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A valuation of Norwegian ASA in COVID-times

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A valuation of Norwegian ASA in COVID-times

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Executive summary

This thesis aims to estimate the value of Norwegian Air Shuttle ASA, both pre-COVID and in 2021, to assess the effect of the pandemic. Our thesis concludes whether support from the government and investors was justified, despite the general impression that COVID-19 enhanced Norwegian ASA's financial challenges.

Entering 2020, the Norwegian airline Norwegian ASA had recently started its turnaround from growth to profitability. Despite considerable amounts of debt accrued in previous years, the strategic shift led to an improvement in key financial ratios in 2019. This improvement was however short-lived. By the time the World's health organization declared COVID-19 a global pandemic, its short-term effects had already begun to unfold. Social restrictions and quarantine regulations affected peoples' travel habits and put an abrupt stop to international mobility. In the blink of an eye, Norwegian ASA went from working towards profitability to being critically dependent on governmental support to survive. Since the outbreak, the company has frequently issued new shares to raise additional capital to continue at going concern.

By using publicly accessible data, this thesis provides a valuation of Norwegian ASA's equity as of 15.04.2021. By forecasting financial statements and using the present value approach to valuation, we arrive at a market value of 9.42 billion NOK. Conducting a relative valuation did not change this value estimate. We also conducted a second valuation of the company before COVID-19 to isolate the effects of the pandemic. The resulting market value was 1.82 billion NOK. Despite enhanced competition within the airline industry from the threat of new entrants and external regulations, Norwegian ASA's market value improved. Supported by an asset-based approach to valuation, the company was wise to continue operations throughout COVID-19. Our findings show that support from the government and investors was justified.

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Table of contents

1 Introduction 1
1.1 Purpose 1
1.2 Motivation 1
1.3 Assumptions and limitations 2
1.4 Structure 3
2 Presentation of the airline industry and Norwegian ASA 4
2.1 Historical development in the airline industry 4
2.1.1 Services provided 4
2.1.2 Implications of COVID-19 5
2.1.3 Airline Corporate governance 7
2.2 Presentation of Norwegian ASA 8
2.2.1 Historical development 8
2.2.2 Profitability 9
2.2.3 Group Structure 10
2.2.4 Corporate Governance and Ownership 11
2.2.5 Norwegian ASA's business model and objectives 12
2.2.6 COVID-19 influence on operations 2020 13
2.2.7 Norwegian ASA's prospects 14
2.3 Comparative market 15
3 Methodology and choice of valuation technique 16
3.1 Overview of valuation techniques 17
3.1.1 Present Value Approach 17
3.1.2 Asset-based Approach 18
3.1.3 Relative Valuation Approach 19
3.1.4 Contingent Claim Valuation 19
3.2 Chosen valuation techniques 19
3.3 Framework for present valuation 21
4 Strategic Analysis 22
4.1 External analysis of industry 22
4.1.1 PESTEL 22
4.1.1.1 Political 23
4.1.1.2 Economic 24
4.1.1.3 Social 25
4.1.1.4 Technological 27
4.1.1.5 Environmental 28
4.1.1.6 Legal 29
4.1.2 Porters' Five Forces 29
4.1.2.1 Threat of entry 30
4.1.2.1.1 Customer switching costs 30
4.1.2.1.2 Capital requirements and incumbency advantages 31
4.1.2.2 Power of suppliers 32
4.1.2.3 Power of buyers 33
4.1.2.4 Threat of substitutes 34
4.1.2.5 Rivalry among existing competitors 34
4.1.3 Summary of the external analysis 35
4.2 Internal analysis of Norwegian ASA 36
4.2.1 Management and ownership structure 37
4.2.2 Brand name 38
4.2.3 Aircraft fleet 38
4.2.4 Airline operations 39

4.3 Summary of strategic analysis - SWOT *40*
5 Accounting analysis **41**
5.1 Assessment of accounting quality *41*
5.1.1 Step 1: identification of key accounting policies 41
5.1.2 Step 2: assess the accounting flexibility 42
5.1.3 Step 3: evaluate the accounting strategy 44
5.1.4 Step 4: The quality of disclosure 45
5.1.5 Step 5: identification of red flags 46
5.1.6 Step 6: Recast financial statements and undo accounting distortions 47
5.2 Income statement and balance sheet - historical figures *49*
5.2.1 Reformulation of the income statement 50
5.2.2 Reformulation of balance sheet 51
5.2.3 Presentation of reformulated and adjusted figures 53
6 Financial analysis **54**
6.1 Estimation of the required rate of return *55*
6.2 Profitability *56*
6.2.1 Return on Equity 57
6.2.2 Residual Income 59
6.2.3 Return on Invested Capital 59
6.2.4 Economic Value Added 61
6.2.5 Summary of profitability analysis 62
6.3 Liquidity and solvency analysis *62*
6.3.1 Liquidity analysis 62
6.3.1.1. Current ratio 63
6.3.1.2 Working capital turnover rate 64
6.3.1.3 Operating Cash-Flow ratio 65
6.3.1.4 Cash flow analysis 66
6.3.2 Summary liquidity analysis 67
6.3.3 Solvency analysis 67
6.3.3.1 Financial ratio 67
6.3.3.2 Interest coverage ratio 69
6.3.4 Summary Solvency analysis 69
6.4 Growth *70*
7 Forecasting for the present value valuation **71**
7.1 Pre-COVID prognosis *72*
7.1.1 Pre-COVID prognosis income statement 72
7.1.2 Summary pre-COVID future income statement 74
7.1.3 Balance Sheet prognosis pre-COVID 74
7.1.4 Summary Pre-COVID future balance sheet 75
7.1.5 Pre-COVID future cash flow 76
7.2 2020 prognosis *77*
7.2.1 2020 prognosis income statement 77
7.2.2 Summary 2020 future income statement 78
7.2.3 2020 prognosis balance sheet 79
7.2.4 Summary 2020 future balance sheet 80
7.2.5 2020 future cash flow 80
8 Valuation **81**
8.1 Present value models *82*
8.1.1. EVA model 83
8.1.1.1 EVA pre-COVID 83
8.1.1.1 EVA 2020 84

8.1.1.3 Summary EVA model 85
8.1.2. FCFF model 85
8.1.2.1 FCFF pre-COVID 85
8.1.2.2 FCFF 2020 86
8.1.2.3 Summary FCFF 86
8.1.3 Sensitivity Analysis 87
8.1.3.1 Sensitivity analysis pre-COVID 87
8.1.3.1 Sensitivity analysis 2020 87
8.2 Asset-based approach *88*
8.3 Relative valuation *91*
8.3.1 Equity multiples 92
8.3.2 Enterprise value multiples 92
8.3.3 Summary of relative valuation 93
9 Conclusion **94**
Reference list **96**
Appendix: Preliminary thesis **108**

1 Introduction

In this chapter, we present the purpose of our thesis and our motivation for the chosen company. Furthermore, our thesis assumptions and limitations are explained, followed by the thesis structure.

1.1 Purpose

The purpose of this thesis is to estimate the value of Norwegian Air Shuttle ASA (Norwegian ASA) as of 01.01.2020 and 15.04.2021, and thus assess the effect of COVID-19. The first of these two dates will be our reference dates to isolate the effect of the pandemic. We compare the value estimate as of 15.04.2021 to the market capitalization at the same date retrieved from Bloomberg, which results in a conclusion on whether the market value is too low or too high.

1.2 Motivation

The most prominent international news of 2020 was and still is the global pandemic of COVID-19. The vast majority of industries, countries, and people have been affected by the pandemic outbreak, for better or worse. It is abundantly clear that the short-term effects of travel restrictions and quarantine regulations have affected international mobility and the travel habits of the average Joe. The global aviation industry faces a severe decline in activity, and Norwegian companies are not let off the hook.

The pandemic and its short-term consequences began to unfold not long before the publication of Norwegian ASA's 2019 annual report. In this report, the company acknowledges how revenues disappeared almost overnight following national and international restrictions. The financial statements of 2019 show increased revenues from recent previous years and mention significant structural changes within the company. Due to a period where Norwegian ASA's main focus was growth and expansion, the company had accumulated a considerable amount of debt and experienced financial challenges. Accompanied by the additional challenges brought by COVID-19 and a sudden stop in mobility, there is no doubt that Norwegian ASA has been/is facing difficulties.

The occurrence of the pandemic increased news articles connecting the words "bankruptcy risk" to Norwegian ASA's name. For this reason, we want to evaluate the company's prospect and how this has changed compared to pre-COVID-19. By doing so, this thesis concludes on whether support from the government and investors, given to Norwegian ASA over the last year, are justified.

1.3 Assumptions and limitations

We base our presented value estimates on publicly accessible data and information. As Norwegian ASA is a listed company, public data is what present and potential shareholders have access to. We have not been in contact with anyone during the preparation of this master thesis. The annual deadline for publishing annual reports for listed companies was extended from 4 to 6 months after the end of the reporting period of 2021. At the start of 2021, Norwegian ASA was in the middle of several restructuring negotiations, which were finalized in April 2021. Therefore, our limit of data collection is the 15th of April 2021. Due to this, we initially retrieved the accounting numbers for 2020 from the unaudited fourth-quarter report of 2020. These numbers were later checked and confirmed when the annual report of 2020 was published at the end of May 2021. There was little to no difference in the accounting numbers. We retrieved some financial information from the annual report of 2020, such as the number of outstanding shares, stock price, and rate of debt. Due to the fast-approaching thesis deadline, less focus was put on the extensive information in the annual report of 2020, though we used the report to confirm ambiguities and uncertainties.

Norwegian ASA is the parent company of several subsidiaries. This group structure is suitable to capture all business activities related to passenger transport across jurisdictions. However, due to limited explicit information about subsidiaries, we have chosen to assess the company as a group, using consolidated financial statements as our basis.

We have chosen to limit the comparative industry to Scandinavian Airlines (from now on SAS), Wizz Air, and Lufthansa. The comparative industry thus consists of only European companies since these are considered the most representative of the sector Norwegian ASA operates in. We have included both low-cost and full-

service companies. Our delimitation of the comparative industry is justified in Chapter 2.

1.4 Structure

This master thesis follows the structure of the course GRA6235 Business Analysis and Valuation, taught by Ignacio Garcia de Olalla Lopez in the spring of 2020, and the associated curriculum. Throughout the thesis, we have actively used the book Business Analysis and Valuation: IFRS Edition by Palepu, Healy, and Peek from 2013. As a result, we have divided the thesis into three parts:

Part 1 forms the basis for our analysis through 3 different chapters that thoroughly examine the airline industry and various valuation techniques. It begins with chapter 2, which presents the historical development in the airline industry and Norwegian ASA's history. After that, chapter 3 provides an overview of valuation methodologies and our rationale for the specific valuation techniques used. Furthermore, strategic analyses are conducted in Chapter 4, where we assess both internal and external factors that affect the company and the industry in general.

Part 2 consists of an evaluation of Norwegian ASA's financial statements throughout the period of analysis. It begins with chapter 5, where we conduct an accounting analysis of Norwegian ASA's financial statements and adjust according to our assessments. Furthermore, we reformulate and adjust the statements to be more suitable for ratio analysis, forecasting, and valuation. Chapter 6 contains our financial analysis of Norwegian ASA's performance, including the required rate of return, profitability, liquidity, and solvency.

Part 3 consists of a forecast, our final valuations, and a conclusion. It begins with chapter 7, where we prepare our forecast based on our insights from the previous chapters. The forecast is further implemented in chapter 8, where we use our chosen valuation techniques to value Norwegian ASA as of 01.01.2020 and 15.04.2021. Finally, in chapter 9, we conclude how COVID-19 affected Norwegian ASA's financial situation.

2 Presentation of the airline industry and Norwegian ASA

2.1 Historical development in the airline industry

The airline industry is enormous and experienced rapid growth until 2020. Facilitating mobility and economic growth, the commercial airline industry alone was valued at 2.7 trillion US dollars by the end of 2019 (Rimmer, 2020) and has fostered more than 80 million jobs over the years (Garrow & Lurkin, 2021). In 2019, 4.5 billion passengers traveled by air, and 11.3 million people were directly employed within the industry (IATA, 2020). At the start of the fiscal year 2020, continuous growth within the industry was anticipated, urging the industry to renew to keep up with the rapid increase in demand (Rimmer, 2020).

Roughly 60 percent of international tourism is related to the airline industry (Garrow & Lurkin, 2021), meaning many financial resources are circulating within the industry. Airlines cross international borders, and a lot of global players are involved. The industry is highly competitive, dealing with high customer expectations (Bakir et al., 2019). To intimidate new actors from entering existing markets and routes, airlines offer low prices to their customers, negatively affecting the industry's overall profitability (Avogrado et al., 2021). A thorough analysis of this, and the airline industry in general, is presented in chapter 4 of this thesis.

2.1.1 Services provided

There are two main strategies within the airline industry – operating as a low-cost carrier or a full-service carrier. Low-cost carriers are known for offering their customers the cheapest air transportation to their designated location without additional services. On the other hand, full-service carriers often include these services in the ticket price, focusing more on passenger comfort. However, the differences between the two strategies have decreased over time (Avogadro et al., 2021). As a measure to adapt to differences in willingness to pay, airlines typically offer various types of tickets on the same flights and routes. Especially low-cost carriers have renewed their business models to fit so-called hybrid strategies, offering features associated with full-service airlines while still keeping prices low (Pereira & Caetano, 2015). As industry competition and customer expectations increase, service quality is considered key to obtaining a competitive advantage (Bakir et al., 2019).

The infamous dynamic pricing of low-cost carriers, raising ticket prices as the departure approaches, is a strategic action to differentiate between the two main customer groups; leisure travelers and business travelers (Avogadro et al., 2021). Whereas the first group is motivated to plan their trips and book tickets in advance, the latter often possesses a higher willingness to pay when going on essential business trips (Avogadro et al., 2021). The convenience of scheduling, low fares, punctuality, reliability, and frequent flyer programs are essential factors when travelers single out their preferred airline (Proussaloglou and Koppelman, 1995, c.f. Avogadro et al., 2021).

2.1.2 Implications of COVID-19

Since the worldwide outbreak of COVID-19 in March 2020, there has been a rapid and unpredictable change in demand for flights. The airline industry is a crucial player in mobility across countries, but it contributes to the continued spread of the virus (Rimmer, 2020). At a conference held by The Airline Group of the International Federation of Operations Research in October 2020, several airline agents shared their concerns about the unstable business environment of the airline industry (Garrow & Lurkin, 2021). Despite customers potentially being eager to travel, differences and rapid changes in national regulations and measures make them hesitant to risk potential inconveniences occurring before, while, or after traveling (Rimmer, 2020; Garrow & Lurkin, 2021). These rapid changes also affect how airlines can project departures and routes, as travels within or between either departure or arrival destinations could be closed on short notice (Garrow & Lurkin, 2021; Rimmer, 2020).

Corresponding with the development of COVID-19, many have researched the short-term effects on the airline industry. The literature found for this master thesis confirms how lockdown regulations and other measures have severely impacted economic activity in general and the airline industry in particular (Liu et al., 2020; Donthu & Gustafsson, 2020). There is a consensus that the effects of the pandemic on the airline industry will continue even longer than the pandemic itself (European Commission, 2020). Several studies question whether airlines will recover their financial stability and services (European Commission, 2020; Abate et al., 2020; Liu et al., 2020). The number of work-related physical meetings in 2020 has been scaled down (Rimmer, 2020). The increased frequency of virtual conferences and

gatherings reduce the need for physical ones and contribute even further to the projected slow recovery of the airline industry. (Rimmer, 2020).

COVID-19 is the most recent, but not the first, pandemic in history. Former studies have shown that pandemics can cause damage to economic activity in several ways, either through short-term shocks in income or long-term negative impacts on economic growth (Zhang et al., 2020). Rimmer (2020), investigated how international incidents like oil crises, the 9/11 attacks' effect on commercial aviation, the financial crises of 2008, and the spread of SARS have had a similar impact on short-term-demand flights and leisure as COVID-19 (Rimmer, 2020). Garrow & Lurkin (2021) highlight the same events as Rimmer (2020) in their assessment of how COVID-19 reshapes the airline industry. A pattern of abrupt decrease in airline demand, followed by a gradual recovery, was an observed commonality in the mentioned situations (Rimmer, 2020, Garrow & Lurkin, 2021).

It is reasonable to compare the advancement of two viruses; the spread of SARS from 2003 and the current spread of COVID-19. The SARS epidemic, which spread to 29 countries and resulted in a little more than 800 deaths (World Health Organization, n.d.), caused a 3 percent decline in airline demand (Rimmer, 2020). The current pandemic of COVID-19 has, as of March 2021, spread to 223 countries and is directly related to over 2.6 million confirmed deaths (World Health Organization, 2021). As a result, approximately 98 percent of international airline activity temporarily stopped in 2020 (Garrow & Lurkin, 2021), and the severe damages to the aviation industry were, and still are, indisputable (Rimmer, 2020). The geographical limitation of SARS, thus make the predictions of COVID-19's long-term effect challenging (Garrow & Lurkin, 2021).

Another study, set out to investigate the initial effects of and future of the airline industry, comparing data from two Chinese companies for evidence. (Liu et al., 2020). In this study, the authors conclude that the volatility in stock prices increased considerably in 2020 compared to the period preceding COVID-19 (Liu et al., 2020). The necessity of government support for airlines has also been highlighted in several studies. (Donthu & Gustafsson, 2020; Abate et al., 2020). Abate et al. (2020) accentuate the various considerations that must be weighed against each other before issuing economic government support. That is, whether the importance of maintaining competitiveness in the aftermath of COVID-19 or the companies'

urgent need for support weighs the most (Abate et al., 2020). The urgent need for support led to several airlines attaining bankruptcy protection during 2020 (Slotnick, 2020, c.f. Rimmer 2020). However, these rescue plans vary depending on the airline, country of origin, and country of bankruptcy protection issuance. The similarities and dissimilarities between these contracts contribute to uneven the competitive airline industry even more (Slotnick, 2020, c.f. Rimmer, 2020).

2.1.3 Airline Corporate governance

Duppati et al. (2016) researched how airline corporate governance affects airline performance. The authors emphasized how a diversity of governance arrangements complicates the relationship between the two (Duppati et al., 2016). Corporate governance oversees conflict of interest in a company between shareholders and managers, debtholders, non-financial stakeholders, and the others holding a share in the company. It is the Board of Directors' job to secure the corporate governance of the company. Shareholders indirectly influence the corporate governance structure by electing a Board of Directors deemed appropriate to satisfy their interests. (Georgen, 2018)

Possible corporate governance issues depend on the relationship between ownership and control in the specific company. Georgen (2018) describes four relationships between ownership and control: dispersed ownership and weak control, dispersed ownership and strong control, concentrated ownership and weak control, and concentrated ownership and strong control. (Georgen, 2018)

Managers run companies on behalf of shareholders, but the two of them may have conflicting interests. Shareholders possess voting rights, whereas managers effectively control the company to maintain owners' economic interests (Berle & Means, 1932, cf. Goergen, 2018). The potential conflict of interests causes problems and becomes more prominent when the ownership structure is dispersed. In this case, potential monitoring efforts will be proportionally low compared to the shareholder's possible benefit. The incentives for shareholders to monitor the management's actions are thus weakened. Owners must trust that their interests are protected, sometimes at the expense of managers' interests. There exists a general understanding that a manager's goal should provide company owners with the highest possible profit (Goergen, 2018). However, a study conducted by Jensen in 1986 demonstrated how managers could increase their power by expanding the

company's size at the expense of its shareholders (Jensen, 1986). Increased power entails increased benefits for the managers, such as wage and entrenchment (Goergen, 2018). A manager's ability to pursue their interests at the expense of those of shareholders is also affected by the company's corporate governance.

2.2 Presentation of Norwegian ASA

The focal point of the next subchapters is Norwegian ASA. Emphasis is put on Norwegian ASA's history, corporate governance, ownership structure, and profitability, as well as on prospects taking the effects of COVID-19 into account.

2.2.1 Historical development

Norwegian ASA was founded in 1993, operating the routes Braathens SAFE had on the west coast of Norway (Jarslett & Askheim, 2020). The collaboration ended after SAS acquired Braathens in 2002 (Jarslett & Askheim, 2020), and thus Norwegian ASA occurred (Norwegian, 2003). The company started operating its own routes, utilizing its fleet consisting of seven BOEING 737 airplanes (Norwegian, 2003).

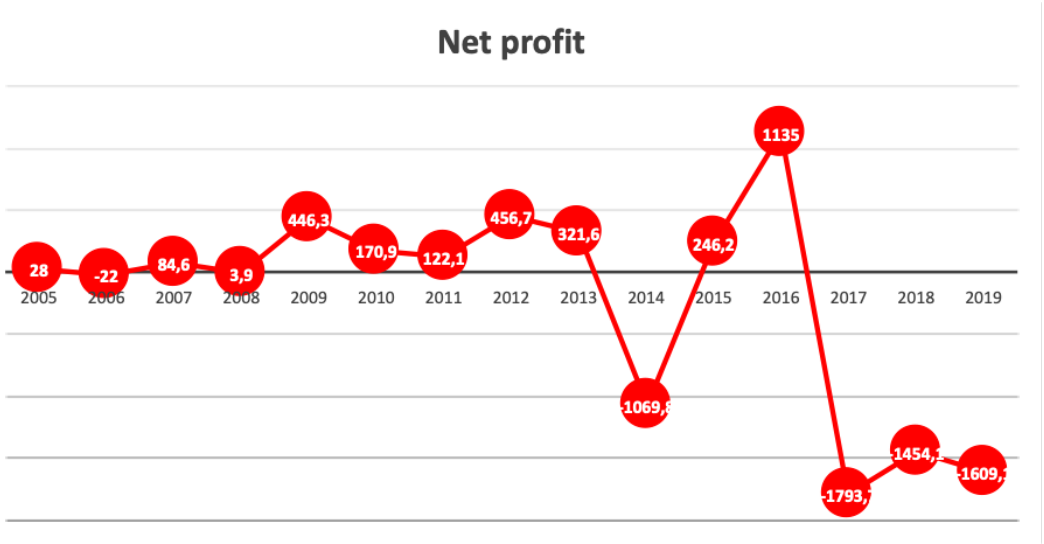
In 2003, Norwegian ASA expanded its route network to include foreign and international routes (Norwegian, 2004). This was also the year the company was listed on the Oslo stock exchange (Norwegian, 2021f), making it a publicly listed company. To expand operations and decrease unit costs, growth quickly became Norwegian ASA's primary focus (Norwegian, 2006), which led to their first profitable year in 2005 (Norwegian, 2021f). At this time, the company's strategic goal was to "establish itself as one of the preferred air travel suppliers to those who live in Norway" (Norwegian, 2006, p. 6). For several years, growth remained the focus and strategy of Norwegian ASA. However, rapid expansion and growth brought financial challenges. A strategic review of Norwegian ASA in 2018 led to the decision of aiming for a substantially lower growth rate than before (Norwegian, 2018), shifting their focus from growth to profitability going forward (Norwegian, 2020). These strategic changes were made in an attempt to improve the company's financial position. As of 2018, their vision was changed from being the "preferred supplier in Norway" to "be the leading long-haul low-cost airline in Europe operating as the engine of low-cost global growth and dominating the Nordic short-haul market" (Norwegian, 2019, p. 9).

As previously mentioned, the airline industry is highly competitive, and the playing field of Norwegian ASA and its competitors is uneven when facing foreseen and unforeseen events. In 2019, the whole sector encountered difficulties as fatal aircraft accidents were tied to the BOEING 737 MAX, leading to the worldwide grounding of this aircraft model (Norwegian, 2020). Norwegian ASA's fleet included eighteen BOEING 737 MAXes (Degnes & Risbakken, 2020), and the grounding of these led to considerable disruption of the company's operations and significant losses (Høgseth & Nysveen, 2020). The same year, Boeing experienced engine troubles with another aircraft model, the BOEING 787 Dreamliner, evidently leading to an additional reduction of twelve aircraft from Norwegian ASA's operative fleet (Norwegian, 2020).

Despite these problems, Norwegian ASA had, as of 2019, positioned itself as a prominent actor in the European short-haul market, especially within the Nordic countries. They operated more than 500 routes, covering 150 destinations, and employed 9.388 people from 11 different countries. At the end of the fiscal year 2019, Norwegian ASA's fleet consisted of 156 aircraft, including the Boeing aircraft mentioned above that are either grounded or on service. (Norwegian, 2020)

2.2.2 Profitability

As mentioned, the last couple of years have presented Norwegian ASA with some financing challenges. Revenues have increased every year since 2005, but so have costs. From graph 2.1 below, we can see Norwegian ASA's net profits from 2005, the company's first profitable year, and up until 2019. Net profits have been fluctuating but have since 2017 been negative, with approximately 1,620 million on average. We have retrieved the numbers presented in graph 2.1 from annual reports from 2005 to 2019.



Graph 2.1 Net profits of Norwegian ASA 2005-2019

2.2.3 Group Structure

Norwegian Air Shuttle ASA is the parent company of the Norwegian Group, which consists of directly and indirectly owned subsidiaries in Norway, Sweden, Denmark, Finland, Ireland, Spain, and the United Kingdom. The company has arranged its group structure into four main business areas specialized for different functions and entities. The purpose of the arrangement is to utilize Norwegian ASA's resources optimally. The four main areas are assets, aircraft operation, people and services, and other business areas. (Norwegian, 2020)

The business area of assets handles aircraft financing, leasing, and ownership. Arctic Aviation Asset DAC is the parent company of this business area and is responsible for aircraft leasing to Norwegian ASA's operations and external airlines. The second area, aircraft operation, regards five airline operators responsible for necessary flight permits in respective markets. Norwegian ASA's commercial airline activities are operated through 20 bases globally. In the third business area, people and services, operational functions, employees, and administrative services are managed. The last area - other business areas - consists of several functions such as Norwegian ASA's loyalty program, Norwegian Reward Ltd, and Red Handling Ltd taking care of cargo and service for the customers' trip from start to finish. In addition, Norwegian Brand Ltd preserves and develops the company's brand in all business areas. (Norwegian, 2020)

2.2.4 Corporate Governance and Ownership

Norwegian ASA's corporate governance is "designed in compliance with laws, regulations and ethical standards, […], with the ultimate goal of maximizing shareholder value while creating added value for all stakeholders" (Norwegian, 2020, p. 111).

Norwegian ASA's Board of Directors consists of eight members, of which five are independent (Norwegian, 2020). These five members are shareholder-elected, while employees elect the remaining three (Norwegian, 2021e). Through efficient communication with the owners, management, and the board itself, the board of directors makes sure that the managers appropriately run the company (Norwegian, 2021e). Since the founding of Norwegian ASA, Bjørn Kjos has been a prominent leader and the public spokesperson of the airline. Nevertheless, Bjørn Kjos has resigned from his position, and, as of 01.01.2020, Jacob Schram is the CEO of Norwegian ASA.

Norwegian ASA's stock is frequently traded, and the term "one share, one vote" applies; each share represents equal rights (Norwegian, 2020). As we can see from table 2.1 below, the company's largest shareholder as of 2019 was HBK Holding, owning 8.7 percent of the shares (Norwegian, 2020). HBK Holding AS is a subsidiary of Observatoriet Invest AS, where former CEO, Bjørn Kjos, has a central position (Proff, n.d.). Table 2.1 also shows that a majority of votes would require cooperation between a multitude of shareholders. Using Georgen's (2018) descriptions, Norwegian ASA is characterized by dispersed ownership and weak control, as no shareholder alone possesses control over the company.

