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Valuation and Financial Analysis of SalMar ASA

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Master thesis, Economics & Business Administration, Finance

NORWEGIAN SCHOOL OF ECONOMICS

Abstract

The purpose of this master's thesis is to estimate a theoretical equity value of SalMar ASA and thereby value per share on 26.04.2019. The valuation was mainly based on a fundamental valuation, supplemented by a method of comparable companies valuation. In the fundamental valuation, the enterprise value was estimated by discounting expected future cash flows to present value. In the comparable companies method multiples have been utilized to provide a supplementary valuation.

The first part of the thesis provides a presentation and strategic analysis of SalMar and the aquaculture industry. We found that the largest opportunities for the industry lie in technological innovations, which have the potential to improve environmental conditions. The analysis of SalMar's internal resources revealed that the company possesses temporary competitive advantage with through the harvesting facility InnovaMar and offshore fish farming facilities, but also a marginal competitive disadvantage due to strong presence in regions with high levels of salmon lice.

The insight gained from the strategic analysis created a foundation that allowed us to perform a financial statement analysis of SalMar and the industry, followed by a forecast of future performance. A base, bull, and bear case were presented to reflect different future outcomes. After combining the outcomes and using fundamental valuation to discount the future cash flows, the first estimate of SalMar's value per share ended at NOK 422. Furthermore, the comparative valuation using multiples gave an estimate of NOK 230 per share.

By weighting the fundamental value estimate 85% and the comparative value estimate 15%, the conclusion falls on a final value estimate of NOK 393.6 per share. Thus, we issue a hold recommendation.

Preface

This master's thesis has been prepared as part of our master's degree in Economics and Business Administration, with a major in finance at the Norwegian School of Economics (NHH). We chose the topic of valuation and analysis of a listed company, as both authors have great interest in this subject.

The thesis is based on Einar Bakke’s master course *FIE436 Valuation* from autumn 2018.

Writing the thesis has been a long and demanding process, and we have acknowledged that a wide economic understanding is important in the event of performing a valuation. The knowledge we have acquired in various courses at NHH, both at the bachelor’s and master's degree programs, have thus been of great help. We are left with deep insight and understanding of SalMar ASA, the aquaculture industry, as well as the valuation process.

We especially wish to thank our supervisor Øystein Gjerde for guidance throughout the process.

Bendik M. Stangeland — Michael Vu

Bendik Midtun Stangeland — Michael Vu

Contents

1. Introduction

This section will start by elaborating on the selection of industry and company. Then, we will present the research objective, delimitations, and the structure of the thesis.

1.1 Motivation and selection of company

The motivation for choosing aquaculture is rooted in our interest for the industry. The industry has had tremendous growth since its start in 1970's and represents today a cornerstone in the Norwegian business sector. We saw the master's thesis as an opportunity to gain deep insight in what we consider to be an exciting industry with important challenges regarding environment, technology and cyclicality. Further, the choice of company fell on SalMar. The company is one of the world's leading producers of Atlantic salmon and has proven to be a highly contemporary and innovative player with interesting future outlooks.

1.2 Research objective and delimitations

The objective of this master's thesis is to estimate SalMar ASA's equity value per share on 26.04.2019, the date when the company's annual report of 2018 is being published. Information gathering will terminate on the date of valuation. We will take on the role as research analysts and arrive at a value estimate that reflect SalMar's underlying economic circumstances and future outlook. The thesis is based on extensive literature and theory, with the main focus lying on Einar Bakke's master course *FIE436 Valuation* from autumn 2018 at Norwegian School of Economics. However, the valuation is based on forecasting of an uncertain future, and hence will be influenced by assumptions and expectations. The estimate will then be compared with the market value of SalMar as of April 26, 2019 in order to assess whether the stock is considered to be under-, over-, or correctly priced. The thesis will then finish off with an investment recommendation from a finance related investor's point of view. The research objection is as follows:

"*What is SalMar's value of equity, and thereby value per share as of April 26, 2019?"*

1.3 Structure

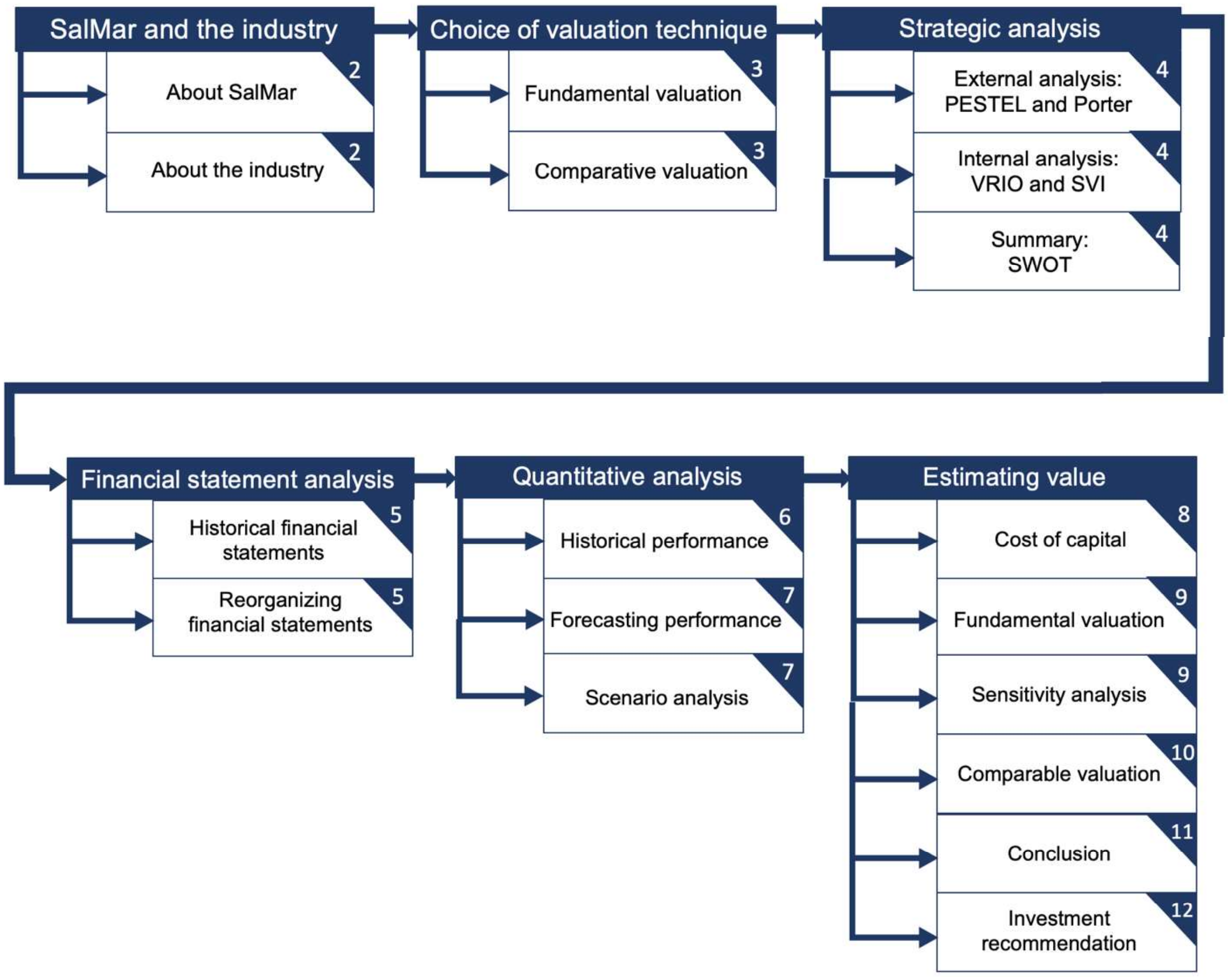


Figure 2: Framework for the thesis

In order to achieve an accurate value estimate it is essential to have a thorough understanding of the object of valuation and the industry in which it operates. Section 2 will therefore start by presenting SalMar, its comparable companies, and the aquaculture industry. Then, section 3 will debate which valuation techniques will be the most relevant to utilize, based on facts presented in the previous section. A strategic analysis is then performed in section 4, where we will elaborate on external and internal factors that affect the company and the industry.

The focus in section 2 lies on reorganizing and normalizing SalMar's financial statements. This will provide a common base for comparison against the company's peers in the quantitative analysis to come.

The quantitative analysis in section 6 will focus on SalMar's and the industry's historical performance. Section 7 will then combine findings from the strategic analysis with data from historical performance to perform a forecasting of SalMar's future performance. The future can take many paths, and thus section 7 will also include a scenario analysis to account for the possibility of different outcomes.

In section 8, we will calculate the company's cost of capital, before a fundamental valuation is performed in section 9. However, there are significant levels of uncertainty related to the value estimate, and we have therefore included a sensitivity analysis. Furthermore, a valuation using comparable companies multiples are supplemented in order to get a more robust estimate in section 10. The thesis then comes to a conclusion in section 11 and will end with an investment recommendation from a finance related investor's point of view in section 12.

2 Introduction of SalMar and the industry

In this section we will present SalMar, the aquaculture industry and comparable companies. Understanding the company and the industry in which it operates lays the foundation for the strategic analysis in later sections.

2.1 SalMar ASA

SalMar is a publicly listed fish farming company that was founded by Gustav Witzøe in 1991. The company is the thirds largest producer of Atlantic Salmon in Norway and is headquartered in Frøya, Sør Trøndelag. SalMar has a market capitalization of NOK 43.4 billion as of April 26, 2019 (Oslo Stock Exchange, 2019), and has approximately 1000 employees (SalMar, 2019a).

