a restructuring process in Norway (Nesvik, 2020).

1.2 Group structure

The Norwegian Group is a conglomerate of various companies that operate under the parent company, Norwegian Air Shuttle ASA. It encompasses a range of subsidiaries located in countries such as Norway, Sweden, Denmark, Finland, Ireland, Spain, Latvia, and the United States. The group has designed its organizational structure to maintain flexibility and adaptability, aligning with its overall business strategy.

Each subsidiary within the group provides permanent employment opportunities with terms and conditions that adhere to the local market laws and regulations. Despite the multiple entities, the group does not report profit per entity as it views its business as a single operating segment, low-cost air passenger travel. The group's operating profit comes from its airline-related activities, with the aircraft fleet being its main revenue-generating asset, utilized across its geographical segments.

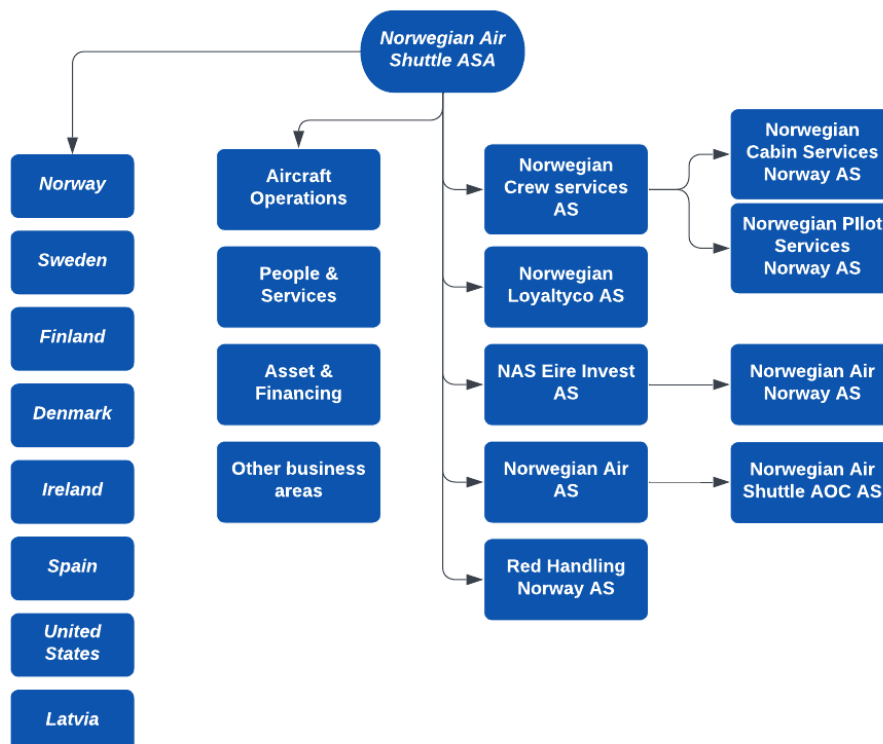


Figure 1 Group structure, locations and subsidiaries (Norwegian, 2023b; Norwegian Air Shuttle ASA - Lysaker - Roller Og Kunngjøring, 2023)

The group's operations are further divided into four functional business areas: Aircraft Operations, People & Services, Asset & financing, and other business areas including partnerships within the tourism and airline sector.

1.3 Corporate governance

Eight people make up the board of directors, with a majority of five people being regarded as independent. The three remaining members are chosen by the workforce, whereas these independent members are chosen by the shareholders. To ensure effective communication between the company's owners, management, and itself, the board of directors is essential. By doing this, they guarantee that the executives are running and managing the business successfully (*Reports and Presentations, 2023*).

Bjørn Kjos, a renowned character and the face of Norwegian, has been the airline's public face and spokesperson ever since it was founded (*Reports and Presentations, 2023*). Jacob Schram took over the position after he resigned and was shortly again replaced by the former CFO, Geir Karlsen in 2021. This quick change came partly because Karlsen stood behind the initiative to cut costs and the general restructuring process (Lorentzen, 2021).

The two largest owners are, in order, Geveran Trade Company LTD with 14,3% and Sundt AS with 11,4%.

Norwegian Air Shuttle ASA				
20 largest shareholders as of 31 December 2022*				
	Name	Country	Number of shares	Percent
1	Geveran Trading Company, Ltd.	Cyprus	133.430.512	14,3 %
2	Sundt AS	Norway	106.103.198	11,4 %
3	Folketrygdfondet	Norway	46.651.798	5,0 %
4	Ballyfin Aviation Limited	Ireland	31.472.703	3,4 %
5	Silver Point Capital, L.P.	United States	30.478.125	3,3 %
6	Nordnet Bank AB.	Norway	30.070.165	3,4 %
7	Handelsbanken Kapitalförvaltning AB	Finland	27.500.000	3,0 %
8	Keskinäinen eläkevakuutusyhtiö Varma	Sweden	27.313.039	2,9 %
9	Avanza Bank AB	Sweden	24.680.156	2,7 %
10	Contrarian Capital Management, LLC	United States	17.708.189	1,9 %
11	DNB Asset Management AS	Norway	16.151.037	1,7 %
12	Morgan Stanley & Co. International Plc	United Kingdom	12.663.237	1,4 %
13	KLP Fondsforvaltning AS	Norway	12.493.863	1,3 %
14	BlackRock Institutional Trust Company, N.A.	United States	10.635.493	1,1 %
15	Svelland Capital (UK) Ltd	United Kingdom	9.427.617	1,0 %
16	Swedbank AB	Sweden	9.390.819	1,0 %
17	Nordea Funds Oy	Finland	9.339.301	1,0 %
18	BofA Global Research (UK)	United Kingdom	8.748.839	0,9 %
19	Brumm AS	Norway	8.285.480	0,9 %
20	HSBC Trinkaus & Burkhardt AG	Germany	7.107.742	0,8 %
	Top 20 shareholders		580.032.235	62,4 %
	Other shareholders		349.957.504	37,6 %
	Total number of shares		929.989.739	100,0 %

Table 1 List of 20 largest shareholders (*Reports and Presentations, 2023*)

1.4 Business strategy and post-crisis structure.

Currently Norwegian identifies itself as a low-cost airline focused on offering affordable fares on its European short-haul network with narrow-body aircraft. Its strategy is built on its core Nordic business and covers domestic routes in Norway, Sweden, Denmark, and Finland, as well as routes across the Nordic countries and to key European destinations. The company has altered its priorities, moving away from pursuing expansion and instead placing greater emphasis on achieving profitability. To accomplish this goal, it has implemented both operational and financial strategies. In addition, the company has successfully managed the challenges presented by the COVID-19 pandemic by undertaking restructuring efforts and developing a robust and attractive airline with a fresh business strategy and plan (*Reports and Presentations*, 2023).

Since the pandemic, Norwegian has gone through two restructuring processes, helping the company achieve lower costs and creating a more financially sustainable platform for stakeholders. The most important points from the restructuring plan were shutting down the long-haul part of the business, fleet reduction, focus on the Nordic market and key European destinations, acquisition of new capital and action toward reduction of its debt (Brunborg & Lorentzen, 2021).

The short-haul network is designed to defend and strengthen Norwegian's position as a leading carrier for leisure traffic in the Nordics. The cost-efficient operating model allows the airline to compete effectively with legacy carriers and ultra-low-cost carriers while providing affordable fares. The airline will continue to attract customers by leveraging its brand value, customer satisfaction, and reward program. Historically the workforce has been dedicated and experienced, and the organization has had a strong governance structure and management team. Even though the company has restructured, they have a good base for improvement in labour efficiency, rebuilding a strong employer brand, and modernizing its infrastructure through IT investments (*Our Story*, 2023).

2 Methodology and valuation theory

There are numerous approaches to valuing a business. In the book “Investment Valuation” Aswath Damodaran divides these techniques into three primary groups. The value of an asset is established by the present value of anticipated future cash flows, which is known as discounted cash flow valuation. Relative valuation is where the value of an asset is evaluated by comparing its price to those of similar assets, based on a shared variable.

Option valuation, also known as the option premium, is the third classification, which is the cost that the buyer of an option contract pays to obtain the right to purchase or sell a security at a certain price in the future (Damodaran, 2012). It's also important to remember that an asset's book value can be used to determine its value. It is crucial to note that the values that different approaches can provide for the same item can differ significantly. In practice, it is difficult to predict these specific circumstances and other factors needed to conduct a contingent claim valuation. Based on that, we decided against using the last valuation method and therefore going forward with the present value approach and the relative valuation. A quick description of both methods will be mentioned here, but a more in-depth explanation of formulas and calculations will be mentioned in Chapter 4.2.

2.1 Present value approach

The present value technique offers several valuation models, all of which, when used properly, yield the same value estimate. The discounted cash flow model (DCF), however, is the one that is most frequently utilized (Palepu & Healy, 2013). This approach is used to calculate the intrinsic value of the company, representing an estimated fair value of the company's stock. If the intrinsic value is higher than the current stock price, the company can be considered undervalued and represents a potential buying opportunity, and conversely. The DCF model is based on the firm's future free cash flow, discounted back to its present value using the weighted average cost of capital (WACC). The discount rate represents the time value of money and the risk associated with the investment. The aim of valuation is to determine the equity market worth of a company. Using WACC we only arrive at the value of the firm. Any debt obligations are therefore subtracted from the firm value to arrive at equity value. Conversely, by predicting free cash flow to equity and discounting it by the cost of equity we will directly arrive at the market valuation of equity (Damodaran, 2012).

The main advantage of discounted cash flow valuation is that it is based upon asset fundamentals, and therefore less exposed to market moods and perceptions. Through intrinsic valuation, we are forced to be aware of and understand the underlying characteristics of the company, such as risk and growth, and ultimately understand its business. This being an advantage is also a source of uncertainty. Because it aims to determine the true value of a company, intrinsic valuation requires more explicit input and information, which can be imprecise, difficult to estimate, and manipulated (Damodaran, 2012).

2.2 Relative valuation

The relative valuation approach determines a company's value by evaluating how well or poorly it performs in comparison to its peers and competitors. Similar companies should have similar valuations, therefore by comparing them an investor should be able to estimate the fair value. This method is rather simple because it doesn't call for any numerical or parameter forecasts, thus requiring less explicit information.

Yet, in fact, this strategy can be extremely difficult because it calls for the identification of businesses and competitors that are directly comparable (Palepu & Healy, 2013). Relative valuation requires that the target company's immediate competitors be comparable to it in terms of elements like size, revenues, capital structure, and operational market. Opposite to discounted cash flow, relative valuation is more likely to reflect market moods and perceptions (Damodaran, 2012).

We shall use the relative valuation method even though the company has been through restructuring and financial problems. We still look at Norwegian as a comparable company to the below-mentioned competitors. We will use SAS, as a benchmark, which operates in the Nordics and is subject to similar limitations and government interference. We will also contrast Norwegian with Lufthansa. Having a similar market capitalization and pre-pandemic revenue we will utilize it as a comparable company (Yahoo, 2023).

2.3 Valuation framework

Valuing Norwegian, we will use both of the above-described methods. However, we will mainly focus on the present value approach and use relative valuation as a complementary method. We tried to find directly comparable competitors but are aware that the potential indifferences may result in a less reliable relative valuation. The process of the present valuation approach will be divided into four steps. Future cash flows are forecasted from information, therefore fundamental analysis is necessary. The four steps are strategy analysis to understand the company and business, analysis of financial statements, developing a forecast, and ultimately converting the forecast to a valuation (Penman, 2007). Each step and technique used will be described in the representative chapter. As there may arise uncertainty in the forecast, we also perform a sensitivity analysis.

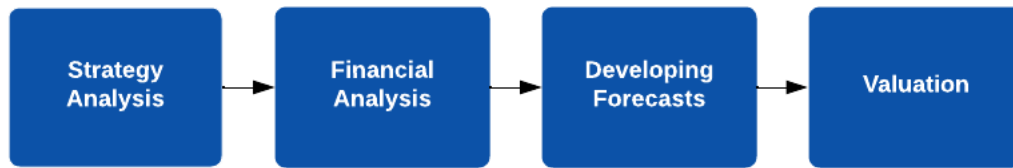


Figure 2 Process of fundamental analysis (Penman, 2007)

3 Strategic Analysis

In the following section, we will undertake a comprehensive strategic analysis of Norwegian and the aviation industry. The purpose of this analysis is to gain a deeper understanding of the industry that the company operates in, and its own strategic position. This will provide a foundation for the subsequent financial analysis and the preparation for future forecasts.

Strategic analysis is a critical component of the valuation process. It involves both an external analysis of the industry and an internal analysis of Norwegian. The external analysis will examine the key drivers of change and the competitive forces within the aviation industry, which will be analysed using the PESTEL framework and Porter's five forces. The internal analysis, on the other hand, will focus on Norwegian's resources and activities, thus determining their ability for creating a competitive advantage for the company.

3.1 PESTEL

The PESTEL framework is a structured method that can be used to identify, analyse, and understand the political, economic, social, technological, environmental, and legal factors that may have an impact on a business. This method is particularly useful for gaining insight into external factors that may affect a business's operations, profitability, and sustainability. By identifying relevant parameters for each of these factors, a company can gain a better understanding of the potential impacts of these external factors on its business strategy. The benefits of using the PESTEL framework include developing a general understanding of the critical factors that may affect a business, ensuring that all categories of external factors are considered, and facilitating group discussions (Johnson et al., 2017).