The largest shareholders at 31 December 2019 were:

	Shares	Ownership	Voting rights
HBK Holding AS	14,229,015	8.7 %	8.7 %
Folketrygdfondet	10,884,688	6.7 %	6.7 %
Keskinäinen eläkevakuutusyhtiö Varma	7,600,000	4.6 %	4.6 %
Danske Capital (Norway)	6,381,845	3.9 %	3.9 %
Pareto Asset Management AS	4,052,733	2.5 %	2.5 %
City Finansiering AS	3,946,041	2.4 %	2.4 %
DNB Asset Management AS	3,678,057	2.2 %	2.2 %
Kite Lake Capital Management (UK) LLP	2,906,986	1.8 %	1.8 %
Sneisungen AS	2,322,414	1.4 %	1.4 %
J.P. Morgan Securities plc	2,233,055	1.4 %	1.4 %
Bank of America Merrill Lynch (UK)	1,842,739	1.1 %	1.1 %
Nordnet Bank AB.	1,608,859	1.0 %	1.0 %
Stenshagen Invest AS	1,523,476	0.9 %	0.9 %
Delphi Fondene	1,472,682	0.9 %	0.9 %
SEB Luxembourg - Custodian	1,386,658	0.8 %	0.8 %
Storebrand Kapitalforvaltning AS	1,307,945	0.8 %	0.8 %
Hands-On Property AS	1,143,753	0.7 %	0.7 %
Credit Suisse Securities (Europe) Limited	1,044,351	0.6 %	0.6 %
DNB Bank ASA	1,032,554	0.6 %	0.6 %
KLP Forsikring	1,032,260	0.6 %	0.6 %
Other	91,928,266	56.2 %	56.2 %
Total number of shares	**163,558,377**	**100.0 %**	**100.0 %**

Table 2.1 Overview of Norwegian ASA's shareholders (Norwegian, 2020, p. 56)

The Board of Directors has in 2019 recommended that no monetary amount of Norwegian ASA's profit should be distributed as dividends, which has been the decision for the last three years. This is in line with Norwegian ASA's structural shift towards restoring profitability (Norwegian, 2020).

2.2.5 Norwegian ASA's business model and objectives

As stated in Norwegian ASA's Article of Association, section 3: "The Company's objective is to be engaged in aviation, other transport and travel-related business activities as well as activities connected therewith" (Norwegian, 2021a). The company's strategy is to discover and utilize markets with the potential to improve current supply, either through price or service. In addition, they constantly work with boosting crew and aircraft utilization (Norwegian, 2020).

Norwegian ASA is known for its strong position in the short-haul market, and by 2019 their objective is to further strengthen its position in the Nordic short-haul market. During 2019, the company ceased service on 50 short-haul routes while at the same time launching 22 new ones. The changes were conducted to decrease complexity and focus on serving the most relevant markets for their success. Additionally, Norwegian ASA's long-haul network increased over 20 percent, resulting in more than 60 international routes. Overall, the company's network was growing in 2019; they have concentrated operations in fewer airports during the

year and announced the closure of approximately 20 long-haul routes in the year to come. (Norwegian, 2020)

Further, section 3 in the Article of Association states: "The Company may also directly or indirectly be engaged in other forms of internet-based provision of goods and services, including car rental, hotel booking, payment services, financial services and services related to credit cards (Norwegian, 2021a).

Until 2019, Norwegian ASA held 16,4% of the shares in Norwegian Finans Holding ASA (NOFI), which owned Norwegian Bank AS. Norwegian Bank AS is an all-digital Nordic online bank established in 2007 to cater to financial services and services related to credit cards. Norwegian ASA established the bank as a support platform for its reward. I the first operational year, Norwegian Bank AS received a license to operate as a bank and focused on offering deposit and lending products online (Bank Norwegian, n.d.). In 2019, Norwegian ASA sold all of its shares in NOFI. As of 31.12.2019, the accounting item "investment in financial assets" is zero in Norwegian ASA's balance sheet, meaning there were no other investments in financial assets (Norwegian, 2020).

2.2.6 COVID-19 influence on operations 2020

At the beginning of 2020, Norwegian ASA anticipated positive year-end results. However, the surprise of COVID-19 changed this. Revenues disappeared almost overnight, with travel restrictions and the presence of a pandemic, forcing the company into hibernation mode. (Norwegian, 2020)

Due to severe measurements and worldwide restrictions to prevent the spread of COVID-19 over the spring of 2020, there was an immediate need to react and enhance the balance sheet of Norwegian ASA. In the annual report of 2019, CEO Jacob Schram wrote that Norwegian ASA would use the pandemic as an opportunity to redefine itself, including restructuring of core business and network (Norwegian, 2020). This redefinition also required significant financial restructuring. After the pandemic outbreak, the company has managed to convert large parts of its debt into equity, acquire several billion in loan guarantees from the Norwegian government, and raise a severe amount of equity and cash through public offerings (Norwegian, 2020). By the end of 2020, Norwegian ASA was also

granted additional financial support through bankruptcy protection in Norway and Ireland (Høgseth & Lorentzen, 2020; Tollersrud & Nesvik, 2020).

Despite courageous efforts to protect the company from bankruptcy, the increase in equity was not alone sufficient to secure Norwegian ASA's future. By the end of 2020, Norwegian ASA was under Examinership in Ireland and a process of restructuring in Norway (Norwegian, 2021c). These processes include further reductions of debt and downscaling operations. The latter led to the shutdown of long-haul routes in their entirety while still serving the European market (Norwegian, 2021b, 2021c). The company plans a significant reduction of its operative fleet to accompany this shutdown, going from 131 aircraft 31.12.2020 to 53 aircraft after the restructuring (Norwegian, 2021c).

The general volatility in stock prices observed by Liu et al.(2020) also applied to Norwegian ASA's stock, decreasing near 83 percent from mid-February to mid-March 2020, according to numbers from Nordnet. The stock price continued to decline, and the total one-year decrease from mid- February 2020 was 98,6 percent. During the fiscal year 2020, other rapid changes occurred within the company, including the ownership structure. In April 2020, HBK Holding AS sold all of their Norwegian ASA shares, only to buy back a smaller number of shares a month later (Randen & Trumpy, 2020). As a result, HBK Holding AS was no longer among the 20 largest shareholders of Norwegian ASA as of 31.12.2020. Contrary to 31.12.2019, when "other shareholders" held more than half of the Norwegian ASA shares, the same group now held approximately 31.6 percent. Regardless of these changes, Norwegian ASA was still characterized by dispersed ownership, though somewhat less dispersed than 31.12.2019.

2.2.7 Norwegian ASA's prospects

Several articles point out the evident effect of discontinued revenues on financial ratios (Lioutov, 2020), but these are general effects found in other countries than Norway. There is no scientific research published on how the pandemic and its aftermaths have directly affected Norwegian ASA after the fiscal year 2020 has ended. The pandemic and the insecurities caused by it make it challenging to foresee the future of Norwegian ASA and how they will keep up in the continually competitive market.

As previously mentioned, there is a consensus that the effects of the pandemic on the airline industry will continue even longer than the pandemic itself (European Commission, 2020). Several studies question whether airlines can recover their financial stability and services (European Commission, 2020; Abate et al., 2020; Liu et al., 2020). Leading personnel within the company vigorously portray Norwegian ASA as returning more robust and more valuable after the COVID-19 pandemic. For this to be possible, Norwegian ASA relied on successful outcomes of the Examinership in Ireland and the restructuring process in Norway (Norwegian, 2021c), which they received in April 2021 (Trumpy & Schultz, 2021; Trumpy & Johannesen, 2021).

As the Examinership and the restructuring process is approved, Norwegian ASA operates on going concern. The company will be required to raise the necessary equity, which today seems achievable. The market values Norwegian ASA to be worth 38 times more than its newly established competitor Flyr, despite Flyr being debt-free (Sundberg, 2021). The market's expectations of Norwegian ASA will be commented upon in the following chapters of our thesis and deemed reliable or not.

2.3 Comparative market

In this subchapter, we present the comparative market for Norwegian ASA. By defining this market, we can conduct a comparative strategic analysis and point out Norwegian ASA's main competitors and competitive market.

We have narrowed down the geographical scope of the operative market. Although the airline industry covers the whole world, the industry is divided into separate geographical regions (Rimmer, 2020; Bakir et al., 2019; Buyle et al., 2021). Norwegian ASA's routes are mainly concentrated within Europe and connect European airports to those of other continents. As previously mentioned, all of Norwegian ASA's wholly-owned subsidiaries are based in Europe, and the company has no autonomous routes outside the European market. The focal point of our strategic analysis will therefore be the European airline market.

As mentioned, Norwegian ASA is known for its strong position in the short-haul market and is mainly considered a low-cost carrier. Nevertheless, Norwegian ASA can be said to have a hybrid strategy. They offer features historically associated

with full-service airlines (Pereira & Caetano, 2015), such as flying to primary airports and offering frequent flyer programs (Corbo, 2016).

Emphasis will also be on the Norwegian and Scandinavian airline markets. Norwegian ASA's frequent routes within Norway and Scandinavia are a vital part of their operations, now more than ever. SAS is denoted as an essential competitor of Norwegian ASA, as they also have a strong presence in the Scandinavian airline market.

Both Norwegian ASA and SAS were positively affected by the so-called Scandinavian travel bubble in 2020, which facilitated free movement within Nordic countries (Rimmer, 2020). On the other hand, the Norwegian airline market is under increasing pressure with the new actor Flyr announcing its entrance into the market and international actors such as the Hungarian Wizz Air and Lufthansa's presence (Frøjd & Graff, 2020). Analysts describe the increasing competition in the Norwegian airline market alone as absurd and surreal, presenting an additional challenge for Norwegian ASA, as COVID-19 was not enough (Degnes & Risbakken, 2021). Sources and news commenting upon the players mentioned above and the European or Nordic airline market will be processed in the comparative strategic analysis of this thesis.

3 Methodology and choice of valuation technique

In the following subchapters, we present various methods of valuing a company and a justification and elaboration of the chosen methods used in this thesis.

Palepu et al. (2013) define valuation as "the process of converting a forecast into an estimate of the value of the firm's assets or equity" (Palepu et al., 2013, p. 278). The process includes assessing several aspects of the operating company, such as future earnings, management, and capital structure (Hayes, 2020). A company's assets or equity generate net cash payoffs, and the value of the identified payoffs lays the basis for the value of the business (Palepu, 2013). A valuation is often based on assumptions and forecasted numbers, allowing for the risk of wrongful assumptions and forecasts. However, establishing a valuation on forecasted numbers instead of current also allows for removing irregularities and one-time events (Penman, 2013).

3.1 Overview of valuation techniques

There are many possible methods in use for valuing a company, and there is no superior method. Petersen et al. (2017) define four main approaches within valuation methods, being present value approach, relative valuation approach, asset-based valuation approach, and contingent claim valuation. The authors emphasize the importance of understanding the benefits and disadvantages of each approach before choosing one or more. (Petersen et al. 2017)

Advantages and disadvantages related to each valuation approach will vary depending on the object or company to be valued. For a better understanding of these (dis)advantages, Petersen et al. (2017) define four fundamental attributes for a successful valuation. The attributes are as follows: 1) preciseness that provides unbiased estimates, 2) valuation based on realistic assumptions, 3) user-friendly valuation approach, and 4) estimates of value, easily presented. Additionally, using more than one valuation approach or model can eliminate technical errors from the valuation. (Petersen et al., 2017)

3.1.1 Present Value Approach

The present value approach is based on forecasted cash flows discounted until the valuation date, using an appropriate discount factor. The discount factor reflects the risk connected to the cash flow at issue and the time value of money (Petersen et al., 2017). Forecasting cash flows requires a thorough understanding of the company and the market in which it operates to arrive at precise estimates based on realistic assumptions (Penman, 2013). There are several valuation models within the present value approach, which all yield the same value estimate when appropriately conducted.

A shared ground for all present value approaches is that every valuation method is derived from the dividend discount model. The dividend discount model is, however, not the most commonly used approach among practitioners. The model assumes that market value only stems from future dividends discounted by the required rate of return (Petersen et al., 2017).

The residual income (RI) model is another example of a present value approach. The model estimates a company's value from an equity perspective by discounting future residual income (income exceeding investors' required rate of return) to find

the present value and add to the book value of equity, which constitutes equity's market value.

In practice, the discounted cash flow model is most commonly used. This model is used either to find the enterprise value or equity value of the company. Enterprise value is found based on a forecast of the free cash flow to the firm, discounted by the weighted average cost of capital (WACC). As defined above, a valuation aims to find the market value of a company's equity. By deducting net interest-bearing liabilities from the enterprise value, one has reached this value. The market value of equity can also be found directly, based on a forecast of free cash flow to equity, discounted by the required rate of return. (Petersen et al., 2017)

The Economic Value Added (EVA) model has also become widely used. This model explicitly reveals whether a firm is traded at, above, or below its book value of invested capital based on accrual accounting data. This model is also known as the excess return approach, as it expresses whether the firm can generate a return equal to or higher or lower than required rates. (Petersen et al., 2017)

3.1.2 Asset-based Approach

The asset-based approach is used to estimate the company's net asset's value based on the current market value of different assets (Young, 2020). The estimates can be found by various measurement bases (Petersen et al., 2017). The approach leaves room for analysts or authors to favor which assets and liabilities to include in the valuation (Young, 2020). Due to valuing assets at their net market value, as if the company is to become insolvent and unable to generate fresh operating cash flows with these assets, this approach is best suited for companies whose going concern is questionable (Petersen et al., 2017).

According to Penman (2013), this valuation approach is considered laborious, even for professionals, as valuing all company assets is challenging. Complex accounting practices include the amortized historical cost in recording assets, meaning that accounted value could be far from market value. Additionally, the value of intangible assets missing from the balance sheet could prove impossible to measure in a reliable way (Penman, 2013).

3.1.3 Relative Valuation Approach

In the relative valuation approach, the company value is derived by comparing its performance or value to its competitors and peers (Tuovila, 2020). Therefore, a method within this category will not require forecasts of parameters or numbers, meaning it can be viewed as relatively simple. In practice, the approach can be somewhat challenging, as it does require the identification of directly comparable competitors and firms (Palepu et al., 2013). Directly comparable competitors must, in this approach, be equal to the target company in terms of size, revenues, capital structure, and operating market, among others.

3.1.4 Contingent Claim Valuation

The last valuation approach, contingent claim valuation models, is also referred to as real option models (Petersen et al., 2017). In this approach, two or more alternative scenarios with various contingencies are formulated and compared. Firm assets are assigned option-like characteristics, enabling the use of option pricing models to estimate firm value. This practice is seldom used in practice due to the complexity in conducting the method (Petersen et al., 2017). An asset with a share option characteristic only generates payoffs under particular circumstances (Damodaran, n.d). These particular circumstances and other variables required to conduct a contingent claim valuation are hard to predict in practice. As a result, this valuation approach gives a relatively uncertain value estimation. (Kaldestad & Møller, 2016, p. 190)

3.2 Chosen valuation techniques

The valuation approaches mentioned above have benefits and disadvantages. Choosing one of them also depends on the objective of the valuation - which in our case is a comparison of value at two different dates, aiming to isolate COVID-19's effect on the company. We do not view the contingent claim valuation appropriate due to its complexity, and will not proceed with this relatively uncertain value estimation.

As elaborated previously in this thesis, Norwegian ASA is facing challenging times and the possibility of bankruptcy. The asset-based approach to valuation is suitable for companies whose going concern is questionable, which has been the case for Norwegian ASA, and we therefore want to proceed with this method. Due to

Penman's (2013) identified difficulties in using this method in practice, we will have to make several assumptions and simplify this approach. In addition, due to severe travel restrictions and restructuring processes, it will be challenging to compare and separate assets in the two fiscal years. As a result, we will only use this method to value Norwegian ASA's assets in 2020. The method will result in a minimum value of the company if all assets were to be sold at market price, subject to set assumptions and the uncertain circumstances in the airline industry as of 01.01.2021.

We will also use the relative valuation approach, despite peculiar conditions of Norwegian ASA regarding capital structure, market, and previous expansion strategy. The Scandinavian airline SAS will serve as a reference, as it is subject to the same restrictions and national governmental interference as Norwegian ASA through its operations in Norway. In other words, they are equal to the target company in terms of the operating market. In addition, the low-cost European airline Lufthansa will be compared and used as a multiple. Wizz Air is not included in the relative valuation, as their financial year goes from March to March. Despite our efforts of finding directly comparable competitors, we note that the estimates from the relative valuation might not prove reliable.

We will mainly focus on the present value approach, specifically the models EVA and FCFF. With these two models, we find Norwegian ASA's enterprise value by discounting forecasts by WACC. By subtracting the company's debt from the enterprise value, we find the market value of equity. While it is also possible to find the market value of equity directly, by discounting either free cash flow to equity or residual income by the required rate of return on equity (re), we will not proceed with any of these models. As Norwegian ASA's equity is negative in 2020 due to retained earnings, the calculations using these models will not generate a result that can be interpreted.

The use of present value models facilitates a thorough analysis of historical performance through previous financial statements and prospects. The extensive amount of available information and data, both for Norwegian ASA and the industry in general, is beneficial when using this method. This way, our provided estimates will be based on realistic assumptions and preciseness, as emphasized by

Petersen et al. (2017). Uncertainty in the forecast will be possible, and we perform a sensitivity analysis to address this.

3.3 Framework for present valuation

Our procedure to conduct this valuation aligns with Penman's (2013, p. 85) description of present value valuation and consists of the five steps described below.

The first step is conducting a strategic analysis to understand Norwegian ASA and the airline industry fully. We conduct the strategy analysis in chapter 4, to gain insight and knowledge of the competitive market, gain awareness of regulatory constraints and evaluate the management. An essential outcome of this analysis is to determine whether Norwegian ASA has strategic competitive advantages over its competitors. It also provides a good foundation for the forecast, firmly rooted in economic reality. (Penman, 2013)

The second step concerns analyses and reformulation of financial statements and related public information outside of statements. We will use historical figures from financial statements and the fourth quarter report of 2020. The reformulation is presented in chapter 5 and aims to address Norwegian ASA's underlying economic realities. The reformulation is necessary to extract information and key figures for the third step, which is forecasting. (Penman, 2013)

In chapter 7, we will use the results from the strategic analysis and key figures from the reformulated financial statements to forecast the future of Norwegian ASA and specify future payoffs. We will emphasize how payoffs are measured, as this measurement determines the validity of any valuation. (Penman, 2013)

The fourth step is to convert our forecast into a valuation, using present value valuation models. This will be presented in chapter 8. We use the EVA and FCFF models to ensure that they yield the same value result to limit technical errors. These will also be compared to the resulting valuations using the relative and asset-based valuations approaches. The converted forecast will be appropriately discounted by either WACC. These valuation frameworks will then result in a valuation. The fifth and final step is to conclude the valuation outcome (Penman, 2013), where we aim to assess Norwegian ASA’s value.

4 Strategic Analysis

The following chapter will cover a strategic analysis of Norwegian ASA and the aviation industry as a whole. It will reward us with better insight into the aviation industry and Norwegian ASA's underlying financial and strategic conditions. The insight will form a basis of understanding before the quantitative accounting analysis and the subsequent preparation of prospects. Hence, strategic analysis is an integral part of the valuation process. The strategic analysis consists of external industry-oriented analysis and internal analysis of Norwegian ASA summarized and presented using a SWOT analysis. We will comment on Norwegian ASA's strategic position in the market and assess whether or not the company generates returns and how this ability was affected by COVID-19.

The external analysis includes determining key drivers of change and analyzing the competitive forces within the industry. These will be presented using the PESTEL-framework and Porter's five forces, respectively. The internal analysis will focus on Norwegian ASA's various resources and activities and whether or not these are suitable for creating competitive advantages for the company.

4.1 External analysis of industry

4.1.1 PESTEL

Conducting a PESTEL analysis will generate insight into macroeconomic conditions or factors that are likely to affect the industry's performance. We will use the analysis to identify key drivers of change that one should be aware of when planning future scenarios. These drivers are characterized as either political, economic, social, technological, environmental, or legal factors, which constitutes the acronym PESTEL. The characterization of these drivers is not absolute and is merely used as a starting point to include all relevant aspects (Digital Norway, n.d.). Under each key driver, we have chosen to focus on the elements that we believe to be the most important ones currently affecting the airline industry and its change. Thus, the included elements are not an exhaustive list. In 2018, the International Air Transport Association (IATA) published a report revealing what they considered key drivers of change in the airline industry (IATA, 2018). This report is a starting point for our PESTEL analysis, supplemented by more recent publications and news. Even though an increased risk of pandemics was included

in the 2018 report (IATA, 2018), the prolonged stop in airline traffic was not foreseen.

4.1.1.1 Political

Political factors are summed up to be how and to what extent governmental interference affects the industry. This can either be through direct governmental involvement in ownership structure or how exposed the sector is to regulations or policies. Various foreign trade policies and restrictions, labor laws, and tax policies affect companies operating across international borders. An industry can be politically exposed, have direct involvement from the state, or both. Changes in political conditions can quickly change the industry's position and profitability. (Digital Norway, n.d.; B2U, 2016)

The aviation industry has since the beginning been characterized by interference from the authorities, and this will most likely continue. Various authorities significantly influence the industry through regulations, investments in infrastructure, and financial support to national actors. In addition, there exist several restrictions on, for example, foreign ownership and government support, which contribute to the aviation industry and authorities having a lasting relationship. Any changes or reinforcements in policies affect the players in the aviation industry. (IATA, 2018)

Previously, there were no standard safety regulations in the aviation industry - this was up to each country to regulate. Following several incidents, such as fatal accidents and terrorist attacks, both the European Safety Agency and the EU have developed recommendations and policies to ensure safety (European Aviation Safety Agency [EASA], 2016; European Commission, 2021a). These policies include requirements for psychological tests of personnel, internal quality control, and the implementation of security controls (EASA, 2016). These requirements are very detailed and thus affect the cost level of airlines. In addition, countries may have various supplementary policies that regulate the aviation industry, for example, through decisions preserving or decreasing national competition, which again affects the international competitive playing field (IATA, 2018).

Political unrest can also significantly affect the industry. In principle, air traffic within Europe is regulated by a common set of rules to ensure European citizens'

access to mobility, flights, and airports across national borders. This set of rules is referred to as the "European Single Aviation Market". It protects consumers and business actors from national monopolies to ensure that the demand for flights is met. Without such agreements, it can be demanding and expensive for companies to obtain dispensations to operate in different countries. Although common regulations contribute to increased competition, it has also contributed to strong growth in European air transport over the past 20 years. (European Parliament, 2021b)

An excellent example of political unrest is BREXIT, the United Kingdom's much-publicized referendum on the EU in 2016. When this international hub for air traffic announced its exit from the EU and thus the regulation mentioned above, this created significant uncertainty for the airline industry. It took years to design new rules that would regulate further traffic between the UK and the rest of Europe, and at the same time protect consumers on both sides. In short, BREXIT constrained the ability of European airlines to operate domestic flights in the United Kingdom and the ability of British airlines to fly within Europe. The troubles and uncertainties related to BREXIT disclose how politically exposed the aviation industry is. (Centre for aviation, 2021)

The European Single Aviation market also sets requirements for individual player's financial situations and limits unconditional government involvement to ensure a healthy and balanced market (European Parliament, 2021a). However, as it has been ascertained that airlines are critically dependent on support and financial assistance to recover from the COVID-19 pandemic, these requirements and restrictions have been reduced (European Commission, 2021c; Rooley, 2020).

4.1.1.2 Economic

Economic factors are elements affecting a specific economy. These elements affect companies directly and indirectly through consumer purchasing power and mindset (Digital Norway, n.d.). We consider the most important macroeconomic factors in the aviation industry to be oil prices, economic growth, and unemployment rates. A company's ability to recover or gain from economic factors depends on its current state and where one is in the business cycle (Digital Norway, n.d.; B2U, 2016).

International oil prices affect airline earnings, as they are dependent on refined oil products for fuel. Over the last decade, various events have led to several sudden drops and fluctuations in the oil price. The financial crisis of 2008, the oversupply of oil in 2014, and the spread of COVID-19 in 2020 are some of the unforeseen events triggering fluctuations. Unpredictability makes predictions of future oil prices difficult and presents an economic uncertainty (Kolakowski, 2020; IATA, 2018)

Airlines, and the aviation industry in general, have experienced tremendous growth over the last ten years, with tens of millions of dollars in annual profits (KPMG, 2021; IATA, 2018). The increased demand was closely tied to the world economy, as one could see that the relative growth in airline revenue and GDP followed the same pattern (KPMG, 2021). However, the growth was in advance expected to slow down in 2020, as the industry's business cycle was considered to be at its peak (KPMG, 2021). Although the economic downturn was somewhat anticipated, the scope of the current pandemic was not expected. When revenues for airlines disappeared almost overnight, even those with good economic conditions experienced a decline in key financial ratios, which for any industry is alarming (Lioutov, 2020).

The economic turmoil in the wake of the pandemic has had significant consequences for most people, and unemployment rates are rising. This trend can also be seen directly in the aviation industry, which has temporarily laid off or dismissed many employees. Rising unemployment can also affect the industry indirectly, as uncertain economic times make many people reluctant to spend money on luxury goods, such as travel and vacations. Price-sensitive customers might lead to price adjustments within the industry. (Digital Norway, n.d.; B2U, 2016)

4.1.1.3 Social

Social factors capture changes in demographics, culture, norms, and trends. People's general awareness regarding their health, safety, income, and lifestyle also falls in this category (Digital Norway, n.d.; B2U, 2016). Countless social factors can affect customers' ability and willingness to fly and travel, supplemented by the pandemic's massive consequences on habits and lifestyle. In the following, we

present the effect on the aviation industry of terror fears, climate attitudes, and social implications of COVID-19, as we consider these most relevant.

Over the last years, there has been a growing awareness of climate change and its drivers in European countries. Transportation, in particular flights, is considered an environmental detriment, and thus environmentally conscious travelers should refrain from this means of transport (IATA, 2018). However, there are indications that people choose to prioritize flights and rather be environmentally conscious in other areas. Thus, it seems as if the increased climate focus has not significantly affected the demand for air transport. This is in line with the fact that the aviation industry has experienced remarkable growth in recent years. (European Parliament, 2015; European Environment Agency, European Union Aviation Safety Agency & Eurocontrol [EEA, EASA & Eurocontrol], 2020)

Fear of terrorism can create negative attitudes towards air travel. However, the perceived frequency of hijacked commercial airplanes can be exaggerated by the attention of each case. Even though occurrences have diminished, widespread media coverage gives rise to fear (Ritchie et al., 2013). Previous international terror attacks involving commercial airlines have caused abrupt decreases in demand (Rimmer, 2020, Garrow & Lurkin, 2021). Therefore, the uncertainty of potential terrorist attacks and other fatalities can affect future flight demand (IATA, 2018).

The social implications of COVID-19 are numerous, as previously mentioned. There has been a steady increase in the desire to travel in Europe over the last decade (KPMG, 2021). Over the last year, alternative interaction habits have emerged or been further developed to reduce the need for physical meetings (Rimmer, 2020). This applies to both social and work-related gatherings. The latter also contributes to companies taking responsibility for environmental commitments and promises (Worldwide Fund for Nature [WWF], 2009), and a quick return to extensive flying could harm organizational reputation. In addition, the ongoing opening and closing of different borders contribute to a slow recovery in flight demand. The rapidly changing rules make people less inclined to book flights to avoid potential travel-related hitches (Rimmer, 2020; Garrow & Lurkin, 2021).

4.1.1.4 Technological

Technological factors refer to technological innovations that influence the market or industry operations. New technology can create opportunities, whereas failure to adapt to new technology can make one fall behind competitors. In addition, actors must be aware of recent and future innovations to prevent sunk-cost in developing soon-to-be outdated technology. (Digital Norway, n.d.; B2U, 2016)

In the airline industry, players must constantly develop new solutions to be better than their competitors through innovation or differentiation (Pereira & Caetano, 2015). In part, heavy investments form the basis for developing technology and contribute to future cost savings. Aircraft manufacturers are working to reduce emissions with new aircraft types and hope to have the first hybrid-aircraft on its wings within a short amount of time (EEA, EASA & Eurocontrol, 2020). Even though acquiring new aircraft is costly, one can save operational costs due to fuel efficiency. In that way, carriers with younger fleets have a temporary strategic advantage (IATA, 2018). The previously mentioned story of the aircraft model BOEING 737 MAX is an example of how dependent the aviation industry is on well-functioning technology and machines. In contrast, deviations from this will naturally result in a limited capacity for carriers.

The technological shift, with the increased use of information and communication technology, affects the aviation industry. A great deal of information is easily available for customers, such as the prices and departures of several providers and others' experiences (Bakir et al., 2019). Extensive communication between customers increases expectations for service levels on flights, whereas these expectations can change rapidly. Further, easily accessible technology contributes to negative attention if one does not meet expectations (Bakir et al., 2019). At the same time, it presents an opportunity for involved actors to determine and comply with what customers view as essential service elements (Airbus, n.d.; Bakir et al., 2019). This may lead to more people choosing to fly over other means of transport, reflecting increased revenues.