SalMar currently holds 100 fish farming licenses, of which 68 are utilized in Central Norway, and the remaining 32 in Northern Norway. The company have fish farming facilities in Møre og Romsdal, Nord- and Sør Trøndelag, Troms and Finnmark, which together harvested a total of 142,500 tons of gutted weight equivalents (GWE) in 2018 (SalMar, 2019a).

In 2001, SalMar expanded internationally by founding Norskott Havbruk AS through a 50/50 Joint-Venture with Lerøy Seafood Group. Norskott Havbruk AS is the sole owner of Scottish Sea Farms Ltd, which is the UK's second largest salmon producer. Furthermore, the acquisition of Icelandic Arnarlax HF was carried out in 2015, and SalMar currently holds 34% ownership in the company. To ensure presence in the Asian market, SalMar also operates with sales offices in Japan, South Korea and Vietnam (SalMar, 2019a).

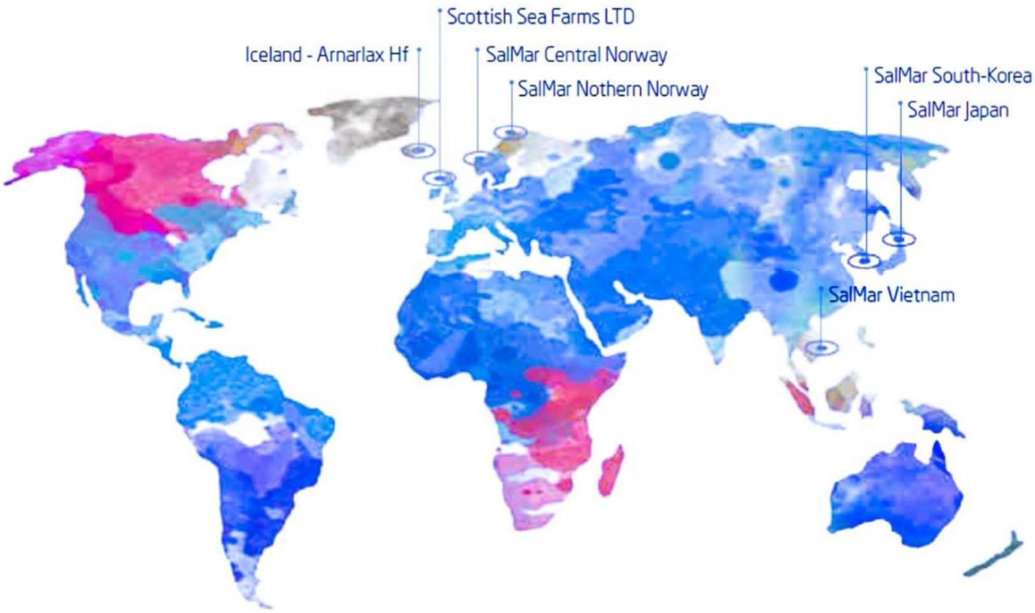


Figure 3: Map over SalMar's locations

2.1.1 Value Chain

SalMar is vertically integrated along the entire value chain, with the exception of fish feed production. The company's business operations consist of fry and smolt, farming, processing, and sales and distribution (SalMar, 2019a). In addition to this, SalMar invests in farming facilities, new licenses, and acquisition of other fish farming companies (SalMar, 2019a)

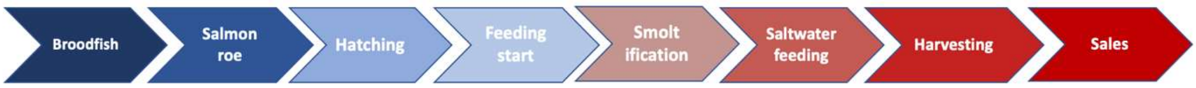


Figure 4: SalMar's value chain

2.1.2 Share price development

SalMar filed for an initial public offering (IPO) on the Oslo Stock Exchange on 8th of May 2007 under the ticker SALM. At the time, one share sold for NOK 39 and the company had a market value of NOK 4,017 million. Since then, the share price has had a compounded annual growth rate of 21.1%. As of April 26, 2019, the closing share price was NOK 382.7, which represents a market value of NOK 43.4 billion (Oslo Stock Exchange, 2019). SalMar did not pay dividend in 2012 and 2013, but in 2014 and 2015 dividends accounted for approximately 8.5% of the share price. In 2016, a total of NOK 125.9 million was paid in dividends, which makes NOK 10 per share. In 2016, 2017, and 2018 the company payed dividends of NOK 19, NOK 12, and NOK 23, respectively (SalMar, 2019c). Figure 5 illustrates the share price development of SalMar from 2007 to 2018.

Figure 5:SalMar share price development 2007-2018 (Oslo Stock Exchange)
Photo: SalMar ASA

2.1.3 Ownership structure

SalMar has one main shareholder, Kverva AS, which holds 53.4% of the company's shares. Kverva holds the majority of shares, and thus has great influence in the management of the company. The founder of SalMar, Gustav Witzøe, and his son Gustav Magnar Witzøe controls Kverva AS (SalMar, 2019a). Gustav Witzøe is also a member of the group management in SalMar, positioned as a director of strategic projects.

The second largest shareholder is Folketrygdfondet (Norwegian National Insurance Fund) who owns 7%. SalMar's 20 largest shareholders own a total of 74.7% of the shares, while the remaining ownership stakes are dispersed among smaller shareholders. The remaining ownership positions are spread over other shareholders who own smaller items. SalMar's ownership structure is illustrated in Figure 6 (SalMar, 2019a).

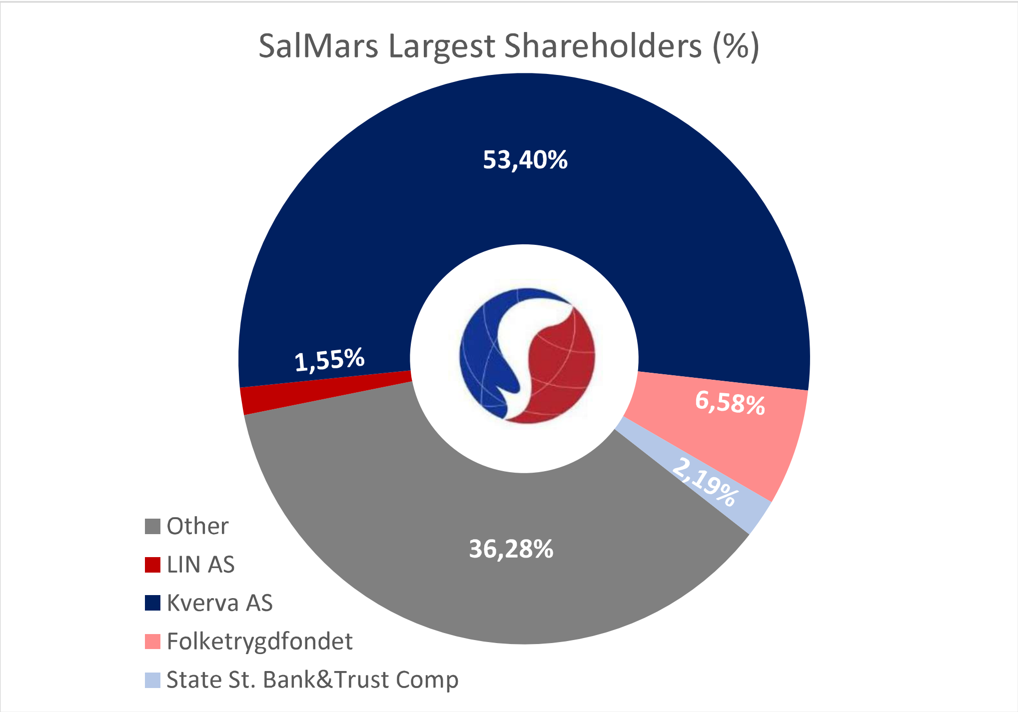


Figure 6: SalMar's largest shareholders

2.1.4 Strategic positioning

SalMar's strategic position is to be a cost leader in the business (SalMar, 2019e). They have stated two clearly defined strategies which underpin their strategic foundations. On the farming side, SalMar aims to produce salmon at the lowest cost by having the best operational efficiency. On the sales and processing side, the company will optimize the yield they derive from salmon in order to achieve the best possible price (SalMar, 2019e).

Figure 7: SalMar's strategic positioning

Innovation is one of the main foundations of SalMar's strategy (SalMar, 2019a). In the past, the company has focused heavily on innovation in the processing stage of the production. In 2011, the company invested NOK 550 million to build InnovaMar, the most efficient salmon harvesting and processing plant in the world. InnovaMar is SalMar's main harvesting and processing facility and is the heart of the company's fish farming activities in Central Norway. This ultra-modern building covers about 17,500 m^2 and has the capacity to harvest up to 150,000 tons of salmon every year. It stands out as the most cost-efficient harvest- and processing facility in the world. Moreover, through innovative use of technology the quality of the salmon is enhanced, costs are reduced, and the environment for the work staff is improved (SalMar, 2019a). The facility serves as an important resource to maintain SalMar's sustainable business profile.

In 2017, SalMar was the first player in the aquaculture industry to have been granted eight development licenses through their subsidiary, Ocean Farming AS. The development licenses gave the company the opportunity to build the world's first offshore facility, Ocean Farm 1. Ocean Farm 1 is a full-scale test facility with the purpose to research and develop offshore fish farming. If the project succeeds and the concept is implemented, the technology will have great implications for the entire industry. Offshore farming will be able to reduce some of the biological constraints regarding lack of feasible areas to farm salmon along the coastline.