3.2 Political

Future cash flows generated by Norwegian may be significantly impacted by political factors that the company is subject to. Governmental policy, regulation, and trade agreement changes may result in higher expenses and lower revenues, which will ultimately impact the profitability of the business.

For instance, adjustments to airline safety regulations may necessitate additional expenditures for infrastructure and staff training, which would raise the cost to the business. Similarly, price increases for fuel or aircraft parts, changes in trade agreements, or tariffs can lower profitability (Anwar et al., 2022).

Political unrest and uncertainty may have an impact on the business. For instance, political unrest may result in lessened demand for air travel, which will lower prices and revenue. Further affecting the company's cash flows is the possibility that Norwegian will have trouble obtaining permits and operating licenses from nations with unstable political environments.

In the company's financial performance, government support and financial aid can be extremely important, especially during economic downturns or unanticipated events like the COVID-19 pandemic. For instance, Norwegian received financial assistance from the Norwegian government in 2020 to help it cope with the pandemic's effects. Without such assistance, the company might have had trouble keeping things running (Krekling, 2021).

Norwegian is also subject to several taxes, such as value-added tax (VAT) and fuel taxes. The cash flow may be significantly impacted by any changes to these taxes. A recent proposal by the Norwegian government to raise the country's aviation tax, for instance, could result in higher costs for the company and other Norwegian-based airlines.

Additionally, Norwegian has come under fire from rival airlines, who contend that the airline received unfair government subsidies from Norway that helped it grow quickly (Holter & Philip, 2020). The political difficulties that the company may experience in the upcoming years are highlighted by these issues. In conclusion, Norwegian's future cash flows may be significantly impacted by political factors that the company is concerned about. To ensure its long-term profitability and success, the business must remain informed about and ready for any changes in governmental regulations, trade agreements, and political environments.

3.2.1 Economic

The aviation industry, like any other industry, is heavily influenced by a range of economic factors. These factors can have both direct and indirect effects on companies operating in the sector and ultimately impact their financial performance. Some of the most critical macroeconomic factors that play a crucial role in the aviation industry include economic growth, oil prices, and in Norwegian's case, exchange rates.

As economies grow, so does the number of people who can afford to travel by air. Conversely, when economies slow down, consumer purchasing power decreases, leading to fewer people travelling. This, in turn, affects the earnings of airlines, as fewer passengers mean lower revenue. Consequently, Norwegian sees the challenges of high inflation and increasing interest rates. However, booking trends have not yet reflected this (Norwegian, 2022). Due to the current macroeconomic event, the company has also set in place flexible power-by-the-hour agreements to be able to reduce or increase fleet capacity at short notice (Expert market research, 2022).

A significant portion of the company's expenses is in foreign currencies. The expenses for aircraft leases, borrowings, maintenance, jet fuel, and other related costs are mostly in USD, while aircraft operating expenses are partly in EUR. Norwegian faces foreign exchange risk due to commercial transactions recognized assets and liabilities, and net investments in foreign operations. Even though currency risk stands to be one of the company's biggest risks, Norwegian has had no significant currency forward contracts in recent years. Due to currency risk, Norwegian profitability may be impacted by the fact that a sizable portion of its expenses are in foreign currencies. Changes in exchange rates may have a variety of effects on the company's revenue and expenses. The company's expenses in those currencies will rise in NOK terms if the value of the Norwegian krone (NOK) falls against the USD or EUR, which can reduce profitability. On the other hand, if the NOK gains strength relative to those currencies, costs will drop, increasing profitability.

Oil prices are a major concern for airlines, as they rely heavily on refined oil products to fuel their operations. The price of oil has increased steadily and reached extreme highs in 2022 and is still hovering far above the average prices (Bouwer & Ditcher, 2022). Counter to what one might believe, high fuel might not be as catastrophic for the airlines in the long run as it is in the short run. Historically it has been shown that higher prices can lead to more disciplined capacity deployment. Even though the report talks about the US market,

we found evidence supporting the fact that the US and the European markets are comparable (Vergara Jr, 2019). According to International Air Transport Association (*IATA's Annual Review, 2022*), jet fuel prices rose by 70% in 2022, which is 1,4% more than what is presented in the McKinsey & Company figure. This could suggest a similar increase in operating margin for Norwegian.

Higher jet fuel prices do not necessarily lead to lower profitability.

US airline sector example

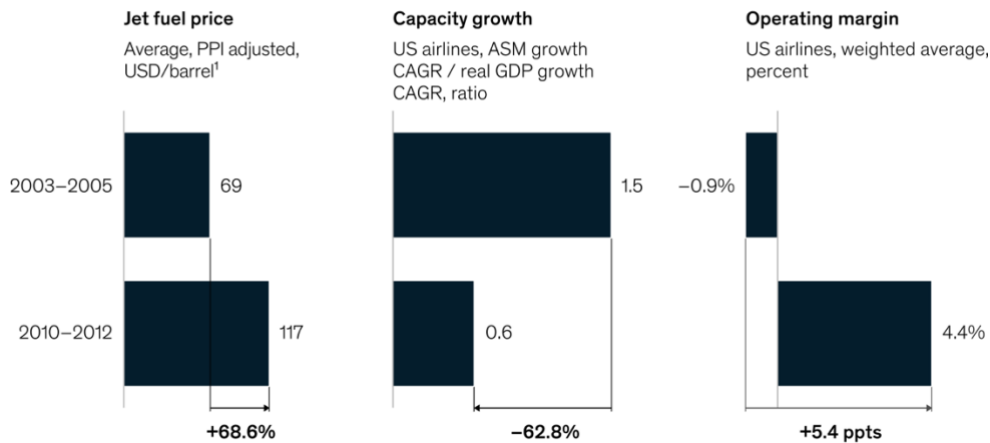


Figure 3 The effect fuel prices have on operating margin (Bouwer & Ditcher, 2022)

At the end of 2022, the company had kept its fuel hedging to 25% (*Reports and Presentations, 2023*). This percentage can be compared to the pre-pandemic forward contracts where the percentages were at a similar level (Norwegian, 2019). In the case of Norwegian, the restructuring was not caused by the high fuel prices, but with the restructuring being completed amid high prices, the company can only benefit from potentially increased growth margins.

To summarize, the airline industry is subject to several macroeconomic factors, which can have a major impact on financial performance. The number of people who fly is influenced by economic growth, and costs are impacted by inflation and interest rates. Despite having flexible agreements in place, Norwegian faces foreign exchange risk because its expenses are in USD and EUR. Although rising oil prices are a major concern for airlines, more disciplined capacity deployment may come as a result.

3.2.2 Social

The company's success and profitability also rely on social factors. The business strategy must consider cultural norms, population growth, and current trends. Because of recent events and environmental factors, health, age, safety, and lifestyle have recently become more important factors. The travel sector has been severely impacted by COVID-19, and it is not anticipated to fully recover until 2024. The removal of governmental restrictions will be the primary factor in this recovery (*This Is the Impact of COVID-19 on the Travel Sector*, 2022)

Recent research indicates that, despite the increased focus on environmentally friendly travel, most airline customers support mitigation strategies, such as the use of environmentally friendly fuels and technological advancements, with a statistically insignificant portion of the customer base willing to change their flying habits to reduce emissions (Gössling & Dolnicar, 2023). So, for the time being, at least, Norwegian does not need to take behavioural demand risks into account.

Finally, when formulating its business strategy, the company must consider social factors like cultural norms, population growth, and modern trends. Although COVID-19 has had an impact on the travel industry, the business can benefit from consumer support for mitigation measures. The expectation that technology will advance and that emissions will decline, a significant social factor that may have an impact on their future profitability and success, must also be considered.

3.2.3 Technological

Technology and its development have a major effect as it has an impact on the company's capacity to remain competitive and satisfy customer demands. The development of technology has improved the effectiveness and affordability of air travel. Reduced fuel consumption and maintenance expenses because of improvements in aircraft design, such as the use of composites and lighter materials, have increased airline profitability. Utilizing these developments, Norwegian has continuously updated its fleet with newer, more fuel-efficient aircraft ('Norwegian Enables Corporate Customers to Reduce Emissions from Business Travel', 2022). This has led to having one of the most updated fleets in Europe.

The company's operations have also been impacted by the digitalization of the airline sector. Airlines now use digital technologies for everything from online check-in and reservation processes to in-flight entertainment and customer support. In order to make its

services more convenient for customers and accessible, Norwegian has responded to this trend by investing in digital technologies like mobile apps and online booking systems. But with technological advancements come dangers and difficulties. Due to increased reliance on technology, there is a higher chance of cyberattacks and system failures, which can cause operations to be disrupted and result in sizable financial losses. The airline industry may also be disrupted by new technological advancements, such as the potential for electric or hybrid aircraft, which will require significant investment from businesses to keep up (Feed, 2022).

In conclusion, technological development affects Norwegian operations and profitability in both positive and negative ways. To stay competitive and satisfy customer demands, the company must continue to make investments in digital technologies and modernize its fleet. It must, however, be conscious of the dangers and difficulties brought on by reliance on technology and be ready to adjust to changes in the sector.

3.2.4 Environmental

The environmental factors related to businesses include their impact on the environment and climate and how they are affected by them. Environmental drivers consider how climate and environmental changes will evolve in the future and the attitudes of consumers and businesses towards climate and the environment (Pathak, 2021).

The aviation industry has taken steps to reduce carbon emissions and meet IPCC goals. Initiatives promoting sustainable aviation fuels (SAF) and alternative propulsion solutions like electric and hydrogen-powered aircraft have been launched. In 2021, airlines used 100 million litres of SAF, and more than 450,000 flights are expected to operate with SAF in 2022. Airlines and manufacturers are working to develop hydrogen-powered aircraft (IATA's Annual Review, 2022).

Although Norwegian has one of the newest fleets in the aviation industry, with an average age of 4.6 years, other factors contribute to its carbon emissions. The company's plans to improve its carbon efficiency through fleet renewal, sustainable aviation fuels, and operational efficiency are commendable, but progress in these areas has been slow. Norwegian entered into an agreement with Neste, the leading SAF producer, but only up to 50% of its aircraft can fly with certified SAF. Although Norwegian ordered up to 80 new 737 MAX 8 aircraft, delays due to the pandemic may affect its goal to use up to 500 million litres of SAF by 2030 (Dunn, 2023). Norwegian's focus on low-cost travel can

incentivize higher load factors, increasing emissions per passenger. Its direct point-to-point flights and new aircraft cleaning techniques may reduce emissions, but their impact is unclear (Reports and Presentations, 2023).

Norwegian's challenges in achieving sustainability may affect its future cash flows. Consumers' expectations for sustainable travel may increase, and regulatory bodies may impose stringent rules on sustainability and carbon emissions, leading to higher compliance costs. Successful implementation of sustainable initiatives could reduce costs and attract eco-conscious customers. Meeting sustainability goals will significantly impact Norwegian's future cash flows, making it challenging to account for these factors in its valuation. Customers anticipate technological advancements to reduce emissions, even if they do not alter their flying habits (Reports and Presentations, 2023).

3.2.5 Legal

Legal factors refer to changes in the regulatory environment that can impact the economy, specific industries, or individual businesses. These factors can include but are not limited to, industry regulations, necessary licenses and permits, employment and consumer protection laws, and the protection of the intellectual property (Pathak, 2021).

After the COVID-19 pandemic, the aviation industry is facing new challenges in terms of regulations. The European Union's GDPR, which sets strict requirements for the use, storage, and collection of personal data, came into force in 2018. Airlines must comply with these rules, as they possess information about their passengers' bank cards, identification documents, and travel details. The pandemic has raised concerns about potential data breaches and increased cybersecurity threats, making it even more critical for airlines to remain vigilant and prioritize security in their use of technology (McCausland, 2021). Following the pandemic, issues could emerge that may lead to future legislation and changes in the industry. For instance, there may be enhanced passenger rights and protection as a result of massive delays in refunds following the 2020 flight cancellations (Rimmer, 2020). Additionally, health and safety while travelling may become a major focus for regulators, leading to enhanced legislation. Compliance with these potential regulations will have an unknown impact on airline costs.

3.3 Porter's Five Forces

A key determinant of profitability in an industry is the extent of competition and the strength of buyers and suppliers (Johnson et al., 2017). The airline industry is very competitive, with the bargaining power of suppliers and customers being high. However, the threat of new entrants and substitute products is low to medium. We will through Porter's Five Forces Framework in detail describe the level of forces, first by looking at the degree of actual and potential competition and then at bargaining power within the supply chain.

3.3.1 Rivalry Among Existing Firms

The aviation industry in Nordic countries and Europe is highly competitive, with numerous airlines competing for market share. Locally the market is highly concentrated with mainly SAS and Norwegian as the main airlines. As of 2019 these airlines hold a significant market share and offer a large number of common flights to the key destination at roughly equal prices creating a competitive environment (Avinor, n.d.). Historically SAS always had a higher capacity, making them a frontier in most of the Scandinavia (*SAS Traffic Figures*, 2023). However, last year SAS faced several operative problems and is currently under bankruptcy protection, with the possibility to be taken off the Oslo Stock Exchange in the autumn as part of their restructuring process. (Valderhaug, 2023). According to analysts, the current SAS situation, and the recent bankruptcy of Flynor, can have a positive impact on the competitive side in the long term. Giving Norwegian a slightly favourable position in the Nordic market. (Waaen & Melkild, 2023).