The COVID-19 pandemic has left its mark on the aviation industry in more ways than just the number of purchased and sold travels. Due to an abrupt shift in habits and leisure, historical data are deemed irrelevant in predicting post-covid demand (Buyle et al., 2021). As a result, previously developed technology used to predict

demand based on historical data and thus plan routes is now outdated (Buyle et al., 2021). Expectations and requirements for hygiene, contactless surfaces, and technological innovations to prevent future inflight infections are assumed to increase (Rimmer, 2020). For example, new requirements for disinfection and possible temperature checks of passengers will increase the time spent on the ground. As a result, the turnaround time from landing to departure will increase and thus reduce efficiency (Rimmer, 2020). In addition, new technology can be used to find and cure future diseases limiting mobility. Though this particular technology may be extracted in other industries, it could prove positive for the aviation industry (IATA, 2018).

4.1.1.5 Environmental

The environmental factors affecting airline performance include environmental policies, general public expectations, and perspectives on green energy (Digital Norway, n.d.; B2U, 2016). Weather, climate, and air pollution also fall in this category (IATA, 2018), but their absolute effects on the industry are somewhat challenging to assess. Our focus will therefore be on environmental policies, expectations, and perspectives.

The annual growth in air traffic comes with increased health and environmental consequences. There is no doubt that the aviation industry pollutes, as it accounts for 3 percent of the world's total CO2 emissions as well as other harmful gases. Aircraft emit sound, heat, and gases that contribute to climate change and global warming. For airlines to reduce emissions and become more environmentally friendly, the EU introduced a wide range of regulations. These regulations are supplemented by the above-mentioned investments in technology and aircraft that are more efficient and pollute less. (European Parliament, 2015; EEA, EASA & Eurocontrol, 2020, European Commission, 2021b)

A 2015 climate agreement for the aviation industry formulated clear goals and commitments for EU member states (European Parliament, 2015). From 2016, gradually stricter limits to airlines' emissions were introduced. The focal point of the agreement was to stop the increase of airlines' CO2 emissions, with 2020 levels of emissions as a base level going forward. The initiative requires the EU, its member states, and airlines to take steps towards a zero-emission industry by 2050. Despite massive funding from the EU, these goals also require airlines to invest

heavily in environmentally friendly solutions and technology. (European Parliament, 2015; EEA, EASA & Eurocontrol, 2020; IATA, 2018). During the preparation of this agreement in 2015, very few anticipated air traffic to experience a sudden stop and historic low in 2020. Maintaining future pollution at or below the 2020 levels now seems baseless. Therefore, it is reasonable to believe that revised goals and objectives will be presented soon after stabilizing the industry.

4.1.1.6 Legal

The last group of factors is legal factors. Legal factors resemble political factors but are more pointed towards existing and future legislation and laws (Digital Norway, n.d.; B2U, 2016). Some legislation for the aviation industry is included in the above subchapter, such as political regulations and environmental legislation. In addition, legal factors such as consumer and data protection laws, health and safety laws, and employment laws should be considered (IATA, 2018; B2U, 2016).

In 2018, the EU's comprehensive regulations on privacy rules came into force, referred to as the GDPR. GDPR sets strict requirements for the use, storage, and collection of personal data. Airlines must comply with these rules, as they possess information about their passengers' bank cards, identification documents, and travel details. Potential data breaches and increased cybersecurity threats worry both consumers and companies and require airlines to be vigilant and focus on security in their use of technology. (IATA, 2018)

In the wake of the pandemic, several issues have arisen that may be precursors to future legislation and changes. Several actors predict enhanced passenger rights and protection due to massive delays in refunds following the 2020 flight cancellations (Rimmer, 2020). In addition, enhanced legislation regarding health and safety while traveling is considered (Rimmer, 2020). These potential legislations will have an unknown effect on airline costs, as they will be required to comply.

4.1.2 Porters' Five Forces

In the following subchapters, we use Michael Porter's widely known framework for analyzing competitive forces within the aviation industry. The industry structure, formed by economic and technical drivers, determines the power of the various forces (Porter 2008). The collective power of these forces discloses potential profits

within an industry (B2U, n.d.), which is an essential factor to consider when evaluating the industry-specific (dis)advantages.

The five forces are defined as the threat of entry, power of suppliers, power of buyers, the threat of substitutes, and rivalry among existing competitors. Porter (2008) emphasized that a common mistake is to ascribe the same emphasis to all forces rather than an in-depth analysis of those more relevant. Due to this, we emphasize the threat of entry and rivalry among existing competitors.

4.1.2.1 Threat of entry

The threat of entry is considered when analyzing opportunities for new entrants to establish themselves in the market. As this force influences the concentration of competitors, potential profits are affected. If the threat of new entrants is high, incumbent firms will be inclined to compete on prices and make heavy investments in new technology to deter new entrants. (Porter, 2008)

The power of this force depends on existing entry barriers and the potential retaliation from incumbent firms. Entry barriers vary between industries, whereas Porter (2008) presents seven general major barriers. From these, customer switching costs, capital requirements, and incumbency advantages independent of size are the barriers we consider relevant for airlines. (Porter, 2008)

4.1.2.1.1 Customer switching costs

Customer switching cost refers to costs related to replacing one's supplier. If these costs are low, customers will be more willing to switch to other suppliers, and thus present new entrants with greater opportunities to attain customers in the market (Porter, 2008). The customer switching costs in the airline industry are noticeably low. Customers are merely looking to be transported from A to B. Any airline offering this will, in theory, be a relevant choice. When returning from B to A, all airlines are again relevant, as there are no restrictions or costs connected to choosing someone else the second time.

Reward programs of airlines attempt to repel the low switching costs (B2U, n.d.) and include benefits with every mile flown or purchase made with specific bank cards. Reward programs have proven to be of significance, as they provide customers incentives to choose a particular airline over its competitors (Saxon & Spickenreuther, n.d.). For business travelers, reward programs can be the decisive

factor when choosing an airline. Using benefits collected through business travels in their personal life can be worth more to him or her than a slight price difference or location of the airport (Saxon & Spickenreuther, n.d.). In the aftermath of COVID-19, airlines are more dependent on their customers than ever before. The customer switching costs can be said to be unchanged, as people are generally less inclined to travel. However, reward programs now play an ever more significant role for airlines, as transactions made with cards tied to reward programs still bring revenues in times of despair. Nevertheless, we assess the entry barrier of switching costs to be low but note that having customers involved in an operating airlines' reward program is beneficial.

4.1.2.1.2 Capital requirements and incumbency advantages

Capital requirements can deter new entrants to the market. However, high capital requirements alone are not necessarily a sufficient entry barrier in an attractive industry (Porter, 2008). If potential profits in an industry are high, investors will be intrigued to support new entrants either way (Porter, 2008). Entering the airline industry includes acquiring planes, flight permits, airport certificates, and route networks, making the capital requirements high. Considering the possibility to lease rather than purchase aircraft can reduce the capital requirements a little (B2U, n.d.). However, the airline industry was in 2018 faced with higher capital requirements than ever before (FlightGlobal, 2018). As a result, depending solely on investment banks for financing has become difficult, which has led to new entrants diversifying their financing alternatives. Airlines have been, and are still, viewed by many as a good investment (PricewaterhouseCoopers [PwC], 2013; Beresnevicius, 2021).

Despite the high interest for investments, new entrants are likely to face several years without profit at the establishment (Airline Industry Analysis, n.d.) due to incumbency advantages independent of size. Such advantages could be a good reputation and well-known brand and advantages of geographical location (Porter, 2008). An established network is an advantage in the airline industry. In conjunction with a brand attracting customers, the airline can have the size and customer base necessary to withstand some losses in short periods to outcompete new entrants (Airline Industry Analysis, n.d.). This points to capital requirements increasing entry barriers.

However, the ongoing pandemic has changed market conditions. The aviation industry is decimated by COVID-19 (KPMG, 2021), and industry sources like IATA and Airbus project the earliest time of recovery to be in 2024 (Lunman & Soroka, 2021). Many airlines struggle in challenging market conditions and can no longer withstand additional losses to deter new entrants. (IATA, 2021). According to KPMG (2021), 31 airlines ceased operations, and 13 others entered bankruptcy protection or restructuring in 2020. Additionally, IATA estimates that more than seven million people have been affected by (temporary) dismissals in the industry (KPMG, 2021). As a result, the market is left with a sudden abundance of aircraft, routes, and crew, which presents opportunities for entrants (Beresnevicius, 2021). Due to sudden changes in financial situations, existing incumbents are faced with massive debt, possibly acquired before the crisis. New entrants dodge overdue debt, providing a beneficial strategic starting point upon entry (Beresnevicius, 2021).

Porter (2008) mentions how the expected retaliation of incumbent firms determines the power of the threat of entry. Unused borrowing power and excess cash possessed by the incumbent can enable them to fight entrants (Porter, 2008). Up until the pandemic, retaliation of the incumbent would have been expected, e.g., lowering prices to outcompete the newcomers. However, as emphasized through this thesis, the aviation industry and the airline operators' resources have been tremendously impacted by COVID-19, which undoubtedly affects the opportunities to fight entrants. Therefore, we assess the threat of entry to be of medium size pre-COVID and medium-high in 2021.

4.1.2.2 Power of suppliers

The power of suppliers is considered to understand the relationship between an industry and its suppliers. The relationship is severely influenced by this force, as it affects the price and offers exchanged between them (Porter, 2008). For the airline industry, we consider airport slots and the cost of fuel and aircraft to be the most relevant inputs that suppliers have power over.

Once an airline wishes to establish a route with a specific airport, the airport has tremendous power. Airport slots are controlled by the airport, which can set the price to their liking, meaning they work as regional monopolies. This was the case until 2009. Industry actors such as IATA demanded regulations of airport charges, as their monopoly power limited economic and social benefits for airlines and

customers (IATA, 2016b). To ensure an efficiently working aviation market, the European Parliament issued an official instruction in 2009 to prevent discrimination of airlines and enhance transparency (European Parliament, 2021c). Thus, the power of airports has been limited.

The price of fuel and aircraft are also relevant inputs for airlines. As mentioned in the PESTEL analysis, fuel prices are subject to fluctuations in the oil price in the global market. Due to this, suppliers of fuel will have low power over airlines. Additionally, most airlines hedge the price risk related to fluctuating prices in fuel, and hence the power of fuel suppliers is considered low.

The power of aircraft suppliers is, on the other hand, considered high. Airbus and Boeing are the two leading aircraft suppliers, constituting a de facto duopoly in Europe (KPMG, 2021). Airlines are highly dependent on their chosen aircraft provider, as they cannot offer any service without airplanes. Because most aircraft are obtained through long-term contracts, the switching costs for airlines are huge (Airline Industry Analysis, n.d.).

The number of airlines having ceased operations in 2020 (KPMG, 2021) could have been much higher had Airbus and Boeing insisted on pre-delivery payments of mentioned contracts. However, as the two aircraft providers are mutually dependent on their customers for survival, they have acted rationally to ensure future orders (KPMG, 2021).

To sum up, we consider the power of suppliers to be high pre-COVID and medium-high in 2021.

4.1.2.3 Power of buyers

The power of buyers is considered to understand market competition. High levels of consumer power infer intense competition within the market and thus lower industry profits. This power increases if products within an industry are considered standardized and the buyers' switching cost is low. Few buyers relative to suppliers will also provide the buyers with bargaining power. (Porter, 2008)

There are many buyers relative to suppliers in the airline industry, indicating low bargaining power for buyers. However, as Bakir et al. (2019) stated, an airline's success depends on the "voice of customers". In conjunction with technological development and accessible information, airline customer power is enhanced.

Customers now have access to various websites for comparing ticket prices and read and leave reviews of received services. This enhanced communication between customers has increased the competition in the airline industry. (Bakir et al., 2019)

To sum up, the power of buyers is unaffected by the implications of COVID-19, and we consider it to be medium.

4.1.2.4 Threat of substitutes

The threat of substitutes is considered to determine alternative products or services that are equal or similar in function to the offered product (Porter, 2008). This power is deemed high if existing substitutes match the performance and price of the product (Porter, 2008). For the airline industry, we consider the currently most relevant substitutes to be high-speed railways and videoconferences.

Over the last years, an increased number of passengers are tempted to choose railways for short-distance travels (Railway Technology, 2020). Research shows that the introduction of a low-cost, high-speed rail led to decreased profits and loss of market share for airlines (Wang et al., 2020). High-speed railways are also popular as an environmental alternative to traveling by airplane and are an essential means of transportation if environmental goals are to be reached (FutureRail, n.d.). However, high-speed railways will never be able to outcompete airlines for long-distance travel, and we consider the threat of substitutes by railways to be low.

The development of technology has spiked the use of video conferences, which constitutes the second possible substitute. Airline passengers are either traveling for business or pleasure. For business trips, video conferences can be an alternative for physical meetings and travels. With the disruption of COVID-19, video conferences have become a common form of communication between (home)offices. This habit is expected to continue even after the pandemic is over due to reduced travel costs and environmental impacts. (Garrow & Lurkin, 2021)

As a result, we consider the threat of substitutes to be low pre-COVID. We believe business travels to recover to normal more slowly (if ever) than leisure travels, and therefore the threat in 2021 is low-medium.

4.1.2.5 Rivalry among existing competitors

Rivalry is potentially the most destructive force for profitability in an industry (Porter, 2008). Fierce competition often leads to competition on price, which

transfers profits from the industry to the customer (Porter, 2008). Rivalry among existing competitors is dependent on several factors (Palepu et al., 2013), whereas we have chosen to emphasize growth, exit barriers, and differentiation.

The aviation industry has been characterized by high growth for many years, known as a supercycle in economic terms. In 2019, a decline in the market was predicted by many (Tozer-Pennington, 2020; KPMG, 2021). A decline in growth will typically raise the level of competition, as airlines will have to compete for existing market shares.

High exit barriers further intensify the rivalry in the airline industry. Aircraft demand is more or less limited to the same market and is thus not easily traded. Due to innovations and technology, the market value of used aircraft decreases rapidly (EEA, EASA & Eurocontrol, 2020). Additionally, national governments will often ensure the protection of airlines to preserve jobs and domestic value creation (Abate et al., 2020).

Furthermore, the increased similarities of low- and full-cost carriers' strategies have made differentiation from competitors more difficult (Avogadro et al., 2021). Products and services are easily copied, as seen in the emergence of hybrid strategies: full-service offered at low costs (Pereira & Caetano, 2015). As the airline industry is characterized by high fixed costs and low marginal costs, airlines have incentives to lower their prices down to their marginal cost (Porter, 2008) to secure customers. This is referred to as price competition.

The rivalry in the airline industry is intense, also after the emergence of COVID-19. Due to a stagnant market, an abundance of capacity, and high debt requirements, there will be fierce competition for customers as soon as travel restrictions are eased. Therefore, we consider the rivalry among existing competitors to be high, both pre-COVID and in 2021.

4.1.3 Summary of the external analysis

From our external analysis, we have found the European aviation industry to be a highly competitive industry. There are strict political, environmental, and safety regulations. If these are subject to change or additional regulations are introduced, all involved parties must comply. However, the industry benefits from common

market regulations and lucrative investment opportunities. The number of financially involved actors and intense rivalry facilitates innovation.

The pandemic has caused authorities to temporarily pause some of those strict regulations in a desperate attempt to save a vulnerable industry. The trend of relative growth in aviation closely correlating with the world economy has prevailed, even throughout the abrupt stop of economic activity. Travel restrictions, closed borders, and uncertainty have left marks on the months after March 2020. On the other hand, technological innovations within communication have presented both opportunities and threats for airlines.

Using Porter's five forces to establish the degree of competition within the industry, we consider this to be of medium size pre-COVID. There are no notable substitutes for airplane travel, and the buyers have limited power over airlines. However, due to intensified conditions in a stagnant market combined with the fight for survival, the competition is medium-high in 2021. New entrants have the unique opportunity to take advantage of the abundance of resources and expertise while entering a chaotic debt-filled market.

4.2 Internal analysis of Norwegian ASA

The analysis of the European airline industry and Norwegian ASA's competitors conducted above is followed by an internal analysis of Norwegian ASA, including analyses of resources and activities within the company. In general, an airline's resources and activities facilitate their chosen strategy, and the combination of these must be strategic compared to competitors (Matthews, 2006). We mainly use information from chapters 2 and 4.1 to assess Norwegian ASA's internal conditions. Focusing on a selection of (in)tangible assets and business activities, we evaluate whether Norwegian ASA has resources able to create lasting (dis)advantages for the company.

As mentioned in chapter 2.3, Norwegian ASA is mainly considered a low-cost carrier but also offers their customers additional services associated with full-service airlines. A standardized fleet of simple aircraft combined with secondary airport slots facilitates a low-cost strategy (Matthews, 2006). However, this chosen combination of resources only makes sense in a competitive environment where the airline's competitors use more complicated fleets and primary airport slots and

thereby encounter higher costs than our target company (Matthews, 2006). How Norwegian ASA's offered services align with their strategy will be assessed below.

4.2.1 Management and ownership structure

The management and ownership structure of a company affects its strategic position. As emphasized in chapter 2.1, the management runs companies on behalf of shareholders. Shareholders possess voting rights, whereas managers effectively control the company to maintain the owner's economic interests. This relationship makes management and ownership structure important to assess when evaluating Norwegian ASA's (dis)advantage.

Norwegian ASA has, within the last years, experienced changes in both management and ownership structure. Changes in management, including leading personnel of Norwegian ASA engaging in startups of new airlines the previous year, have gained attention (Bøe & Lorentzen, 2021; Lorentzen, 2020). Ever since Norwegian ASA's foundation, Bjørn Kjos has been a prominent figure of the company. He led the company through startup, growth, and strategic change towards profitability in 2018. As of 01.01.2020, the experienced businessman Jacob Schram took the reins as the new CEO. Schram has commented on the company's state upon his accession and how his task was to structure the "gigantic startup company" towards sustainable profitability (Kjernli, 2020). Regardless of COVID-19, the company was not ready for the extreme growth focus and the debt obligations that came with it (Kjernli, 2020).

Several stakeholders are affected by the company's profitability. As previously mentioned, the board of directors' job is to secure a company's corporate governance, including conflict of interest between various stakeholders. In hindsight, we believe that the tremendous growth strategy of Norwegian ASA perhaps should have been counteracted by Norwegian ASA's Board of Directors to secure stakeholder interests. However, the near 40 million outstanding shares were at year-end 2020 unequally divided between more than 67 thousand shareholders, of whom none possessed a controlling stake (Norwegian, 2021c). A well-known pitfall of dispersed ownership and weak control is how the absence of controlling stakes overshadows various shareholder interests (Goergen, 2018).

As a result, we consider the management and ownership structure challenging for Norwegian ASA's prospects. The extreme growth focus has brought challenges that are difficult to manage, both pre-COVID and after. It will entail high costs to ensure that all shareholders' interests are secured in the future.

4.2.2 Brand name

The Norwegian ASA brand name has the potential to create a lasting strategic advantage. The many received prices and awards listed on Norwegian ASA's website (Norwegian, n.d.) implies that the airline is well-liked and recognized within the industry. Between 2012 and 2020, the company has been recognized for its customer service, loyalty programs, various onboard service elements, and highly prestigious titles (Norwegian, n.d.).

Although Norwegian ASA has several times been officially named the leading airline in Europe, its recognition in the industry and brand name is also affected by customers' impressions. Insight and consulting companies annually conduct more informal reputation surveys. Excerpts from these insights are publicly accessible, where one can observe a decreasing trend of Norwegian ASA's reputation over the years. Multiple events can have caused the faded reputation of Norwegian ASA, but COVID-19 was undoubtedly one of them.

Over the last year, the words "Norwegian ASA" and "risk of bankruptcy" were frequently combined in the media. The abrupt decrease in revenues created trouble for Norwegian ASA, including frustrated customers waiting more than ten months for canceled flight compensation. Other customers accepted cash points with Norwegian ASA as a settlement, hoping to use these at a later time. (Solli, 2020)

As elaborated under our external analysis, a good reputation and well-known brand name is an incumbency advantage facing the threat of new entrants. We assess Norwegian ASA's decreased reputation to weaken its competitiveness and be a disadvantage.

4.2.3 Aircraft fleet

The strategic position of Norwegian ASA and its aircraft fleet mutually affect one another. For airline companies in general, the aircraft fleet is their main income-generating asset. Having a younger fleet than one's competitors is likely to be a

strategic advantage. It decreases operation costs and allows lowering prices on airline tickets compared to the competitors.

As we know from chapter 2.2, Norwegian ASA's aircraft fleet as of 2019 consisted of 156 aircraft from Boeing, many of them relatively modern and fuel-efficient. This fleet was beneficial for Norwegian ASA's operations. In addition to reducing costs, the increased environmental demand from customers, investors, and regulators was met by the exceptional young fleet, resulting in lower emissions than competitors (Norwegian, 2020). Due to increased financial troubles resulting from the pandemic, the aircraft fleet of Norwegian ASA changed drastically. In 2020, the company got rid of 25 aircraft through restructuring. Plans involve further reductions of the fleet, getting rid of 78 additional aircraft (Norwegian, 2021c), which have become redundant, as their new strategic goal is now limited to serve only the European market. As of April 2021, Norwegian ASA has no outstanding orders of new aircraft, though such acquisitions are regarded feasible in case of an expansion in the near future (Schram & Karlsen, 2021).

At the end of 2019, the average age of Norwegian ASA's aircraft was 4.6 years (Norwegian, 2020). The average age of aircraft was 5.4 years for Wizz Air, 8.6 years for SAS, and 12.5 years for Lufthansa (Wizz Air, 2020; SAS, 2021; Lufthansa Group, 2021). Thus, Norwegian ASA's average age on the aircraft fleet seems to have a strategic advantage. However, aircraft fleets are constantly renewed. On average, between 2 and 3 percent of aircraft are retired yearly, while this rate has increased by two percentage points in previous economic downturns (Boeing, 2020). As a result, Boeing (2020) is reasonably confident that the current economic downturn will generally lead to a renewal of older aircraft, making airlines more robust due to decreased costs related to this. In addition, newer technology used in younger fleets is more likely to meet current and future environmental expectations. The advantage of Norwegian ASA's young fleet is therefore not deemed sustained.

4.2.4 Airline operations

Norwegian ASA's operations, including their route network, is an essential part of their strategic position and the potential to attract customers. For their operations to serve as a lasting advantage, Norwegian ASA will need to operate faultlessly, providing customers with a unique route network with attractive destinations and travel experiences not easily matched by competitors.

As we know from chapter 2.2, Norwegian ASA aimed for a strategic change in 2018, shifting focus from growth to profitability. As a result, the company concentrated its operations into fewer airports to decrease structural complexity in 2019. However, COVID-19 disrupted the original plan for structural changes towards profitability, forcing the company to cease long-haul operations. Today, Norwegian ASA concentrates on serving the European market, focusing on the Nordic market. We know from Matthews (2006) that the use of secondary airport slots facilitates the low-cost strategy. To our knowledge, Norwegian ASA uses both primary and secondary airport slots in their operations and thus does not properly facilitate the low-cost carrier strategy for the time being.

Further, differentiation of offers and providing travel experiences not easily matched by competitors is not easily done in the near future. The Norwegian market will be characterized by fierce competition in the time ahead. Earlier in this chapter, the threat of new entrants was considered high, and the emergence of new actors in the market is evident with the presence of Flyr and Norse (Bøe & Lorentzen, 2021). The competition is further intensified by existing competitors like Wizz Air, SAS, and Lufthansa. Therefore, we do not assess Norwegian ASA's operations and route network to be advantageous in the time ahead. This assessment is further proved by the decreased customer satisfaction and less received rewards as mentioned under the discussion of the brand name. Decreased customer satisfaction has emerged for several reasons, one of them being frustrated customers still awaiting compensation for flights canceled at the outbreak of COVID-19 (Solli, 2020).

4.3 Summary of strategic analysis - SWOT

Using the SWOT framework, we have summarized the main findings of our external and internal analysis in the table below. Our analysis is broken down into four categories: threats and opportunities postulated from the market and strengths and weaknesses within Norwegian ASA. Thus, this framework captures Norwegian ASA's potential for going concern with the current market conditions.

	S	W	O	T
Pre-COVID	• Well recognized brand • Young fleet	• Growth chosen over structure → financial challenges	• Economic growth contributing to new markets	• High power of suppliers • Anticipated end of super cycle in industry
2021	• Market expectations • Support from government	• Negatively associated brand name • Diluted stock	• Overflow of work force in the market	• New entrants not bound by current debt • Social restrictions
Sustained	• Well established firm with existing customer base	• Extensive amounts of debt	• Technology for improving operations • Word of mouth due to internet	• Video conferences • Strict regulations by various government • High rivalry

Table 4.1: SWOT analysis, Norwegian ASA

Through PESTEL and Porter's five forces, our analysis displays the European airline market to be highly competitive both pre-COVID and in 2021. Given the pandemic, some strict regulations have been temporarily paused, but it has also given new entrants unique opportunities to take advantage of the abundance of resources and expertise. Seen in context with our internal analysis not assessing any of Norwegian ASA's internal resources to be sustained advantages, this implies a challenging future. However, Norwegian ASA's greatest strength is its incumbency advantage, having already established networks.

5 Accounting analysis

5.1 Assessment of accounting quality

A company's financial statements should be an objective presentation of its financial situation and give a clear picture of the underlying activities performed by the company. The purpose of this assessment is to answer how well Norwegian ASA sheds light on these aspects. Several factors can open up for noise and bias in the accounts, and these factors can be identified by reviewing six steps in accounting analysis. (Palepu et al., 2013)

5.1.1 Step 1: identification of key accounting policies

Identification of key accounting policies is an essential step for evaluating how well a company addresses and manages its risk and success factors (Palepu et al., 2013).

Norwegian ASA presents their financial statements under IFRS and is thereby bound by IFRS's demands of explicitly identifying which methods and measurements that require judgment (Palepu et al., 2013). One can read from the auditor's reports in the financial statements of the period of analysis that the company complies with these explicit demands of IFRS. Thus, we deem Norwegian ASA to depict a fair view of their financial position.

In their financial statements, Norwegian ASA presents financial risks and other risk factors and how risk management is conducted. Their presentation is thorough, as they identify and address several risks such as environmental, foreign currency, and liquidity risks. One of the identified competitors, SAS, discloses its risk management similarly (SAS, 2021). On the other hand, Lufthansa has a slightly different approach, revealing risk and opportunity management combined (Lufthansa, 2021). They also provide more specific information about how risk management is conducted, including aspects of risk related to digital transformation and strategic fleet sizing (Lufthansa, 2021). This way, Lufthansa provides a more comprehensive view of their accounting policies and how this addresses and manages both its risk *and* success factors. Particularly, the risk related to strategic fleet sizing should, in our opinion, have been mentioned in Norwegian ASA's risk factors due to its unfortunate impact on profits. Nevertheless, we assess Norwegian ASA's accounting policies to be overall informative, but we note that it could have been better when compared to competitors.

5.1.2 Step 2: assess the accounting flexibility

Flexibility in choosing accounting policies and estimates varies across firms, and this flexibility can affect whether or not the policies reveal the reality of the underlying business (Palepu et al., 2013).

The estimates deemed relevant in this step are related to (in)tangible assets and estimates that affect asset value and depreciation practices. Yearly depreciation costs are composed of three variables: acquisition cost, residual value, and the asset's useful life. In the determination of the two latter variables, management uses judgment and discretion, which can significantly affect the portrayed financial position of the company. Overconfident estimates, being too high values of these, will result in a too low yearly depreciation. Consequently, the balance sheet and earnings will be overstated. (Palepu et al., 2013; Dyrnes, 2016)

The risk of understated depreciation costs is prominent in the airline industry due to the high value of assets, and thereby a significant amount of depreciation that affects earnings (Palepu et al., 2013). In IATA's (2016) industry-specific guidelines on aircraft depreciation, it reads that acquisition-related costs should be capitalized. Various aircraft components should also be individually assessed in terms of useful lives. The useful life of the aircraft body, being the main part of the aircraft, should be between 15 and 25 years, and the most common is to use 20 years (IATA, 2016a). According to IATA, the residual value should be between 0 and 15 percent of the purchase price, and the two estimates should be evaluated by the end of every reporting period (IATA, 2016a).