To further develop offshore fish farming, SalMar has been granted an additional eight new licenses in 2018 to develop Smart Fish Farm, which will fall into the concept of the development license scheme (SalMar, 2019a). By holding a total 16 development licenses, the company will be able to move a major step towards realizing its offshore fish farming innovations.

2.2 The Aquaculture Industry

2.2.1 Fish farming in Norway

The process of farming salmon emerged in Norway in the early 1970s. It was clear during this decade that Norway had unique natural production factors that gave an advantage for the aquaculture industry; a long coastline with favorable climatic conditions, ideal sea temperature and stable ocean currents due to the Gulf Stream (SalMar, 2019a). Today, Norway stands out as the world's largest producer of Atlantic salmon and contributes to more than 50% of the global salmon production, followed by Chile, the UK and Canada (Pareto, 2017). Figure 8 illustrates the distribution of global production of salmon.

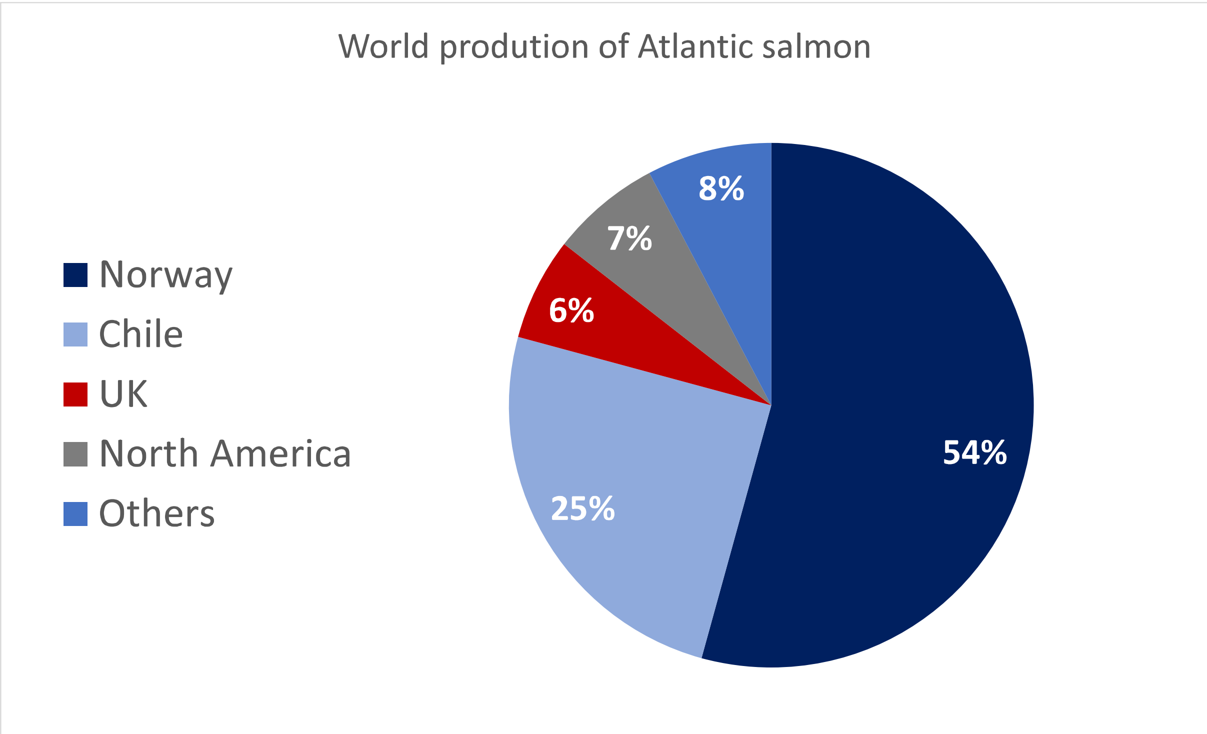


Figure 8: Global distribution of salmon production (Marine Harvest, 2018b)

One important consideration in the emergence of fish farming was the regulations of the industry. To ensure sustainable production, fish farming licenses were introduced in 1973 followed by a permanent fish farming law in 1981 (Jakobsen, Berge, & Aarset, 2003). In the beginning, licenses were provided only to small and local fish farms. However, increased international competition has further led to the need for a more profitable and cost-effective industry, and efficiency have thus been put before policy regulations. As result, the aquaculture industry has experienced rapid growth over the past 50 years. In the early 1970s, the entire Norwegian farming industry had a combined harvested volume of 300 tons. Ten years later, in 1980, the aggregate global production was just over 5,000 tons. Since then, the amount of farmed salmon has grown exponentially. In 2018, the total export volume of Atlantic salmon from Norway was approximately 1,208,000 tons (SalMar, 2019a). Figure 9 shows the growth in production volumes from 2008 to 2017. As can be seen, there has been a steady increase in production volumes during this period.

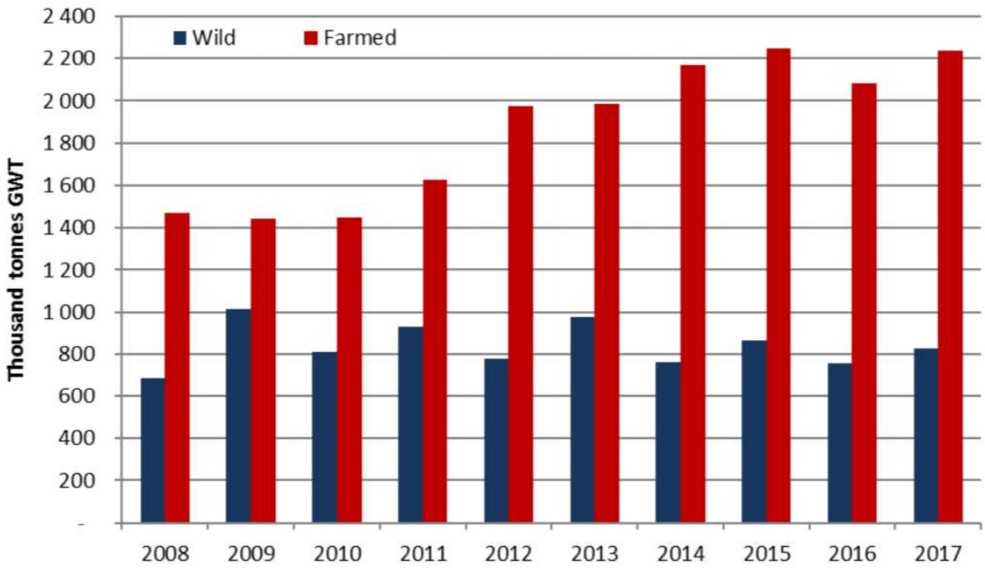


Figure 9: Global production growth (Marine Harvest, 2018b)

2.2.2 Production cycle

Fish farming is defined as raising fish commercially in tanks, ponds or other enclosures for the purpose of producing food. In order to farm salmon, multiple procedures in fresh- and saltwater are required. The whole fish farming process takes up to two to three years and involves everything from fertilizing eggs to distribution of ready-to-eat salmon. The salmon lifecycle starts with broodfish providing fertilized roe, which is then placed in an incubator for 60 days until it hatches into salmon fry. Four to six weeks after hatching, the fry can be moved from the incubator into freshwater tanks for feeding. During the first ten to sixteen months of the production cycle, the fish has grown to 100-160 grams in a freshwater environment. Next, the fish undergo a smoltification process which enables it to transition from fresh- to saltwater living. Then, the salmon is transferred to a fish farm for further feeding over a period of 14-24 months, until it weights four to six kilos and is ready to be harvested. The fish is then either sold in grocery stores, as whole gutted salmon for further processing, or distributed to markets around the world.

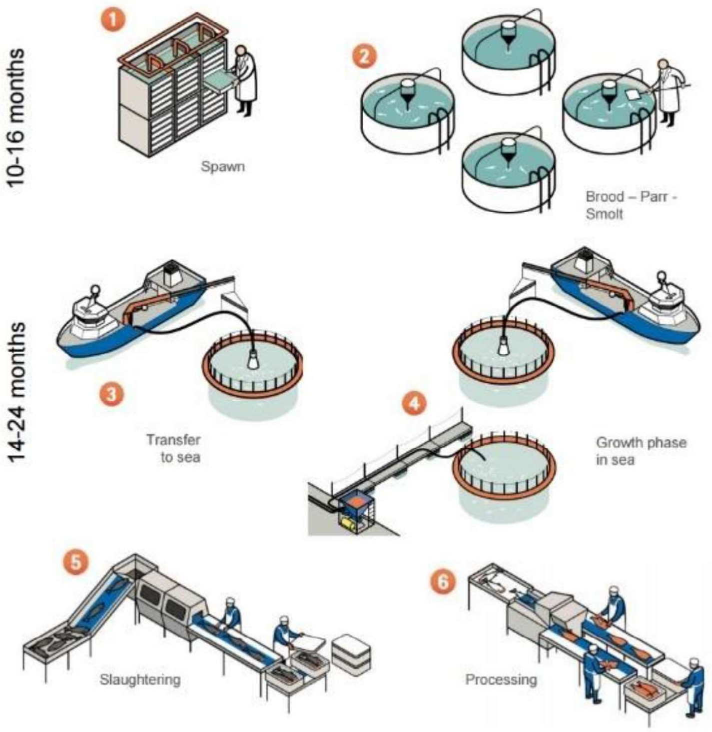


Figure 10: Salmon farming process (Marine Harvest, 2018b)

2.2.3 Salmon price and volatility

The salmon farming industry is characterized by high volatility and cyclicality. Salmon price is the preliminary economic driver in the aquaculture industry. The spot price of Atlantic salmon may be subject to sharp changes on a weekly and monthly basis. Price fluctuations are a result of an inelastic supply side, which comes from long production cycles, combined with the fact that salmon mainly is sold as fresh produce. This makes aquaculture a cyclic industry. The long production time leads to a considerable time lag between the decision to increase production and when the salmon is being sold on the market. For example, fish farmers are likely to increase volume output when salmon prices are high. However, this can lead to excessive supply and thus declining prices when the salmon is being sold two to three years later. Low market prices will then cause farmers to reduce production, which in turn leads to low supply followed by a new period with high prices.