Domestically, Norwegian has entered an agreement with the largest Nordic regional airline Widerøe. Interlining will allow passengers to combine a domestic flight and an international journey as part of the same trip. The deal will allow Norwegian to have a bigger influence on the domestic aviation (Norwell, 2022). Similar agreements have been done with Norse Atlantic, a long-haul airline from Norway (Norwegian, 2022c).

On the European market, other low-cost airlines, make up Norwegian's biggest competitors. By making air travel accessible to a wider range of customers, these airlines have changed the market dynamics and forced other airlines to adjust their offers.

Passenger load factor (PLF) is and key performance indicator used by airlines to measure capacity utilization (Beers, 2022). Having thin profit margins, airlines need a high load factor to stay profitable. Even though PLF cannot be solely used to determine the level of

competitiveness in the industry it can give us a picture of the current utilization. With an average passenger load factor of 80.5% between 2010 and 2020 (pre-pandemic), it suggests that there was intense competition and that the airlines' capacity exceeded the demand (Statista Research Department, 2023b). In such cases, there is an increased incentive for firms to cut prices to fill capacity. Together with a small degree of differentiation, resulting in low switching costs there is a greater incentive for airlines to engage in the price competition (Palepu & Healy, 2013).

The fluctuations in the aviation industry's growth over the years, with periods of growth and contraction, have also impacted the threat of existing competition. Currently, the industry is facing a significant setback due to the COVID-19 pandemic, causing a decline in flight growth rates. The aviation industry experienced a setback of around 10 years due to pandemic restrictions and is now predicted to only grow between 1.2% and 3.4% annually for the next two decades (EUROCONTROL, 2022; *IATA's Annual Review*, 2022). This slow growth rate means that existing airlines can only expand by gaining market share from competitors, thereby intensifying the competition within the industry field (Palepu & Healy, 2013).

Overall, we conclude the aviation industry in Nordic countries and Europe is a highly competitive environment, roughly equal in size and power. As a result, airlines must continuously innovate and adapt to remain competitive and profitable, therefore we consider the threat of existing competition to be high and have a significant impact on Norwegian's profitability.

3.3.2 Threat of New Entrants

Entering an industry can be challenging due to several so-called entry barriers. This term describes factors that need to be overcome by newcomers if they are to compete in an industry, thus the barriers can prevent or limit industry competition (Johnson et al., 2017). Among the most important entry barriers in the aviation industry are economies of scale, high fixed costs, lack of experience, limited bargaining power with suppliers, legal barriers, and regulations.

The aviation industry relies heavily on both scale and financing. With significant economies of scale in place, new players are faced with a dilemma - they must either invest in large-scale capacity, which can result in underutilization, or start with less than the ideal capacity (Palepu & Healy, 2013). With the aviation industry being characterized by high

fixed costs, it will be very expensive for a newcomer to match the performance of well-established carriers until a similar volume is matched (Webber, 2012). Requiring high capital investments, the scale effect is increased. Setting up an airline requires significant upfront investments in aircraft, infrastructure, and personnel. Either by buying new or previously used jets or acquiring leasing contracts, newcomers are forced to numerous financial programs to cover their expenses (Wagner, 2017).

Furthermore, the experience possessed by established players with extensive experience and resources gives them a significant advantage over new entrances. Until newcomers have built the same level of expertise, they will tend to operate at a higher cost, making them less profitable (Johnson et al., 2017). Access to suppliers and establishing channels may also cause entry barriers. This connects to the previously discussed bargaining power of suppliers. As a newcomer the negotiation power with suppliers of aircraft, jet fuel suppliers, and airport slots may be lowered, causing increased costs. Lastly, legal barriers may cause airlines to not be willing to enter specific markets or not make them enter at all. To operate the aircraft a handful of licenses and certifications, mostly regardless of safety need to be obtained. Most of them are largely common, although there will be variations between countries, making a market not suited for operation (Peters, 2022).

Even though the entry barriers make it difficult for new companies to enter the airline industry, it is not impossible. According to the IATA report from 2022, the number of new airlines in Europa was 20 (*IATA Economics*, 2020). By introducing innovative cost-cutting business models, new carriers may enter the market and be a threat to already established airlines. Flyr focused on domestic routes in Norway and tried to position itself as a premium low-cost carrier, taking advantage of Norwegian's bankruptcy risk. Flyr managed to enter the market but did not sustain financial stability, resulting in bankruptcy (Bøe & Valderhaug, 2023). This is also the case for many other new airlines. Even if they make it through the entry barrier, there is a high probability that the company will go bankrupt in the start-up phase. As a result of the difficulties entering the market and low margins, we assume the threat of new entrants to be low, having minimal effect on Norwegian's profitability in the future.

3.3.3 Threat of Substitute Products

The third factor is the threat of substitute products with relevant substitutes being those that perform the same function. Relative price, performance, and buyers' willingness to switch are the key factors when it comes to substitutes' impact on the airline industry (Palepu & Healy, 2013).

When analysing this threat, it is appropriate to divide the rivalry from close substitutes into long and short distances. Aircraft being the quickest and most comfortable travel method when it comes to cross-country travel have helped airlines to establish a strong position on the market by exploiting the performance factor, such as timesaving and comfort.

Alternatives for short-distance travel can include various modes of transportation. Trains, buses, and personal vehicles provide competition to airlines for such trips. Additionally, the development of a Europe-wide network of railway and high-speed rail technology will make it easier and more convenient for people to travel without needing to take a flight (European Commission, 2013). Furthermore, European Union aims to reduce its greenhouse gases, environmental concerns and sustainability efforts may lead some consumers to choose alternative modes of transportation (Gouveia & Lunam, 2022). However, those are long-term projects and will take time to be fully implemented. Hence, the determining factors in the selection between air and ground transportation for short-distance travel will be the price sensitivity of customers, the time savings they seek, and their willingness to switch between options, resulting in Norwegian still being a highly relevant travel alternative.

In some instances however, the threats arise not from customers opting for an alternative product but rather from the adoption of technology that enables them to eliminate or reduce their dependence on the current offerings (Palepu & Healy, 2013). The introduction of the video conferencing industry due pandemic has the potential to impact both business and leisure travel. While the substitution threat posed by this alternative remains relatively low at present and will never replace travel, the time and cost savings factors may contribute to a rise in its popularity (CAPA, 2020b). Summing up the presented factors we conclude them to result in a low level of threat to Norwegian's profitability.

3.3.4 Bargaining Power of Buyers

Driven by several key factors, including industry characteristics and the high number of buyers the customers can exert considerable pressure on the airlines, and perhaps have the biggest effect on the company's revenue (de Bruin, 2016).

Without any doubt, we can consider the aviation industry a relatively homogeneous market. The main purpose of airlines is to provide transportation services to move people, or cargo from one place to another. Although airlines do some degree differentiate on specific on-board and off-board aspects, the majority of players within the industry offer similar products, services and often routes with marginal differences (Tatum, 2023). Consequently, pricing strategies play a crucial role in the competition for customers. Some airlines enter alliances, thus making the market less homogenous and competing against the bargaining power of buyers (Crail, 2022). Norwegian is a standalone airline, and cannot benefit from the big alliances, however as previously mentioned the airline has entered strategic agreements with two other airlines from Norway.

The other factor is the high number of buyers, including individual consumers, travel agencies, and corporate clients. With access to price transparency provided by online services customers have almost perfect information about flights (Gössling & Dolnicar, 2023). In addition, switching costs between airlines are substantially low, therefore also brand loyalty. With an undifferentiated product and few switching costs, buyers are more price sensitive and therefore more likely to switch between carriers (Palepu & Healy, 2013).

The strategy airlines often implement is customer retention, such as loyalty programs, to maintain their customer base. Norwegian's loyalty program, "Norwegian Reward," allows loyal customers to collect virtual currency, Cashpoints, which can be redeemed for flight tickets and additional perks (Norwegian, 2023a). Such programs include an indirect switching cost and can limit the bargaining power because customers may be less likely to switch to a different carrier. Nevertheless, price is the most significant factor in determining airline choice, whereas loyalty programs rank as the least important consideration (Salas, 2022). Consequently, customers that are less sensitive to price and travel frequently, for example, business travellers are more likely to benefit from loyalty programs and therefore remain loyal to a single airline. On the other hand, one-time holiday passengers, may not see significant benefits from the loyalty program and therefore look for cheaper alternatives.

Overall, we conclude the bargaining power of buyers is moderate to high. The high number of buyers, combined with a relatively homogenous product and low switching costs, means that customers can exert significant pressure on airlines. Loyalty programs may limit switching. Nonetheless, the price remains the most significant factor in determining airline choice, and buyers are more likely to switch to cheaper alternatives if available. As there are airlines offering even lower prices than Norwegian the company revenue will be to a certain degree affected.

3.3.5 Bargaining Power of Suppliers

When analysing the power of suppliers, we consider commercial jet manufacturers and airport slots as the key players. Creating a duopoly, Airbus and Boeing share almost exclusive control of the business for large commercial jets and have substantial bargaining power on the prices they charge (Banton, 2021). The limited number of suppliers means there are few alternatives for airlines to choose from, further increasing the bargaining power of the supplier (Palepu & Healy, 2013).

Furthermore, the switching cost, especially for airlines that rely on their business at low cost and operates with low margins can be substantial. Such costs can include training costs where pilots, mechanics, and maintenance staff need to be trained on the new aircraft, which can be costly. Costs of cancelling existing orders or contracts with the previous supplier can also have a huge financial impact. Back in 2021, Norwegian cancelled the order of Airbus aircraft, losing both the prepayment made and paying an additional 700 million EUR fee (Bailey, 2021).

Airports have bargaining power as suppliers in the aviation industry to some extent. If an airport is one of the few options for a specific destination or has unique facilities, locations or services, airlines may have to agree to the terms and conditions set by the airport to establish a destination. Through directives, European Parliament aims to increase the balance of bargaining power between airlines and airports (Conti et al., 2018). It can however be observed that fees are likely to vary (CAPA, 2020a; Conti et al., 2018). Consequently, low, and ultra-low-cost carriers will avoid the main airport. Airlines focusing on flights to key European destinations, like Norwegian are unable to adopt this strategy and are to some extent subject to the bargaining power of airports. To summarize we consider the bargaining power of suppliers to be high.

3.4 Internal Analysis of Norwegian

The examination of the macro environment and industry analysis outlined above will be in the followed subchapter enhanced by an analysis of the company's internal resources. To obtain a sustainable competitive advantage and achieve exceptional economic results, it is essential for an organization to possess unique resources and capabilities (Johnson et al., 2017). The following internal analysis will aim to identify these distinctive competencies. From a strategic viewpoint, airlines are faced with a constant need to make decisions as they want to set themselves apart, either in terms of their activities or through their resources. The central concern is the alignment of resources with activities; when this is done effectively, the company is likely to prosper (Mathews, 2007). We assess the potential of Norwegian to establish lasting advantages or disadvantages by examining a select group of tangible and intangible assets.

3.4.1 Management and ownership structure

Leadership and ownership are key strategic activities to create a competitive advantage, with the management team playing an important role in shaping the strategy and direction of and company and the ownership structure affecting the company's ability to access resources and funding, as well as its decision-making processes and accountability (Gluck et al., 1980). In the end, both the management and ownership structure can significantly influence a company's competitiveness and its likelihood of success in the market.

As emphasized in an earlier chapter, the board of directors is composed of eight members, with five, being considered independent and elected by shareholders, while the remaining three are elected by employees. The board plays a key role in efficient communication between owners, management, and itself, ensuring the company is effectively managed. Geir Karlsen, current CEO and former CFO will now proceed to execute the new business strategy and lead Norwegian to profitability (Lorentzen, 2021b).

The ownership structure can determine the level of control that shareholders have over the company and influence how decisions are made. There is clear evidence that the structure of company ownership can significantly influence financial performance (Zheka, 2003). If the company has a diverse ownership structure with many smaller shareholders, as in the case of Norwegian the company may be more responsive to changes in the market and be more willing to pursue long-term initiatives. It is argued that when shareholders hold a large block of shares, they are likely to regard their investment as long-term, and the

initiative to maintain value is higher (Palepu & Healy, 2013). Norwegian however is owned by many small investors, with multiple institutions. When multiple institutions have ownership of a stock, there's always a risk that they are in a 'crowded trade'. When such a trade goes wrong, multiple parties may compete to sell the stock, resulting in the price falling down (Simply Wall St, 2022). Due to recent changes in business structure, management, and ownership structure, we assume this might be a challenging aspect for the prospects of Norwegian. If the company fails to improve the results, investors might take their investments elsewhere, resulting in a decrease in demand for Norwegian stock and potentially leading to a decline in stock price. This could make it harder for the company to raise new capital in order to cover the fleet renewal plan and increase financial risk.