These guidelines offer airlines flexibility in depreciation practices. Thus, depreciation practices vary across airlines. Nevertheless, the chosen practices should be formulated and reasoned (Palepu et al., 2013). A reason for differences in depreciation between airlines can be operative differences in routes or strategy (Palepu et al., 2013). Low-cost airlines that operate on short routes relative to others can justify a lower depreciation cost (Palepu et al., 2013). In addition, younger aircraft are associated with lower operating costs, meaning their effectiveness can further decrease the useful lives of older aircraft (Palepu et al., 2013; IATA, 2016a). If the differences in depreciation rates between competitors are not adequately justified, the companies will not be directly comparable. This must be considered in comparative valuation (Palepu et al., 2013).

Norwegian ASA and its competitors SAS and Lufthansa have different depreciation practices, though all three comply with IATA's industry guidelines and use straight-line depreciation. Norwegian ASA uses 25 years as useful life for their aircraft, with the total residual value being 4.8 million NOK in 2019. SAS and Lufthansa depreciated their aircraft over 20 years, with respectively 10 and 5 percent residual value. Each of the companies depreciates other components individually, though the useful life of other components varies from 4 to 8 years.

While Norwegian ASA's tangible assets are depreciated on a straight-line basis with a residual value of zero, their carrying amounts of liabilities and intangible assets are estimated. Such estimates require assumptions to be reliable (Palepu et al., 2013). Norwegian ASA's included assumptions related to estimating the fair value of debt are extensive and informative.

The assumptions related to intangible assets are, on the other hand, just referred to as being in accordance with the Board of Directors' approved assumptions. Norwegian ASA merely states that these assumptions are "based on experience and other factors" (Norwegian, 2020, p.11). However, it is reasonable to believe that this experience is sufficient.

5.1.3 Step 3: evaluate the accounting strategy

The third step of accounting analysis is the evaluation of the accounting strategy. This step involves assessing whether management will have incentives to manipulate performance, as well as an assessment of the credibility of Norwegian ASA's policies through the years. (Palepu et al., 2013)

Managements' incentives for performance manipulation can arise from outside, through shareholders, or from personal motives. Personal motives can typically be improving personal reputation or increasing earnings if one's salary is connected to company performance (Dyrnes, 2016). As COVID-19 caused an abrupt decrease in profits, there is no doubt that the management of Norwegian ASA is under pressure to perform and survive. Raising capital from shareholders has been necessary and could thus work as an incentive to manipulate performance for satisfying existing investors and attract new investors. However, we note that the disruption caused by the pandemic applies to every industry, and the common understanding of this reduces the incentive for performance manipulation.

Further in evaluating the accounting strategy, the credibility of Norwegian ASA's accounting policies is discussed, looking at disclosed policy changes over the last five years. Information regarding policies is presented in the first note of Norwegian ASA's consolidated financial statements. The note describes several changes, such as adopting annual improvements and new interpretations of existing IFRSs. This approach to policy change disclosure is in line with how both Lufthansa and SAS present the changes (Lufthansa, 2021; SAS, 2021).

The only change that has made a material impact on Norwegian ASA's financial statement over the analysis period is implementing IFRS 16 in 2019. IFRS 16 removed the distinction between operational and financial leases, leading to most leases previously accounted for as operational required capitalization (PwC, 2016), which led to a tremendous negative impact on Norwegian ASA's financial

statements of 2019. Due to this immense impact, we find it appropriate to adjust the accounting for leases for fiscal years until 2019 in our period of analysis. This way, all historical years will be accounted for in line with IFRS 16. We present the procedure for the actual adjustments under step 6 of this assessment of accounting quality.

Our overall assessment is that Norwegian ASA's accounting strategy is sufficient. While the management and CEO Schram are under a lot of pressure, it is not reasonable to believe that this impacts the accounting strategy of the management at the time being.

5.1.4 Step 4: The quality of disclosure

Assessment of the quality of disclosure is the fourth step in accounting analysis. A high-caliber disclosure strategy will ensure that analysts are provided a clear view of the underlying reality of the business, assessing the quality of disclosure an essential part of accounting analysis. To a certain extent, company management will determine the disclosure, as they influence the obtainability of valuable accounting information for analysts. (Palepu et al., 2013)

International policies and accounting principles will also determine the quality of disclosure. For example, the International Air Travels Association, IATA, has published guidelines on necessary accounting information that needs to be addressed in airlines' financial statements. Among others, the guidelines include that judgment on impairment must be addressed (IATA, 2016a), which Norwegian ASA fulfills in its annual reports (Norwegian, 2020).

However, the quality of disclosure is also subject to personal judgments. What is considered a good disclosure strategy varies between professionals. While some professionals see information overload as impossible and appreciate extensive information, others see increased note-lengths as harmful to the information quality (Dyrnes, 2016). The latter group worries that information overload makes it harder to assess company performance (Dyrnes, 2016).

With this in mind, we further evaluate Norwegian ASA's disclosure quality by looking at how transparent the company is. The company's guidelines for financial reporting are based on the principle of transparency (Norwegian, 2020), and a thorough review of the company's annual reports reveals that the extent of

information is immense. We have compared the last five years' annual reports to each other to evaluate the provided information regarding how Norwegian ASA explains their performance. Annual reports of Norwegian ASA from 2014 up to 2017 states that "… there are no indications that the Group is in breach of the going concern convention" (Norwegian, 2017, p. 25). From 2018 and going forward, this is changed to "The financial statements have been prepared on the going concern basis" (Norwegian, 2019, p. 28). The auditor's report in 2018 confirms that the company does not violate the going concern convention (Norwegian, 2019). However, there is no explanation for why the "no indications that the Group is in breach"-comment is removed.

Further, the quality of disclosure is also determined by how managers unveil bad news (Palepu et al., 2013), which Norwegian ASA overall does well. For example, the impact of IFRS 16 mentioned above was disclosed in the annual statements from 2016 and going forward. The management also thoroughly addressed the implications of COVID-19 in the annual report of 2019 and the quarterly reports of 2020. Nevertheless, insolvency problems related to the previously emphasized growth strategy are, in our opinion, not sufficiently addressed in the financial statements. A review of the annual reports does not reveal any clear articulation of actions to solve these problems, other than slightly superficial statements.

To sum up our assessment of Norwegian ASA's disclosure quality, we note that while extensive information is provided, it can be deemed a confusing overload of information. However, both SAS and Lufthansa have similar financial statements, thoroughly presenting their operations through segment reporting and detailed notes. Therefore, we conclude that the quality of disclosure is overall sufficient, based on what we can assess.

5.1.5 Step 5: identification of red flags

The fifth step of accounting analysis is to identify red flags, being items that require in-depth examination. Analysts should be aware of these items, as identification of such points to questionable accounting quality. (Palepu et al., 2013)

Items that signal either that the going concern is questionable or the presence of accounting manipulation requires more in-depth examination. As discussed in chapter 2, the profitability of Norwegian ASA has fluctuated a great deal. We see

this profit uncertainty as a potential red flag. We know that Norwegian ASA made a strategic shift from growth to profitability in 2018, confirming that the company management has addressed this questionable performance with specific measures. Our impression so far is that the growth strategy was chosen at the expense of the company's shareholders. Having major shareholders would, in many cases, increase deliberate disclosure (Dyrnes, 2016), and as we emphasized under chapter 2.2, Norwegian ASA is characterized by dispersed ownership. This is assessed to be one factor that enabled Norwegian ASA to choose growth over profitability in the past.

Closely related, another potential red flag is inadequate internal corporate governance mechanisms (Palepu et al., 2013). Inadequate internal mechanisms can arise from dependency between management and its board or management and their auditors. We elaborated on this in chapter 2.2, and as emphasized there, we do not have premises to state that Norwegian ASA's internal governance mechanisms are insufficient.

The third and last red flag discussed here is "unexplained transactions that boost profits" (Palepu et al., 2013, p. 93). These are typically transactions such as debt-for-equity swaps, used to "realize gains, when operating performance is poor" (Palepu et al., 2013, p. 93). 2020 and 2021 resulted in several debt-equity swaps for Norwegian ASA. However, this is thoroughly assessed and explained as a vital measure to survive the pandemic and is therefore not assessed to be a red flag. To conclude on this step, we have not identified any red flags in Norwegian ASA's financial statements, apart from the fluctuating profitability.

5.1.6 Step 6: Recast financial statements and undo accounting distortions

The sixth and final step of accounting analysis is recasting financial statements and undo accounting distortions using standard templates and language (Palepu et al., 2013). In chapter 5.2, we have reformulated Norwegian ASA's financial statements, distinguishing between operational and financial items, to better facilitate a comparable ratio analysis (Palepu et al., 2013, Dyrnes, 2016). Before presenting these numbers, we have made some adjustments.

Adjustments are made to correct for identified noise and bias to better view the company's underlying operations. Contrary to a reformulation of the balance sheet, adjustments involve an actual correction of the company's reported figures (Palepu

et al., 2013; Dyrnes, 2016). As elaborated in the above steps, we have no reason to believe that there are irregularities in the accounts, much because the company's external auditor has approved all annual reports. As commented on above, after the new IFRS 16 came into force on 01.01.2019, it was required that most operational leases should be accounted for as financial leases and thereby the standard affected capitalization. Norwegian ASA has adopted IFRS 16 from 2019, though they have not restated previous year's financial statements to comply with the new standard (Norwegian, 2020). In the following paragraphs, we explain how we have adjusted Norwegian ASA's operating leases into financial leases for 2018 and back to 2014.

It is important to be aware that overriding reported figures can also be a source of noise since we are external analysts with less information than the company that prepares its accounts (Palepu et al., 2013; Dyrnes, 2016). Nevertheless, we consider this correction appropriate for our thesis, as depreciation related to aircraft and leasing constitutes relatively high costs for airlines. To avoid underestimating Norwegian ASA's assets, we adjust the company's financial statements according to Palepu's method for leased assets off-balance sheet (Palepu, 2013, p. 143-146). For complete calculations, see attachment 1.

Using Norwegian ASA's financial statements, we set up table 5.1 of the company's future lease obligations by the end of each fiscal year up until 2018. The leasing obligations include a marginal share for cars, property, and technical equipment. Due to the substantial part of aircraft in the obligations, we have chosen to only go forward with the lease information regarding aircraft. In their financial statements, Norwegian ASA states that most of the aircraft lease contracts have a duration of up to 12 years, over which we allocated the lease obligations using discretion. Lease obligations due within one year remained unaffected, while the amounts in the two consecutive periods were evenly distributed over 12 years. The discount rate used to find present value is the average rate of debt through the period of analysis.

Minimum future rental payments in NOK 1000						
	2013	2014	2015	2016	2017	2018
Within 1 year	2 034 125,00	2 603 334,00	3 218 516,00	3 114 133,00	4 682 200,00	5 244 100,00
Between 1-5 years	6 724 240,00	8 894 137,00	20 261 852,00	18 505 134,00	16 827 000,00	18 358 400,00
After 5 years	6 167 172,00	7 167 035,00	19 882 063,00	16 420 712,00	17 529 800,00	18 687 200,00

Table 5.1: Minimum future rental payments of aircraft

The adjustment affects both the balance sheet and the income statement. First and foremost, the leasing costs in the income statement are reversed, increasing the net

profits. Increases in depreciation completely counteract this effect each year due to a substantial increase of tangible assets in the balance sheet. The net profit is further reduced by the increase in financial expenses, following increased financial debt associated with increased assets. Due to higher costs than what is reported, deferred tax liabilities decrease in every adjusted fiscal year. Even though the tangible assets are increased due to capitalization of leased assets, the belonging increase in operational liabilities decreases this effect in the reformulated balance sheet, presented in chapter 5.2. We summarize the results in tables 5.2 and 5.3 below.

Changes in income statement	Effect	2014	2015	2016	2017	2018
Cost of sales						
Aircraft leases	*Reduction*	-1 845 940,00	-2 213 251,00	-2 841 859,00	-3 889 680,00	-4 354 100,00
Depreciation and amortization	*Increase*	1 994 292,75	3 128 030,96	5 058 051,43	4 705 155,86	4 922 036,25
Interest expense	Increase	653 369,20	1 168 887,23	1 510 434,80	1 466 747,80	1 556 704,80
Income tax expense	*Reduction*	-216 464,93	-562 590,14	-931 656,81	-547 733,68	-488 667,44
Changes in net profit		- 585 257,02	- 1 521 077,05	- 2 794 970,42	- 1 734 489,98	- 1 635 973,61

Table 5.2: Effects on the income statement

Changes in balance sheet	2014	2015	2016	2017	2018
Beginning capitalization	11 783 475,01	14 843 812,16	33 590 072,80	29 688 579,25	30 492 695,98
New leases	4 354 810,51	20 264 821,24	-2 631 649,97	3 304 371,22	5 540 454,14
Annual depreciation	-1 994 292,75	-3 128 030,96	-5 058 051,43	-4 705 155,86	-4 922 036,25
= Non-current tangible assets	**14 143 992,78**	**31 980 602,43**	**25 900 371,41**	**28 287 794,60**	**31 111 113,87**
Beginning debt	11 783 475,01	14 843 812,16	33 590 072,80	29 688 579,25	30 492 695,98
New leases	4 354 810,51	20 264 821,24	-2 631 649,97	3 304 371,22	5 540 454,14
Debt repayement	-1 192 570,80	-1 044 363,77	-1 331 424,20	-2 422 932,20	-2 797 395,20
= Non-current operational liabil	**14 945 714,73**	**34 064 269,62**	**29 626 998,64**	**30 570 018,26**	**33 235 754,92**
=Changes in NONCA	**-801 721,94**	**-2 083 667,19**	**-3 726 627,22**	**-2 282 223,66**	**-2 124 641,05**
Deferred tax liability	-216 464,93	-562 590,14	-931 656,81	-547 733,68	-488 667,44
Shareholders equity	-585 257,02	-1 521 077,05	-2 794 970,42	-1 734 489,98	-1 635 973,61
	-801 721,94	**-2 083 667,19**	**-3 726 627,22**	**-2 282 223,66**	**-2 124 641,05**

Table 5.3: Effects on the balance sheet

5.2 Income statement and balance sheet - historical figures

The following subchapters contain our reformulation of Norwegian ASA's financial statements and corresponding key numbers. This chapter includes excerpts from our calculations, whereas complete calculations are found in attachment number 1. The reported financial statements are reformulated to better facilitate profitability, growth, and liquidity analyses, and thereafter we use the key numbers to conduct our valuation. Every accounting item is classified as either operating or financing items in the reformulated income statement and balance sheet. This way, we can evaluate Norwegian ASA's capability to generate profit for its various shareholders. (Penman, 2013; Palepu et al., 2013)

We present the reformulated financial statements of Norwegian ASA first, followed by how our adjustments from chapter 5.1.1.6 affected these.

5.2.1 Reformulation of the income statement

A reformulated income statement shows the same net results as those reported by the company. The accounting items are classified as either operating or financing, and a reshuffling of the items reveals key numbers further used in ratio analysis of Norwegian ASA. Our reformulation is in line with the methods presented by Penman (2013) and Dyrnes (2016).

In the reformulated income statement, depreciation and amortization costs are drawn from operational expenses to find earnings before interest, taxes, depreciation, and amortization (EBITDA). Adding back the depreciation and amortization costs shows earnings before interest and taxes (EBIT). A comparison of these two key numbers reveals how much mentioned costs affect earnings.

To get a clear view of how much profit the company can generate through its operations, we aim to find the net operating profit after taxes (NOPAT). The difference between EBIT and NOPAT is the subtraction of operational taxes. However, the company's reported income tax is affected by both operational and financial items. To isolate the operational part of taxes, one must calculate how net financial items affect the reported income tax. A company with net financial expenses will experience a tax shield equal to the tax rate multiplied by their interest expenses. As a result, the company will report a lower income tax than what arises from its operations. A company with net financial income will experience the opposite; their reported income tax will be higher than the taxes arising from operations.

Table 5.4 below presents key numbers from our reformulation of Norwegian ASA's income statement from 2014 to 2020.

Reformulated income statement in TNOK							
	2014	2015	2016	2017	2018	2019	2020
Operating income	19 597 670,00	22 594 588,00	26 163 355,00	31 240 207,00	40 394 100,00	43 508 300,00	9 087 900,00
Operating expenses	- 20 202 439,00	- 21 010 086,00	- 22 834 343,00	- 30 889 395,00	- 42 448 700,00	- 36 208 400,00	- 13 851 000,00
EBITDA	- 604 769,00	1 584 502,00	3 329 012,00	350 812,00	- 2 054 600,00	7 299 900,00	- 4 763 100,00
EBIT	- 1 352 907,00	451 215,00	2 033 187,00	- 1 710 167,00	- 3 722 200,00	842 400,00	- 10 960 600,00
NOPAT	- 869 640,53	520 760,94	1 528 620,50	- 1 146 159,16	- 2 402 863,00	364 300,00	- 11 505 896,00
Profit (loss) from continued operations	- 1 069 762,00	246 151,00	1 134 980,00	- 1 793 705,00	- 1 454 300,00	- 1 609 100,00	- 10 224 200,00
Profit (loss) for the period	- 1 069 762,00	246 151,00	1 134 980,00	- 1 793 705,00	- 1 454 300,00	- 1 609 100,00	- 23 039 900,00

Table 5.4: Reformulated income statement

As shown in Table 5.4, Norwegian ASA's operating income has increased steadily each year from 2014 until 2020, while their operational expenses have increased more sporadically in the same period. EBITDA and EBIT fluctuate throughout the period of analysis, being both positive and negative. In 2019, both measures were affected by the adoption of IFRS 16. In isolation, the new IFRS 16 affects EBITDA positively while negatively impacting EBIT. This is due to decreased operating expenses as leasing-related costs are capitalized (increasing EBITDA), and thus the depreciation costs are increased (decreasing EBIT).

Operating expenses were also reduced in 2019 from Norwegian ASA's strategic shift from growth to profitability, which led to an increase of EBITDA by almost 9 billion NOK in 2019. This resulted in the highest EBITDA throughout our analysis period. However, the effect was counteracted by the increased depreciation costs due to IFRS 16, making the increase in EBIT smaller than the increase in EBITDA.

Norwegian ASA's operating income was in 2020 about a fifth of the 2019 level, whereas operating costs only decreased by two-thirds compared to 2019. There were minor changes in depreciation and amortization costs. The result was negative numbers in EBITDA, EBIT, and NOPAT in 2020. In addition, the 2020 income statement includes impairment on assets held for sale of 12 billion NOK, further reducing the profit of the period to a deficit of 23 billion NOK. Our reformulation has not included the impairment in Norwegian ASA's continued operations but rather classified the entry as discontinued. The impairment relates to restructuring costs, which are not abnormal to occur now and then within the ordinary course of business (Penman, 2013). However, the impairment will not be forecasted to continue, and we will not use this accounting line further.

5.2.2 Reformulation of balance sheet

Norwegian ASA's reported balance sheet distinguishes between current and non-current assets and liabilities. This distinction is in line with IFRS but can be said to be more creditor-oriented than investor-oriented. While creditors are concerned with the company's ability to fulfill its financial obligations, investors are more concerned with its ability to generate value and return. Value mainly originates from operational activities and operational accounting items. The various accounting items should also in the balance sheet be divided into operating or financial items. (Penman, 2013; Petersen et al., 2017)

By reformulating the balance sheet, we can consistently analyze key financial ratios over time. We reformulate Norwegian ASA's financial statements into the NOA format, which presents their net operating assets on the left-hand side of the balance sheet and how these are financed on the right-hand side.

NOA is the difference between a company's net operating non-current assets (NONCA) and its net operating working capital (NOWC). For Norwegian ASA, NONCA consists of various long-term assets and liabilities related to their operations, being accounting items related to aircraft, equipment, and buildings. NOWC consists of the current assets and liabilities related to operations. The other side of the balance sheet, Equity and Net Interest-Bearing Debt (NIBD), shows how operations are financed. We show the key numbers of our reformulation in Table 5.5.

Reformulated balance sheet, key figures							
	2014	2015	2016	2017	2018	2019	2020
NONCA	17 347 590,00	25 184 557,00	30 310 519,00	31 477 500,00	40 257 900,00	36 233 700,00	9 414 900,00
NOWC	- 3 391 710,00	- 4 254 260,00	- 5 439 103,00	- 7 652 044,00	- 8 030 600,00	- 9 128 000,00	- 9 268 600,00
NOA	13 955 880,00	20 930 297,00	24 871 416,00	23 825 456,00	32 227 300,00	27 105 700,00	146 300,00
Equity	2 108 251,00	2 965 312,00	4 048 976,00	2 098 407,00	1 704 500,00	4 124 900,00	- 6 623 800,00
NIBD	11 847 628,00	17 964 983,00	20 822 441,00	21 727 049,00	30 522 900,00	22 980 600,00	6 770 200,00
Equity+NIBD	13 955 879,00	20 930 295,00	24 871 417,00	23 825 456,00	32 227 400,00	27 105 500,00	146 400,00

Table 5.5: Reformulated balance sheet

Norwegian ASA's reformulated balance sheet reflects our analysis of the company and its strategic shift from growth to profitability after the fiscal year 2018. NONCA has had a relatively stable development up until this year, increasing each year. In 2019 however, NONCA decreased slightly. Most of this decrease is due to Norwegian ASA's reduction in prepayments to aircraft manufacturers. This development makes sense as the acquisition of new aircraft was reduced due to the new strategic shift. The introduction of IFRS 16 has not significantly impacted total NONCA as both assets and liabilities have increased approximately the same following the capitalization of the leased aircraft.

NOWC, on the other hand, has had a relatively stable development through all periods of our analysis, also after the strategic shift. This is solely due to the capitalization of current lease liabilities. Contrary to NONCA, the capitalization in NOWC is not offset by the capitalization of aircraft, as aircraft are classified as long-term assets. The capitalization of current lease liabilities thus counteracts the increase observed in trade and other receivables of 2019, which are also seen as a result of the strategic shift.

On the right-hand side of the balance sheet, NIBD has increased each year from 2014 to 2018. In 2019, this key number also declined, mainly due to a reduction in current borrowings. We see the reduction as a possible result of the strategic change to reach profitability, as getting rid of short-term debt is desirable for a more liquid position. Equity has fluctuated through all periods of this analysis. In 2019, there was a significant increase in total equity due to Norwegian ASA's issuance of many new shares.

In 2020, the financial position was quite different from previous years. Desperate for cash, Norwegian ASA cut their assets and held several planes for sale. Our reformulation reveals how the abnormal times dramatically changed their position. Aircraft layoffs and the reduction of associated accounting items such as the related lease liabilities reduced total NONCA by almost 26 billion. In the reformulation, assets held for sale are classified as financing activities (Petersen et al., 2017). They are thus subtracted from the asset-side and placed with a negative sign at the right-hand side, reducing the total net interest-bearing debt. As this accounting item made up a tremendous amount, the effects are equally as tremendous. In addition, a negative net profit of close to 23 billion NOK tilts the equity below zero, as retained earnings are included in equity.

5.2.3 Presentation of reformulated and adjusted figures

As presented in chapter 5.1.1.6 and Table 5.2, and Table 5.3, our lease accounting adjustments from 2014 to 2018 affect Norwegian ASA's financial statements. The reversal of leasing costs in this period positively affects EBITDA, turning the key number positive in all adjusted years. The severe increase in depreciation following the capitalization of assets has the opposite effect on EBIT, which is now negative in all adjusted years. The same applies to both NOPAT and profit from continued operations, revealing how Norwegian ASA would not have generated profits in any year if the accounting standard was affected earlier.

We present key figures from the reformulated and adjusted income statement in Table 5.6.

Reformulated and adjusted income statement in TNOK							
	2014	2015	2016	2017	2018	2019	2020
Operating income	19 597 670,00	22 594 588,00	26 163 355,00	31 240 207,00	40 394 100,00	43 508 300,00	9 087 900,00
Operating expenses	- 18 356 499,00	- 18 796 835,00	- 19 992 484,00	- 26 999 715,00	- 38 094 600,00	- 36 208 400,00	- 13 851 000,00
EBITDA	1 241 171,00	3 797 753,00	6 170 871,00	4 240 492,00	2 299 500,00	7 299 900,00	- 4 763 100,00
EBIT	- 1 501 259,75	- 463 564,96	- 183 005,43	- 2 525 642,86	- 4 290 136,25	842 400,00	- 10 960 600,00
NOPAT	- 977 938,04	- 147 028,43	- 133 523,82	- 1 765 920,82	- 2 840 173,91	364 300,00	- 11 505 896,00
Profit (loss) from continued operations	- 1 655 019,02	- 1 274 926,05	- 1 659 990,42	- 3 528 194,98	- 3 090 273,61	- 1 609 100,00	- 10 224 200,00
Profit (loss) for the period	- 1 655 019,02	- 1 274 926,05	- 1 659 990,42	- 3 528 194,98	- 3 090 273,61	- 1 609 100,00	- 23 039 900,00

Table 5.6: Reformulated and adjusted income statement

The capitalization of leases following IFRS 16 impacted Norwegian ASA's NONCA and equity in the balance sheet. The capitalization of aircraft leases causes an increase in non-current operating assets. However, as the lease liabilities related to aircraft also are classified as an operational accounting item, both the liability and asset increase are reflected on the left-hand side of the reformulated balance sheet. Additionally, the capitalization of aircraft leases entails a reduction in tax liabilities. These accounting items are all included in NONCA, and the net effect is a slight reduction in NONCA, and thereby also NOA, in all adjusted accounting years. On the right side of the balance sheet, our adjustments of IFRS 16 lead to a reduction in equity equal to the decrease in profits in the income statement. This amount is consistent with the decrease on the right-hand side.

We present key figures from the reformulated and adjusted balance sheet in Table 5.7 below.

Reformulated and adjusted balance sheet, key figures							
	2014	2015	2016	2017	2018	2019	2020
NONCA	16 762 332,98	23 663 479,95	27 515 548,58	29 743 010,02	38 621 926,39	36 233 700,00	9 414 900,00
NOWC	- 3 391 710,00	- 4 254 260,00	- 5 439 103,00	- 7 652 044,00	- 8 030 600,00	- 9 128 000,00	- 9 268 600,00
NOA	13 370 622,98	19 409 219,95	22 076 445,58	22 090 966,02	30 591 326,39	27 105 700,00	146 300,00
Equity	1 522 993,98	1 444 234,95	1 254 005,58	363 917,02	68 526,39	4 124 900,00	- 6 623 800,00
NIBD	11 847 628,00	17 964 983,00	20 822 441,00	21 727 049,00	30 522 900,00	22 980 600,00	6 770 200,00
Equity+NIBD	13 370 621,98	19 409 217,95	22 076 446,58	22 090 966,02	30 591 426,39	27 105 500,00	146 400,00

Table 5.7: Reformulated and adjusted balance sheet

The reformulated and adjusted financial statements are further analyzed and forecasted in the following chapters.

6 Financial analysis

In the following chapter, we conduct a financial analysis of Norwegian ASA. To assess and comment upon Norwegian ASA's profitability, liquidity and growth, we use key numbers and ratios and the relative growth in these ratios over our analysis period. Complete calculations of all ratios are included in attachment 1.

As endlessly emphasized, the COVID-19 pandemic presented Norwegian ASA with operational and financial troubles. This results in some challenges in calculating key ratios in 2020. As the book value of equity in 2020 is negative, we

have used the 2019 value of equity in calculations that include the book value of equity. For comparability, we have also chosen to use the 2019 book value of NOA in the relevant calculations, as equity and NOA are closely associated.

6.1 Estimation of the required rate of return

To calculate key ratios and figures, a required rate of return is necessary. The following paragraphs contain a step-by-step walk-through of the calculated cost of equity and the weighted average cost of capital (WACC) and their related calculations. The two rates are further used in calculations of key ratios and figures in this chapter and are also frequently used in chapter 7 and 8. (Palepu et al., 2013)

The formulas for the cost of equity (re), using CAPM, and WACC as rendered by Penman (2013) and countless others, is:

$$r_{e_t} = rf_t + \beta e_t * (Market\ risk\ premium_t)$$

$$WACC_t = r_{e_t} * \frac{MVE_t}{MVE_t + NIBD_t} + r_{d_t} * (1 - tc_t) * \frac{NIBD_t}{MVE_t + NIBD_t}$$

Re reflects what return equity investors expect to be entitled to and at what rate the net earnings are expected to grow each year. Using the capital asset pricing model (CAPM), we need three parameters: beta of equity, risk-free rate, and market risk premium (Palepu et al., 2013).