The price of one kilogram of Atlantic salmon the last 10 years has fluctuated between NOK 20.64 and NOK 75.25 (FishPool, 2019a). Figure 11 illustrates the volatility, but also the upward facing trend of salmon prices.

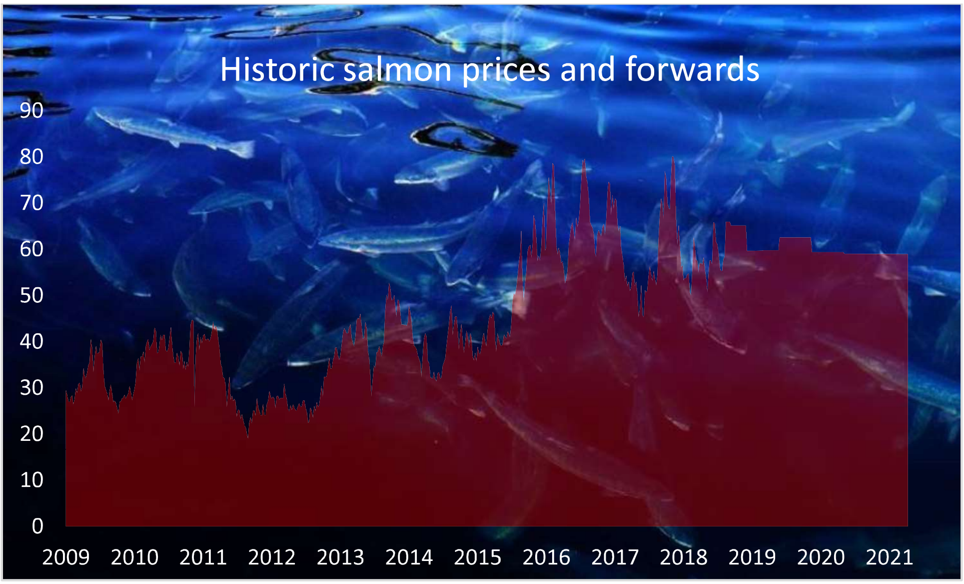


Figure 11: Salmon prices 2009-2021 (Fish Pool, 2019a)

The rise in salmon prices serves as an indicator that the increase in demand has not been met by a corresponding increase in supply. Environmental, regulatory, geographical, and biological factors make it challenging to maintain sufficient production growth. As a result of this, most of the increase in revenue is caused by the rise in salmon prices. Figure 12 shows the relationship between growth in value of salmon sold and growth in production volmes. From 2004 to 2017 the value of salmon sold increased by 440%, while the underlying volume growth during the same period was only 91%. The gap between the growth in volume sold of salmon and volume growth thus illustrates the increase in demand for salmon.

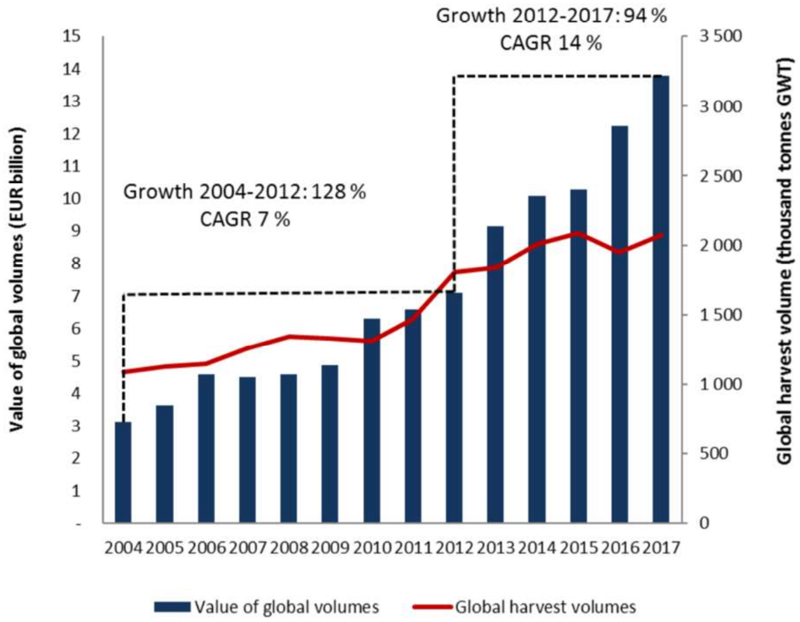


Figure 12: Growth in value of salmon sold vs underlying volume growth (Marine Harvest, 2018b)

2.2.4 The Market

Figure 13 below illustrates the global flow of farmed Atlantic salmon. At the close of 2018, the standing biomass of Norwegian salmon was at 782,900 tons round weight, an increase of 2% from 2017 (SalMar, 2019a). Norway exports roughly 95% of its harvested volume. Total exported salmon from Norway was around 1 208 000 tons in 2018, up 5% from the previous year. Norway exports 75% of its harvested volume to the EU, which received a total 906,000 tons of Atlantic salmon. The central Asian markets including Vietnam, China, and Hong Kong showed an overall decrease of 17% (SalMar, 2019a).

Figure 13: Global flow of farmed Atlantic salmon (Marine Harvest, 2018b)

After an increase in the global supply of Atlantic salmon by 4% in 2015 and a reduction of 7% in 2016, supply has increased both in 2017 and 2018. Thus, around 2.4 million tons of Atlantic salmon were slaughtered (SalMar, 2019a). Norway increased its total supply by 4%, or about 45,000 tons from 2017 to 2018. Chile increased its volume by 20% the same year, corresponding to 115,000 tons. In North America, production was increased by 2%, or around 3000 tons during the period. The UK decreased its supply by 13%, corresponding to 23,000 tons, while the other markets decreased the supply by 5% (SalMar, 2019a).

2.2.5 Cost Structure

Figure 14 illustrates the distribution of production costs for the Norwegian aquaculture industry. Fish feed costs stands out as the most dominant expense item as it accounts for 47% of total production costs (Norwegian Directorate of Fisheries, 2018b). The fish feed consists of 70% vegetable ingredients such as soy, rapeseed oil, sunflower, canola, corn and wheat, while 30% comes from raw materials such as fish meal and fish oil (Laksefakta.no, 2018).

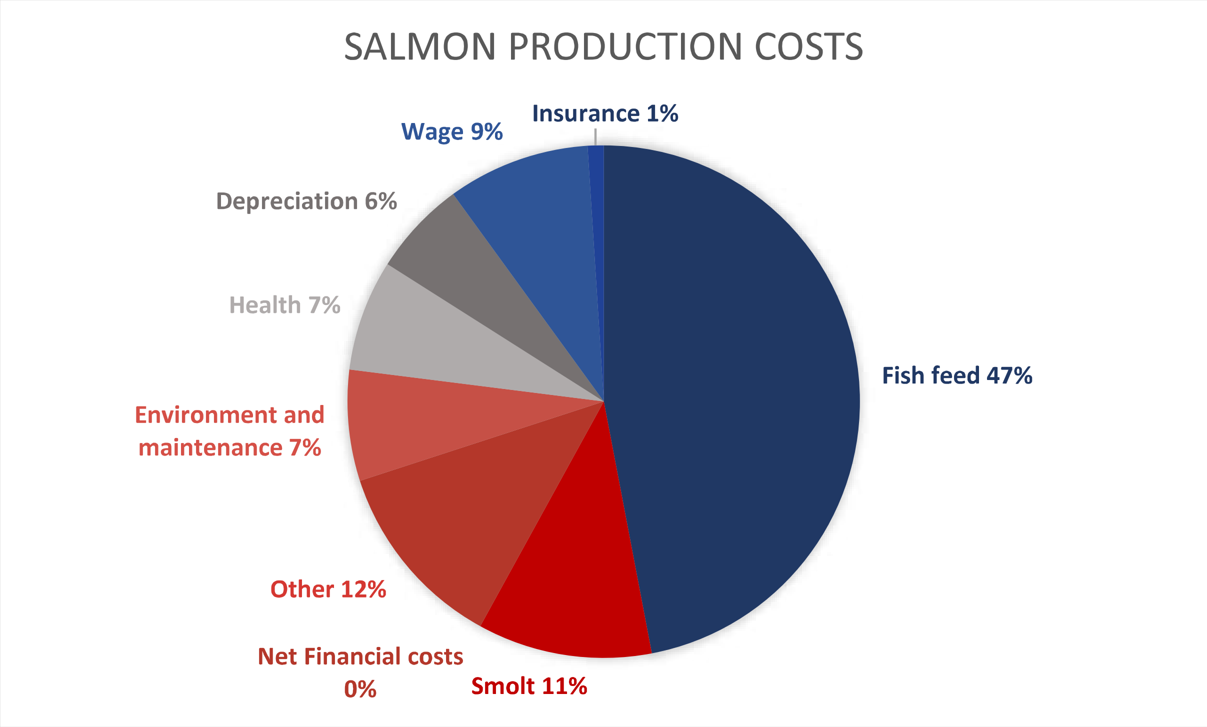


Figure 14: The industry's average distribution of salmonids production costs (Norwegian Directorate of Fisheries, 2018b).