3.4.2 Norwegian's fleet

An important area the airlines focus on is fleet management, with its aircraft being the main revenue generator. Optimizing operations, reducing costs, enhancing safety and reliability, and delivering a consistent passenger experience are the key benefits of effective fleet management in the aviation industry (Atay et al., 2022).

The preferred size of an airline's fleet can vary depending on various factors such as the carrier's operational needs, financial resources, and business strategy. As of 2019, the company operated more than 156 aircraft, in recent years Norwegian has drastically reduced its fleet size as part of the restructuring process. At the end of 2022, the fleet consisted of 70 aircraft within the Boeing 737 family. Norwegian's strategy of seasonal flexibility, including „Pay-by-the-hour” agreements allows them to fully utilize the fleet. During low season allowing them to reduce capacity by 20-30% and minimize cash-burn (*Reports and Presentations*, 2023)

Over the upcoming years, Norwegian plans to re-organize and increase its fleet, with the redelivery of leased 737, and replace them with fuel-efficient aircraft with significant cost savings. This is a common practice among airlines aimed at reducing maintenance costs as the aircraft reaches its mature stage (Bechai, 2017). The aim is to increase the fleet but below the pre-pandemic size. As of October 2022, Norwegian placed an order for 50 Boeing 737 MAX 8 aircraft with an option for additional 30 aircraft with the aim to increase its operating fleet to above 100 by 2030. The order stands for almost 40 % of the planned fleet (Norwegian, 2022b). This is a costly operation, but important to keep up with

the modernization of fleets among the competition and the company's environmental sustainability strategy.

Due to the pandemic, both Boeing and Airbus may struggle to deliver some aircraft on time, this relates to the whole industry (Russell, 2023). To prevent the delays from impacting the operations has extended some of its lease contracts. After the bankruptcy of Flynor, the airline also managed to overtake six 737 MAX 8 aircraft on a fixed lease rate with no escalation. This will somehow compensate for the possible further delays (Vosgraff et al., 2023).

It is important to note that standardization by utilizing aircraft from a single manufacturer can result in lower operating costs through economies of scale and improved maintenance and training efficiencies (Santo, 2004). Standardization, however, may restrict an airline's ability to adjust to shifting market conditions and customer demands and hinder their distinction from competing airlines, with Boeing 737 MAX groundings as an example (Manglik et al., 2021).

Strategic fleet management enables Norwegian to utilize its aircraft more efficiently. However, the competition currently has a bigger fleet and taking the same actions toward having a more efficient and environmentally friendly fleet (*Annual Reports - SAS*, 2023; Lufthansa Group Investor Relations, 2023). As a result, we consider the fleet resource to provide Norwegian with a competitive parity.

3.4.3 Brand value

Brand image is crucial to a company's success in a highly competitive industry. In the airline industry, where the products offered are highly commoditized, brand image can serve as a key differentiator between airlines. The airline brand is more than just a name, it encompasses the airline's visual identity, reputation, and perception in the minds of customers. The ability to create and maintain a strong brand image is therefore a strategic tool that can impact a company's long-term viability and profitability (Bartaševičiūtė, 2022).

In recent years, Norwegian has gained significant attention in the media and the aviation industry. The outbreak of the global pandemic has had a significant impact on Norwegian's operations, resulting in the company being associated with terms such as "risk of bankruptcy" and "financial problems". The pandemic led to a decline in revenue and a reduction in customer satisfaction due to numerous flight cancellations and issues

surrounding compensation, causing the Norwegian brand to experience a decline in brand image. However, the airline has been formally recognized on multiple occasions as the top-ranked carrier in Europe. Being one of the European leading low-cost airlines, between 2012 and 2020 Norwegian was granted multiple awards and accolades for airline operations, loyalty programs, and customer service (*Awards and Recognitions*, 2023). The most recent award „Best Low-Cost Airline in Northern Europe” implies that even though Norwegian suffered a reputation loss due pandemic, it is still considered the best alternative in Northern Europe (Skytrax, 2023)

With a history of success combined with a recent collaboration with local airlines to increase seamless travel, problems in the competition camp, and overall being a trusted brand in Norway and Scandinavia we consider the Norwegian brand value to be competitive in Northern Europe and giving them competitive parity on the European market.

4 Financial analysis

This chapter covers different parts of the financial analysis and supplements the insights from the strategic analysis of Norwegian. Financial analysis will provide us with insight into past and current performance, thus helping us evaluate the effectiveness of the strategies and help us make a reliable future forecast (Palepu & Healy, 2013).

To better perform the analysis, we will reformulate parts of the financial statement. The analysis will then be based on key financial numbers and ratios covering profitability, solvency, and liquidity during our analysed period, 2017-2022. Calculations of all ratios are enclosed in Attachment 1 under “Financial Ratios”.

As a benchmark for our ratios, we will in this chapter calculate the required rates of return for Norwegian, which we will also later use as discount rates in our valuation. The goal is to assess the performance of the company, relative to the investor's expectations, thus giving us more context about the company's financials. Additionally, we will compare key ratios to the industry average and closest competitors.

4.1 Reformulation of financial statements

The first step will be to get a clear financial statement to work with. During our analysis period, in 2019 Norwegian adopted a new financial reporting standard called IFRS 16. The new standard resulted in changes for companies that lease operating assets. IFRS 16 required all leases to be recognized as assets and liabilities, thus resulting in changes in

financial statements and some ratios. We do not believe that the changes would affect our valuation in a significant way, as this only affects historical numbers. Therefore, besides depreciation adjustment, we choose not to reformulate the years 2017 and 2018 to fit the IFRS 16 standards and the remaining period. However, we will be aware that the changes would lead to a slightly increased debt ratio, EBIT, and EBITDA (PricewaterhouseCoopers, 2016). The adjustment to depreciation is to get a better understanding of how it changed historically, thus helping us with the future forecast. Although the adjustment is not fully in line with the IFRS 16 standards, it is done in a way that represents the changes.

The other major decision is to keep the “reversal of impairment loss regarding prepayment on aircraft” as it is. During the second quarter of 2022, the company recognized a partial impairment reversal of 2.099 billion NOK relating to predelivery payments toward Boeing. This is due to the delays in the delivery of new aircraft and has a significant impact on the income statement (*Reports and Presentations*, 2023). Without the recognition of reversal, the EBIT would have been -597 million NOK, compared to 1.502 billion NOK. The net profit would also be negative. We are aware that this might be recognized as a one-time event and should therefore be excluded but decide to keep it as it is. We justify the choice by augmenting that this is a significant amount of money, contributing to the operation of Norwegian. We also believe the reversal will offset the future negative effect of the late aircraft delivery. What we have in mind is that this choice affects all ratios that include EBIT and net profit, such as the main ones ROIC and ROE. However, we will proceed with the analyses and valuation as if the results were positive, just as in the income statement.

The further standard reformulation of the income statement included three changes. First, we recognized profit (loss) from associated companies as operating revenue. These are associated with aircraft lease and aviation crew management, and we consider them related to Norwegian’s core business. The second change is not to include impairment in our reformulated income statement. Impairment may arise as a one-time event and be caused by a change in a company operation. In Norwegian’s case, it is related to the restructuring because of the pandemic in the year 2020. Further impairments during our forecast period are not expected and thus also not included in the financial analysis. The last adjustment is related to not including assets held for sale in the calculation of the current ratio. This is also because of the abnormal number that year. The table below presents key numbers

from our reformulated financial statements, while more detailed calculations are presented in Attachment 1 under “Income statement” and “Balance Sheet”

Key Financial Numbers in NOK 1000						
	2017	2018	2019	2020	2021	2022
Total Revenue	31 240 207,00	40 394 100,00	43 508 300,00	9 087 800,00	5 067 800,00	18 869 300,00
Operating expenses	30 889 395,00	42 448 700,00	36 208 400,00	13 851 000,00	6 584 000,00	17 615 300,00
EBIT	- 1 710 167,00	- 3 722 200,00	842 400,00	- 10 960 700,00	- 2 786 200,00	1 502 400,00
Net profit (loss)	- 1 793 705,00	- 1 454 300,00	- 1 609 100,00	- 10 224 300,00	1 870 200,00	1 005 500,00

Table 2 Key financial numbers, 2017-2022

4.2 Calculation of required rate of return

Crucial components in determining the value of a company and a benchmark for our financial ratios that will be calculated throughout the analysis are the required rates of return for equity and capital. To estimate the required rate of return on equity (r_e), we will use the Capital Asset Pricing Model (CAPM). For the cost of capital, we will use the Weighted Average Cost of Capital (WACC). The following section will briefly explain each rate, and a more in-depth calculation is given in Attachment 1 under “Beta & Required rate of return”.

4.2.1 The required rate of return on equity

The cost of equity describes the expected rate of return on an investment financed by equity. The metric is used by investors and business owners to assess the equity value of a project or business venture. To calculate the cost of equity (r_e) we used the following CAPM formula:

$$r_e = r_f + \beta * (\text{Market Risk Premium})$$

The three important parameters needed in the capital asset pricing model are a risk-free rate (r_f), stock beta (β), and a market risk premium. The bond rates are provided by PVC and given by the Norwegian central bank. We choose 10-year government bonds as risk-free rate. For the market risk premium, we used the weighted average in each representative year, also provided by PWC (PricewaterhouseCoopers, 2022). To estimate the beta in each year we went with the conventional approach where we regress the return on the investment, against the return on the market index, in our case Oslo Stock Exchange Index. The table below shows the three parameters and the calculated cost of equity (r_e) in each representative year.

Required rate of return on equity						
	2017	2018	2019	2020	2021	2022
Beta	1,15	3,35	-1,53	0,30	2,03	1,54
Risk free rate (Rf)	1,64%	1,88%	1,49%	0,82%	1,40%	2,84%
Market risk premium (Rm)	5%	5%	4,90%	4,80%	4,80%	4,90%
Required return on equity (Re)	7,38%	18,64%	-6,02%	2,26%	11,14%	10,40%

Table 3 Calculation of required rate of return on equity, 2017-2022

The beta that will be used in our valuation purpose is determined by taking the weighted average of two historical periods, the pandemic period beta, and the non-pandemic beta. The pandemic period we define to be 2020 and 2021, and the rest of the period is non-pandemic. We shall multiply the beta from the pandemic period (2020–2021) by 0.33 since we deem it to be a short-term disturbance, and thus we give this period less weight. The non-pandemic years (2017-2019, 2022) will weigh the beta calculation by a factor of 0.67. As the pandemic was an unusual event that disturbed Norwegian's operation, we argue that using the historical beta without recognition of COVID-19 would lead to a wrong beta estimation and valuation outcome. The non-pandemic beta was calculated to be 1.59 while the pandemic beta was 1.15. On the 18th of December 2020, the stock also experienced a 1/100 stock split which made the stock jump 549% that month. Since the price stabilized within the next month, we decided to exclude that month from our calculations. Weighted up by their respective factors, we end up with the historical beta of:

$$1.59 * 0.67 + 1.15 * 0.33 = 1.45$$

To calculate the cost of equity (r_e) for the valuation purpose we used the beta calculated above, with the three other parameters from the year 2022.

$$0.0284 + 1.45(0.049) = 0.099205$$

4.2.2 The required rate of return on capital

The next step is to calculate the weighted average cost of capital (WACC), calculated with the formula below:

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

(Damodaran, 2012)

According to the company's capital structure, the market value of equity (MVE) and net interest-bearing debt (NIBD) are used to weigh the cost of equity and the cost of debt. The MVE is computed by multiplying the closing stock price by the total number of outstanding shares as of year-end. NIBD is obtained from the Norwegian annual balance sheet. During the last two years, the company accumulated a large cash balance, therefore

we choose to work with net interest-bearing debt all the way through our valuation as it allows us to get a more accurate picture of the company's debt position and overall valuation (Damodaran, 2012).

To calculate NIBD we use borrowings, lease liabilities, and derivative financial instruments (forward contracts) from both non-current and current liabilities.

Net Interest Bearing Debt in NOK 1000						
	2017	2018	2019	2020	2021	2022
Borrowings	22 060 271,00	22 530 000,00	22 144 400,00		3 981 600,00	4 050 000,00
Lease liabilities			30 079 800,00	185 700,00	4 434 800,00	4 646 200,00
Derivative financial instruments		38 100,00	369 200,00	3 200,00		
Non-Current IBD	22 060 271,00	22 568 100,00	52 593 400,00	188 900,00	8 416 400,00	8 696 200,00
Borrowings	4 244 486,00	11 309 100,00	4 589 600,00	8 769 900,00	183 100,00	198 500,00
Lease liabilities			4 194 500,00	3 165 400,00	777 900,00	1 190 600,00
Current IBD	4 244 486,00	11 309 100,00	8 784 100,00	11 935 300,00	961 000,00	1 389 100,00
Total Interest Bearing Debt	26 304 757,00	33 877 200,00	61 377 500,00	12 124 200,00	9 377 400,00	10 085 300,00
Only Borrowings	26 304 757,00	33 839 100,00	26 734 000,00	8 769 900,00	4 164 700,00	4 248 500,00
Cash and cash equivalent	4 039 776,00	1 921 700,00	3 095 600,00	2 666 900,00	7 694 800,00	7 759 000,00
NIBD	22 264 981,00	31 955 500,00	58 281 900,00	9 457 300,00	1 682 600,00	2 326 300,00

Table 4 Calculation of Net Interest-Bearing Debt

The tax rate is provided by the Norwegian government, while the cost of debt (r_d) is derived straight from the company's annual reports. As there is no recent credit rating available for Norwegian reflecting its current structure, we choose to use the data provided by the company itself.