Norwegian ASA's beta of equity is calculated twice – with and without the 2020 variance. As explained in chapter 2.1.2, the volatility of airline stock prices heavily increased after COVID-19 was declared a pandemic compared to prior periods (Lioutov, 2020; Liu et al., 2020). For that reason, we consider it appropriate to operate with two different beta values in further calculations. With numbers from Oslo Stock Exchange's benchmark and the stock price of Norwegian ASA, we have calculated the monthly average variance from December 2019 and 2020 back to January 2016. The beta of equity is calculated using the covariance between the benchmark index and the company's stock price in question to see how much the stock price varies compared to the benchmark. The calculated beta values of Norwegian ASA are 1.64 before 2020 and 3.21 including 2020.

For the risk-free rate (rf) parameter, we have used the yearly average rate of 10-year government bonds, as stated by The central bank of Norway. Using statistics from Statista, we also found the market risk premium (rm) for each year in our

analysis period. We have summed up the yearly values of each parameter and the resulting cost of equity in Table 6.1 below.

Calculation of Re							
	2014	2015	2016	2017	2018	2019	2020
Beta	1,64	1,64	1,64	1,64	1,64	1,64	3,21
Risk free rate	2,52 %	1,57 %	1,33 %	1,64 %	1,88 %	1,49 %	0,82 %
Rm	5,50 %	5,50 %	5,50 %	6,10 %	5,70 %	6 %	5,80 %
Re	**11,56 %**	**10,61 %**	**10,37 %**	**11,67 %**	**11,25 %**	**11,35 %**	**19,46 %**

Table 6.1 Calculation of Re

In calculations of WACC, the cost of debt (rd) is retrieved from Norwegian ASA's annual reports of the analysis period, whereas the yearly marginal corporate tax rate (tc) is retrieved from the Norwegian government.

In WACC, the two costs of capital are weighted according to the company's capital structure, using the market values of debt and equity. The market value of debt is NIBD, as calculated in chapter 5.2. The market value of equity (MVE) is found by multiplying the number of outstanding shares and the closing stock price at the end of each fiscal year, as stated in each annual report. In table 6.2, we show the resulting WACC.

Calculation of WACC							
	2014	2015	2016	2017	2018	2019	2020
Re	11,56 %	10,61 %	10,37 %	11,67 %	11,25 %	11,35 %	19,46 %
Rd	4,50 %	4,10 %	4,60 %	5,20 %	5,00 %	10,10 %	9,3 %
Tax rate	27 %	27 %	25 %	24 %	23 %	22 %	22 %
MVE	9 711 783	11 575 395	10 263 016	6 293 696	7 883 330	6 174 329	3 455 810
NIBD	11 847 628	17 964 983	20 822 441	21 727 049	30 522 900	22 980 600	6 770 200
MVE+NIBD	21 559 411	29 540 378	31 085 457	28 020 745	38 406 230	29 154 929	10 226 010
WACC	**7,0123 %**	**5,9774 %**	**5,7344 %**	**5,6845 %**	**5,3685 %**	**8,6135 %**	**11,3794 %**

Table 6.2 Calculation of WACC

There are small fluctuations in Norwegian ASA's WACC throughout the analysis period, but from 2015 to 2018 it is relatively stable. In 2019 and 2020, the reduction in NIBD contributes to an increased cost of capital. In 2020, the increase in the cost of capital, and thereby also WACC, is mainly due to an increase in beta.

6.2 Profitability

Before formulating our forecast, we analyze the profitability of Norwegian ASA as support to our strategic analysis. Understanding key drivers of profitability and growth is crucial to providing a realistic forecast (Penman, 2013). We have based our profitability analysis of Norwegian ASA on four key ratios: return on equity

(ROE), return on invested capital (ROIC), residual income (RI), and economic value added (EVA).

We compare ROE and ROIC to the required rate of return (re) and the weighted average cost of capital (WACC), respectively. This way, actual performance is compared to investors' expected performance.

The calculated ratios are based on the reformulated and adjusted historical numbers presented in chapter 5.2, and we assess the development in these as a basis for our forecast. In the following subchapters, we will go more in-depth about the different measures.

6.2.1 Return on Equity

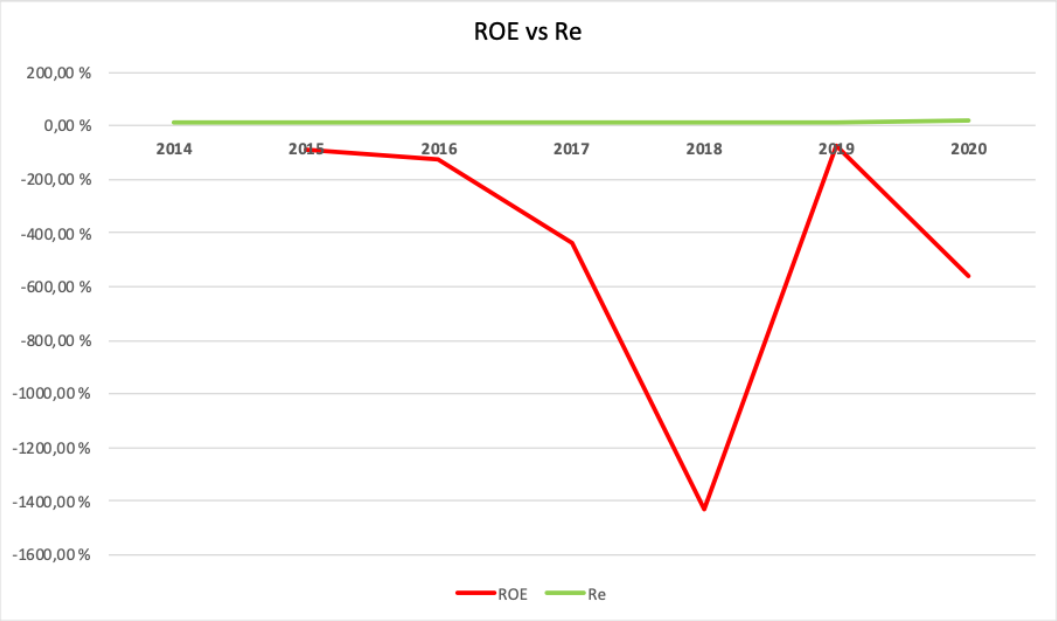
Return on equity (ROE) is a common profitability ratio calculated by dividing net profits by the book value of equity. As net profits accrue to the value of equity through retained earnings, this ratio is interesting for equity investors (Damodaran, 2012). ROE is thus an indicator of whether a company is creating or destroying value for its equity investors and could work as a signal of operating efficiency to potential investors (McClure, 2021).

As stated above, the formula for ROE is:

$$ROE_t = \frac{Net\ income_t}{(BVE_{t-1} + BVE_t)/2}$$

Graph 6.1 below shows Norwegian ASA's ROE from 2014 and up to 2020. The ratio is calculated by dividing net income by the fiscal year's average book value of equity. Net income results from a year's operations, whereas equity in the balance sheet is a still image of year-end equity. As equity might be subject to changes throughout the fiscal year, we calculate the average value to provide a more appropriate measure of the profitability ratio. The average is found by the current and prior year-end book value of equity. As the negative equity in 2020 disrupts the average value of equity, we have for the 2020 calculations used only the start of year-equity value, being the 2019 year-end value.

The measure of ROE is compared to re to assess whether Norwegian ASA provides a higher rate of return on equity than what is required.



Graph 6.1: ROE and Re for Norwegian ASA

As shown in graph 6.1, ROE is negative throughout the analysis period due to income deficits each fiscal year. Our adjustments to include IFRS 16 led to deficits in 2015 and 2016 and have, in the remaining years, further increased the reported deficits from Norwegian ASA's income statements.

ROE has decreased from 2015 to 2018 due to both increased deficits and decreased equity over the period. Thus, the numerator increases (negatively), and the denominator decreases, leading to an increasingly negative ROE.

ROE for 2018 is exceptionally unpleasant. Despite Norwegian ASA issuing new shares in 2018, total equity still decreased due to the sizeable year-end deficit. In 2019, ROE improved from 2018 due to a new issuance of shares that led to equity being considerably higher than before. The tremendous deficit in 2020 led to a further decrease in ROE.

Reading this graph shows that Norwegian ASA, both pre-COVID-19 and in 2020, does not provide a return on equity for investors. The negative ROE from all years in our analysis period should work as a signal to investors that operating efficiency is not sufficient and has not been so for a long time. This will further be discussed in the following subchapter.

6.2.2 Residual Income

Residual Income (RI) is a measure of the excess value added for the shareholders of a company. While ROE estimates the percentage-wise return on equity, RI expresses whether the return is above or below the expected return. A positive RI is thus and indicator of a better return than expected, and vice versa. For consistency between ROE and RI, RI is also calculated using the average book value of equity. We have based the calculation for 2020 on the 2019 year-end value. (Petersen et al., 2017)

The formula for RI is:

$$RI_t = \left(ROE_t - r_{e_t}\right) * \left(\frac{BVE_{t-1} + BVE_t}{2}\right)$$

As shown in graph 6.1, ROE is lower than re for all years in our analysis period. Re fluctuates around eleven percent pre-COVID-19 before approaching twenty percent in 2020, while ROE is negative in all years. We present the calculation of RI in table 6.3.

RI	2015	2016	2017	2018	2019	2020
ROE	-85,93 %	-123,04 %	-436,14 %	-1429,22 %	-76,74 %	-558,56 %
- Re	10,61 %	10,37 %	11,67 %	11,25 %	11,35 %	19,46 %
*avg BVE	1 483 614	1 349 120	808 961	216 222	2 096 713	4 124 900
= RI	**- 1 432 326,03**	**- 1 799 883,73**	**- 3 622 562,92**	**- 3 114 594,06**	**- 1 847 097,33**	**- 23 842 666,80**

Table 6.3 Calculation of residual income

Norwegian ASA's residual income is negative for all years in the period of analysis. RI has a negative development from 2015 to 2018, before an improvement in 2019. This change is due to a more negligible difference between ROE and re compared to previous years.

In 2020, residual income was severely damaged. This is not surprising concerning the effects of COVID-19. The incoming equity for the year was higher than previous years, resulting in a highly negative RI.

The measure of residual income presented in table 6.3 reveals that Norwegian ASA's return on equity has not been sufficient, neither pre-COVID-19 nor in 2020.

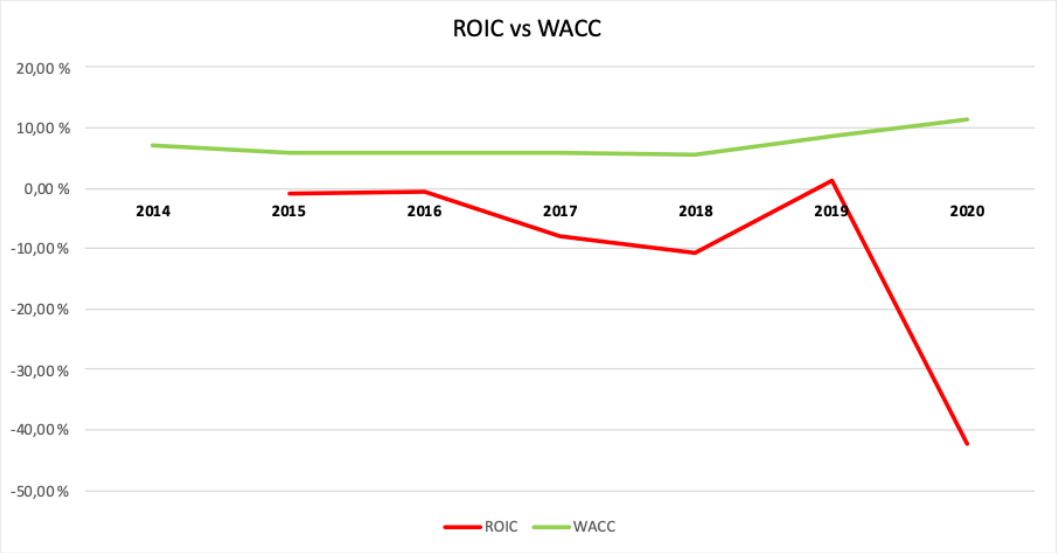
6.2.3 Return on Invested Capital

ROIC might prove an even more appropriate profitability measure than ROE. ROIC is calculated by dividing the operating income by the invested capital of a firm

(Damodaran, 2012). Similar to the calculations of ROE, we calculate ROIC by dividing the average NOA from the current and previous year to correct for potentially significant changes during the year. For consistency between ROE and ROIC, we have in this calculation also used the 2019 value of the denominator in 2020. The formula for ROIC is:

$$ROIC_t = \frac{NOPAT_t}{(NOA_{t-1} + NOA_t)/2}$$

Graph 6.2 below shows the development in ROIC and WACC for Norwegian ASA in the period of analysis. Similar to ROE, ROIC indicates how well a company uses its invested capital to generate profits for its shareholders. As the above formula implies, ROIC presents the operating return relative to the company's operating assets or invested capital. The yearly cost of this invested capital is found through WACC. When analyzing ROIC, it is thus appropriate to compare the ratio to WACC to find the relative return above the cost required to finance the operations. A ROIC lower than WACC indicates an untenable business, whereas any ROIC below 2 percent is viewed as directly harmful to the company value. (Hayes, 2021b)



Graph 6.2: ROIC and WACC for Norwegian ASA

Graph 6.2 shows a negative ROIC until 2019 when the ratio is weakly positive. This is due to negative NOPATs from 2015 to 2018 and the positive NOPAT in 2019. Net operating assets are relatively stable in this period. The change in ROIC may indicate that Norwegian ASA's change in strategy had a positive effect. In 2020

however, ROIC was negative with over forty-two percent due to the abrupt decrease in NOPAT caused by the pandemic.

Graph 6.2 reveals that Norwegian ASA does not provide sufficient return on the invested capital of the firm, neither pre-COVID-19 nor in 2020. ROIC is negative for most years in the period of analysis, meaning that Norwegian ASA does not generate returns on invested capital. We discuss this further in the following subchapter.

6.2.4 Economic Value Added

Economic value added (EVA) is another common profitability measure. The measure is closely related to ROIC. While ROIC discloses the return on invested capital, EVA discloses the return in excess of the return required to finance invested capital (Petersen et al., 2017). Also here, we have used the average of invested capital to ensure consistency in our calculations.

The formula for EVA is:

$$EVA_t = (ROIC_t - WACC_t) * (\frac{NOA_{t-1} + NOA_t}{2})$$

As shown in graph 6.2 above, ROIC is lower than WACC in all years in the analysis period. Thus, Norwegian ASA has not generated any excess profits during the period, rather the opposite. This appears in EVA, of which we present calculations in table 6.4 below.

EVA	2015	2016	2017	2018	2019	2020
ROIC	-0,90 %	-0,64 %	-8,00 %	-10,78 %	1,26 %	-42,45 %
- WACC	5,977 %	5,734 %	5,684 %	5,369 %	8,613 %	11,379 %
*NOA	16 389 921,47	20 742 832,77	22 083 705,80	26 341 146,20	28 848 513,20	27 105 700,00
= EVA	**- 1 126 722**	**- 1 323 004**	**- 3 021 264**	**- 4 254 301**	**- 2 120 565**	**- 14 590 372**

Table 6.4: Calculation of EVA

Table 6.4 reveals a negative development in EVA from 2015 to 2018. The positive ROIC in 2019 resulted in an improvement in EVA the same year, though the improved ROIC still did not exceed the cost of capital. Thus, Norwegian ASA's EVA was also negative in 2019. The 2020 decline in EVA is drastic but not surprising. COVID-19 occurred at a rather unfavorable time for Norwegian ASA, trying to recover from a too aggressive growth strategy.

6.2.5 Summary of profitability analysis

Overall, Norwegian ASA has not been profitable during our analysis period. They have large negative ratios for both return on equity and invested capital. Nevertheless, we see from the figures that the different measures improve slightly in 2019, which could be related to their strategic change from growth to profitability. This development was brutally hampered by COVID-19, resulting in worrying profitability figures in 2020. However, as 2020 is a year of exception, this is not deemed reliable for predicting the future.

6.3 Liquidity and solvency analysis

Next in our financial analysis is the analysis of liquidity and solvency. The ratios included in these analyses reveal whether a company can meet its short- and long-term debt obligations. (Palepu et al., 2013).

It is worth noting that having just the *right amount* of debt is desirable for companies, as debt provides a corporate interest tax shield. Additionally, having some debt will, in many cases, work as incentives for management, as they must generate sufficient profits to make payments to their debt. However, a too extensive amount of debt puts the company at risk of financial distress. Therefore, the use of debt as financing will be a trade-off between the benefits from the corporate tax shield and the incentives it can create against potential costs of financial distress. (Palepu et al., 2013)

The adjusted and reformulated key numbers from Norwegian ASA are in the following subchapters used to calculate both the liquidity and solvency ratios. As we use numbers for six years, we assess the development of the different ratios and use this insight further when developing our forecasts.

6.3.1 Liquidity analysis

Liquidity analysis aims to evaluate a company's ability to pay its short-term debt (Kenton, 2021). We have focused on three specific ratios: the current ratio, working capital turnover and operating cash-flow ratio. Additionally, we also provide a cash-flow analysis as a company's short and long-term capacity to generate positive cash flows affects its liquidity (Petersen et al., 2017).

6.3.1.1. Current ratio

The current ratio measures to what extent a company can repay its current liabilities using its current assets (Palepu et al., 2013).

The formula for the current ratio is:

$$Current\ ratio_t = \frac{Current\ assets_t}{Current\ liabilities_t}$$

As a rule of thumb, the ratio should be higher than one to signal a sufficient short-term ability to pay off debt (Palepu et al., 2013). A current ratio below one indicates that the company has more short-term liabilities than its current assets are expected to generate in cash if sold within the next year (Damodaran, 2012).

The simple idea behind the ratio is disputed in the academic field, as a sufficient ratio varies depending on the industry of analysis (Petersen et al., 2017). Nevertheless, we consider the ratio useful as we calculate the ratio for Norwegian ASA for several years and thereby evaluate current liabilities' development compared to current assets. (Fernando, 2021a).

We show the calculated current ratios for Norwegian ASA in table 6.5 below.

Current ratio	2014	2015	2016	2017	2018	2019	2020
Current assets	4 267 512,00	5 109 017,00	5 793 336,00	9 194 944,00	11 776 600,00	14 608 700,00	37 686 900,00
Operating current liabilities	5 648 083,00	6 909 117,00	8 555 546,00	12 111 505,00	14 950 500,00	19 436 600,00	13 911 500,00
= Current ratio	**0,76**	**0,74**	**0,68**	**0,76**	**0,79**	**0,75**	**2,71**

Table 6.5: Calculation of the current ratio

Norwegian ASA's current ratio is relatively stable, fluctuating between 0,68 and 0,79 from 2014 to 2019. Any potential change in the current ratio resulting from the increased current liabilities over these years is offset by a similar increase in current assets.

In 2020, however, the current ratio was far above one. This indicates that Norwegian ASA could pay off its short-term debt. The improved ratio stems from a significant increase in current assets combined with a large decrease in current liabilities. The increase in current assets is mainly due to the mentioned restructuring plans of Norwegian ASA in 2020 and the resulting offset of many aircraft, which have led to an increase of NOK 30 billion in current assets. The decrease in current liabilities is mainly due to reduced air traffic settlement liabilities, referring to liabilities arising from providing services to customers. The

increased numerator and decreased denominator results in an increased current ratio.

If evaluating only the current ratio, it looks like the liquidity of Norwegian ASA improved in 2020 compared to previous years. However, while the company could repay its short-term debt as of 2020, it is feasible to assume that the current ratio returns around 0,70 in the future. This is because the current liabilities related to provided services are expected to increase when social restrictions are removed and people resume traveling. At the same time, the large offset of aircraft is not likely to continue after 2020, as Norwegian ASA now has offset most of their redundant aircraft.

6.3.1.2 Working capital turnover rate

The working capital turnover rate shows how much of a company's net revenue is generated by its working capital. Working capital is the difference between current assets and current liabilities. (Hayes, 2021d)

The ratio for working capital turnover rate is:

$$Working\ capital\ turnover_t = \frac{Net\ revenue_t}{(Working\ capital_{t-1} + Working\ capital_t)/2}$$

A high ratio indicates that a company sufficiently supports its revenues from its working capital. What is regarded as a high ratio is disputable, though one can compare the company's ratio to the ratios of its competitors to make an assessment. If the working capital is negative, a comparison will be irrelevant as the ratio also turns negative. (Hayes, 2021d)

We show our calculations of Norwegian ASA's working capital turnover rate in table 6.6.

Working capital turnover						
	2015	2016	2017	2018	2019	2020
Net revenue	21 781 051,00	25 024 573,00	29 541 602,00	39 570 000,00	42 622 900,00	7 990 400,00
Average working capital	- 3 822 985,00	- 4 846 681,50	- 6 545 573,50	- 7 841 322,00	- 8 579 300,00	- 9 198 300,00
= Working capital turnover	**- 5,70**	**- 5,16**	**- 4,51**	**- 5,05**	**- 4,97**	**- 0,87**

Table 6.6: Calculation of working capital turnover

The table shows that Norwegian ASA's working capital turnover rate is negative throughout the analysis period, as their current liabilities exceed their current assets. The negative capital turnover rates show that Norwegian ASA has not had enough short-term cash support for its revenues. The company has thereby been dependent

on raising capital or debt or increasing revenues to pay off its current obligations for the whole period (Blokhin, 2015).

We see from the table that both net revenue and the negative working capital average have increased in all historical years pre-COVID. Thus, the ratio has remained relatively constant from minus four to minus three. In 2020, the average working capital continued its negative development, while revenues have decreased compared to previous years. Therefore, the working capital turnover is only slightly negative. As noted before, 2020 is a year of exception, and we do not emphasize this when performing our forecast in chapter 7.

6.3.1.3 Operating Cash-Flow ratio

The operating cash-flow ratio discloses whether the firm's operations generate enough earnings to cover the company's current liabilities (Palepu et al., 2013). The ratio is also used to evaluate a company's short-term liquidity (Hargrave, 2021), and the formula is:

$$Operating\ cash\ flow\ ratio_t = \frac{Operating\ cash\ flow_t}{Current\ liabilities_t}$$

A ratio below one indicates that the company cannot generate enough cash to cover its current liabilities (Hargrave, 2021).

Operating Cash-Flow ratio						
	2015	2016	2017	2018	2019	2020
NOPAT	- 147 028,43	- 133 523,82	- 1 765 920,82	- 2 840 173,91	364 300,00	- 11 505 896,00
+ Depreciation expense	4 261 317,96	6 353 876,43	6 766 134,86	6 589 636,25	6 457 500,00	6 197 500,00
-+ changes in NOWC	862 550,00	1 184 843,00	2 212 941,00	378 556,00	1 097 400,00	140 600,00
+/- Net income from disc. Op	-	-	-	-	-	- 12 815 700,00
Operating Cash Flow	4 976 839,53	7 405 195,61	7 213 155,05	4 128 018,34	7 919 200,00	- 17 983 496,00
Operating current liabilities	6 909 117,00	8 555 546,00	12 111 505,00	14 950 500,00	19 436 600,00	13 911 500,00
Operating Cash-Flow ratio	**0,72**	**0,87**	**0,60**	**0,28**	**0,41**	**- 1,29**

Table 6.7: Calculation of operating cash flow ratio

Table 6.7 shows how Norwegian ASA does not generate enough cash to cover its current liabilities. The operating cash-flow ratio is below one throughout the analysis period and has fluctuated a lot. The ratio peaked in 2016 before declining until 2018. In 2019, the ratio increased slightly. In 2020 however, the ratio was negative, which is not surprising due to the tremendous impact of COVID-19.

Regardless of similarities in Norwegian ASA's operating cash flow in 2016, 2017, and 2019, the increase in operating current liabilities has caused a decrease in the operating cash flow ratio from 2016 and going forward.

Norwegian ASA's operating cash flow ratio is insufficient, being relatively far from one throughout the whole period. The ratio in 2020 is, as mentioned, affected by the outbreak of COVID-19, and the large deficit this year causes the ratio to be negative. However, we do not emphasize the negative operating cash flow of 2020 further, as it is reasonable to assume that the ratio will improve as operations return closer to normal.

6.3.1.4 Cash flow analysis

A thorough cash flow analysis is conducted to evaluate the liquidity of Norwegian ASA since a company is dependent on generating positive net cash flows to serve both its short- and long-term debt (Petersen et al., 2017). Table 6.8 shows our cash flow analysis of Norwegian ASA following Penman (2013, p. 344).

Cash Flow analysis, adjusted numbers						
	2015	2016	2017	2018	2019	2020
NOPAT	- 147 028,43	- 133 523,82	- 1 765 920,82	- 2 840 173,91	364 300,00	- 11 505 896,00
+Depreciation	4 261 317,96	6 353 876,43	6 766 134,86	6 589 636,25	6 457 500,00	6 197 500,00
-/+ Changes in NOWC	862 550,00	1 184 843,00	2 212 941,00	378 556,00	1 097 400,00	140 600,00
-/+ Changes in NONCA	- 11 162 464,93	- 10 205 945,05	- 8 993 596,30	- 15 468 552,62	- 4 069 273,61	20 621 300,00
Free cash flow to the firm (FCFF)	**- 6 185 625,40**	**- 2 800 749,45**	**- 1 780 441,25**	**- 11 340 534,29**	**3 849 926,39**	**15 453 504,00**
+/- Changes in NIBD without cash	6 560 376,00	2 726 945,00	2 620 737,00	6 677 775,00	- 6 368 400,00	- 16 639 100,00
Net finance	- 1 545 065,23	- 2 035 288,80	- 2 318 781,80	- 324 804,80	- 2 530 000,00	1 643 200,00
+/- tax shield from NFE	417 167,61	508 822,20	556 507,63	74 705,10	556 600,00	- 361 504,00
Free CF to equity holders	**- 753 147,02**	**- 1 600 271,05**	**- 921 978,42**	**- 4 912 858,98**	**- 4 491 873,61**	**96 100,00**
+/- Changes in Equity	1 196 167,02	1 469 761,05	2 638 106,42	2 794 882,98	5 665 473,61	12 291 200,00
Income from discontinuing operations						- 12 815 700,00
Cash surplus	**443 020,00**	**- 130 510,00**	**1 716 128,00**	**- 2 117 976,00**	**1 173 600,00**	**- 428 400,00**

Table 6.8: Cash flow analysis

Table 6.8 reveals a fluctuating cash surplus throughout the analysis period. The free cash flow to equity holders is negative from 2015 to 2019, but the cash surplus is still positive in 2015, 2017, and 2019 due to changes in equity.

As repeatedly emphasized, COVID-19 disrupted operations in 2020, setting Norwegian ASA into hibernation mode. Table 6.8 shows a negative cash surplus of 428.400 TNOK in 2020. Several of the key measures used in calculating the cash flow changed massively this year. NONCA is heavily decreased, as explained in chapter 5.2, which is positive for our cash as less capital is bound in assets. However, further in chapter 5.2, we explained the decrease in NIBD. The decrease in NIBD is negative for Norwegian ASA's cash flow, as debt repayment means less cash at hand. In the longer term, less interest-bearing debt is beneficial for Norwegian ASA, which has previously been characterized by too much debt. At last, the 2020 increase in equity is offset by the deficit from discontinued operations, resulting in a negative cash flow for 2020.

We see the fluctuating cash surplus through the years as a warning signal for how Norwegian ASA operates and confirms that the strategic change from growth to profitability was needed. Their previous operations did not provide stability.

6.3.2 Summary liquidity analysis

Our overall assessment is that Norwegian ASA's liquidity is insufficient both pre-COVID-19 and in 2020. Our analysis reveals that none of the ratios are sufficient, and thus Norwegian ASA does not have adequate short-term liquidity.

The company has in 2020 a current ratio above 2, implying that they can pay off their short-term liabilities using their short-term assets. Regardless of this, a negative working capital turnover rate and operating cash flow ratio are critical. We note that the liquidity ratios for 2020 are heavily impacted by COVID-19 and are thus not alone reliable for predicting the future.