The second largest expense item is smolt, which accounts for 11% of the total production costs in 2017. In comparison, this is less than a quarter that of fish feed. Thus, an increase in feed costs will have considerable impact on operating profitability. Historically, production costs have been reduced as productivity has increased and new technology and techniques have improved. In recent years, costs have however trended upwards due to multiple factors including rising feed costs, biological costs and more strict regulatory compliance procedures (Marine Harvest, 2018b).

2.3 Comparable companies

In this section we will present similar companies that operate in the same market as SalMar. The purpose of this is that the peer group will be used as reference when we perform the strategic and financial analysis in later sections. By comparing SalMar's with its peers, we will be able to gain a wider perspective of the company's performance. We consider the comparable companies to be Marine Harvest ASA, Lerøy Seafood ASA and Grieg Seafood ASA. The reason behind the choice of the particular companies is that they operate in the same industry as the object of valuation, are of right size, are listed on Oslo Stock Exchange and thus also follow the International Financial Reporting Standard (IRFS). An equal accounting standard is decisive when comparing companies as it ensures that special accounting line items are handled uniformly. In addition to this, the peer group of choice represents SalMar's main competitors, which creates a good foundation for comparison.

2.3.1 Marine Harvest Group ASA / Mowi

Marine Harvest is the world's largest fish farming company and are headquartered in Bergen, Norway. The company was founded in 1965 but went in 2006 through a merger with Pan Fish, and Fjord Seafood. The company has production in Norway, Scotland, Canada, Chile and Ireland. Marine Harvest holds 207 fish farming licenses in Norway and controls the entire value chain from fish feed production to sales and distribution. John Fredriksen is the main shareholder, and the company is listed on the Oslo Stock Exchange and the New York Stock Exchange (NYSE). In 2017, Marine Harvest produced a total of 375,237 tons of salmon and had a market value of NOK 97.1 billion as of 26.04.2019 (Oslo Stock Exchange, 2019).

2.3.2 Lerøy Seafood Group ASA

Lerøy Seafood Group is the world's second largest producer of Atlantic salmon. The company is headquartered in Bergen but has aquaculture- farming facilities in several countries. Lerøy's main business area is salmon farming, of which they control the entire value chain from production to sales. In addition to this, the company also supply a wide range of other seafood products; trout, cod, saithe, shellfish etc. Lerøy Seafood has a total of 130 licenses in Norway and had a harvested volume of 162,039 tons in 2017 (Lerøy Seafood, 2019). The company is listed on Oslo Stock Exchange with a market capitalization of NOK 36.8 billion as of 26.04.2019 (Oslo Stock Exchange).

2.3.3 Grieg Seafood ASA

Grieg Seafood is a Norwegian fish farming company headquartered in Bergen. The company has production facilities in Norway, Canada and Shetland, which together have a total production capacity of 80,000 tons (Grieg Seafood, 2019). Grieg Seafood's business operations include farming of salmon and trout and holds 100 salmon farming licenses. In 2018 the company harvested a total of 74,623 tons (Grieg Seafood, 2019). Grieg Seafood got listed on Oslo Stock Exchange in 2007 and has a market value of NOK 11.0 billion as of 26.04.2019.

2.3.4 SalMar's deviation from the industry average

Marine Harvest, Lerøy Seafood and Grieg Seafood, together with SalMar represent the aquaculture industry. It is important to emphasize that SalMar is excluded from any figures regarding industry average in our analysis. This is because it is unfavorable to compare SalMar with a selection of companies that partly consist of SalMar itself, as the difference between the object of valuation and the industry will be inexpediently smoothed out.

Share price development

Figure 15 illustrates the share price development of SalMar, the comparable companies and Oslo Stock Exchange from 26.04.2016 to 26.04.2019. Grieg and SalMar stand out as the companies with the highest growth in return of approximately 237% and 200%, respectively. Lerøy has a growth in return of 160%, followed by Marine Harvest with a share price increase of 145%. During this three-time perspective, all of the four of the listed fish farming companies had considerably higher growth than Oslo Stock Exchange Benchmark Index (OSEBX), which had a growth of approximately 20%. The significant growth in the market value of the farming companies in comparison to OSEBX emphasizes that the aquaculture industry has been more profitable than the benchmark index from an investor's perspective.

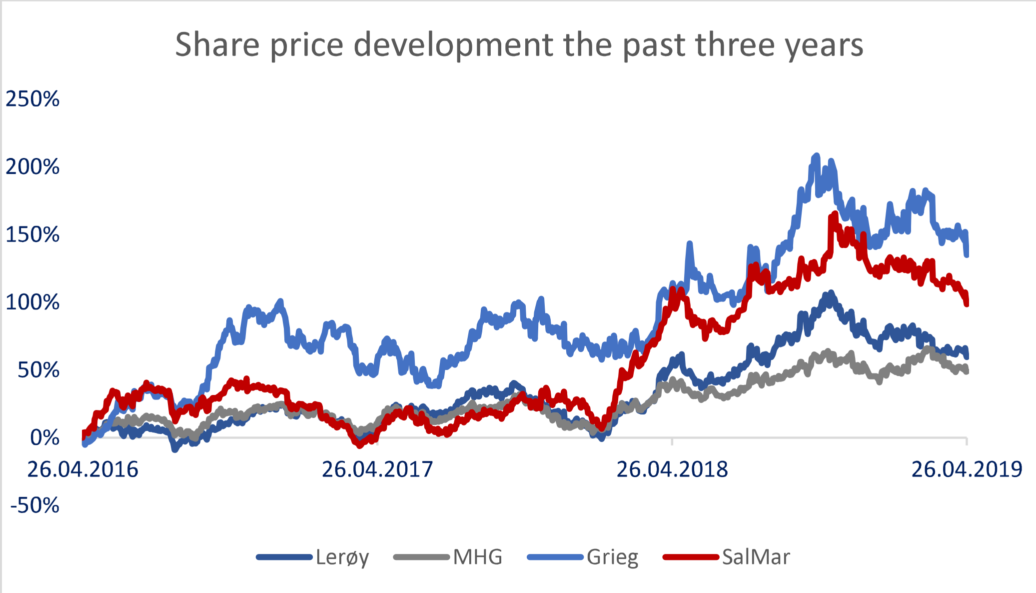


Figure 15: Share price development the past three years (Oslo Stock Exchange, 2019)

Harvested volume

Figure 16 illustrates the distribution of harvested volumes throughout the different regions; Northern Norway, Central Norway, and Western Norway, as well as the industry's average. Geographical location is an important factor in the aquaculture industry, as different area compositions differ in terms of water temperature, weather conditions and amount of salmon lice (SalMar, 2019a). There are significant differences between SalMar and the comparable companies. The industry produces in average 22% in Central Norway, 37% in Northern Norway and 41% in Western Norway. SalMar stands out by not having harvesting- and processing facilities in Western Norway, and at the same time having their largest harvested volume in Central Norway of 70%, while the rest is produced in Northern Norway.

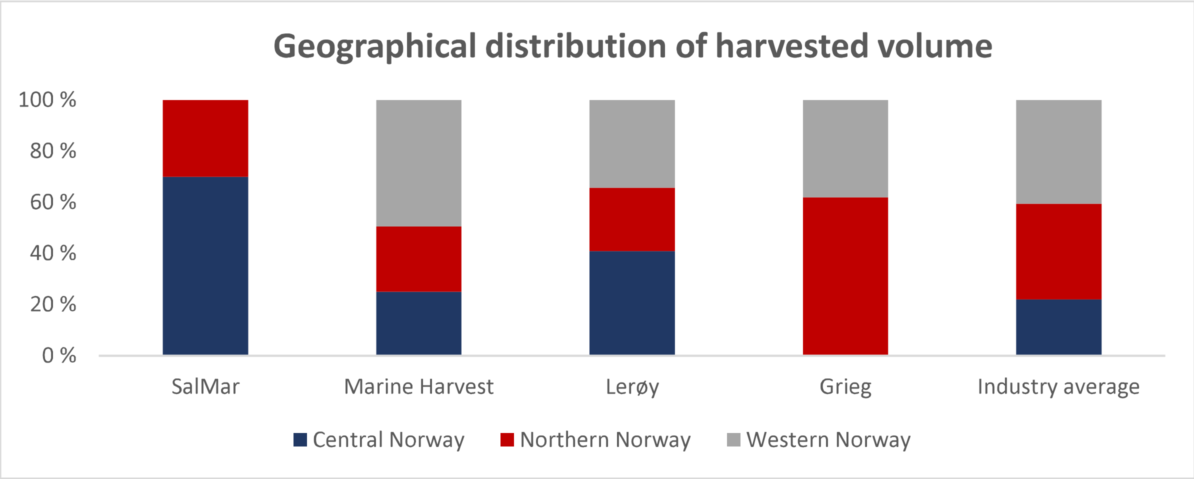


Figure 16: Geographical distribution of harvested volume

3 Valuation techniques

In this section, we will present the various valuation techniques available in the process of valuing SalMar. We will then choose the valuation technique for the thesis.

3.1 Presentation of valuation techniques

There are mainly three valuation methods; fundamental, comparative and option-based (Damodaran, 2012). The methods are often overlapping and serve to greater extent as supplements rather than direct alternatives to each other. The choice of method will depend on the object of valuation, its life cycle situation, the industry, and whether it is assumed that the company will continue operation or be liquidated (Knivsflå, 2019a).