In the same way, as in the previous subchapter, the table below shows the necessary parameters and WACC in each representative year. The outcome of each year will be used to compare it with Norwegian's return on invested capital in the representative year.

Calculation of WACC						
	2017	2018	2019	2020	2021	2022
Required rate of return (Re)	7,38%	18,64%	-6,02%	2,26%	11,14%	10,40%
Cost of Debt	5,20%	5,00%	10,10%	9,30%	4,10%	6,40%
Tax rate	24%	23%	22%	22%	22%	22%
MVE	6 293 696 464	7 860 611 207	6 174 328 732	3 455 809 880	9 981 573 832	6 826 124 684
NIBD	22 264 981 000	31 955 500 000	58 281 900 000	9 457 300 000	1 682 600 000	2 326 300 000
MVE+NIBD	28 558 677 464	39 816 111 207	64 456 228 732	12 913 109 880	11 664 173 832	9 152 424 684
WACC	4,71%	6,77%	6,55%	5,92%	9,99%	9,02%

Table 5 Calculated WACC, 2017-2022

The WACC used for valuation is given by the following equation:

$$0.092 * \frac{6\,826\,124\,684}{9\,152\,424\,684} + 0.064(1 - 0.22) \frac{2\,326\,300\,000}{9\,152\,424\,684} = 0.0866$$

Final WACC	
Beta	1,45
Risk free rate (Rf)	2,84%
Market risk premium (Rm)	4,90%
Required return on equity (Re)	9,92%
Cost of Debt	6,4%
Tax rate	22%
MVE	6 826 124 684
NIBD	2 326 300 000
MVE+NIBD	9 152 424 684
WACC	8,66%

Table 6 Calculated WACC used for the present value approach

4.3 Historical growth and results

Having the required rates of return calculated we begin the financial analysis by looking at some key financial numbers that will provide us with information and a picture of a company's past performance. This chapter will briefly cover revenue, operating, expenses, earnings before interest and taxes (EBIT), and net profit.

	Key Financial Numbers in NOK 1000					
	2017	2018	2019	2020	2021	2022
Total Operating Revenue	31 240 207,00	40 394 100,00	43 508 300,00	9 087 800,00	5 067 800,00	18 869 300,00
Operating expenses	30 889 395,00	42 448 700,00	36 208 400,00	13 851 000,00	6 584 000,00	17 615 300,00
EBIT	- 1 710 167,00	- 3 722 200,00	842 400,00	- 10 960 700,00	- 2 786 200,00	1 502 400,00
Net profit (loss)	- 1 793 705,00	- 1 454 300,00	- 1 609 100,00	- 10 224 300,00	1 870 200,00	1 005 500,00

Table 7 Total operating revenue, operating expenses, EBIT, and net profit, 2017-2022

As presented in the table above, Norwegian struggled to achieve positive net profit, except for the years 2021 and 2022. The negative results in the first four years and the improvement in the most recent period are connected to the percentage growth or decline of important numbers throughout the analysis period.

	Key Numbers Percentage Change				
	2018	2019	2020	2021	2022
Total operating revenue	29%	8%	-79%	-44%	272%
Operating expenses	37%	-15%	-62%	-52%	127%
EBIT	-118%	123%	-1401%	75%	154%
Net Profit	19%	-11%	-535%	118%	-46%

Table 8 Percentage change in total operating revenue, expenses, EBIT, and net profit, 2017-2022

The company managed to significantly increase its revenue in 2018. However, as it reads from the table there was also a drastic decrease in EBIT the same year, as operating expenses grew more than revenue. This is mainly due to the doubling in the price of aviation fuel compared to previous years, as well as a slight increase in personal expenses. Due to the negative net profit being the starting point, the 2018 results while remaining negative, increased by 19%. This was possible because of high positive net financial items.

Changing its strategy in 2019, Norwegian had a smaller increase in revenue but managed to report a significant increase in EBIT. The reduction in operating expenses is partly an effect of the IFRS 16 implementation, as aircraft leases were no longer included as part of operating expenses, but under depreciation. Excluding the lease effect, the company still managed to reduce expenses by 5% (15% including the removal). The fuel price remained high that year, and the reduction in expenses might support the previously discussed disciplined capacity deployment and the McKinsey & Company study. Even though EBIT was positive, Norwegian failed to sustain positive net financial items and reported a decrease in net profit. The first year with a focus on profitability ended thus with a negative result.

The pandemic disrupted the ordinary operation. During these years the company also preceded the restructuring process resulting in high net financial items. This allowed Norwegian to report a positive net profit in 2021 even though revenue was below standards.

After two years of struggle, 2022 ended with both positive EBIT and net profit. As explained and justified in Chapter 4.1 this is mainly caused by the reversal of impairment loss regarding prepayment on aircraft. Looking at the operating expenses, Norwegian managed to achieve healthier cost management in every aspect that they could control, mainly because of the restructuring. However, once again extremely high fuel prices increased expenses significantly and were 40% of revenue compared to the historical average of 27%.

It is worth noting that in 2022, the company operated almost half of the fleet and at a lower scale compared to 2017-2019. If we would calculate the fuel expense in 2022 using the 2018 prices, Norwegian would be able to achieve both positive EBIT and Net profit even without the reversal of prepayment on aircraft. This further emphasizes the impact that fuel prices have on the company's results.

We can conclude that the reasons for the poor performance in the previous years are a combination of different factors, mainly the high operating expenses, more specifically fuel prices. This is not usually as the aviation industry is characterized by its low margins. We also see that the restructuring had an impact on Norwegian's financial management, even though the results are not yet fully optimized. Also following the same pattern as in

2019 we could expect the company to be even more discipline with expenses next year. This will be more covered in the forecast chapter.

4.4 Profitability

The profitability analysis establishes where the company is now and is important when it comes to making a reliable and realistic forecast (Penman, 2007). We have based our analysis on two common measures: return on invested capital (ROIC) and return on equity (ROE). These ratios will be compared to the WACC, the required rate of return (r_e), and the industry average. By doing this, we will put the actual performance in the context of investors' expectations and industry standards. Additionally, we will calculate and compare the operating profit margins to the closest competitors.

4.4.1 Return on Invested Capital

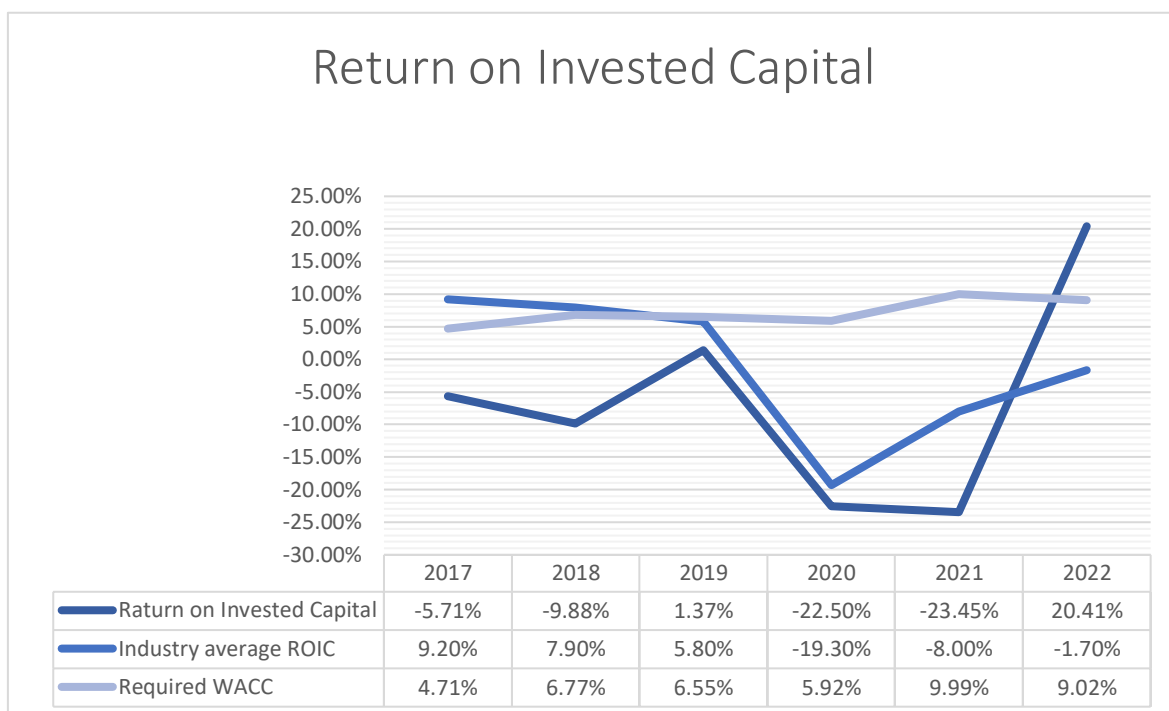
Return on invested capital is a measure that relates the operating income to the capital invested in a company. In our calculation of ROIC, we choose the capital to be the sum of the book value of interest-bearing debt and equity, net of cash. Cash is a non-operating asset, thus we decided to deduct it to obtain a more accurate return on invested capital. We also took the average of the current period's book value and the prior period. (Damodaran, 2012). The formula used for ROIC is:

$$\frac{EBIT * (1 - t)}{((BV \text{ of debt} + BV \text{ of equity} - Cash)_t + (BV \text{ of debt} + BV \text{ of equity} - Cash)_{t-1})/2}$$

The graph below shows how the ROIC changes from 2017 - 2022 compared to WACC and the industry average. The analysed period can be split into three phases to obtain a better understanding of its development. The first phase was from 2017 to 2019 with the first two years yielding a negative return. A company can report higher ROIC by increasing its operating profit (EBIT). This was the main reason for the Norwegian's slight positive return in the year 2019, where ROIC increased by 11.3%. This may suggest that the change in strategy had a positive effect and that Norwegian is capable of delivering positive results (*Airlines Cut Losses in 2022; Return to Profit in 2023*, 2022).

The second phase represents the pandemic period 2020 and 2021. Company revenue decreased by nearly 80% while expenses and aircraft leases stayed high. As the book value also reflects retained earnings, large negative retained earnings in 2020 led to negative equity, providing us with a meaningless number for that year. Therefore, we decided to use

only the book value of 2019 equity as input data (Damodaran, 2012). Reduction in EBIT drastically affected the ROIC, falling to negative 22.5% and 23.5% respectively. The last phase is the year 2022 in which Norwegian managed to achieve an ROIC of 20.4%.



Graph 2 Return on invested capital comparison, 2017-2022 (Europe, 2022)

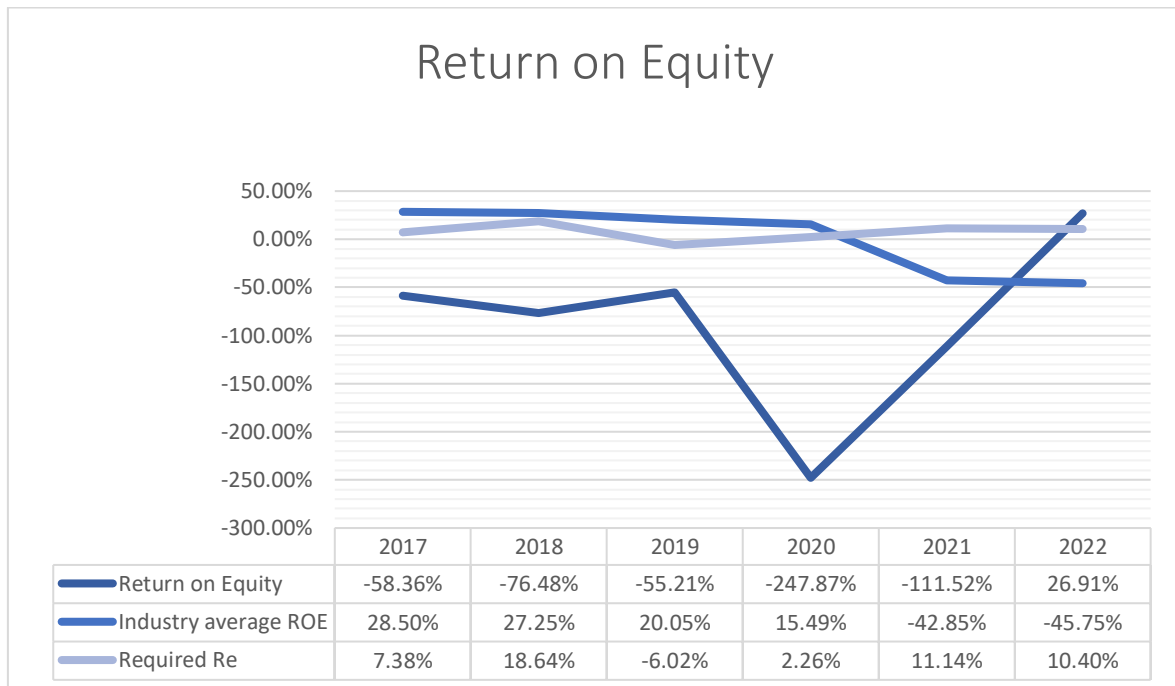
As mentioned earlier return on invested capital is a metric used to evaluate a company's effectiveness in using its capital to generate profitable investments and is adding value if its higher than the weighted average cost of capital. A common benchmark of two percent above WACC indicates a value creation (Hayes, 2022a). When comparing the company's performance to the weighted average cost of capital we see that Norwegian has not provided the expected return for investors in any year besides 2022. Moreover, the ROIC has been significantly lower than the industry average, except for last year when it substantially exceeded the expected level. Overall, the company has not produced a significant return on the total invested capital in the company.