6.3.3 Solvency analysis

While a liquidity analysis measures a company's ability to meet its short-term obligations, a solvency analysis is focused on long-term obligations. Solvency ratios are indicators of a company's financial health and thus work as signals for whether a company will default on its long-term debt or not. (Hayes, 2021c)

To evaluate Norwegian ASA's solvency, we focus on the financial ratio and the interest coverage ratio.

6.3.3.1 Financial ratio

The financial ratio, also called the debt-to-equity ratio, is used to find a company's financial leverage by measuring its total liabilities to its equity (Fernando,2021c). The formula is:

$$Financial\ ratio_t = \frac{Total\ liabilities_t}{Equity_t}$$

The ratio reflects to what extent a company finances its business by debt and equity (Fernando, 2021b). An evaluation of this ratio is appropriate, as debt is a more expensive financing option than equity. Debt requires interest payments, whereas dividends payouts to equity shareholders are optional (Petersen et al., 2017). Thus, equity provides a buffer for unforeseen events and an opportunity to retain liquidity in situations where the company struggles to meet financial obligations (Petersen et

al., 2017). A high financial ratio implies that a company's growth is financed through debt and is therefore often viewed as involving high risk (Fernando, 2021b). What is considered a high debt-to-equity ratio varies across industries (Folger, 2020). Therefore, it is appropriate to compare the ratio to competitors' ratios. Table 6.9 shows the financial ratio of Norwegian ASA in our period of analysis and SAS and Lufthansa for 2019 and 2020 for comparison.

	Financial ratio						
	2014	2015	2016	2017	2018	2019	2020
Norwegian ASA	23,20	43,05	49,77	196,33	1269,99	19,69	-8,48
SAS	N/A	N/A	N/A	N/A	N/A	5,33	4,48
Lufthansa	N/A	N/A	N/A	N/A	N/A	3,16	27,47

Table 6.9: Comparison of financial ratios

The ratio is calculated using the book value of equity. Norwegian ASA's financial ratio has increased every year from 2014 to 2018 due to increased liabilities and decreases in equity in each consecutive year. In 2019, the financial statements showed a slight reduction in liabilities, while equity is increased tremendously by issuing new shares, as explained in chapter 5.2. As a result, the financial ratio improves drastically compared to 2018. Regardless, Norwegian ASA's financial ratio in 2019 is still considerably higher than both SAS' and Lufthansa's 2019 ratios. Compared to its competitors Norwegian ASA has a smaller capital buffer, and thus their operations involve more risk.

In 2020, the financial ratio of Norwegian ASA was largely affected by the outbreak of COVID-19. The liabilities of Norwegian ASA have in 2020 decreased by approximately 30 billion NOK. However, the ratio turns negative due to negative equity. As previously mentioned, the negative equity stems from retained earnings and the deficit of 26 billion NOK. Negative equity makes little sense in a financial ratio, though the bankruptcy risk associated with negative equity is indisputably a warning sign for investors (Petersen et al., 2017). In comparison, table 6.9 shows that SAS has lowered its financial ratio during 2020, while Lufthansa increased theirs. Regardless of this, both competitors are better positioned than Norwegian ASA in 2020, judging by the financial leverage this year.

6.3.3.2 Interest coverage ratio

The interest coverage ratio measures how many times a company's earnings before interest and tax cover its net financial expenses (Petersen et al., 2017). The formula is:

$$Interest\ coverage\ ratio_t = \frac{EBIT_t}{Net\ expenses_t}$$

What is considered to be an appropriate ratio varies across industries, though a high ratio is usually desirable (Hayes, 2021a). The consensus is that the ratio should be above 1.5 (Hayes, 2021a). A low ratio indicates that the company is "burdened" by debt. In case of unforeseen events (such as COVID-19), a low interest coverage ratio is alarming as the company could incur problems with meeting its interest obligations (Hayes, 2021a).

We present the interest coverage ratio of Norwegian ASA in table 6.10 below.

Interest Coverage Ratio							
	2014	2015	2016	2017	2018	2019	2020
EBIT	- 1 501 259,75	- 463 564,96	- 183 005,43	- 2 525 642,86	- 4 290 136,25	842 400,00	- 10 960 600,00
Net financial expense	927 508,20	1 545 065,23	2 035 288,80	2 318 781,80	324 804,80	2 530 000,00	- 1 643 200,00
Interest Coverage ratio	**- 1,62**	**- 0,30**	**- 0,09**	**- 1,09**	**- 13,21**	**0,33**	**6,67**

Table 6.10: Calculation of interest coverage ratio

As table 6.10 shows, Norwegian ASA's interest coverage ratio fluctuates significantly and is negative for most years. As EBIT is negative in all years pre-COVID except 2019, the resulting interest coverage ratio is negative. This means that Norwegian ASA is unable to meet its net financial expenses in these years. In 2019, EBIT was positive for Norwegian ASA, but the interest coverage ratio is still far below 1.5. However, the improvement in EBIT for 2019 can signify that the strategic shift towards profitability has gained results.

In 2020, the ratio was positive by 6.67. However, we disregard this number as it results from a negative EBIT and negative financial expenses. Due to the heavy restructuring processes in 2020, where Norwegian ASA tremendously reduced debt, the company gained more financial income than it had financial expenses.

6.3.4 Summary Solvency analysis

Our overall assessment is that Norwegian ASA's solvency is insufficient, both pre-COVID and in 2020. Through assessing the development of the two included solvency ratios we have found that Norwegian ASA's ability to meet its long-term

liabilities is poor and has been so since 2014. In 2019, the ratios improved slightly, implying that the strategic change towards profitability gained results. As was the case of liquidity analysis, we note that the solvency ratios for 2020 are heavily impacted by COVID-19 and will thus not be reliable for predicting the future.

6.4 Growth

In light of the profitability, liquidity, and solvency analyses, we analyze and summarize the annual growth in EBIT, NOPAT, profit, and EVA for Norwegian ASA. The absolute numbers of these chosen key numbers are presented in table 6.11, whereas we show the relative growth in table 6.12.

Key numbers							
	2014	2015	2016	2017	2018	2019	2020
EBIT	- 1 501 259,75	- 463 564,96	- 183 005,43	- 2 525 642,86	- 4 290 136,25	842 400,00	- 10 960 600,00
NOPAT	- 977 938,04	- 147 028,43	- 133 523,82	- 1 765 920,82	- 2 840 173,91	364 300,00	- 11 505 896,00
Profit of the year	- 1 655 019,02	- 1 274 926,05	- 1 659 990,42	- 3 528 194,98	- 3 090 273,61	- 1 609 100,00	- 23 039 900,00
EVA	-	- 1 126 722,38	- 1 323 004,12	- 3 021 264,06	- 4 254 301,16	- 2 120 564,91	- 14 590 371,74

Table 6.11: Historical key numbers

The commonality of all key numbers is the negative sign, except for EBIT and NOPAT in 2019. Despite this discouraging first impression, the relative growth in key numbers has fluctuated over the analysis period.

Historical growth in key numbers						
	2015	2016	2017	2018	2019	2020
EBIT	-69,12 %	-60,52 %	1280,09 %	69,86 %	-119,64 %	-1401,12 %
NOPAT	-84,97 %	-9,19 %	1222,55 %	60,83 %	-112,83 %	-3258,36 %
Profit of the year	-22,97 %	30,20 %	112,54 %	-12,41 %	-47,93 %	1331,85 %
EVA		17,42 %	128,36 %	40,81 %	-50,15 %	588,04 %

Table 6.11: Growth in historical key numbers

With the absolute negative numbers of 2014 being the starting point, the negative growth in 2015 shows an improvement: EBIT, NOPAT, and profit were less negative in 2015 than in 2014. The positive developments are also seen in EBIT and NOPAT in 2016, whereas profit and EVA declined. Therefore, the positive relative growth in all key numbers in 2017 is not a good sign, as all numbers declined further below zero. The growth analysis shows a further decrease of EBIT, NOPAT, and EVA in 2018. On the other hand, profit improved slightly in 2018 due to a reduction in net financial expenses from the year before.

After the fiscal year of 2018, Norwegian ASA implemented the much-elaborated strategic shift towards profitability, and the growth numbers for 2019 show a significant improvement. The absolute numbers for both EBIT and NOPAT are

positive in 2019. However, as the observed 2018 reduction in net financial expenses was not sustained in 2019, Norwegian ASA still ended the year without profits, nor any economic value added.

Despite the positive development in 2019, Norwegian ASA could not withstand the tremendous impact from COVID-19 and ended 2020, to no surprise, with the lowest key numbers of the period of analysis.

7 Forecasting for the present value valuation

The following chapters constitute part 3 of our thesis, being our predicted development of Norwegian ASA. The predictions stem from the insight we have gathered through our previous chapters. We also use the predictions further in the conclusion of our thesis question. In this chapter, we forecast Norwegian ASA's development and present this in forecasted income statements, balance sheets, and cash flows. We use the key numbers further in chapter 8, where we arrive at a market value of equity for Norwegian ASA. See attachment 1 for complete calculations.

Based on our strategic analysis and thesis question, we distinguish between Norwegian ASA's 5-year prognosis pre-COVID and after 2020. The pre-COVID prognosis is based on historical years 2014-2019, with a forecast horizon from 2020 to 2024. The 2020 prognosis is based on historical years 2014-2020, with a forecast horizon from 2021 to 2025.

The market value of a company reflects the expectation of future earnings and growth. We present how predictions of development in the income statements affect the financial situation of Norwegian ASA in the corresponding balance sheets and cash flows. The result is two comprehensive forecasts, though value drivers are mainly rooted in the relative growth in operating income. These expectations are quite different for our two valuation settings due to the disrupted market and key drivers for economic growth for Norwegian ASA and the airline industry. The forecasts in this chapter can be seen as a numeric summary of the macroeconomic and company-specific trends uncovered in the previous chapters of this thesis. (Palepu et al., 2013; Penman, 2013)

Our forecast and the resulting valuation must be read with discretion, as we have made several assumptions. As mentioned in chapter 4.1.1, the macroeconomic

factors and trends explicitly presented in this thesis are not an exhaustive list of factors affecting Norwegian ASA, the airline industry, or economic growth in general. With this in mind, we are aware of the risk of wrongful assumptions and forecasts. In addition, Petersen et al. (2017) emphasize how forecasts and valuation should be based on unbiased estimates and realistic assumptions. Our first prognosis aims to present what Norwegian ASA's future would have looked like in a fictitious scenario *without the occurrence of COVID-19*. As we, in 2021, try to bluntly ignore an event that has indeed happened and been widely discussed in the news, we risk not being able to ignore this properly. Nevertheless, as our thesis question aims to assess the effect of COVID-19, we have tried to be as objective as possible.

The following subchapters contain our prognoses and the resulting income statement and balance sheets for the two starting points. For complete calculations, see attachment number 1.

7.1 Pre-COVID prognosis

7.1.1 Pre-COVID prognosis income statement

A forecast starts with the primary driver for operating revenue growth, growth in sales, and how an analyst predicts this to change compared to historical sales (Penman, 2013). Revenue growth is the first aggregated value of Norwegian ASA's income statement that we have forecasted. For Norwegian ASA, revenue includes revenue from passengers and freight. At year-end 2019, the airline industry had long been characterized by positive growth, and the increased demand was expected to continue (Rimmer, 2020). Norwegian ASA's historical revenue growth increased in line with this market trend. The company was a prominent actor in the European short-haul market with an average 17 percent yearly increase in revenue throughout our analysis period. Despite the expected increase in demand, the extreme growth pattern was not expected to continue, and stagnation was predicted by many (Tozer-Pennington, 2020; KPMG, 2021). Nevertheless, we have estimated Norwegian ASA to have continued revenue growth in the forecast period from 2019 due to the company's advantage of an established network and customer base. We acknowledge the expectations of a stagnant market by expecting the growth to increase with a smaller percentage than the historical trend. Starting with revenue

growth of 4 percent in 2020, the relative growth is degressive and ends up at an annual growth of 1,5 percent in the terminal period. We expected other income to be a constant percentage of revenue; thus, total operating income increases in the same pattern as revenue.

Operating expenses result from the industry dynamics and the company's business model (Penman, 2013). The value driver for operating expenses is calculated as a percentage of operating income. The airline industry is characterized by many fixed costs related to operative fleets and routes (Penman, 2013). Norwegian ASA publicly presented plans to decrease the number of routes and the complexity of their operations in line with their strategic shift from growth to profitability in 2019. Due to this, we estimate expenses to grow at a somewhat slower pace than operating income. EBITDA, being the difference between operating income and expenses, is expected to slowly increase over the forecasting period, from 16 to 18 percent of operating income.

The value driver of depreciation is calculated as a percentage of operating non-current assets (ONCA), as this aggregated accounting line includes aircraft and other assets requiring depreciation. ONCA, and thereby also depreciation, is estimated to decrease each forecasting year, with the highest decrease in 2020 and 2021. We expect this decrease due to Norwegian ASA's plans to reduce the complexity of their operations and routes and thus offset more aircraft in the coming years. Some aircraft replacement is likely, but these aircraft are expected to be better and infer lower depreciation levels.

Norwegian ASA's net financial expenses are calculated as a percentage of "NIBD w/o cash" in our forecast. We have estimated NIBD to decrease from 2019 to 2020 and stay relatively stable for the rest of the period. We explain the reasoning for our expectations of the growth in the components of NIBD in the following subchapter. As net financial expenses are closely related to NIBD, we see it reasonable to assume that it follows the same pattern as NIBD in the forecasting period. Therefore, we have chosen to forecast the net financial expenses at the historical average, being -7.13 percent of NIBD.

7.1.2 Summary pre-COVID future income statement

We present the resulting forecasted income statement in table 7.1. The historical pattern of increased revenues and expenses and negative profit will continue for some years. Even though NOPAT is positive in each forecasted year, the financial expenses related to Norwegian ASA's massive debt will negatively affect net profit. In 2022, the company will finally have generated positive profits due to the strategic shift in the reins of its new CEO.

Norwegian ASA pre COVID-19					
Income statement	**Forecast horizon**				
TNOK	**2020**	**2021**	**2022**	**2023**	**2024**
Revenue	44 327 816,00	45 657 650,48	46 570 803,49	47 502 219,56	48 214 752,85
Operating income (O)	**45 436 011,40**	**46 799 091,74**	**47 735 073,58**	**48 689 775,05**	**49 420 121,67**
Operating expenses (O)	**- 38 166 249,58**	**- 38 843 246,15**	**- 39 620 111,07**	**- 39 925 615,54**	**- 40 524 499,77**
EBITDA	**7 269 761,82**	**7 955 845,60**	**8 114 962,51**	**8 764 159,51**	**8 895 621,90**
Aircraft lease, depreciation and amortization	- 6 133 861,54	- 5 767 988,06	- 5 422 704,36	- 5 414 302,99	- 5 376 909,24
EBIT	1 135 900,29	2 187 857,54	2 692 258,15	3 349 856,52	3 518 712,66
Income tax expense (income) (O + F)	- 249 898,06	- 481 328,66	- 592 296,79	- 736 968,44	- 774 116,79
Tax shield	- 394 940,75	- 399 484,90	- 399 288,78	- 394 750,27	- 396 434,13
NOPAT	**491 061,47**	**1 307 043,98**	**1 700 672,57**	**2 218 137,82**	**2 348 161,74**
Net financial income/expenses	- 1 795 185,25	- 1 815 840,46	- 1 814 949,02	- 1 794 319,39	- 1 801 973,33
Tax shield	394 940,75	399 484,90	399 288,78	394 750,27	396 434,13
Profit (loss) from continued operations	**- 909 183,03**	**- 109 311,58**	**285 012,34**	**818 568,70**	**942 622,55**

Table 7.1: Forecasted income statement, pre-COVID

7.1.3 Balance Sheet prognosis pre-COVID

We start by elaborating on our forecast of the left side of the reformulated balance sheet, consisting of four key numbers being ONCA, ONCL, OCA, and OCL, which together constitute NOA. Value drivers for all of these key numbers are calculated as a percentage of operating income, as Norwegian ASA's profit stems from their operations. We know from our analyses that Norwegian ASA plans to reduce the complexity of operations and offset aircraft. Thus, ONCA is estimated to decrease from 2019 to 2020 and slowly decrease further as Norwegian ASA progresses to reduce its complexity. Similar to ONCA, ONCL is estimated to decrease in all forecasted years, as liabilities tied to aircraft and operations also decrease when aircraft are offset.

OCA includes inventory, and trade and other receivables connected to operations. Therefore, higher operating income leads to higher OCA. We see the ratio in growth from 2019 as a reasonable estimate for the future. We have consequently estimated OCA to grow at a constant percentage of operating income equal to this.

OCL increased by approximately 4 billion NOK from 2018 to 2019 mainly due to IFRS 16. As IFRS 16 is now included, we have estimated Norwegian ASA's OCL to remain relatively close to the 2019-amount. However, we expect a slight decrease

at the end of the forecasting period, as we anticipate a decrease in current liabilities of providing aircraft services. The decrease is seen as a result of a predicted improvement of operating efficiency as Norwegian ASA progresses to reduce the complexity of their operations. The expected changes in these four key numbers result in a decline in NOA in 2020 and an increase throughout our forecast period.

On the right-hand side of the reformulated balance sheet, we have equity, FA, and IBD, which together add up to the same amount as NOA. The value driver of IBD is calculated as a percentage of NOA, as this reflects the proportion of Norwegian ASA's assets supported by interest-bearing debt. This value driver has historically increased until 2018, before a sudden drop in 2019 in line with Norwegian ASA's strategic shift. We expect IBD to decrease further in 2020 and then stay relatively stable for the period of analysis.

We have calculated the value driver of FA w/o cash as a percentage of NOA. In 2019, this accounting line was solely made up of assets held for sale. As we expect Norwegian ASA to reduce their numbers of aircraft in the coming years, we estimate the amount in FA w/o cash to remain relatively constant, as we expect Norwegian ASA to have assets or aircraft for sale.

Equity does not have a percentage-wise value driver. Changes in equity are made up of yearly profits, dividends paid out, and raising additional capital. Norwegian ASA has not paid out dividends for the last three years. For simplicity, the changes in equity in our forecasted balance sheet stem from yearly profits only. As a result, cash in the balance sheet is the difference between the balance sheet's right-hand and left-hand sides.

7.1.4 Summary Pre-COVID future balance sheet

The balance sheet presented in table 7.2 reflects how the forecasted growth affects Norwegian ASA's financial situation. The decrease in both ONCA and ONCL still generates an increase in NONCA over the forecast period. The reduction in OCL contributes to an improved NOWC, though the key figure is still negative in all forecasted years. There is a slight increase in NOA over the period.

Norwegian ASA pre COVID-19					
Balance sheet, key figures	Forecast horizon				
TNOK	2020	2021	2022	2023	2024
ONCA	68 154 017,10	67 858 683,03	67 783 804,48	67 678 787,32	67 211 365,48
ONCL	- 33 622 648,44	- 33 227 355,14	- 32 937 200,77	- 32 622 149,28	- 32 617 280,30
NONCA	**34 531 368,66**	**34 631 327,89**	**34 846 603,71**	**35 056 638,03**	**34 594 085,17**
OCA	10 765 340,57	11 088 300,79	11 310 066,80	11 536 268,14	11 709 312,16
OCL	- 19 991 845,02	- 20 123 609,45	- 20 048 730,90	- 19 962 807,77	- 19 273 847,45
NOWC	**- 9 226 504,45**	**- 9 035 308,66**	**- 8 738 664,10**	**- 8 426 539,63**	**- 7 564 535,29**
NOA	**25 304 864,22**	**25 596 019,23**	**26 107 939,61**	**26 630 098,40**	**27 029 549,88**
Equity	3 215 716,97	3 106 405,40	3 391 417,73	4 209 986,43	5 152 608,98
Cash	- 3 103 435,55	- 2 992 832,07	- 2 753 414,15	- 2 760 319,83	- 3 410 901,88
IBD	26 317 058,79	26 619 860,00	26 630 098,40	26 363 797,42	26 488 958,88
FA w/o cash	- 1 124 475,99	- 1 137 414,09	- 1 160 162,37	- 1 183 365,62	- 1 201 116,11
NIBD wo/cash	**25 192 582,79**	**25 482 445,90**	**25 469 936,03**	**25 180 431,80**	**25 287 842,78**
Equity+NIBD	**25 304 864,22**	**25 596 019,23**	**26 107 939,61**	**26 630 098,40**	**27 029 549,88**

Table 7.2: Forecasted balance sheet, pre-COVID

7.1.5 Pre-COVID future cash flow

Table 7.3 below shows future cash flow for our forecast period and results from the forecasted key numbers in the income statement and balance sheet. The table shows that Norwegian ASA's free cash flow to the firm (FCFF) will be slightly above 2.29 billion NOK in 2020, before falling by more than a billion in 2021, and then have a slow but steady growth throughout the forecast period. The decline in 2021 comes from our expectations of reducing long-term operating debt that year, as repayment of debt reduces cash. At the same time, we have assumed a positive growth in income which infer more cash for Norwegian ASA. From 2022 and onwards, this counteracts the negative effect of reduced operating debt on cash surplus.

Furthermore, our forecasted numbers result in a weakly positive free cash flow to equity holders (FCFE) in 2020, though this fluctuates throughout the forecast period. As a result of NIBD being reduced in 2020 and remaining more or less constant going forward, the cash surplus is only minorly affected. However, as the amount of NIBD is estimated to be relatively high, net financial expenses have a rather significant negative impact on the cash available to shareholders.

Changes in equity other than retained earnings also affect cash surplus. However, we have not predicted any additional changes; thus, cash surplus equals FCFE throughout the forecast period.

Norwegian ASA pre COVID-19					
Cash flow	Forecast horizon				
TNOK	2020	2021	2022	2023	2024
NOPAT	491 061,47	1 307 043,98	1 700 672,57	2 218 137,82	2 348 161,74
+Depreciation	6 133 861,54	5 767 988,06	5 422 704,36	5 414 302,99	5 376 909,24
-/+ Changes in NOWC	98 504,45	- 191 195,78	- 296 644,56	- 312 124,47	- 862 004,34
-/+ Changes in NONCA	- 4 431 530,20	- 5 867 947,28	- 5 637 980,18	- 5 624 337,31	- 4 914 356,38
Free cash flow to the firm (FCFF)	**2 291 897,25**	**1 015 888,97**	**1 188 752,19**	**1 695 979,03**	**1 948 710,27**
+/- Changes in NIBD without cash	- 883 617,21	289 863,11	- 12 509,87	- 289 504,23	107 410,98
Net finance	- 1 795 185,25	- 1 815 840,46	- 1 814 949,02	- 1 794 319,39	- 1 801 973,33
+/- tax shield from NFE	394 940,75	399 484,90	399 288,78	394 750,27	396 434,13
Free CF to equity holders	**8 035,55**	**- 110 603,47**	**- 239 417,92**	**6 905,68**	**650 582,05**
+/- Changes in Equity	-	-	-	-	-
Income from discontinuing operations					
Cash surplus	**8 035,55**	**- 110 603,47**	**- 239 417,92**	**6 905,68**	**650 582,05**

Table 7.3: Future cash flow, pre-COVID

7.2 2020 prognosis

The forecast for 2020 is characterized by how the occurrence of the COVID-19 pandemic disrupted all historical tendencies and previous facts. Industry sources project the earliest time for recovery of the airline industry to be in 2024 (KPMG, 2021; Lunman & Soroka, 2021). As a result, we view 2021 and 2022 as years of exception used to stabilize and get Norwegian ASA back on its feet. We use the same value drivers and links between the income statement and balance sheet as above to ensure comparability in the two years.

7.2.1 2020 prognosis income statement

This forecast also begins with predicting changes in income. We anticipate a gradual recovery towards the market recovery in 2024. Tremendous increases in air traffic are expected as social restrictions ease over the next two years. However, the growth in business travels is expected to be slower than that for leisure travels due to environmental expectations and new habits of interaction (Rimmer, 2020; Avogadro et al., 2021). Having gone through the significant restructuring process in 2020, Norwegian ASA is much smaller than pre-COVID. The company now focuses on a smaller operative market without long-haul routes. As a result, we expect Norwegian ASA's revenue to grow dramatically in the first two years and stabilize at a lower point than pre-COVID. We expect other income to be a constant percentage of revenue, equal to the historical average without including the year 2020. As a result, operating income as a whole increases in the same pattern as revenue.

Operating expenses have in 2020 decreased relative to pre-COVID years due to the severe activity decline. As Norwegian ASA has reduced its fleet, fewer costs are tied to previously grounded airplanes. The company plans an additional reduction of their operative fleet, which reduces operations. In 2021 we have therefore anticipated the operating costs to be approximately the same as in 2020. However, as operating expenses are closely tied to activities, we expect a growth in operating expenses in line with the growth in revenues. Additionally, expectations linked to hygiene and technological innovations will increase future costs (Rimmer, 2020). However, we estimate the growth in operating expenses to be slightly less than the growth in revenues. We, therefore, expect EBITDA to increase from 4.34 percent to 18 percent of operating income over the forecasting period.

Depreciation, also here calculated as a percentage of ONCA, is expected to decrease drastically from 2021 and forwards. This expectation comes from the vast reduction of the operative fleet in 2020. We expect the fleet reduction to continue in 2021, and Norwegian ASA has no immediate plans for fleet renewal.

In 2020, Norwegian ASA had more financial income than financial expenses due to gaining financial income from converting debt. However, Norwegian ASA has had more financial expenses than income in all other historical years. As 2020 is a year of exception, we expect the company to have net financial expenses in the forecasting period and have thus used the average value driver for net finance income/expenses, which is negative. Since we estimate NIBD to increase during our forecasting period (explained below), we expect financial income/expenses to increase negatively, being a constant negative 3.57 percent of NIBD.

7.2.2 Summary 2020 future income statement

Table 7.4 shows future income statements resulting from our forecast. 2021 will, as mentioned, be an exceptional year on the road to recovery. Operating income will rapidly increase once passengers return to their long-awaited traveling habits, and operating expenses increase accordingly. Due to the massive reduction of Norwegian ASA's operative fleet, depreciation costs are expected to be much lower than in previous years, which results in a positive EBIT and NOPAT from 2022. As Norwegian ASA's debt is reduced, their net financial expenses do not result in a net loss in any of the forecasted years.

Norwegian ASA 2020					
Income statement	Forecast horizon				
TNOK	2021	2022	2023	2024	2025
Revenue	14 382 720,00	24 450 624,00	28 607 230,08	30 037 591,58	30 638 343,42
Operating income (O)	14 896 629,73	25 324 270,55	29 629 396,54	31 110 866,37	31 733 083,70
Operating expenses (O)	- 14 250 527,74	- 21 525 629,97	- 25 184 987,06	- 25 822 019,09	- 26 021 128,63
EBITDA	646 101,99	3 798 640,58	4 444 409,48	5 288 847,28	5 711 955,07
Aircraft lease, depreciation and amortization	- 1 833 228,87	- 1 869 893,45	- 2 051 039,38	- 2 153 591,35	- 2 196 663,18
EBIT	- 1 187 126,88	1 928 747,13	2 393 370,10	3 135 255,93	3 515 291,89
Income tax expense (income) (O + F)	261 167,91	- 424 324,37	- 526 541,42	- 689 756,31	- 773 364,22
Tax shield	- 69 695,38	- 75 518,75	- 96 286,41	- 108 683,28	- 110 856,95
NOPAT	- 995 654,34	1 428 904,01	1 770 542,27	2 336 816,35	2 631 070,73
Net financial income/expenses	- 316 797,17	- 343 267,04	- 437 665,48	- 494 014,91	- 503 895,21
Tax shield	69 695,38	75 518,75	96 286,41	108 683,28	110 856,95
Profit (loss) from continued operations	**- 1 242 756,13**	**1 161 155,72**	**1 429 163,20**	**1 951 484,72**	**2 238 032,47**

Table 7.4: Forecasted income statement, 2020

7.2.3 2020 prognosis balance sheet

Again, we start by elaborating on our forecast of the left side of the reformulated balance sheet, consisting of ONCA, ONCL, OCA, and OCL. Norwegian ASA has severely decreased its operative fleet, reflected in the reduced ONCA from 2019 to 2020. There is no indication that ONCA will return to pre-COVID levels, as Norwegian ASA plans to reduce their operative fleet further. We estimate the 2020 level of ONCA to continue in 2021, followed by a slight increase as Norwegian ASA progresses towards recovery.