3.1.1 Fundamental valuation

Fundamental valuation is based on the underlying fundamental conditions of the company. The method defines the value of a company or an asset as the present value of the expected future cash flows. The model can also be referred to as an earnings-based approach as one looks at the earnings of the object.

$$Value = \sum_{t=1}^{N} \frac{Free\ cash\ flow_t}{(1+WACC)^t}$$

Fundamental value stands out as the most prevalent in academic finance out of the three techniques. The method starts with a strategic analysis of internal and external conditions, before preparing a financial analysis. To perform a strategic analysis prior to the financial analysis is emphasized by Penman (2013) as essential, since the equity value cannot be determined without taking into account information and factors that may affect the company's ability to deliver results. Furthermore, forecasting of future performance and cost of capital are calculated before future cash flows are discounted to find the value of the company.

There are two main methods within fundamental valuation; the equity valuation method and the enterprise discounted cash flow method. The equity valuation method values the company's equity directly by discounting the free cash flow to equity with the equity cost of capital (Koller et al., 2015). The most common model within equity valuation is the free cash flow model, which discounts the free cash flow. The cash flow is given by operating profit, adjusted for changes in net operating assets, net financial result and change in financial debt. Other models within the equity valuation are the dividend, super-profit and super-profit growth models, whereof all are equivalent and provide the same value estimate when done properly.

The enterprise discounted cash flow (DCF) model estimates the company's equity indirectly by taking into account the value of the assets and liabilities of a business. Under this approach, the value of a company is equal to the difference between the value of all its relevant assets and the value of all its relevant liabilities and minority interests (Koller et al., 2015). In order to determine the enterprise value, future cash flows are calculated and discounted to present value using the cost of capital:

$$Enterprise\ value = \sum_{t=1}^{N} \frac{Free\ cash\ flow_t}{(1 + WACC_1)^t} + \frac{Terminal\ value}{(1 + WACC_2)^N}$$

Where:

$$Terminal\ value = \frac{Free\ cash\ flow\ year\ (N+1)}{WACC_2 - growth\ rate}$$

The first term represents the present value of the explicit forecast period, while the second term represents the present value of the implicit period, i.e. the terminal value.

Fundamental valuation is best applied on companies that find themselves in a mature stage of the life cycle and have stable earnings, so that future cash flows may be estimated with reasonable certainty. This method also analyzes the value drivers, as opposed to a comparative valuation where one assumes that the value drivers are identical in the comparable companies. On the other hand, performing a fundamental valuation is a time-consuming procedure and requires sufficient accounting information. The method can bring challenges when estimating future earnings and margins, and it can be difficult to separate the dependency between the various variables in the model. Furthermore, the value estimate will be very sensitive to changes in the cost of capital (WACC) and the growth rate (g).

3.1.2 Comparable companies analysis

A comparable companies valuation focuses on the pricing of similar companies in the market. The object of valuation is priced against the price of its comparative companies. The idea is that similar assets should sell for similar prices (Koller et al., 2015). A comparable companies analysis is simpler to conduct than a fundamental valuation, which is the reason why the method prevails as the most commonly used. Comparable analysis depends on the existence of similar companies in the market (Kaldestad & Møller, 2016). This can be partly difficult in practice, as identical businesses often do not exist in the market. As result, the person carrying out the analysis will have great influence on the value estimate by being able to determine which companies to include in the analysis. When conducting a comparative valuation, one is also dependent on having an efficient market. Under this assumption, one can detect error pricing on an individual basis by comparing the object of valuation's multiples with the market multiples (Damodaran, 2012). Comparable companies valuation can be divided into two models; the multiples approach and net asset value approach.

Multiples approach

In the multiples approach, the value estimate of the company's equity is derived by comparing the market value of peers using multiples and adjusting differences in fundamental relationships between the companies (Koller et al., 2015). In the case of a share of stock, there are various types of multiples that we will address in the following.

Price/Earnings

The price-earnings ratio is defined as the ratio of the market price per share to the earnings per share. Damodaran (2012) argues that it is the most widely used multiple, but at the same time also the most misused one. According to (Koller et al. 2015) the P/E multiple has to major flaws. First, for companies with an unlevered P/E which is greater than one over the cost of debt, the P/E ratio will rise with increased leverage. Therefore, companies such as SalMar with a relatively high all-equity P/E can increase its P/E by choosing debt financing over equity. Secondly, the P/E ratio is based on earnings, which include many nonoperating items that could be one-time events, thus the P/E multiple could be misleading. Due to momentums discussed above we find it reasonable to exclude the P/E from our multiple analysis.

Price/Book

The price/book (P/B) multiple measures the ratio between the stock price and the book value of the shares. This ratio compares a firm's market to book value by dividing price per share by book value per share. Market value per share is obtained by looking at the share price of the stock in the market and reflects what investors are willing to pay while book value per share is calculated by taking (total assets – total liabilities) and divide it by the number of outstanding shares. An asset's book value is equal to its carrying value on the balance sheet, and companies calculate it netting the asset against its accumulated depreciation.

The formula for the P/B ratio is:

$$P/B = \frac{Market\ price\ per\ share}{Book\ value\ per\ share}$$

The P/B multiple is easy to calculate, while at the same time giving a good indication of the market's expectation for the future cash flows, relatively to its book value of equity (Kaldestad & Møller, 2016). The P/B is also a good indicator whether a company is under- or overvalued compared to other companies in the same industry that apply same accounting standards (Damodaran, 2012). In the aquaculture industry where, one is exposed to volatile salmon prices and varying results, a balance sheet oriented multiple could be beneficial to use (Damodaran, 2012).

The P/B ratio and the return of equity usually correlates well (Investopedia, 2019d). When the price to book ratio are higher than 1.0, investors are willing to pay more than their net assets are worth. This could indicate that the company has healthy future profit projections and are able to deliver a return of equity above the cost of equity. Traditionally, any value below 1.0, which implies that the book value is higher than market value, has been considered a good P/B ratio for value investors. These types of investors would argue that the company is undervalued and that the share price should not fall to a price level that reflects that the company is destroying value.

As mentioned, the multiple is dependent on peer groups using the same accounting standards. Therefore, the biggest limitation is that the multiple is not applicable if the companies apply different accounting standards (Damodaran, 2012). This is though considered an insignificant concern since all the peer companies are listed on Oslo Stock Exchange and thereby report their financial statements according to the IFRS.

EV/EBITDA

The enterprise valuation consists of the market value of the equity as well as the debt. EV/EBITDA gives us a company's result before interest, taxes, depreciation and amortization relative to the EV. Damodaran (2012) states that this is favorable, as the multiple is unaffected by differences in the capital structure and depreciation plan for the companies. Furthermore, the multiple is unaffected by taxes, so it will not be affected by difference in the tax regimes the companies operate in. This is beneficial as the companies operate in different tax regimes, Marine Harvest for instance, have some of their operations in Chile while Grieg have some of their operations in Canada. Furthermore, the method is favorable due to different practices when it comes to depreciation and amortization methods. The different companies can despite the same accounting standard (IFRS) apply different depreciation methods according to (IAS 16).

EV/Sales

The EV/revenues multiple is calculated by taking the ratio between the enterprise value and revenues. A company that is trading at a higher multiple than a competitor is considered as more expensive, since a high multiple indicates low revenues relative to its value (Damodaran, 2012). EV/revenues will not be affected by different accounting standards and depreciation methods, which makes them less exposed to biases (Damodaran, 2012).

The EV/Revenues should only be a supplement to other multiples, as it implicitly assumes that the comparable companies have the same margins (Kaldestad & Møller, 2016). Another benefit with the EV/Revenues is that the revenues are seldomly as volatile as the results, which makes it more likely to get an analysis consisting of historical stable numbers.

Companies operating in the same industry with similar performance are expected to trade at the same multiple. The multiples approach is often used in valuation as it is simple to use and requires less time than DCF-models. A weakness, however, is that the model by focuses on market prices, and thus indirectly assumes that the market is efficient and properly priced, which is often not the case in practice. Another weakness is that the freedom to choose peers affects the valuation value, causing the reliability of the model to be impaired (Damodaran, 2012).

Net asset value approach

The net asset value approach estimates on the value of what the company's assets can be sold for in the market, based on comparative values of assets (Kaldestad & Møller, 2016). The equity value of an entity thus becomes the net asset value of its assets, less the value of the debt of comparatives (Koller et al., 2015). A company's net asset value is equal to its liquidation value. The model is specifically designed for companies operating in industries where it is relatively easy to estimate the value of comparative assets, such as shipping and property. In the aquaculture industry, licenses make an important asset and can be traded on a secondary market. The net asset value model can thus be relevant to the aquaculture industry by allowing valuation of licenses to be possible, creating a sufficient basis for comparison for assets. However, fish farming companies also have a significant amount of assets in intangible assets like knowledge and technology, which are difficult to estimate a comparative value for. In addition, International Financial Reporting Standards (IFRS) imposes strict accounting requirements, making it difficult for such intangible assets to be recognized and measured. This makes the net asset value model less suitable for fish farming companies.