4.4.2 Return on Equity

While the return on invested capital provides us with information about the company's profitability relative to all capital invested, the return on equity focuses only on the equity part of the balance sheet, therefore being a relevant ratio for equity investors. The higher the ROE is, the more effective a company is in turning its equity financing into profits (Fernando, 2023). The formula used for ROE is:

$$\frac{Net\ Profit_t}{(Total\ Equity_t + Total\ Equity_{t-1})/2}$$

To calculate the return on equity ratio, we divide net income by the book value of total equity. During our analysis period, Norwegian issued lots of new shares, so we decided to take an average of the ending book values for the current and prior periods to arrive at a more appropriate current ratio, similar like in the calculation of ROIC. Also here we use the 2019 book value of equity as input for 2020 calculations (Damodaran, 2012).



Graph 3 Return on equity comparison, 2017-2022 (Europe, 2022)

The negative ROE in 2017 - 2018 was mainly driven by the net loss reported and decreasing amount of total equity. The slight improvement in 2019 was caused by the issue of new shares, which resulted in a doubling of the company's total equity. However, the continuity of net loss held the ROE negative. The pandemic period furthermore disrupted company operations and increased net loss. As mentioned earlier, we used 2019 equity to

calculate the 2020 ROE, however, the ratio still yields an unrealistic number providing us with little input to reflect on. As the company reported a positive net profit in 2022 it also managed to achieve an ROE of 26.9%

When comparing the Norwegian's return on equity to (r_e) and the industry average, similarly as with ROIC we see that up until 2022 Norwegian has not delivered the required rate of return for investors. This should be seen as a warning signal to a potential investor (Fernando, 2023). The analysis shows the negative net income and inconsistent profits as the main reason for the negative result through previous years.

4.4.3 Operating profit margin

The last profitability ratio we will look at is the operating profit margin which tells us how much profit a company makes every dollar of sale after paying for all its variable costs but before any tax and interest payment. Airlines usually have low operating margins primarily due to high variable costs. Thus, the operating margin is a crucial measure for evaluating a company's profitability derived from its operations (Hayes, 2022b). The formula for operating profit margin is:

$$\frac{\text{Operating Profit (EBIT)}}{\text{Total Revenue}}$$

The table below shows how Norwegian's operating margin changed during our analysis period. Prior to the COVID-19 pandemic, the margin for European airlines fluctuated around 5%, indicating that Norwegian reported a ratio below the average up until 2022 (Statista Research Department, 2023a). The pattern follows the previously discussed ratios, ROIC and ROE, which improved in 2019 before collapsing during the pandemic.

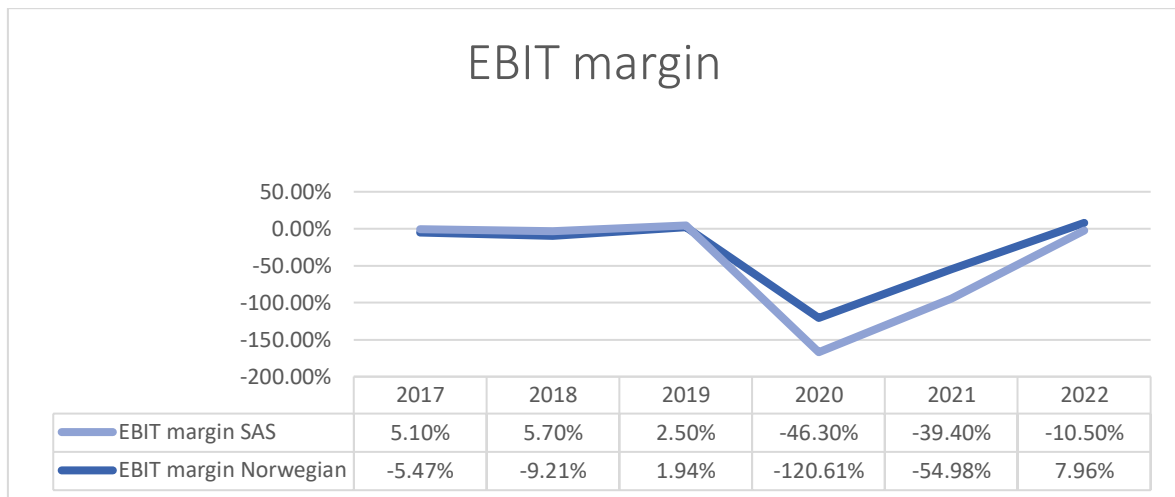
Operating Profit Margin Norwegian						
	2017	2018	2019	2020	2021	2022
Operating Profit Margin	-5,47%	-9,21%	1,94%	-120,61%	-54,98%	7,96%

Table 9 Norwegian's operating profit margin, 2017-2022

Diving deeper into the income statement we see the fuel cost and weak NOK in recent years having the most impact on the EBIT, thus reducing the operating margin. In 2022 Norwegian managed to report a positive EBIT, mainly due to the reason earlier explained in chapter 4.1.

Because EBIT excludes factors such as interest and tax rate differences it is a good ratio when comparing airlines performance. The graph below shows how SAS and Norwegian EBIT margins changed through the years. Both companies follow a similar path,

corresponding to the events in the industry. However, SAS performed better than Norwegian during most of the period, the downfall during the pandemic was also significantly lower. Currently, SAS is struggling and under bankruptcy protection but historically higher EBIT margins suggest that SAS has been more efficient in generating higher profits from its operation and managing its costs (Valderhaug, 2023).



Graph 4 Historical EBIT margin for SAS and Norwegian, 2017-2022 (Annual Reports - SAS, 2023)

4.5 Liquidity

The next step in our financial examination is liquidity. The goal of the liquidity analyses is to determine the company's ability to pay its current debt obligations. As airlines may experience revenue declines, having sufficient liquidity is crucial in absorbing cash flow disruptions. For our liquidity analysis, we have chosen to focus on the current ratio and the cash ratio.

4.5.1 Current ratio

The current ratio is a measure of a company's ability to pay its short-term debt. The ratio is calculated with this formula:

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

In general, the current ratio should be above one, which would prove that the company can pay off its current debt. If a company's current ratio is less than one, it means that the amount of short-term liabilities is greater than the expected cash generated from its current assets if they were sold within the next year (Damodaran, 2012).

The expectation of how high the ratio should be can vary between industries, so we compared Norwegians' ratio to the industry average.

	Current Ratio					
	2017	2018	2019	2020	2021	2022
Norwegian	0,56	0,43	0,61	0,70	1,27	1,32
Industry Average	0,99	1,13	1,01	0,90	1,12	1,36

Table 10 Current ratio comparison with industry average, 2017-2022 (Air Transport Services Current Ratio 2010-2022 / ATSG, n.d.).

Compared to the industry average, we can see that Norwegian has had a weaker ratio up until 2021 when it beat it and settled around the industry average in 2022. This comparison also tells us that while the industry average weakened in 2020, the current ratio for Norwegian continued to rise. This improvement can be explained by the company's restructuring process in which it increased its cash and cash equivalent holding from around 2 - 4 billion NOK in 2017-2020 to around 7.5 billion NOK in 2021 and 2022. As of the year-end 2020 majority of the debt was reclassified due to a breach of covenants, reducing the current borrowing from nearly 9 billion NOK to 183 million NOK and furthermore increasing the current ratio. While the current ratio is currently relatively high to what it averaged in the last years it is reasonable to assume the ratio to fall down in the future. This is due to the increase in air traffic liabilities as the operations increase and the expansion of the aircraft fleet.

4.5.2 Cash ratio

Because of the increased amounts of cash, we considered the cash ratio highly important when evaluating liquidity. It is a conservative evaluation of a company's capacity to meet its financial commitments. In contrast to other liquidity ratios, it only takes cash or cash equivalents into consideration, leaving out other assets like accounts receivable. A company's cash ratio can be determined using the formula below:

$$\frac{\text{Cash and Cash Equivalents}}{\text{Current Liabilities}}$$

(Cash Ratio, 2022)

We could not find the industry average cash ratio, so we calculated the ratio for Norwegians's two closest competitors.

	Cash Ratio					
	2017	2018	2019	2020	2021	2022
Norwegian	0,29	0,18	0,18	0,62	1,27	1,02
SAS	0,58	0,65	0,58	1,17	0,26	0,36
Lufthansa	0,10	0,09	0,09	0,12	0,16	0,10

Table 11 Cash ratio comparison with SAS and Lufthansa, 2017-2022(Annual Reports - SAS, 2023; Lufthansa Group Investor Relations, 2023).

As we can see, Norwegian has throughout most of the period, had a lower cash ratio than SAS, but higher than Lufthansa. We can see the trend change after 2020 when Norwegian's ratio rises significantly. As mentioned earlier this is due to the increase in cash holdings.

In general, a larger cash ratio is viewed favourably because it indicates a solid financial situation, especially in a volatile industry where unexpected events can disrupt operations and revenue. It's crucial to keep in mind, though, that a high cash ratio may also mean that the business isn't using its cash effectively or taking advantage of low-interest loans. We believe that in the future some of the cash will be used to pay for the order of new aircraft, thus reducing the cash ratio.

4.6 Solvency

The ability of a corporation to fulfil short-term obligations is the focus of the liquidity analysis, whereas the ability to fulfil long-term obligations are the focus of the solvency analysis. Solvency ratios are important measures of a company's financial stability and can shed light on the likelihood of a long-term debt default. We will look at the interest coverage ratio and the debt-to-equity ratio as two important ratios to evaluate the solvency of Norwegian. These ratios can reveal important details about the company's financial health and capacity to fulfil its long-term commitments (*What Is a Solvency Ratio, and How Is It Calculated?*, 2023).

4.6.1 Debt to equity ratio

In the case of debt-to-equity ratio, we managed to find a comparable industry average. Its common financial indicator for determining a company's level of financial leverage. As the aviation industry requires a significant amount of capital to operate and expand, debt is often used as a way of financing. The ratio is derived with the given formula:

$$\text{Debt to Equity Ratio} = \frac{\text{Interest Bearing Debt}}{\text{Total Shareholders Equity}}$$

The D/E ratio is crucial in the realm of corporate finance because it shows how much a company depends on debt rather than equity to finance its operations. The D/E ratio offers investors and analysts crucial insight into a company's financial health and risk profile by assessing the split between debt and equity financing. Having the right amount of debt can be a good thing for the company as it provides some benefits such as tax shield. The

problems arise when the industry is experiencing a downfall in operations and as the macroeconomic events influence the debt and rates (Orlando, 2022).

	Debt to Equity Ratio					
	2017	2018	2019	2020	2021	2022
Norwegian	12,5	19,9	14,9	-1,8	2,9	2,4
Industry Average	1,30	3,21	3,22	1,72	0,98	1,03

Table 12 Debt to equity ratio comparison to the industry average, 2017-2022 (Air Transport Services Debt to Equity Ratio 2010-2022 | ATSG, n.d.).

We continue seeing the same trends as in previous ratios where Norwegian gets outperformed in the first three years of our analysis period and slowly improves. The improvement and lowering of the D/E ratio is mainly a result of restructuring where Norwegian managed to reduce the debt by approximately 62 billion NOK and also offered some creditors shares in the company (Brunborg & Lorentzen, 2021). Company's ratio has not reached the industry average but has improved significantly. The debt-equity ratio is also one of the ratios affected by the adaptation of IFRS 16. As a result, the ratios from 2019 and later are slightly higher, than if they were calculated based on the old accounting standard. This is because most leases that used to be accounted for as operational are according to IFRS 16 part of the balance sheet (PricewaterhouseCoopers, 2016).

4.6.2 Interest coverage ratio

To support our debt-to-equity ratio we calculate the interest coverage, as it allows us to put more context on the results. The last ratio in the liquidity and solvency analysis further supports the claim that Norwegian has underperformed in comparison to the market up until last year where all the ratios including this, have reached the industry average.

	Interest Coverage Ratio					
	2017	2018	2019	2020	2021	2022
Norwegian	-1,78	-3,21	0,27	-4,07	-4,08	2,31
SAS	2,82	3,35	2,14	-6,78	-1,16	-2,68
Lufthansa	8,84	14,03	4,71	-17,63	-5,32	2,52

Table 13 Interest coverage ratio comparison with SAS and Lufthansa, 2017-2022 (Annual Reports - SAS, 2023; Lufthansa Group Investor Relations, 2023)

The interest coverage ratio tells us how easily a company can pay interest on its outstanding debt and liabilities. This ratio is rational to use for a company that is highly financed by debt, as it allows us to determine the amount of time Norwegian can pay off its obligations using earnings.