ONCL decreased tremendously during 2020, as Norwegian ASA severely reduced its debt by negotiations and converting debt into equity. Therefore, we disregard the years 2014-2019 when estimating ONCL in 2021 and estimate an ONCL level approximately the same as in 2020. As operations and income increase each year of the forecast period, so does ONCL.

The increased operating income is also reflected in increased OCA, as higher revenues call for higher inventory and trade and other receivables. We expect OCA to grow in line with the growth in operating income; rapidly in 2021, as people are eager to travel in 2022 and purchase travels in advance, and then at a slower pace for the rest of the forecast period.

OCL decreased in 2020, and we expect it to stay at 2020 levels in the future, as this is tied to providing aircraft services. Even though we expect increased efficiency in operations in 2020, the extensive demands of cleanliness, hygiene, and contactless services counteract this. As a result, more time is spent on the ground, and we expect the company's efficiency and thus OCL to be a relatively constant amount. The anticipated changes in these four key numbers result in a drastic increase from the

2020 level in NOA throughout our forecast period. This is due to a modest increase in operational debt compared to the increase in operating assets.

As for the right-hand side of the reformulated balance sheet, we have IBD, FA, and equity. We expect both IBD and FA to be 30 billion NOK lower in 2021 than 2020, as this amount was tied to the disposal and sale of assets in both aggregates. We expect FA to stay at the resulting level going forward. In contrast, we estimate IBD to increase steadily over the forecast period as we expect Norwegian ASA to acquire *some* long-term debt. Equity is characterized by the retained net deficit of 23 million NOK in 2020. We anticipate equity to stay negative throughout the forecasted period.

7.2.4 Summary 2020 future balance sheet

Table 7.5 presents Norwegian ASA's financial situation in the years to come. The increase in ONCA and ONCL will increase NONCA from 2022. The increase in OCA as operating activities start back up contributes to a slight improvement in NOWC. Equity remains negative throughout the forecasted period.

Norwegian ASA 2020					
Balance sheet, key figures	Forecast horizon				
TNOK	2021	2022	2023	2024	2025
ONCA	11 917 303,79	12 155 649,86	13 333 228,44	13 999 889,87	14 279 887,66
ONCL	- 2 234 494,46	- 4 051 883,29	- 5 036 997,41	- 5 599 955,95	- 5 711 955,07
NONCA	**9 682 809,33**	**8 103 766,58**	**8 296 231,03**	**8 399 933,92**	**8 567 932,60**
OCA	7 448 314,87	7 597 281,16	8 888 818,96	9 333 259,91	9 519 925,11
OCL	- 12 215 236,38	- 12 662 135,27	- 12 444 346,55	- 12 444 346,55	- 12 693 233,48
NOWC	**- 4 766 921,52**	**- 5 064 854,11**	**- 3 555 527,59**	**- 3 111 086,64**	**- 3 173 308,37**
NOA	**4 915 887,81**	**3 038 912,47**	**4 740 703,45**	**5 288 847,28**	**5 394 624,23**
Equity	**- 7 866 556,13**	**- 6 705 400,41**	**- 5 276 237,21**	**- 3 324 752,49**	**- 1 086 720,03**
Cash	**4 032 163,64**	**262 905,99**	**- 2 071 853,13**	**- 5 031 626,21**	**- 7 436 786,25**
IBD	9 831 775,62	10 636 193,63	13 273 969,65	14 808 772,39	15 104 947,84
FA w/o cash	- 1 081 495,32	- 1 154 786,74	- 1 185 175,86	- 1 163 546,40	- 1 186 817,33
NIBD wo/cash	**8 750 280,31**	**9 481 406,89**	**12 088 793,79**	**13 645 225,99**	**13 918 130,51**
Equity+NIBD	**4 915 887,81**	**3 038 912,47**	**4 740 703,45**	**5 288 847,28**	**5 394 624,23**

Table 7.5: Forecasted balance sheet, 2020

7.2.5 2020 future cash flow

Table 7.6 below presents the cash flow resulting from our forecast of key numbers in the income statement and the balance sheet in 2020. Due to the significant immediate effects of COVID-19, Norwegian ASA's FCFF is negative in 2021 and then positive throughout the forecast period. The slight decrease in 2023 comes from the increase in both short-term and long-term operating assets as the market moves towards a full recovery. The enlargement of operating assets is harmful to

the FCFF as more capital is tied up in the assets. However, the cash surplus reinforces as Norwegian ASA's income is anticipated to increase after 2023.

Furthermore, the table shows a strongly negative FCFE in 2021, which later fluctuates around 2 to 3 billion NOK for the rest of the forecast period. Following the pandemic, Norwegian ASA has very little interest-bearing debt. As explained, we expect this to change in the future and thus positively affect FCFE. Net financial expenses are far lower than before COVID-19 due to the reduction of interest-bearing debt.

The same applies to changes in equity as in the forecast before COVID-19. We anticipate the only changes in equity to be through retained earnings and thus not affect the cash surplus. Therefore, the cash surplus will be equal to FCFE, fluctuating between 3,7 billion NOK and 2,3 billion NOK from 2022.

Norwegian ASA 2020					
Cash flow	Forecast horizon				
TNOK	2021	2022	2023	2024	2025
NOPAT	- 995 654,34	1 428 904,01	1 770 542,27	2 336 816,35	2 631 070,73
+Depreciation	1 833 228,87	1 869 893,45	2 051 039,38	2 153 591,35	2 196 663,18
-/+ Changes in NOWC	- 4 501 678,48	297 932,59	- 1 509 326,52	- 444 440,95	62 221,73
-/+ Changes in NONCA	- 2 101 138,20	- 290 850,70	- 2 243 503,84	- 2 257 294,24	- 2 364 661,85
Free cash flow to the firm (FCFF)	**- 5 765 242,16**	**3 305 879,36**	**68 751,29**	**1 788 672,51**	**2 525 293,78**
+/- Changes in NIBD without cash	- 686 819,69	731 126,59	2 607 386,90	1 556 432,20	272 904,52
Net finance	- 316 797,17	- 343 267,04	- 437 665,48	- 494 014,91	- 503 895,21
+/- tax shield from NFE	69 695,38	75 518,75	96 286,41	108 683,28	110 856,95
Free CF to equity holders	**- 6 699 163,64**	**3 769 257,65**	**2 334 759,12**	**2 959 773,08**	**2 405 160,04**
+/- Changes in Equity	-	-	-	-	-
Cash surplus	**- 6 699 163,64**	**3 769 257,65**	**2 334 759,12**	**2 959 773,08**	**2 405 160,04**

Table 7.6: Future cash flow, 2020

8 Valuation

This chapter presents our calculations of Norwegian ASA's market value of equity by using three different approaches in line with our justifications in chapter 3.2. We thus use the present value approach, the relative valuation approach, and the asset-based approach. Using these approaches allows us to compare the estimated market values of equity, to reach a conclusion of Norwegian ASA's market value of equity, as well as the effect of COVID-19. For complete calculations, see attachment 1.

We have estimated Norwegian ASA's market value of equity both on 01.01.2020 and 15.04.2021 through the EVA and FCFF models. Our conclusion stems from the resulting value from our present value approach. Further, we estimated a liquidation value using the asset-based approach as of only 01.01.2021. This approach

estimated Norwegian ASA's proceeds as if they ceased operations by 01.01.2021. The model provides a basis for saying whether Norwegian ASA has benefited from continuing operations despite financial challenges being enhanced by the global pandemic. Finally, using SAS and Lufthansa as peers, we conducted a relative valuation and found an estimate for Norwegian ASA's market value of equity as of 01.01.2020 and 01.01.2021. However, our relative valuation is deemed too straightforward and misleading for Norwegian ASA due to incomparable conditions. We have therefore not adjusted our derived market value of equity after using this approach.

We compare our estimated equity value to the market capitalization as of 15.04.2021, retrieved from Bloomberg. This is considered the most appropriate basis of comparison as Norwegian ASA through 2020 has had many shares at different prices due to the extensive processes of raising new equity and converting debt into equity.

8.1 Present value models

As explained in chapter 3.1.1, present value models estimate the intrinsic firm value by discounting estimated forecasts of cash flows to the valuation date, using an appropriate discount factor (Petersen et al., 2017). We chose to use EVA and FCFF, as we consider these to be most appropriate for our purpose. The use of both ensures that there are no technical errors in our calculations as they yield the same market value of equity. Both models are based on key figures from our forecast in chapter 7, discounted by WACC. Using both models, we have calculated a market value for Norwegian ASA both in the fictive scenario of no COVID-19 and in the present after 2020. This results in market values as of 01.01.2020 and 15.04.2021. A comparison of these captures the effect of COVID-19. We have assumed a constant WACC for each scenario in this present value valuation, being the WACC calculated for each valuation year. Chapter 6.1 shows our calculations of WACC.

Following the valuations, we conduct a sensitivity analysis showing how small changes in expected growth in either EBITDA or revenue would have affected our estimated market value for the valuation dates. This analysis highlights how big of

a difference minor adjustments in our assumptions have on the resulting market value of equity; thus, it reflects the uncertainty related to the valuation models.

8.1.1. EVA model

The EVA model is widely used among practitioners of valuation (Petersen et al., 2017). As explained in 3.1.1, this model estimates the market value of a company by adding the present value of forecasted excess returns to the current net operating assets. Excess return, here represented by EVA, refers to the value the company creates beyond the return required to finance invested capital, as discussed in chapter 6.2.4. EVA is calculated each year from forecasting year 1 to forecasting year 5 by deducting the cost of capital connected to the prior year's NOA from the starting year's expected NOPAT. These excess returns are discounted by WACC to find their present value. A positive EVA indicates that the company generates an excess return for its shareholders. Adversely, a cost of capital greater than NOPAT suggests that the company cannot generate excess profit, thus indicating that it destroys its shareholders' value.

8.1.1.1 EVA pre-COVID

Table 8.1 below shows our Norwegian ASA's market value calculations as of 01.01.2020 using the EVA model. We have estimated NOA to decline from 2019 to 2020, while NOPAT is estimated to increase throughout the forecast period.

Our forecast pre-COVID implies that the cost of capital will exceed the predicted NOPAT in all years of our forecast period except the terminal period 2024. Thus, EVA is only positive in 2024 and negative in all other years. Therefore, the discounted present value of all future EVAs is negative with 2.3 billion NOK. This amount is deducted from the valuation year's NOA, and so is NIBD. The resulting market value of equity of Norwegian ASA in this fictive scenario is 1.822 billion NOK.

EVA-model	Pre COVID-19 Valuation					
	Explicit forecasting period					
Summary of key data	2019	2020	2021	2022	2023	2024 (Terminal)
Period	0	1	2	3	4	5
NOA	27 105 700,00	25 304 864,22	25 596 019,23	26 107 939,61	26 630 098,40	27 029 549,88
WACC	8,61 %					
NOPAT		491 061,47	1 307 043,98	1 700 672,57	2 218 137,82	2 348 161,74
Cost of capital		2 334 747,81	2 179 632,93	2 204 711,55	2 248 805,78	2 293 781,89
EVA		- 1 843 686,34	- 872 588,95	- 504 038,97	- 30 667,95	54 379,85
Discount factor		0,92	0,85	0,78	0,72	
PV of EVAs in Explic at 31.12.2019		- 1 697 474,48	- 739 677,04	- 393 380,44	- 22 036,86	
PV of EVAS in terminal at 31.12.2024					764 460,53	
PV of EVAs in terminal per 31.12.2019					549 313,06	
PV of all EVAs per 31.12.2019	- 2 303 255,75					
EV per 31.12.2019	24 802 444,25					
NIBD per 31.12.2019	22 980 600,00					
MVE per 31.12.2019	**1 821 844,25**					

Table 8.1: EVA model, pre-COVID

8.1.1.1 EVA 2020

Table 8.2 shows our calculations of Norwegian ASA's market value of equity as of 15.04.2021 using the EVA model. During our forecast period, we have estimated that NOA will increase drastically compared to 2020. NOPAT is forecast to be negative in 2021 and positive and increasing from 2022 and throughout our forecast period.

Our forecast results in a negative EVA for 2021 and positive EVAs in the remainder of the forecast period. This infers that Norwegian ASA from 2022 generates profit above shareholders' required return. Discounted by WACC, the present value of expected future EVAs is slightly above 16 billion NOK. This is added to the 2020 value of NOA before NIBD is deducted. The estimated market value for Norwegian ASA thus ends at 9.425 billion NOK.

EVA-model	2020 valuation					
	Explicit forecasting period					
Summary of key data	2020	2021	2022	2023	2024	2025(Terminal)
Period	0	1	2	3	4	5
NOA	146 300,00	4 915 887,81	3 038 912,47	4 740 703,45	5 288 847,28	5 394 624,23
WACC	11,38 %					
NOPAT		- 995 333,19	1 428 904,01	1 770 542,27	2 336 816,35	2 631 070,73
Cost of capital		16 648,11	559 400,30	345 811,09	539 465,31	601 840,98
EVA		- 1 011 981,30	869 503,71	1 424 731,18	1 797 351,04	2 029 229,75
Discount factor		0,90	0,81	0,72	0,65	
PV of EVAs in Explic at 31.12.2020		- 908 589,00	700 908,64	1 031 140,60	1 167 919,35	
PV of EVAS in terminal at 31.12.2025					21 634 880,64	
PV of EVAs in terminal per 31.12.2020					14 058 353,14	
PV of all EVAs per 31.12.2020	16 049 732,73					
EV per 31.12.2020	16 196 032,73					
NIBD per 31.12.2020	6 770 200,00					
MVE per 31.12.2020	**9 425 832,73**					

Table 8.2: EVA model, 2020

8.1.1.3 Summary EVA model

With key figures from our forecast in chapter 7, we calculated a much higher market value of equity for Norwegian ASA in 2020 than in 2019. This may seem contradictory to the significant effects we know COVID-19 has had on most industries and the world economy in general. Nevertheless, we consider the increase in the market value of equity reasonable. The findings from our analyses imply that Norwegian ASA was too large to be profitable before COVID-19, which resulted in the company destroying value for its shareholders. The effects of the pandemic made Norwegian ASA go through heavy restructuring processes, offsetting many aircraft and compressing its operations to a smaller market. With this level of operations, we deem Norwegian ASA able to create excess profits in the future.

8.1.2. FCFF model

As presented in chapter 3.1.1, the discounted cash flow model is most used in practice. The basis of the model is that the market value of a company derives from the free cash flow to the firm. The free cash flow to the firm (FCFF) refers to the cash that arises from its operating activities minus the cash that occurs from its investing activities. When calculating the market value of equity for Norwegian ASA, we have used our forecast of FCFF from chapter 7. Then, we discount FCFF by WACC and deduct net interest-bearing debt to arrive at a value of the market value of equity for Norwegian ASA.

8.1.2.1 FCFF pre-COVID

Table 8.3 shows our calculations of Norwegian ASA's market value of equity as of 01.01.2020 using the FCFF model. As elaborated in chapter 7, we have estimated FCFF to be around 2 billion NOK in 2020, before declining by a million in 2021, and thereafter steadily increasing for the remaining forecast periods.

By discounting the free cash flow by WACC, we find a present enterprise value of 24.8 billion NOK. After deducting net interest-bearing debt, we get a market value of 1.822 billion NOK, equal to the market value of equity calculated using the EVA model.

FCFF-model	Pre COVID-19 Valuation					
		Explicit forecasting period				
Summary of key data	2019	2020	2021	2022	2023	2024 (Terminal)
Period	0	1	2	3	4	5
FCFF		2 291 897,25	1 015 888,97	1 188 752,19	1 695 979,03	1 948 710,27
WACC	8,61 %					
Discount rate		0,92	0,85	0,78	0,72	0,66
Present value of FCFF in explicit		2 110 140,43	861 149,74	927 769,25	1 218 667,81	
PV of terminal per 31.12.6					27 394 558,93	
PV of terminal per 31.12.0					19 684 717,00	
EV per 31.12.0	24 802 444,25					
NIBD per 31.12.0	22 980 600,00					
MVE per 31.12.0	**1 821 844,25**					

Table 8.3: FCFF pre-COVID

8.1.2.2 FCFF 2020

Table 8.4 shows our calculations of Norwegian ASA's market value of equity as of 15.04.2021 using the FCFF model. Due to the significant immediate effects of COVID-19, Norwegian ASA's FCFF is estimated to be negative in 2021. However, for the rest of our forecast period, FCFF is estimated to be positive.

By discounting the forecasted FCFFs by WACC, we find a present enterprise value of 16.196 billion NOK. After deducting net interest-bearing debt, we arrive at a market value of equity of 9.425 billion NOK, equal to the estimated market value of equity calculated by the use of EVA.

FCFF-model	2020 valuation					
		Explicit forecasting period				
Summary of key data	2020	2021	2022	2023	2024	2025(Terminal)
Period	0	1	2	3	4	5
FCFF		- 5 764 921,00	3 305 879,36	68 751,29	1 788 672,51	2 525 293,78
WACC	11,38 %					
Discount rate		0,90	0,81	0,72	0,65	0,58
Present value of FCFF in explicit		- 5 175 929,43	2 664 875,80	49 758,33	1 162 280,04	
PV of terminal per 31.12.6					26 923 727,92	
PV of terminal per 31.12.0					17 495 047,99	
EV per 31.12.0	16 196 032,73					
NIBD per 31.12.0	6 770 200,00					
MVE per 31.12.0	**9 425 832,73**					

Table 8.4: FCFF 2020

8.1.2.3 Summary FCFF

Using the FCFF model for calculating the market value of equity of Norwegian ASA, we reached the same estimates as with the EVA model. Arriving at the same values indicates that there are no technical errors in our valuations. Despite the higher market value of equity in 2020, we can see from table 8.3 and 8.4 that the present value of forecasted FFCFs is lower in 2020 than pre-COVID. The expected market value of equity is still higher in 2020 due to the massive reduction of the company's interest-bearing debt during this year.

8.1.3 Sensitivity Analysis

We use sensitivity analysis to highlight the uncertainty of conducting a valuation. The analysis provides an overview, both for the valuation pre-COVID and in 2020, that discloses how small changes of forecasted growth percentages of EBITDA and income will significantly impact our estimated market value of Norwegian ASA. The analysis presents changes in EBITDA and income of 0,5 percent and 1 percent, both up and down, from initially chosen levels. Table 8.5 and 8.6 in the following subchapters show our findings.

8.1.3.1 Sensitivity analysis pre-COVID

Table 8.5 presents the sensitivity analysis related to Norwegian ASA's estimated market value of equity pre-COVID. The table shows that a decrease in EBITDA of either 0.5 percent or 1 percent from our original estimate would have implied a negative market value of equity, independent of the changes in income. Even one percent higher income growth combined with the opposite in EBITDA would have made our valuation go from 1.822 billion NOK to a negative value of 3.735 billion NOK. This is in line with our perception that Norwegian ASA was too large to be profitable.

In the same way, we see that a one percent increase for both the estimated key figures would result in an estimated market value of equity of 8.232 billion NOK. The significant differences show the uncertainty in our estimate of the market value of equity on 01.01.2020

Sensitivity analysis : pre-COVID		Changes in revenue growth				
		-1,0 %	***-0,5 %***	***0,0 %***	***0,5 %***	***1,0 %***
Changes in EBITDA growth	***-1,0 %***	-2 910 872	-3 080 649	-3 271 229	-3 487 302	-3 735 095
	-0,5 %	-699 931	-712 932	-724 692	-734 906	-743 165
	0,0 %	1 511 009	1 654 786	**1 821 844**	2 017 490	2 248 766
	0,5 %	3 721 949	4 022 504	4 368 381	4 769 886	5 240 696
	1,0 %	5 932 889	6 390 221	6 914 917	7 522 282	8 232 627

Table 8.5: Sensitivity analysis, pre-COVID

8.1.3.1 Sensitivity analysis 2020

Table 8.6 presents the sensitivity analysis related to Norwegian ASA's estimated market value of equity 15.04.2021. Similar to table 8.5, table 8.6 also shows large

fluctuations in the estimated market value for equity, though none of the changes would imply a negative value. A one percent decrease in estimated percentages for both EBITDA and revenue growth from our starting point gives an estimated market value of equity of 5,410 billion NOK. The sensitivity analysis shows that the bankruptcy risk associated with small changes is lower, though it still underlines the uncertainty related to a forecast and valuation.

Sensitivity analysis : 2020		Changes in revenue growth				
		-1,0 %	-0,5 %	0,0 %	0,5 %	1,0 %
Changes in EBITDA growth	-1,0 %	5 410 401	6 222 360	7 122 547	8 125 879	9 250 829
	-0,5 %	6 444 289	7 312 144	8 274 190	9 448 320	10 548 349
	0,0 %	7 478 178	8 401 927	9 425 833	10 566 823	11 845 869
	0,5 %	8 512 066	9 491 711	10 577 475	11 787 295	13 143 389
	1,0 %	9 545 954	10 581 495	11 729 118	13 007 767	14 440 909

Table 8.6: Sensitivity analysis, 2020

8.2 Asset-based approach

As elaborated in chapter 3.2, we consider an asset-based valuation appropriate as a supplement to the present-value valuation of Norwegian ASA. The asset-based approach is best suited for companies whose going concern is questionable, which Norwegian ASA's was until April 2021 when the restructuring negotiations were finalized. Due to the previously identified difficulties related to this valuation method, we provide a simplified version of the model based on Petersen et al.'s (2017) guidelines on pages 603-606. The asset-based valuation aims to calculate the company's net value after creditors have been reimbursed for their lending. We evaluate Norwegian ASA's various assets to estimate proceeds from liquidation. We calculate the proceeds subject to each asset's presented assumptions and a significant amount of discretion. The resulting amount is the absolute minimum value of Norwegian ASA available to its shareholders, should the company have ceased operations and liquidated. (Petersen et al., 2017; Young, 2020)

Unequal to the present value and relative valuations, this liquidation valuation is solely based on the balance sheet of Norwegian ASA at year-end 31.12.2020, and no later developments are considered. This assumption somewhat limits the comparability of the resulting valuation but is necessary to have an informative still image of the assets owned by Norwegian ASA. Therefore, the interpretation of this

approach is whether or not Norwegian ASA was right to continue its operations after the disruptive year of 2020. The following tables and paragraphs explain our assumptions and calculations to arrive at Norwegian ASA's liquidation value.

As reported in the company's balance sheet, the book value of Norwegian ASA's assets is 49.5 billion NOK. The main part of this amount stems from tangible assets, hereunder aircraft. Norwegian ASA's fleet plan presents its operated aircraft and whether these are leased or owned by the company (Norwegian 2021, p. 91). The company has access to three types of aircraft, with a total of 131 aircraft. In a liquidation, the leased aircraft are returned to the lessor (Petersen et al., 2017), as these are not Norwegian ASA's property to sell. Table 8.7 shows the distribution of aircraft types of the 55 aircraft owned by the company.

Calculation tangible assets				
Aircraft type	Number of owned	Price used aircraft in $	Price used aircraft in TNOK	Value of Norwegian's aircraft
B737	30	22 500 000,00	192 093,75	5 762 812,50
B737 MAX8	14	1 000 000,00	8 537,50	119 525,00
B787-8/B787-9	11	122 000 000,00	1 041 575,00	11 457 325,00
TOTAL	55	145 500 000,00	1 242 206,25	17 339 662,50

Table 8.7: Liquidation value of Norwegian ASA's tangible assets

As mentioned in chapter 4.1.2.5, aircraft are not easily traded as the demand is limited. To find the market price for Norwegian ASA's Boeing 737s and Boeing 787s, we used Statista's (2021) statistics of average USD prices for Boeing aircraft. These prices were compared to active listings on various digital marketplaces for used aircraft on the 11th of June 2021, which confirmed that these were reasonable market prices. We converted the prices to fit our balance sheet in thousand NOK using DNB's NOK/USD currency rate on the same date. As for the Boeing 737 MAX, we found no market price for this aircraft type, which is understandable due to technical errors and troubles related to this aircraft. For simplicity, and as a symbolic act, we have ascribed the aircraft type a scrap value of 1 million USD if sold for parts and converted this value to TNOK. The resulting market price of Norwegian ASA's fleet is read from table 8.7, being 17.3 million TNOK.

Norwegian ASA's balance sheet includes intangible assets and inventories, as presented in table 8.8 below, though the market value is relatively modest. The internally generated software is estimated to be sold to one of Norwegian ASA's

newly established competitors at 75 percent of expensed costs. In contrast, goodwill has no recoverable amount in a liquidation (Petersen et al., 2017). The "other" intangible assets of Norwegian ASA are valued at zero in a liquidation. Norwegian ASA's inventories are limited to consumables, interpreted to be consumables sold in flights. The recoverable amount of this is highly subject to discretion and is estimated to be 25 percent of costs. (Petersen et al., 2017)

Calculation intangible assets and inventories		
Type of asset	Book value	Estimated proceeds from liquidiation
INTANGIBLE ASSETS		
Software	43 000,00	32 250,00
Goodwill	104 200,00	0,00
Other	53 800,00	0,00
Total	201 000,00	32 250,00
INVENTORIES		
Consumables	64 100,00	16 025,00
Total	64 100,00	16 025,00

Table 8.8 Liquidation value of intangible assets and inventories

The remainder of assets and liabilities needs no further calculations and is used "as is" to calculate liquidation value, presented in table 8.9 below. The book value of assets in Norwegian ASA's balance sheet includes financial assets and financial assets held for sale. The financial assets held to maturity are solely made up of cash. As financial assets held for sale are valued at market price, the liquidation values of Norwegian ASA's financial assets are the same as their book values.

Norwegian ASA's accounts receivable, deferred tax assets, and investments in associates are all considered to be sunk costs in the liquidation. Accounts receivables from not yet completed flights are deemed not recoverable, nor are investments in associated companies. Deferred tax assets arising from deductible differences are considered to cease as the related assets are sold as calculated above.

As for reimbursed liabilities, we have also practiced a fair amount of discretion. We expect liabilities related to leased aircraft to cease with the return of mentioned assets to the lessors. The same applies to provisions for periodic maintenance related to returning these assets in the expected condition. The liquidation value of "accounts payable" accounted for using IFRS is also considered to be the nominal value (Petersen et al., 2017). The remainder of financial liabilities constitutes

interest-bearing debt, for which the liquidation value is the nominal value (Petersen et al., 2017). Table 8.9 shows the resulting value of assets, liabilities, and the difference between these.

Norwegian ASA		
Accounting item in TNOK	Book Values	Estimated proceeds from liquidiation
ASSETS		
Tangible assets (including leases)	39 930 300,00	17 339 662,50
Intangible assets	200 900,00	32 250,00
Financial assets	2 666 900,00	2 666 900,00
Financial assets held for sale	3 700,00	3 700,00
Inventories	64 100,00	16 025,00
Accounts receivable	4 641 400,00	0
Deferred tax asset and investments in associates	2 046 600,00	0
Total assets	**49 553 900,00**	**20 058 537,50**
REIMBURSED LIABILITIES		
Financial liabilities	9 050 100,00	9 050 100,00
Accounts payable	10 328 800,00	10 328 800,00
Total reimbursed liabilities	**19 378 900,00**	**19 378 900,00**
Total value after liquidation		**679 637,50**

Table 8.9: Liquidation value 01.01.2021, Norwegian ASA

The calculated total value available to shareholders after liquidation is 679 637 TNOK. As this value is far below the MVE found in our present value valuation, our conclusion from this subchapter is that Norwegian ASA was right to continue its operations after the disruptive year of 2020.

8.3 Relative valuation

As explained in chapter 3.1.3, the relative valuation approach does not require forecasts of parameters and numbers. Norwegian ASA's market value is derived by comparing its performance to its competitors and peers, conducted by calculating standardized multiples. The use of multiples in the valuation of companies is widely used and is considered a simple and time-efficient way of doing valuations (Dyrnes, 2004; Petersen et al., 2017). We use our identified competitors SAS and Lufthansa as references.

The standardized multiples are divided into two categories: equity multiples and enterprise value multiples (Dyrnes, 2004). Whereas equity multiples are based on the market value of equity, enterprise value multiples are based on the company's total market value (Dyrnes, 2004; Petersen et al., 2017).