3.1.3 Option-based valuation

An option is the right, but not an obligation to exercise an asset at a preset date (Damodaran, 2012). The purpose of an option-based valuation is to determine the value of the flexibility to postpone, expand or dispose of a project (Kaldestad & Møller, 2016). An option-based valuation will serve as a supplement to a fundamental valuation. In fundamental valuation, the equity will often be undervalued, as the method does not take into account the value of flexibility. Such flexibility can for instance be the right, but not the obligation, to implement a project. Option-based valuation is therefore an extended fundamental valuation, which takes into account this flexibility. The process of option-based valuation consists of two parts. First, a static value of the company is estimated using fundamental valuation. Then, a value estimation of the option is carried out, either by using the Black & Scholes model for option pricing or binomial models (Damodaran, 2012). Thus, the enterprise value is the sum of the present value of future cash flows in a static scenario and the present value of flexibility:

$$Enterprise\ value = Static\ value + Present\ value\ of\ flexibility$$

Option-based valuation is well suited for industries characterized by highly changing dynamics and uncertainty. On the other hand, the model brings great uncertainty when calculating the input factors, for instance the volatility and the life expectancy of the real option. Since an option-based valuation requires a fundamental valuation of the static value, there is an increased risk of double counting by including the present value of the flexibility term in the discounted cash flow or in the growth factor (Kaldestad and Møller, 2016). Thus, the method is not suitable for companies at mature growth stages, such as SalMar. On the other hand, it will be useful for companies that possess licenses, patents, permissions etc. that can be developed or carried out. Such companies often find themselves in the initial phase or growth phase, with a wide range of uncertainties that option-based valuation can be applied on.

3.2 Choice of valuation techniques

The choice of technique depends on factors such as industry characteristics, comparative companies, time horizon, access to information, what the purpose of the analysis is, the company's life cycle situation, and whether the object of valuation is likely to continue operation or be liquidated (Damodaran, 2012). The various valuation techniques have their strengths and weaknesses. They do not exclude one another, and it is therefore also beneficial to combine several methods in the event of a valuation.

Fundamental valuation is essential in any valuation of a company, and often lays the foundation for other methods. The method is time-consuming, and the results will be highly sensitive to changes in the input values. Nevertheless, the discounted cash flow derived from the fundamental analysis brings valuable insight to other supplementary methods like option-based valuation comparable companies valuation. In option-based valuation, the static value is calculated using fundamental valuation before any flexibility is added. Moreover, discounted cash flows are estimated indirectly when using comparable companies valuation. Thus, a fundamental valuation should have its place in any valuation. However, all valuation methods are highly sensitive to changes in input, and it is therefore beneficial combine several methods and assign each one a reasonable weighting in order to obtain a balanced and accurate value estimate.

One of the challenges of fundamental valuation is the extensive information needed to carry out an analysis. As the method focuses on expected future cash flows, it is dependent on having access to information from previous financial years. If the company is in its earliest life cycle stages, access to historical accounting information will be limited, causing a fundamental analysis to be inadequate. For immature companies, a comparative analysis will also be difficult to implement as there are few or no similar companies operating in the same market. For more mature companies, however, information access will be better, making a fundamental analysis more relevant.

After decades of exponential volume growth, the aquaculture industry has now stabilized due to regulatory and environmental challenges. Growth prospects on the supply side are also expected to be stable due to regulations. The aquaculture industry faces a period of great potential for growth if they manage to solve the environmental challenges which will lead to more flexible regulations. SalMar was founded in 1991 and has been publicly listed since 2007, meaning that there is sufficient access to accounting information for company available. Reliable historical data and stable growth prospects facilitate the opportunity to conduct a thorough fundamental valuation.

As elaborated in section 2.2.3, the aquaculture is a cyclical industry. Relying solely on fundamental valuation on a company in a cyclical industry can be challenging as it creates uncertainty about the forecasting of future cash flows. Thus, an option-based valuation may be relevant, as it is suitable for cyclical industries. However, the aquaculture industry is in a mature stage and SalMar's future cash flows are largely influenced by external factors like the license system. In addition, it will be challenging to obtain enough information regarding input factors to conduct an accurate and relevant analysis. Option-based valuation is therefore considered a less relevant valuation method for SalMar and will not be utilized.

The aquaculture industry consists of few and large players with similar products and operation processes. There is a sufficient number of peers that can be used for comparable companies valuation. The net asset value model is based on estimating the value the company’s assets and is best suited for companies in liquidation phase. SalMar’s annual report of 2018 was prepared under the assumption of continued operations, and therefore the multiples approach is considered as the most relevant. Comparable companies multiples provide a good picture of the company's current situation but are not necessarily accurate estimates of future earnings. Thus, we will mainly focus on a fundamental analysis using the enterprise DCF method when valuing SalMar, combined with comparable multiple analyzes as supplement in order to get a robust value estimate.

4 Strategic analysis

The purpose of the strategic analysis is to identify factors that SalMar can exploit. In order for the company to grow, improve and gain a competitive advantage against the industry average it is essential to understand the underlying dynamics that affect the business on macro- and microeconomic level (Lien, Knudsen, & Baardsen, 2016). Furthermore, the strategic analysis plays a central role in financial forecasting, in the sense that the findings will contribute to determine the overall valuation of SalMar and the aquaculture industry. The following section seeks to address the external and internal factors that is relevant in assessing the company's future outlook. Moreover, an evaluation of potential opportunities and threats that the industry faces will be included.

We will use five frameworks in the strategic analysis. The PESTEL-framework is used to decompose the macroeconomic factors that influence the company. Porter's Five Forces will identify the variables that affect the aquaculture industry. The VRIO-framework will address the internal resources that SalMar possesses, while the SVI-framework will identify the company's missing resources that can potentially cause competitive disadvantage. Lastly, a SWOT analysis will be used to summarize strengths, weaknesses, opportunities and threats for SalMar and the industry.

4.1 PESTEL-analysis

PESTEL is a framework for systematizing external macroeconomic factors that affect the competitive conditions in a market (Lien, Knudsen, & Baardsen, 2016). PESTEL is an acronym for political (P), economic (E), sociocultural (S), technology (T), environmental (E), and legal (L) factors. The framework aims to uncover opportunities and threats that an industry is facing. The focus will be to address the macroeconomic conditions that have the highest impact on the industry and the company's future value creation.

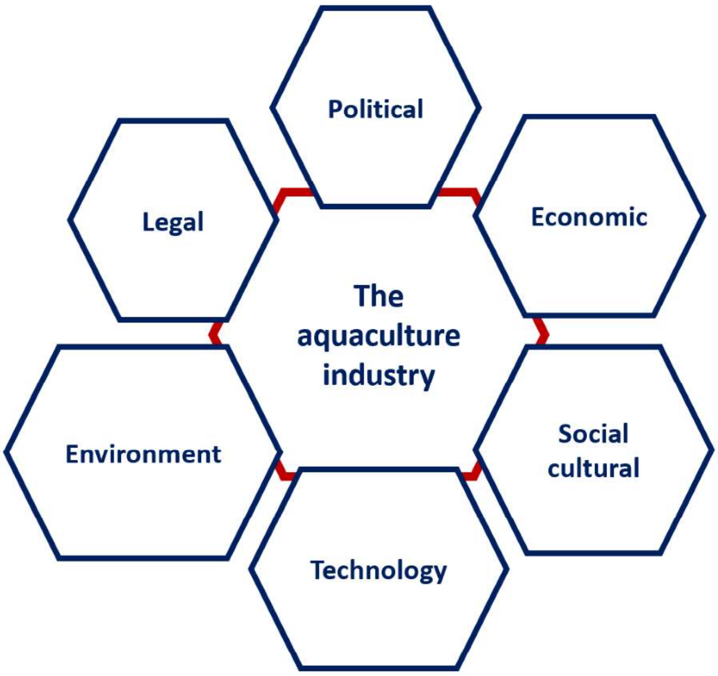


Figure 17: PESTEL-framework

4.1.1 Political factors

Norwegian fish farming companies export around 95% of the harvested volume. The high exposure to abroad markets causes the industry to be affected by political regulations both in Norway and overseas.

Norway

The aquaculture industry in Norway is heavily regulated. Authorities issue licenses, which in turn limit the production of the fish farming companies. The regulated distribution of licenses prevents conflicts between fishermen and farmers, as well as consideration of the environment.

There has been a slow increase in number of licenses, from 848 in 2002 to 1,015 in 2017 (Norwegian Directorate of Fisheries, 2015). However, in 2015, the Norwegian authorities initiated the distribution of development licenses, which provides the license holder with the right to operate at approved facilities, given that the requirements for development licenses are met. The intention is to stimulate technological innovation that can secure Norwegian market shares in the future (Norwegian Directorate of Fisheries, 2015). The initiative of development licenses has had promising effects, considering that major companies have come up with several innovations, like SalMar's Ocean Farm 1, and the Marine Harvest "Egg".

International

The European Union (EU) serves as the main export market for Norwegian salmon. Approximately 68% of seafood consumed in the EU is imported, and the demand for seafood is increasing (Regjeringen, 2018a). Norway is not a member of the EU, but rather a part of the European Economic Area (EEA) and the European Free Trade Association (EFTA). The EU Commission has in recent years launched a set of guidelines, strategies and measures to stimulate more sustainable development of the EUs aquaculture industry (Regjeringen, 2018). The EEA protocol 9 allows free flow of trade goods between European national borders (Regjeringen, 2018a). However, protocol 9 does not provide tariff reduction on salmon and other processed products. The EU maintains import duties of 2% and 13% on fresh and smoked salmon, respectively.

Norwegian fish farming companies face several market restrictions and barriers to trade related to overseas export. Until 2013 Russia stood out as one of the most important markets for Norwegian farmed salmon. However, in 2014, Norway implemented trade sanctions against Russia after the invasion of Crimea in Ukraine. As a response to this, Russia introduced a ban on the importation of certain Norwegian goods, including farmed salmon (Regjeringen, 2018b).