To calculate the interest coverage ratio, we used the following formula.

$$\text{Interest Coverage Ratio} = \frac{EBIT}{\text{Interest Expenses}}$$

When a company ratio stays below 1.5 it can be a call sign that meeting necessary obligations can be uncertain. From a shareholder return perspective, it's an important factor. A low or negative interest coverage ratio is alarming and can incur problems when hit by unforeseen events (Damodaran, 2012).

4.7 Summary of profitability, liquidity, and solvency

The analysis reveals that, except for 2022, Norwegian has not given investors the expected returns. The main causes of the poor performance in prior years were the negative variable profits. Operations at the company were further disrupted by the pandemic, which raised overall net loss. The company's restructuring after the pandemic improved the returns and demonstrated profitability potential. Although the company's restructuring improved the returns, we cannot safely assume that the high 2022 results will continue throughout the forecasted period. However, we believe that they will be able to report positive returns as Norwegian has in the past shown the ability to increase the return by a significant amount.

When it comes to liquidity, both the current and cash ratios are high post-pandemic fluctuating around the average and indicating a strong liquidity position. It's crucial to keep in mind, though, that a high cash ratio is unrealistic and may indicate that the company isn't using its cash effectively to generate profit.

While the debt-to-equity ratio is also not problematic and moving towards the industry average, investors and analysts should be aware of the industry's volatility as well as macroeconomic factors that may have an impact on debt and interest rates in the future, affecting the company's cost of debt.

5 Forecasting

The value of Norwegian using discounted cash flow method as our main valuation tool will be based on the present value of future generated cash flow and the terminal value. The following chapter will therefore focus on estimating growth and forecasting future earnings and revenue. Valuing Norwegian we focus on a 5-year time frame. Most information about the company's future is focused on the upcoming years. A longer forecast can therefore be challenging as predicting future market conditions is difficult. We believe that the chosen

time frame is long enough to capture the effect of the company's new strategic initiatives and short enough to provide a reliable valuation.

To forecast future performance, we will look at historical growth and results. While the historic data is useful, in our case, it is marked by extraordinary events such as the pandemic and the company's restructuring during the last years. Therefore, we see it reasonable to look at the company's fundamentals to get an additional perspective. Ultimately the forecast of future results is also based on the information we gathered from the strategic and financial analyses.

It is important to have in mind that the forecast should be perceived with awareness of mistakes. There are various factors that can impact future performance that are beyond our ability to predict. Although we have insight from the strategic and financial analysis, we don't have all information that can affect Norwegian and the airline industry. However, we have tried not to be biased in our forecasting approach and have used all available information to estimate future cash flows to the best of our ability.

5.1 Growth in operating revenue

The estimation of Norwegian's future cash flow begins with forecasting the growth in operating revenue, which includes passenger revenue and freight. Prior to the pandemic, the company had a positive revenue growth trend throughout the analysis period. However, the 2020 and 2021 operating revenue has been heavily impacted by the pandemic. Norwegian reported a successful year in 2022, with the aim to gradually increase its operation over the years. It's worth noting that it was the first full year out of bankruptcy risk. We believe that the company will be able to approach pre-pandemic levels, but not reach them during our forecast period. Industry expert's growth forecasts vary between 1.2% and 3.4% (EUROCONTROL, 2022; *IATA's Annual Review*, 2022). We have decided to use 2% as a point toward which revenue growth will move. This percentage will later be used as the stable growth rate for the terminal value calculation. As the total revenue is still far below pre-pandemic levels, we assume that growth will increase sharply in the first few years and gradually decrease. When calculating terminal value, it is important to set the growth rate under the economy's growth rate, which is currently 2.7% in the EU (*EU GDP Growth Rate*, 2022). Since the GDP growth rate lies under the 3.4% forecasted industry growth, we consider the 2% growth in revenue to be reasonable.

We expect the initial growth to be supported by the fact that two of its regional competitors have recently had bigger financial issues. Flyr declared bankruptcy in January 2023, while SAS has gone under bankruptcy protection in 2022 which could lead to Norwegian grabbing a bigger market share and achieving a higher passenger load factor. On the other hand, strong competition from other European low-cost airlines may reduce revenue.

Even though we have continually referenced Norwegian being in cost cutting profitability-focused period, we acknowledge that the company must go through a growth phase to return to pre-pandemic sales volumes. This will further connect to our Capex and depreciation forecast.

5.2 Growth in operating income

If we were to analyse a more stable period in the company's history or a less volatile industry, it could be useful to look at historical numbers, but since there are no clear trends in the EBIT margin, we decided to compare Norwegian to the industry average EBIT margin in Europe, which is 5.11% (Statista Research Department, 2023a).

	Revenue and Profitability				
	2023	2024	2025	2026	2027
Total Operating Revenue	25 473 555	30 568 266	33 625 093	35 306 347	36 012 474
Revenue growth	35%	20%	10%	5%	2%
EBIT	1 856 265,32	2 038 646,86	2 052 368,76	1 972 265,61	1 841 137,74
EBIT margin	7,29%	6,67%	6,10%	5,59%	5,11%

Table 14 Forecasted total operating revenue, revenue growth, EBIT and EBIT margin for Norwegian

The most recent EBIT margin for Norwegian was just under 8%, which is a lot higher than the rest of our analysis period. We cannot find evidence for the EBIT margin to continue to rise above the average more than it already has. We discounted the 2022 EBIT margin by the factor needed for it to reach the European industry average in 5 years. We justify this by the fact that Norwegian is planning to expand its operations, resulting in an increase in operating expenses. Furthermore, the aviation industry is characterized by thin profit margins and many fixed costs related to fleet operations. With the fuel prices remaining relatively high, and a weak Norwegian currency we believe that Norwegian will follow the earlier pattern and become more disciplined with its cost management, thus not affecting the EBIT more than it already has (Bouwer & Ditcher, 2022).

5.3 Capital Expenditures

When valuing a firm, we must consider the cash flow after reinvestment. The first component needed to estimate future reinvestments is determined by the net capital expenditures (Capex), which is the difference between Capex and depreciation.

(Damodaran, 2012)

When forecasting Capex, it is important to align them with our other financial projections made, most importantly the revenue. The future Capex needs therefore to be forecasted accordingly to support revenue growth. However, estimations are never 100% certain and can be subject to several factors such as changes in market conditions or unpredictable events (FMVA, 2020). To end up with a realistic estimate we have based the forecast on available knowledge and information. As mentioned in the strategic analysis Norwegian is planning to increase its fleet, having at the end of 2030 approximately 100 modern aircraft (*Reports and Presentations*, 2023). As this is the best available information we have, confirmed by the company itself we decided to estimate Capex accordingly to the process of acquiring the aircraft. Because they are the most significant asset and capital investment for any airline, it is generally correct to assume that the expenses related to the purchase of aircraft account for most of the capital expenditures.

Normalizing Capex by taking the average from the last years as a base is a common technique (Damodaran, 2012). However, our analysed period was disturbed by the change in the company's strategy and the pandemic, resulting in very inconsistent Capex. Since neither Norwegian nor Boeing has announced the value of the deal for 50 aircraft due to be delivered between 2025-2028, we have chosen to look at similar deals previously made in the industry and the Capex in the years before the 2017 (Norwegian, 2022b). Even though our main analysis period only consisted of the last six years, we in this case assumed it appropriate to take a further look back and not rely our forecast on pure guess. Between 2013 and 2016, Norwegian acquired a similar number of aircraft, which allowed us to have and benchmark for the future Capex (*Reports and Presentations*, 2023).

The starting point was to simply multiply the list price of a new Boeing 737 Max 8 by the amount ordered, resulting in a deal worth nearly 63 billion NOK (Burgueño Salas, 2022). It is however common for airlines to receive discounts from the listed price when they place orders for a significant number of aircraft. According to reports, up to 50%, reductions are frequently granted for the most significant orders. Norwegian also

confirmed that the deal is very attractive (Cummins, 2019) We used a discount rate of 45%, which we believe is both realistic and not overly optimistic. Based on this assumption, we estimated that the deal would be worth 35 billion NOK, with an average value of 5 billion NOK a year during the acquisition of aircraft (2022-2028). Those expenses would either be in the form of prepayments or actual purchases. We compared these numbers with the average historical Capex between 2013 and 2019 and other similar deals (Hayward & Ahlgren, 2021). As we assumed the Capex will follow the pattern of aircraft delivery, we calculated a discount rate to reach a historical average of 5.3 billion NOK at the end of the acquisition period ending in 2028. We concluded this to be a reliable and our best estimation of future capital expenditures. Yearly Capex and depreciation are presented in the table below while a more detailed calculation is presented in Attachment 1 under “Capex & Depreciation”.

Capital expenditures and Depreciation					
	2023	2024	2025	2026	2027
CapEx	5 121 293,73	5 173 758,54	5 226 760,82	5 280 306,08	5 334 399,88
CapEx as % of revenue	20,10%	16,93%	15,54%	14,96%	14,81%
Depreciation	3 175 202	3 207 730	3 240 592	3 273 790	3 307 328

Table 15 Forecasted Capex, Capex as % of revenue and depreciation for Norwegian

5.4 Depreciation

We started by looking at and understanding applied depreciation methods and historical data to estimate future depreciation. According to the annual reports, Norwegian uses straight-line depreciation where the cost of assets is evenly spread over their useful life.

Under IFRS 16, aircraft leases are considered right-of-use assets and therefore subject to depreciation. Currently, these are a significant part of the Norwegian fleet, and as mentioned in the chapter about reformulation, we have made some adjustments to better reflect the numbers. When calculated as a percentage of Capex, we can see that the depreciation has been relatively stable in the period 2013-2018. The average of these years ended up being 62% which is the percentage used for the forecast of future depreciation. As most depreciation costs come from aircraft, we have chosen to grow them at the same rate as the increase in the fleet thus keeping it as a constant percent of Capex. We did not use depreciation from years 2019-2022 in the calculation of the average as they yield very high numbers, mainly because of the low and unusual Capex in that period. Detailed calculation is presented in Attachment 1 under “Capex & Depreciation”

5.5 Net operating working capital

The second component of reinvestment is the change in working capital. For valuation purposes, we have we define working capital as the difference between the amount of money that a company is owed (receivables) and the value of the goods that it has in stock (inventory), subtracted by the amount of money that the company owes to its suppliers (accounts payable). By focusing on non-cash working capital, we also ensure that the valuation is based on the operational aspect of the company (Damodaran, 2012).

Net Operating Working Capital					
	2023	2024	2025	2026	2027
NOWC	-1 273 678	-1 222 731	-672 502	-353 063	360 125
Total Operating Revenue	25 473 555	30 568 266	33 625 093	35 306 347	36 012 474
NOWC as % of Revenue	-5,00%	-4,00%	-2,00%	-1,00%	1,00%
Change in NOWC	111 422	50 947	550 229	319 438	713 188

Table 16 Forecasted NOWC, total operating revenue, NOWC as % of revenue and change in NOWC for Norwegian

Historically, the working capital has been mostly negative, except for its more successful years, 2019. This is also in line with the liquidity ratios previously analysed. For most businesses, negative working capital, for an extended period should be cause for concern as it could mean that they are having trouble making ends meet and must use other ways to fund their operations. Norwegian has in a sense been using suppliers' credit as a source of capital. As this might work in the short term, it is being seen as a source of default risk and not quite representative of the future as it might cause liquidity problems (Damodaran, 2012)

Based on the insights from our analysis, we assume that the company will slowly recover and reach its pre-pandemic performance, we have forecasted the NOWC to gradually move to be positive in 2027. We have set the NOWC as a percentage of operating revenue and calculated it to change by about 2% yearly. If the NOWC to operating revenue was more stable in the previous years we could have set a fixed percentage, but with the current outlook, we settle with a slight increase each year until it comes close to its 2019 level.

5.6 Future FCFF summary

The free cash flow to firm is estimated to be negative increasingly throughout the forecasted period because of the investments needed for Norwegian fleet renewal. We believe that it truthfully represents the company's plan to expand its fleet in the next years, and we can't see them reaching a positive FCFF before the growth period is over.

	Free Cash Flow to Firm				
	2023	2024	2025	2026	2027
Tax rate	22%	22%	22%	22%	22%
FCFF	-609 627	-426 831	-935 550	-787 588	-1 304 173
PV of FCFF	-561 019	-361 478	-729 133	-564 874	-860 797

Table 17 Forecasted free cash flow to firm

6 Valuation

This chapter will focus on the valuation process of Norwegian, through two different approaches presented in chapter 2, the present value approach, and the relative valuation approach.

The present value approach will allow us to estimate the intrinsic firm value based on the future cash flow, discounted by the appropriate discount rate (Damodaran, 2012). The model is based on the forecasting done in the previous chapter, discounted by the WACC, as explained in chapter 2.1. To understand the effect of different factors on the value of Norwegian, we also perform a sensitivity analysis. This analysis helps us determine how minor changes to our assumptions and forecast affect the market value of equity (Kenton, 2023).

Through the relative valuation, we estimate the value of Norwegian by looking at the performance of comparable firms and standardized multiples (Damodaran, 2012). We use SAS and Lufthansa as comparable companies.