8.3.1 Equity multiples

Within the first category, we found SAS and Lufthansa's respective price-to-book ratios, dividing their market value of equity by their book value of equity each year. We calculated the market values of equity using the number of outstanding shares and the closing share price of 31.12 in both valuation years. After that, we multiplied the average of the resulting price-to-book ratios by the book value of Norwegian ASA's equity by the end of 2019 and 2020. The resulting market value of equity is presented in table 8.10.

MVE Norwegian ASA using equity multiples	2019	2020
BVE	4 124 900,00	- 6 623 800,00
Average MVE/BVE from peers	0,51	2,96
MVE	**2 101 427,04**	**- 19 603 140,83**

Table 8.10: MVE Norwegian ASA, using equity multiples

The results from table 8.10 are rather confusing. Despite the market value of equity in 2019 being relatively close to our present value valuation, the market value of equity of 2020 is unreliable due to Norwegian ASA's negative book value of equity. As presented in table 6.9 from chapter 6, there are apparent differences in financial ratios across the three companies. In 2019, Norwegian ASA's financial ratio was almost five times as high as the average financial ratio of its peers. Due to Norwegian ASA's much-discussed negative book value of equity in 2020, their financial ratio is negative the same year as opposed to the increased peer average. These differences present a clear disadvantage of basing a relative valuation on equity multiples, as differences in capital structure are considered a source of error (Dyrnes, 2004; Petersen et al., 2017), and we consider this result inappropriate.

8.3.2 Enterprise value multiples

In the second category, enterprise value multiples, this source of error may be eliminated as enterprise value disregards capital structure (Dyrnes, 2004). In these multiples, the numerator is the enterprise value of the company. Appropriate denominators should be related to operational activities and not be affected by the cost of capital. To ensure consistency in our multiples, we used historical expected

EBIT and EBITDA for Norwegian ASA and its peers retrieved from Bloomberg. We divided enterprise value by EBIT and EBITDA for both peer companies. Also here, the average of these ratios was used in calculating Norwegian ASA's enterprise value. We subtracted net debt and cash to find their market value of equity. The resulting market value of equity stemming from each of these multiples is presented in table 8.11.

MVE Norwegian ASA using enterprise value multiples		
	2019	2020
Result from EV/EBITDA	- 26 849 964,49	- 125 794 602,47
Result from EV/EBIT	- 64 790 508,81	29 315 522,13
Average MVE	**- 45 820 236,65**	**- 48 239 540,17**

Table 8.11: MVE Norwegian ASA, using enterprise value multiples

Table 8.11 shows that despite using multiples that are not affected by capital structure, the calculation of market value of equity still is. The resulting value from each multiple varies a lot; thus, the average value does not make sense.

As the difference between EBITDA and EBIT is the subtraction of depreciation-related costs, differences in depreciation practices require attention. While Norwegian ASA, SAS, and Lufthansa all depreciate according to industry guidelines (IATA, 2016a), their practices are not equal. However, the differences in depreciation practices can be justified if rooted in operational differences (Palepu et al., 2013, p 163). The average fleet age varies severely between the companies, and the depreciation practice should thus vary. As a result, it is not appropriate to adjust depreciation costs in any of these three companies. This is a reason why our relative valuation is not interpretable.

8.3.3 Summary of relative valuation

The calculations in chapter 8.3 show that relative valuation is not appropriate in Norwegian ASA's case. This is related to the preconditions of this valuation approach. Identification and selection of comparable companies are one of the key points in the use of multiples and relative valuation (Dyrnes, 2004; Petersen et al., 2017). In industries with few players, such conditions could lead to difficulties in finding comparable companies within the industry at all (Dyrnes, 2004). As

mentioned earlier, there are peculiar conditions related to Norwegian ASA, making the company incomparable to anyone.

The first condition is the company's capital structure and thereby also its financial ratio. The second condition regards the operative markets. Even though all three companies operate within the European airline industry, they are subject to additional regulations from their respective home countries. Thus, the identified peers are not subject to the exact same market conditions.

Proceeding with relative valuation despite the violation of basic preconditions is a well-known pitfall (Dyrnes, 2004). We conclude that our identified peers are simply too different from our target company, and therefore we do not adjust our previously found value estimates.

9 Conclusion

This thesis aimed to estimate the market value of equity of Norwegian ASA, both pre-COVID and in 2021. Based on this, we aimed to assess the effects of the pandemic to determine whether the financial support from government and investors is justified.

From the use of publicly available information, we have calculated a market value of equity pre-COVID equal to 1.82 billion NOK and 15.04.2021 equal to 9.43 billion NOK. Thus, the market value has increased. We compare our value estimate from 15.04.2021 to the actual market capitalization as of the same date. Retrieved from Bloomberg, we found this to be 2.41 billion NOK. At first sight, our calculations seem overly optimistic. However, we feel fairly confident in our estimates due to a thorough analysis over a long period. While formulating this thesis, we kept an eye on the market capitalization, which as of 14.06.2021 was 7.75 billion NOK. This reinforced our confidence.

The rationale for our enthusiastic value is that the company has implemented significant structural changes, and their effects are predicted to continue. In our pre-COVID valuation, the basis is a company with massive financial challenges, burdened by interest-bearing debt, and an aim to become profitable. The fact that COVID-19 disrupted the world economy forced the company to take extraordinary measures to continue at going concern. Therefore, we have based our valuation as

of 15.04.2021 on a smaller but healthier company. The concentration of operations contributes to decreasing costs and generating value for the company's shareholders.

We estimated liquidation proceeds as if the company would have ceased operations at 01.01.2021. The resulting value reveals that liquidation would have resulted in less value for shareholders than by continued operations. We thus conclude that the effect of COVID-19 on Norwegian ASA's market value is positive. The financial support from the government and investors is justified.

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Appendix: Preliminary thesis

Table of contents

Problem area and motivation **109**

Theoretical background **111**

Norwegian ASA **116**

Ownership and governance *116*

Industry and peers *117*

Methodology **117**

Valuation *117*

Data sources *119*

Preliminary schedule for the thesis *119*

«Data gathering» 119

«Data processing» 120

«Revision and finalization» 120

Preliminary assumptions and limitations *120*

Bibliography **122**

Problem area and motivation

The most prominent international news of 2020 was, and still is, the global pandemic of COVID-19. The fear and uncertainty regarding the contagious disease led to many countries introducing national measures and lockdown regulations (Gössling et al., 2020). In the wake of these regulations, the global aviation industry saw a severe decline in activity (European Commission, 2020). The vast majority of industries, countries and people have been affected by the pandemic outbreak, for better or worse. However, it is abundantly clear that the short-term effects of travel restrictions and quarantine regulations have affected international mobility and the travel habits of the average Joe. The global aviation industry faces a severe decline in activity, and Norwegian companies are not let off the hook.

Norwegian Air Shuttle ASA, hereafter "Norwegian ASA", is a large Norwegian airline company. The company has succeeded in positioning itself as a large international airline company, especially in Europe, but also other parts of the world. (Norwegian, 2020)

The pandemic and its short-term consequences began to unfold not long before the publication of the 2019 annual report of Norwegian ASA. In this report, the company acknowledges how revenues disappeared almost overnight following the introduction of national and international restrictions. The financial statements of 2019 shows increased revenues from recent previous years, but also mentions major structural changes within the company. The last couple of years has presented some financing challenges for Norwegian ASA, as their main focus was growth and expansion into international markets. The company has now switched their focus from growth to profitability, in order to try to improve the financial position. The structural changes include changes in routes and bases (Norwegian, 2020).

The pandemic has presented Norwegian ASA with additional financial challenges, and the need for further structural changes (Ghaderi & Lorentzen, 2020). In order to mitigate challenges and avoid bankruptcy, Norwegian ASA has in 2020 converted a severe amount of debt to shares (Lund, 2020). This is one of three

ways to raise capital to the company (Modigliani & Miller, 1958). In addition, Norwegian ASA has withheld dividends for several years (Norwegian, 2020).

Over the last few months, the words "Norwegian ASA" and "risk of bankruptcy" have been frequently combined in the media. Norwegian's financial report for the third quarter of 2020 shows an operating deficit of 6,3 billion NOK, and a drop in revenues of 75 percent (Rystad, 2020). Decreased revenues create trouble for Norwegian ASA as a company for several reasons, one of them being frustrated customers still awaiting compensation for flights that were cancelled 10 months ago. Other customers have accepted cash points with Norwegian as a settlement and hoping to use these at a later time. These settlements merely function as small, long-term loans to an illiquid company. (Solli, 2020).

There is no doubt that Norwegian ASA is facing difficulties in this international pandemic. However, airlines in general are indeed affected by mentioned regulations and changes in mobility patterns. Norwegian ASA had problems with profitability even before this, and has since 2001 ran a total operating deficit of 9,5 billion NOK (Rystad, 2020). At the beginning of November 2020 came the news that the Norwegian government rejected Norwegian ASA's request for additional financial support. Norwegian ASA then filed for bankruptcy protection in Ireland, and was granted protection in mid of December 2020 (Tollersrud & Nesvik, 2020). Shortly after this, a parallel protection was granted in Norway (Høgseth & Lorentzen, 2020). As mentioned, economic activity is severely impacted by the pandemic, leaving many companies dependent on economic support in order to fulfill their various obligations. The government has had to weigh the importance of maintaining competitiveness after the pandemic against companies' urgent need for support (Abate et al., 2020). For our master thesis, we want to investigate whether the bankruptcy risk faced by Norwegian ASA can be said to be mainly due to the pandemic, or if the risk were already close at hand before the outbreak of COVID-19. Several aspects of Norwegian ASA will be relevant to conduct this investigation, such as the implications of the company's capital structure and governance, before and after COVID-19. Alternative capital and governance structures will be considered, and different valuation models will be used to provide answers to the future of the company.

Theoretical background

Corresponding with the development of COVID-19, the short-term effects on the aviation industry have been researched. The literature found for this paper confirms how lockdown regulations and other measures have severely impacted economic activity in general, and especially the aviation industry (Liu et al., 2020; Donthu & Gustafsson, 2020). There is a consensus that the effects of the pandemic on the aviation industry are anticipated to continue even longer than the pandemic itself (European Commission, 2020), and several studies question whether airlines are able to recover their financial stability and services (European Commission, 2020; Abate et al., 2020; Liu et al., 2020). Several articles point out the evident effect of discontinued revenues on financial ratios (Lioutov, 2020), but these are general effects found in other countries than Norway. There is no scientific research published on how the pandemic and its aftermaths have directly affected the Norwegian company Norwegian ASA after the fiscal year 2020 has ended.

COVID-19 is the most recent, but not the first, pandemic in history. Former studies have shown that pandemics can cause damage to economic activity in several ways, either through short-term shocks in income, or long-term negative shocks on economic growth (Zhang et al., 2020). Liu et al. (2020) set out to investigate the initial effects and future of the aviation industry, comparing data from two Chinese companies for evidence. In the mentioned study, the authors conclude that the volatility in stock prices increased considerably in 2020 compared to recent time before COVID-19 (Liu et al., 2020). The same tendency was observed in the stock price of Norwegian ASA, which decreased with 83 percent from mid-February to mid-March 2020, according to numbers from Nordnet, and continued to decrease as the seriousness of the pandemic was made evident.

Other studies have highlighted how government support to airlines has become an urgency (Donthu & Gustafsson, 2020; Abate et al., 2020). Abate et al. (2020) accentuate the various considerations that must be weighed against each other before issuing economic government support. That is, whether the importance of

maintaining competitiveness after the outbreak of COVID-19 or the companies' urgent need for support weigh the most (Abate et al., 2020).

Contrary to COVID-19, subjects within valuation, corporate governance and corporate finance are widely researched. The following sections of this preliminary thesis will give a brief overview of the theorems and subjects considered relevant for our master thesis.

Several theories within corporate finance state that the capital structure of a company does not affect the company's market value (Modigliani & Miller, 1958; Chen, 2020; Durand, 1952). In 1958, Modigliani and Miller presented their well-known propositions, laying the grounds for these theories. Their main idea was that capital structure does not affect a company's total value, and that the market value therefore can be calculated as the present value of future income and underlying assets (Modigliani & Miller, 1958; Chen, 2020) . There are three ways a company can raise new capital to finance operations: borrow capital through obtaining loans or issuing bonds, issuance of shares, or withholding and reinvesting dividends. However, the selected alternative, or any combination of the three, will not impact the market value of the company (Modigliani & Miller, 1958).

A second theory, supporting this view, is the Net Operating Income theory (NOI), presented by David Durand (1952). NOI states that the company's value is not affected by changes in debt- or equity-components. According to this theory, market value depends on operating income, and company- and industry-specific risk (Durand, 1952).

Per contra, Durand also presented a conflicting theory, called "net income theory", which states that company value is related to their weighted average cost of capital, hereby "WACC". Accordingly, as cost of equity and cost of debt are components of WACC, the capital structure of a company affects market value through their cost of capital (Durand, 1952). Under the assumption that cost of debt is cheaper than cost of equity, the net income theory will conclude that a capital structure with debt as the single way of financing will facilitate a higher market value than any other capital structure.

The three above-mentioned theories have circulated for many years, and have affected theoretical approaches to capital structure. Common for the three is the use of assumptions that must be present for the theories to hold. Assumptions about perfectly efficient markets without taxes, bankruptcy costs and asymmetric information have led to the theories being subject to criticism. Companies rarely, or never, operate in markets with such conditions, which indicates that the theories do not hold in real life.

The presence of, and problems associated with, asymmetric information in real life are also widely referred to in theory (Goergen, 2018). Two important types of problems related to asymmetric information are the possibility to hide one's true characteristics or type ("adverse selection"), and the possibility to hide one's action ("moral hazard"). These problems play a role in the well-known principal-agent relationship, separating ownership and control of a company. Managers run companies on behalf of shareholders, and the two may have conflicting interests. Managers should manage companies in such a way that provides owners with the highest possible profit (Goergen, 2018). However, a study conducted by Jensen in 1986 demonstrated how managers could increase their own power by expanding the size of the company at the expense of its shareholders (Jensen, 1986). Increased power entails increased benefits for the managers, such as wage and entrenchment (Goergen, 2018). This potential conflict of interests lays ground for problems. Shareholders possess voting rights, whereas managers effectively control the company to maintain owners' economic interests (Berle & Means, 1932, cf. Goergen, 2018). Owners must be able to trust that their interests are protected, sometimes at the expense of managers' own interest. The presence of asymmetric information challenges this trust.

Companies differ in established company goals and objectives, and there is no universal agreement as to what these must be (Goergen, 2018). The subjective understanding of appropriate company goals will vary depending on the organizational role of the replicant, as well as being influenced by which country the company operates in, through laws, rules and policies. Nevertheless, there exists a general understanding that a manager's goal should provide company owners with the highest possible profit (Goergen, 2018). A manager's ability to

pursue their own interests at the expense of those of shareholders, is affected by the corporate governance of the company.

Duppati et al. (2016) researched how airline corporate governance affects airline performance, and emphasized how diversity of governance arrangements complicates the relationship between the two (Duppati et al., 2016). Corporate governance oversees conflict of interest in a company between shareholders and managers, debtholders, non-financial stakeholders and the others holding a share in the company(Georgen, 2018). For our master thesis, we will elaborate further on possible corporate governance issues of Norwegian ASA. We will investigate the presence of asymmetric information, strengths and weaknesses of their governance, and how these aspects affect the value of the firm.

Palepu et al. (2013) defines valuation as "the process of converting a forecast into an estimate of the value of the firm's assets or equity" (Palepu et al., 2013, 278). A business valuation involves assessment of several aspects of the operating company, such as future earnings, management and capital structure (Hayes, 2020). A company's assets or equity generate net cash payoffs, and the value of the identified payoffs lays the basis for the value of the business (Palepu, 2013).

A valuation is often based on assumptions and forecasted numbers, allowing for the risk of wrongful assumptions and forecasts. However, basing a valuation on forecasted numbers instead of current also allows for removal of irregularities and one time-events (Penman, 2013). Petersen et al. (2017) defines four fundamental attributes for a successful valuation. The attributes are as follows: 1) preciseness that provides unbiased estimates 2) Valuation based on realistic assumptions, 3) user-friendly valuation approach, and 4) Estimates of value, easily presented. (Petersen et al., 2017)

There are many possible methods in practice of valuing a company, and there is no superior method. There are four main approaches within valuation methods, being present value approach, relative valuation approach, asset-based valuation approach and contingent claim valuation. (Petersen et al., 2017)

The present value approach is based on forecasted cash flows discounted until the valuation date, using an appropriate discount factor. The discount factor reflects the risk connected to the cash flows at issue, and the time value of money. A

shared ground for the present value approach is that every valuation method is derived from the dividend discount model. This approach and its possible valuation methods is widely used for valuation. (Petersen et al., 2017)

In the relative valuation approach, the company value is derived comparing their performance or value to its competitors and peers (Tuovila, 2020). Therefore, a method within this category will not require forecasts of parameters or numbers, meaning it can be viewed as quite simple. In practice, the approach can be somewhat challenging, as it does require identification of directly comparable competitors and firms (Palepu et al., 2013). Directly comparable competitors must in this approach be equal to the target company in terms of size, revenues, capital structure and operating market, among others. Due to the special circumstances of Norwegian ASA in regards to capital structure, market and previous expansion strategy, we deem this valuation approach as irrelevant in the case of valuing Norwegian ASA.

The third and fourth approaches of valuation are the asset-based approach and the approach of contingent claim. The first of these is used to estimate the company's net asset's value, based on current market value of different assets (Young, 2020). The estimates can be found by different measurement bases (Petersen et al., 2017), and the approach leaves room for analysts or authors to favor which assets and liabilities to include in the valuation (Young, 2020). Due to valuing assets at its net market value, as if the company is to become insolvent and not able to generate fresh operating cash flows with these assets, this approach is best suited for companies whose going concern is questionable (Petersen et al., 2017). In connection to recent events and Norwegian ASA's current state, a valuation method of this approach could turn out intriguing as we move further along the thesis process. The last valuation approach, being contingent claim valuation models, is also referred to as real option models (Petersen et al., 2017). In this approach, two or more alternative actions are examined, and compared. For now, this approach is not deemed relevant for this thesis.

To sum up, there are several aspects and recent events that are likely to impact company value. The short-term effects of COVID-19 have been researched, and without doubt found to have had an impact on economic activity, especially within the aviation industry. Established theories on capital structure are

challenged, mainly due to their assumptions not holding in practice. Asymmetric information and potential conflicts of interest might prevent managers from providing shareholders with the maximal surplus possible, which is the general understanding of what the managers' main goal should be. Corporate governance facilitates management possibilities and growth opportunities. There are many ways to value a company, its growth prospects and future cash flows. We will analyze the above-mentioned factors, and contribute further to theories on these subjects in our valuation of Norwegian ASA. The outbreak of COVID-19 has undoubtedly affected the value of Norwegian ASA, but there are other factors that play a role in the company's former and future destiny.

Norwegian ASA

Norwegian Air Shuttle ASA was founded in 1993 and started operating as a low-cost airline in 2002. The company is headquartered at Fornebu in Norway. Since the founding of the company, they have created subsidiaries in Norway, Sweden, Denmark, Finland, Ireland, Great Britain, Spain and Singapore. Close up until the outbreak of COVID-19 and its following regulations, Norwegian ASA operated on short-haul services in Europe, as well as providing long-haul services for the US, Asia and South America, which is enabled through air bases across the world. (Norwegian, n.d.)

Norwegian's overall business objective is *"to be the preferred airline in selected markets and to generate profitability and return to its shareholders"* (Norwegian, 2020, p. 6). To ensure the business objective being met, Norwegians' corporate structure is divided into four main business areas, being assets, aircraft operations, people & services, and "other business areas". (Norwegian, 2020)

Ownership and governance

Norwegian ASA's management team consists of CEO Jakob Schram, and eight other members. The ownership of Norwegian ASA is characterized by many dispersed shareholders. In the beginning of 2020, approximately fifty percent of the shares were held by private investors (Hovland, 2020). According to DN Investor's overview of Norwegian ASA's investors in the beginning of 2020, the largest shareholder of the company was HBK Holding. HBK Holding is

controlled by two of Norwegian ASA's founders, Bjørn Kjos and Bjørn Kise. During 2020, the company sold many of its Norwegian ASA shares (Høgseth, 2020), leading to major changes in the ownership structure. As previously mentioned, Norwegian ASA converted severe amounts of debt into shares, welcoming suppliers, leasing companies and other creditors as owners.

The Board of Directors ensures that the governance of Norwegian ASA is satisfying. The board consists of eight members, whereas five of these are reported to be independent members. In the annual report of 2019, it is stated that Norwegian ASA's corporate governance "are designed in compliance with laws, regulations and ethical standards, […], with the ultimate goal of maximizing shareholder value while creating added value for all stakeholders" (Norwegian, 2020, p. 111).

Industry and peers

Norwegian ASA operates within the aviation industry, and has established themselves as an international player within the industry. As previously mentioned, the aviation industry as a whole is severely impacted by travel restrictions and other regulations. Norwegian ASA and another Norwegian airline company, SAS, have both been criticized for the long waiting time for refunds related to cancelled flights, and the process around this in the aftermath of the pandemic. However, the general media coverage of SAS has not nearly been as focused on bankruptcy as that of Norwegian ASA. For our master thesis, we will conduct a strategic analysis of Norwegian ASA. This will include an external analysis of the aviation industry in which Norwegian ASA operates.

Methodology

Valuation

In order to examine "whether the bankruptcy risk faced by Norwegian ASA can be said to be mainly due to the pandemic, or if the risk were already close at hand before the outbreak of COVID-19", our research method will be a qualitative literature review, followed by different valuation methods. The qualitative

literature review will be the basis for our forecasted estimates of Norwegian ASAs economic future. To exclude technical error, we will use several valuation-models in our valuation. The relative valuation approach is deemed irrelevant, as so, we will focus on models under the present value approach. (Petersen et al., 2017, Saunders et al., 2016)

A proper valuation of Norwegian ASA requires several time-consuming processes. First, we will provide a presentation of Norwegian ASA: who they are, how they operate and present the industry in which they operate, being the aviation industry.

Thereafter, we will perform a thorough strategic analysis of the aviation industry for a better understanding of Norwegian ASA's operations, and to identify possible competitive (dis)advantages. By analyzing macroeconomic conditions of the industry, we aim to identify factors, possibly beyond Norwegian ASA's control, that may affect their scope of opportunity. A PESTEL analysis will be a helpful tool to summarize these future findings. This will hopefully give us a clear view of Norwegian ASA's existing opportunities and threats. In addition, we will formulate what internal strengths and weaknesses are present for Norwegian ASA to take advantage of, or minimize these. The strategic analysis will thus provide us with an understanding of the market, and lay the grounds for assumptions for the future.

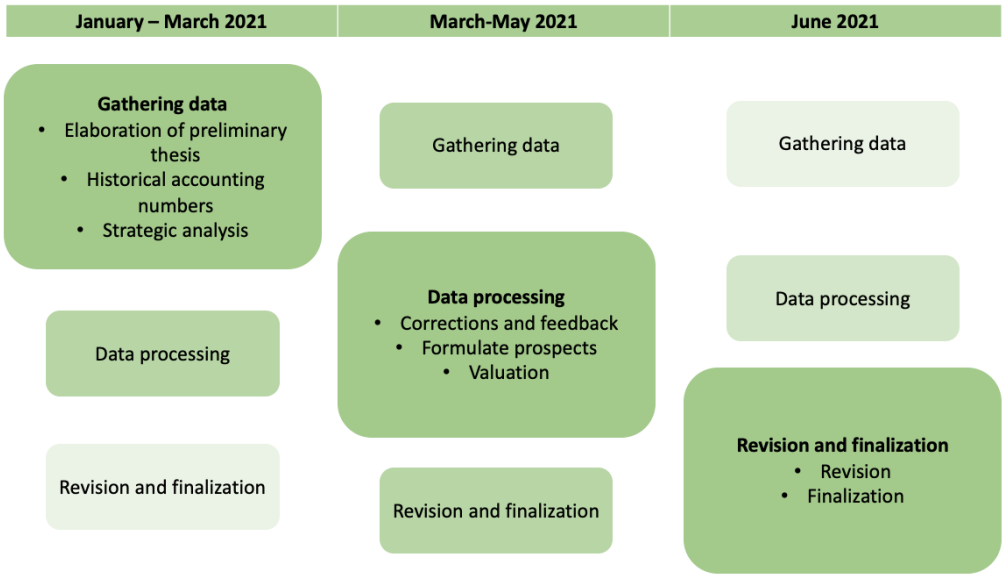
Furthermore, we will conduct an assessment of Norwegian ASA's accounting quality. The financial statements of Norwegian ASA should provide its users with a nonpartisan picture of the company's financial position. In order to assess whether or not this is the case for Norwegian ASA, we will go through several necessary steps in analyzing the accounting quality of the company. These steps will be further elaborated in our thesis. However, the last step of the accounting quality assessment is reformulating previous and current financial statements, in order to be able to compare the information over time. This reformulation will be our basis for our valuation, and the forecast of Norwegian ASA's future economic position. Key figures and ratios will be used to analyze and comment upon the profitability, growth and liquidity of the company. Historical and future key figures will be used to reach a conclusion on the effects of COVID-19 on Norwegian ASA's financial position.

Data sources

Our chosen use of data sources in this master will be archival and documentary research (Saunders et al., 2016). Since Norwegian ASA is a publicly listed company, there is plenty of relevant information available, such as annual reports. These annual reports will be supplemented by articles deemed relevant for our chosen topic, in addition to other publically available sources. Emphasis will be put on the theories presented in this paper. We acknowledge that additional relevant content is likely to appear as the work progresses.

Preliminary schedule for the thesis

The deadline to submit our master thesis is the 1st of July 2020. At time of writing this preliminary thesis report, we are confident of meeting this deadline. In this highly tentative thesis schedule, we have chosen to divide the thesis process into three continuous parts. This visualization illustrates at which time the different parts will be of main focus. However, we recognize that this is a tentative draft of the schedule, and it may be subject to change.



«Data gathering»

We plan to use the time from January until March mainly to gather data and information. This part includes evaluation of this preliminary thesis, and

elaboration of the preliminary literature review. The presented content and articles will be thoroughly reviewed, and excess parts may be eliminated. Reviewed data and articles will result in a theoretical background for our thesis, and also provide us with sufficient information to conduct the strategic analysis.

Next, we will analyze historical accounting numbers. Previous annual reports of Norwegian up until 2019 are available online, being the starting point for our thesis. In addition, preliminary quarterly reports of 2020 are published during the fiscal year 2020, and therefore we do not lack the possibility of gathering any necessary data at this point. In addition to financial statements, the annual reports include important notes and information regarding capital structure, governance and internal procedures, which are considered relevant for our chosen problem area.

The data gathering part will hopefully result in a clear view and plan for the remaining parts of our thesis, and we plan to initiate an initial supervision session with our supervisor for feedback and suggestions.

«Data processing»

There is a floating transition from the data gathering part to the next part, being processing gathered data. Corrections and processing feedback after the initial supervision session is included here. This part also includes formulating prospects, before and after the impact of COVID-19, assessing whether or not the capital structure or governance of Norwegian ASA is destructive, and conducting our valuation.

«Revision and finalization»

In order to meet the deadline of submission, the last month of our masters will be dedicated to revision and completion of the above-mentioned parts. It also serves as a buffer, as the schedule is fairly vague and tentative.

Preliminary assumptions and limitations

As of right now, we realize that due to the massive impact of COVID-19 on all aspects of international and Norwegian economic activity, and activity in general, there is a high probability that some limitations may occur. We have tried to limit this by taking a conscious choice to use secondary data for our thesis due to

problems that may arise being dependent on primary data/persons. However, due to the impact of COVID-19, it is possible that we will encounter some limitations in our use of secondary sources as well. We limit our data to publicly accessible data. As we are to do a valuation of the listed company, public data is what present and potential shareholders have access too, and we will limit our thesis to this.

According to Oslo Børs, the deadline for publishing annual reports for listed companies is 4 months after the reporting period ended. Norwegian ASA's fiscal year starts the 1st of January, and ends 31st of December, meaning, we estimate publication to be in April 2021. However, as mentioned above, we recognize that this might be subject to change based on the presence and effects of the pandemic. Nevertheless, our preliminary delimit of data gathering is set to be the end of April, as for now.

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