6.1 FCFF model valuation

To calculate the intrinsic value of Norwegian, the future cash flows for the following years and the terminal value of the company are discounted to the present value. As calculated in chapter 4.2 the cost of capital is set to 8.66% and will be used as the discount rate. The terminal value is calculated using the following formula:

$$Terminal\ Value = \frac{EBIT_{2027}(1 + g)(1 - t)(1 - Reinvestemnt\ rate)}{Cost\ of\ Capital_{stable} - g}$$

(Damodaran, 2012)

We assume that in the stable growth period, Norwegian will grow at 2% a year, and the return on invested capital (ROIC) will move towards the cost of capital, as this is a characteristic of a stable growth firm (Damodaran, 2012). To calculate the cost of capital in stable growth, we will assume that the Norwegian beta will move towards 1.25 which is the industry average beta in Europe. At the end of our forecast period, Norwegian will be near the end of its growth phase and will be less exposed to risk (Damodaran, 2012). The

company will have an efficient aircraft fleet, which will improve operational efficiency and cost management, allowing them to be closer to the industry's performance. We believe that the company will maintain a strong balance sheet with moderate debt levels to reduce financial risk, as this was one of the main points in the restructuring. However, the fleet renewal needs to be financed, so we assume that the cost of debt will slightly increase from its current level and move towards the industry average of 6.5%, which is in line with Norwegian's historical debt ratio. These assumptions are also in line with the recent study about key numbers in the European airline industry (Damodaran, 2023) Furthermore, we assume the risk-free rate to rise and yield 3.5% due to the recent macroeconomic changes (*Monetary Policy Report 1/2023*, 2023). Using a net debt ratio of 50%, based on the current ratio, we estimate the cost of capital in stable growth to be 7.35% (Damodaran, 2012).

It is also reasonable to assume that ROIC will move toward the industry average. In 2019 right before the pandemic, IATA predicted the industry average ROIC to be 7.5% (*IATA's Annual Review*, 2022). Since we base our assumptions on the fact that the industry will reach its pre-pandemic performance and the predicted value is very close to our estimated cost of capital in stable growth, we will further proceed with our calculated value, supported by the predicted value by IATA.

Having all the necessary variables, we calculate the reinvestment rate which is derived by taking the stable growth rate of 2% and dividing it by the return on invested capital (ROIC) which we have determined to be equal to the cost of capital during the stable growth period.

Terminal Value	
Expected EBIT in 2028	1 877 960,50
Reinvestment rate in stable growth	27%
Cost of capital in stable growth	7,35%
Stable growth rate	2%
Terminal Value	19 936 158

Table 18 Calculation of terminal value for Norwegian

After obtaining both terminal value and free cash flow we proceed to calculate the sum of them to receive the total present value of Norwegian. We then proceed to subtract the net interest-bearing debt to arrive at the equity value. The last step is to divide the equity value by the outstanding shares which we found in Norwegian's Q4 report (*Reports and Presentations*, 2023). This gives us a stock price of 8.34 NOK. As of 21.04.2023, the

market stock price is 10.01 NOK. Calculations are also provided in Attachment 1 under “Forecast and valuation”.

Firm Valuation	
PV of FCF	-3 077 301,10
PV of Terminal Value	13 158 528,88
Firm Value	10 081 228
NIBD	2 326 300,00
Equity Value	7 754 927,78
Stock price	8,34

Table 19 Calculation of stock price for Norwegian

6.2 Sensitivity Analysis

Even small changes in the forecast can have a big impact on the intrinsic value of the company. As we are aware that our forecast is not 100% sure we proceed with the sensitivity analysis to identify how changes in certain parameters affect the market value of equity. The analysis also reflects the uncertainty about valuation models and provides insight into the key drivers of the company’s value (Kenton, 2023). We will focus on changes in WACC, EBIT and Capex as we believe these factors have the greatest impact on Norwegian value and are the numbers, we are most uncertain about.

6.2.1 EBIT

We briefly discussed the change in EBIT in Chapter 5.3. As mentioned, we believe that Norwegian will be able to manage the operating expense and report positive EBIT during the forecast year. However, there are still several factors that might affect the expenses that are not under the company’s control. The table below shows how the firm value and stock price change relative to a 0.5% change in EBIT margin. Even a small change in margin has a significant effect on the stock price. As earlier justified, we believe that the industry average is achievable, but Norwegian may as well reach the 2019 levels being closer to the 3.1% benchmark. One reason for the high fluctuation in stock price is that for most of the period, we forecast a negative cash flow. A big part of the market value comes from the terminal value of Norwegian, making the entire valuation more sensitive to changes.

	Change	Firm Value	Stock Price
Change in EBIT target	3,11%	3 500 555,63	1,26
	3,61%	5 164 604,27	3,05
	4,11%	6 812 114,70	4,82
	4,61%	8 446 074,55	6,58
	5,11%	10 081 227,78	8,34
	5,61%	11 681 534,94	10,06
	6,11%	13 285 968,63	11,78

Table 20 Change in stock price based on changes in EBIT target

As we assume the EBIT margin to be positive, the overall EBIT will stay positive at any percentage change. Therefore, the sensitivity analyses also indicate that the bankruptcy risk associated with changes in EBIT margin is lower as the Norwegian will be able to meet its debt obligations.

6.2.2 Capital Expenditures

The company will grow in the next few years resulting in high capital expenditures. Depreciation being set as a percentage of Capex will thus also be affected. While we view our calculation to be reliable, we are also aware of wrong assumptions, such as the aircraft price, change in currency rates, and about the deal. The table below summarizes the changes in stock price when the average yearly Capex changes. Firm value and stock price are affected; however, the changes are relatively smaller compared to changes in EBIT margin.

	Avg CapEx	Firm Value	Stock Price
Change in average yearly CapEx	3 621 293,73	12 355 743,75	10,78
	4 121 293,73	11 596 079,87	9,97
	4 621 293,73	10 836 415,98	9,15
	5 121 293,73	10 081 227,78	8,34
	5 621 293,73	9 317 088,20	7,52
	6 121 293,73	8 557 424,32	6,70
	6 621 293,73	7 797 760,43	5,88

Table 21 Change in stock price based on changes in Capex

6.2.3 WACC

Lastly, we will look at how changes in WACC may affect the stock price. The uncertainty about WACC relates to the calculation of beta. As we have done some major assumptions regarding the calculation of the beta itself and thus WACC, we are aware that even small

changes may affect the calculated stock price.

	Change	Firm Value	Stock Price
Change in WACC	7,16%	10 882 540,27	9,2
	7,66%	10 606 946,88	8,9
	8,16%	10 339 167,88	8,62
	8,66%	10 081 227,78	8,34
	9,16%	9 826 048,88	8,06
	9,66%	9 580 229,62	7,8
	10,16%	9 341 265,59	7,54

Table 22 Change in stock price based on changes in WACC

6.3 Relative valuation

In the relative valuation approach, we will contrast Norwegian to its competitors, SAS, and Lufthansa. SAS is its closest competitor but has been struggling financially recently, which heavily affects the price-to-earnings ratio (P/E) which is often used. We will therefore not use the P/E ratio. Considering all the changes that have happened in the airline industry recently, we decided to use three types of multiples which will be elaborated on in the next subchapters.

6.3.1 Price-to-sales ratio

The sales volume has been relatively stable across all three companies in comparison to the above-mentioned P/E ratio, which is why we deem it to be a better multiple for our valuation. The price-to-sales ratio (P/S) compares a firm's stock price to its revenue. It is calculated by dividing a company's market capitalization by its revenue. The stock of the company is more inexpensive in relation to sales the lower the P/S ratio.

	Norwegian	SAS	Lufthansa	Average
P/S	0,36	0,16	2,98	1,16

Table 23 Price to sales ratio as off 31.12.2022

We can clearly see that Norwegian has a lower ratio than the average, but the average is heavily affected by the high score from Lufthansa. This makes it hard to assess if the firm is undervalued based on this alone. We also compared it to the industry average which is 0.42 (*Price to Sales Ratios*, 2023). This average includes many entities which cannot be considered Norwegian's competitors, but it can point us in the right direction. Even if we look at both our calculated average and the obtained industry average, we will still see that Norwegian has a relatively low ratio. By using the average P/S ratio we calculate the stock price to be 1.15 NOK.

6.3.2 Price-to-book ratio

Investors assess a company's stock price in relation to its book value of equity using the financial metric price-to-book value (P/B). The total value of a company's assets listed on its balance sheet is represented by the book value of equity. It is calculated by deducting the total liabilities of the business from its total assets.

The P/B ratio essentially indicates the price that investors are willing to pay for each dollar of a company's net assets. A high P/B ratio could mean that the stock is overvalued in relation to its book value, while a low P/B ratio might mean that the stock is undervalued.

	Norwegian	SAS	Lufthansa	Average	
P/B		1,75	0,85	1,61	1,40

Table 24 Price to book value as of 31.12.2022

Norwegian has a slightly higher ratio than its competitors, and by using the average we would get a stock price of 5.89 NOK and a book value of 5.23 billion NOK.

6.3.3 EV/EBITDA ratio

The relative value of various businesses can be compared using the EV/EBITDA ratio, which is a valuation metric. By contrasting an organization's Enterprise Value (EV) to its Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA), it achieves this. By evaluating a company's ability to turn a profit before deducting financing costs, taxes, and other non-operational expenses, this ratio gives an overview of its financial situation.

	Norwegian	SAS	Lufthansa	Average	
EV/EBITDA		13,98	45,84	8,49	22,77

Table 25 Enterprise value to EBITDA as of 31.12.2022

Again, we see that with few competitors in the analysis, SAS's high ratio increases the average greatly. This is why we again use the industry average even though it has its downsides. The industry average stands at 9.39 which is a lot closer to the ratio of Norwegian and Lufthansa. If we exclude SAS, we get an average of 11.24.

Using the average, Norwegian will have an EV of:

$$1.254 \text{ billion NOK} * 11.24 = 14.094 \text{ billion NOK.}$$

We then use this to find the market value:

$$14.094 \text{ billion NOK} = \text{Market Value} + 18.466 \text{ billion NOK} - 7.759 \text{ billion NOK}$$

Market value = 3.387 billion NOK.

This results in a share value of 3.64 NOK, much less than the market price of 10.01 NOK. One possible explanation for this is that Norwegian has a large amount of debt, which has a significant impact on enterprise value.

6.3.4 Summary relative valuation

Our values found in the multiple valuations are highly varied. The biggest reason for this is a lack of similar competition, especially since the firm's biggest competitor, SAS, is on the edge of bankruptcy at the time of our valuation. Using the industry average provided additional information where the main competitors lacked sufficient data. The significance of careful analysis and understanding of the underlying factors driving valuation is made clear by the volatility of competitor multiples. It also emphasizes the necessity of considering various valuation techniques, which is why we put more weight on the present value valuation.

	Closest competitors	Industry Average
P/S	1,15	0,46
P/B	5,89	11,52
EV/EBITDA	3,64	1,15
Average	3,56	4,37

Table 26 Calculated average of all multiples based on the industry average and closest competitors

The averages of the three ratios using the closest competitors and the industry average, both give a relatively similar value. It is hard to say if these results give an accurate view of the stock value. It would most likely give us a better understanding in more stable times for both Norwegian and SAS, but it can still be used to support our discounted cash flow valuation.

6.3.5 Valuation summary

The results of these valuation methods have given us two different results which point us in different directions. Because of the many downsides with the relative valuation of Norwegian, we have decided on weighting it less than the future cash flow valuation. Based on this we calculated a sum of both stock prices where the FCFF stock price is weighted by 0.67 and the relative valuation is weighted by 0.33. This gives a stock price of 6.90 NOK.

	Weights	Stock price	Weighted stock price
Relative valuation	0,33	3,97	1,31
FCFF valuation	0,67	8,34	5,59
Sum of weighted stock prices			6,90

Table 27 Stock price calculated from the weighted sum of both valuations

7 Conclusion

The aim of this thesis was to determine the current value of Norwegian Air Shuttle ASA, considering the impact of the COVID-19 pandemic and the company's new business strategy. We sought to determine whether the stock is fairly priced and to offer a trading suggestion for the company. To project cash flows over the next five years and a terminal value for the time after, we used historical data and insights from the company and industry analysis. The market value of the equity was then calculated by discounting these cash flows using a required rate of return and taking away the debt. Additionally, to get a benchmark for comparison, we used relative valuation.

We calculated the equity value to be 7.75 billion NOK or 8.34 NOK per share using the present value. Due to the difficulty in locating comparable companies, the multiple valuations produced a range of results. Therefore, we decided to give the multiple analysis less significance but used it to support our main valuation. A weighted average of both valuation methods yielded a stock price of 6.90 NOK per share.

As stated in the summary, the goal of our valuation was to determine the stock price of Norwegian Air Shuttle ASA as of 21.04.23. The price of the company's stock on that day was 10.01 NOK on the Oslo Stock Exchange. Based on the results from the present value approach, relative valuation, and the weighted average of both we assess the company to be overvalued and we would like to give a sell recommendation on Norwegian Air Shuttle ASA.

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9 Appendix

[Attachment 1](#) - Password: Bachelor2023

In the case of the hyperlink not working, use the following link:

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