Political friction between Norway and China occurred when the Chinese human rights defender Liu Xiaobo received the Nobel Peace prize in 2010. This resulted in barriers to trade between the two countries. Consequently, there was a sharp decrease in Norwegian salmon export to China (e24.no, 2012). The introduction of trade barriers reduced the market share of Norwegian salmon from 90% in China to approximately 96 kilos, which is equivalent to 15 large salmons in 2015 (e24.no, 2018). In December 2016 however, after six years without any political contract, the relationship between the two countries began to normalize as a result of comprehensive diplomatic efforts. The Director of Norwegian Seafood Council, Asbjørn

Warvik Rørtveit, expects that Norway will be able to recapture a market share of 65% of China's salmon import in the long run (Dagens Næringsliv, 2017).

The political conditions in Norway can be characterized as somewhat stable and predictable. However, government regulations prevent the industry from increasing production rapidly by putting sustainable development ahead of short-term profitability. Consequently, growth is compromised. Furthermore, the industry's competitiveness is influenced by factors outside Norwegian borders. There may be adjustments in conditions such as customs and duty-free quotas, or new health and veterinary requirements. In addition to this, comprehensive changes in international relationships and political processes may have great impact on the Norwegian aquaculture industry.

4.1.2 Economic factors

Economic factors are elements in the economy that directly affects a company and have resonating long term effects. These factors have significant impact on the performance of the aquaculture industry and how profitable they operate. Factors include economic growth, interest rates, inflation, and exchange rates.

Salmon price

Figure 11 illustrates the salmon prices the last ten years, as well as forward prices until 2021. As can be seen from the graph, the price of salmon has risen sharply in the recent years. The price of salmon is determined by the supply and demand, as well as exchange rates in the market. Historically, price developments have been particularly cyclical due to the long production process, while demand has grown steadily between 6-8% in the period 2000-2015 (Marine Harvest, 2018b). For 2016, Fish Pool's spot price has averaged around 30% higher than in 2015. The average cost per kilogram of fish produced, including slaughtering, was NOK 34.29 in 2016, according to the Norwegian Directorate of Fisheries (2017). This represents an increase of 13% from the previous year. The reason for this strong price development was increased demand for salmon internationally, while the industry experienced a decline in production.

The upward facing trend continued into January 2017, when salmon prices peaked at around NOK 80 per kilograms, before stabilizing with an average of NOK 60.76 in 2018. The historically high spot prices, together with low forward prices, indicate that prices will decrease in the long term, which is negative for the industry.

In addition to supply and demand, foreign exchange rates are an important driver for fluctuations in the salmon price. Any weakening of the NOK against the respective trading currencies may lead to an increase in the price of salmon measured in NOK, and vice versa.

Exchange rate

Fluctuations in exchange rates between NOK and foreign currencies like EUR, GDP, USD, and JPY represent a significant risk for the aquaculture industry, as the majority of harvested volumes are exported overseas. After the downfall in oil prices summer 2014, the Norwegian Krone was depreciated against the currencies of interest.

The EU holds the largest share of Norwegian salmon. On 24th of December 2018, the NOK reached historically weak levels against the EUR. For the first time since the financial crisis in 2008, one Euro cost more than ten Norwegian Krone. As of April 2019, the exchange rate between EUR and NOK currently stays at a high level compared to past observations.

The exchange rate largely determines the cost of Norwegian salmon for foreign exporters. A weakening of NOK against the relevant currencies has made Norwegian salmon relatively inexpensive abroad. This increases demand for Norwegian salmon, which again results in higher profitability for Norwegian farmers. On the other hand, the depreciation of the Norwegian krone has led to increased feed costs for the industry, since commodity prices are set internationally in EUR and USD (Lerøy, 2018). Fish feed stands out as the largest salmon production cost, and accounts for around 47%. An increase in fish feed thus represent a threat to the industry. Nevertheless, the positive effects of the depreciation of NOK are considered to overcome the negative effects of increased costs.

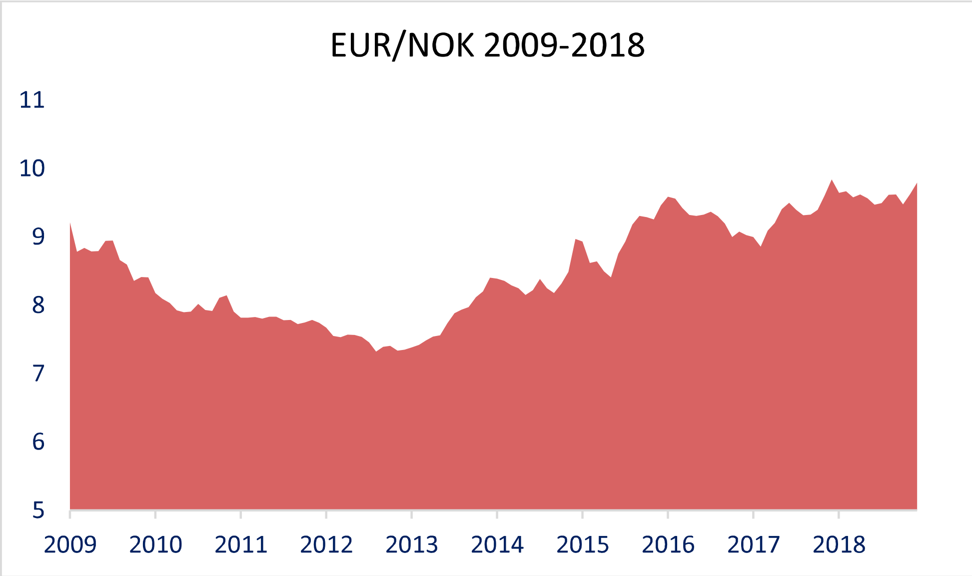


Figure 18: EUR/NOK exchange rates 2009-2018

Interest rate

Aquaculture is a capital-intensive industry, which requires the players to carry out major investments loans. Thus, interest rates and payments have great impact on the profitability of companies and the industry. The central bank of Norway sets the key policy rate, which is the interest rate on other banks' deposits up to a given quanta (The central bank of Norway, 2019). The interest rate in Norway averaged 4.09% from 1991 until 2019, reaching an all-time high of 11% in September of 1992 and a record low of 0.50% in March of 2016.

As of 26.04.2019, the key policy rate is low and steady at 1.0%, in line with market expectations. According to policymakers, the outlook and balancing of risk indicates that the interest rate will increase gradually. The future prospects of low key policy rate around 1% will benefit the aquaculture industry, as low interest rates facilitates new investments opportunities.

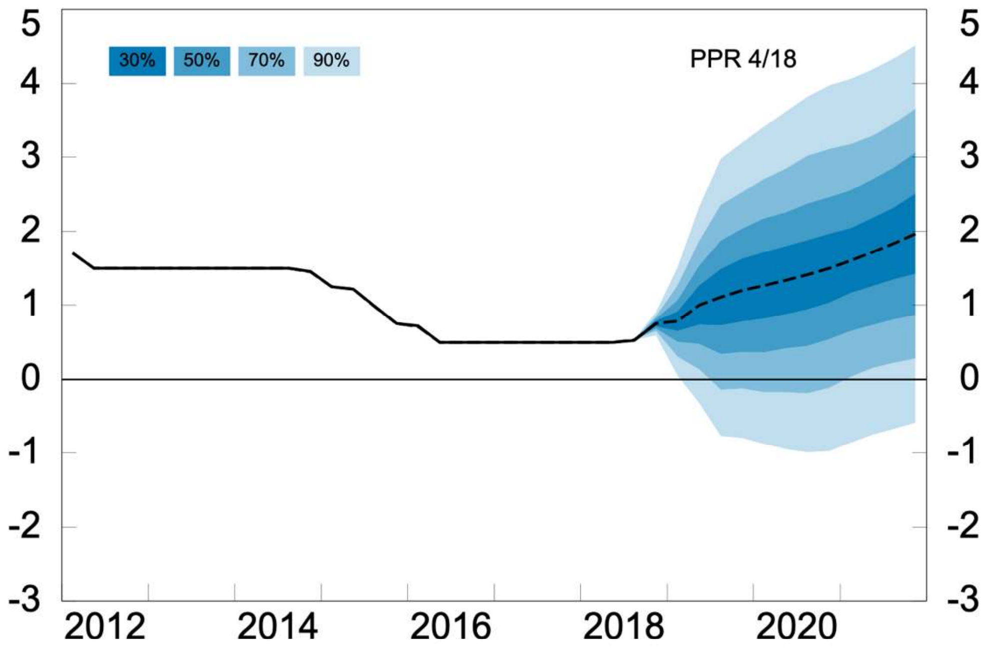


Figure 19: Interest rates 2012-2020E

4.1.3 Sociocultural factors

Sociocultural factors involve the shared beliefs and attitudes of a population. Understanding the demographic changes that are likely to unfold, as well as challenges and opportunities associated, is important in order to gain insight of the industry and the object of valuation. Population growth, increased prosperity and health consciousness will be the prevailing factors that have impact on the fish farming companies.

Population growth

Population growth is a key driver for sustained increase in demand for salmon. The world's population is estimated to increase by 60% in the period from 1990 to 2030, and in 2050 the UN expects the population to reach 9.7 billion (UN, 2018). This will set pressure on the food industry, as increased population leads to more mouths to fed. By 2030, it is estimated that the world must produce 70% more food (SalMar, 2019a), and it has to be done with lower resource consumption and with the least possible environmental footprint. The oceans cover over two-thirds of the Earth's surface, but only 2% of the food we eat comes from the ocean, measured in energy (SalMar, 2019a). Producing animal protein through fish farming requires less resources and is more climate-friendly than producing food from domesticated animals raised in an agricultural setting. Since traditional fishing is fully exploited, growth in aquaculture is crucial for obtaining food for future generations.

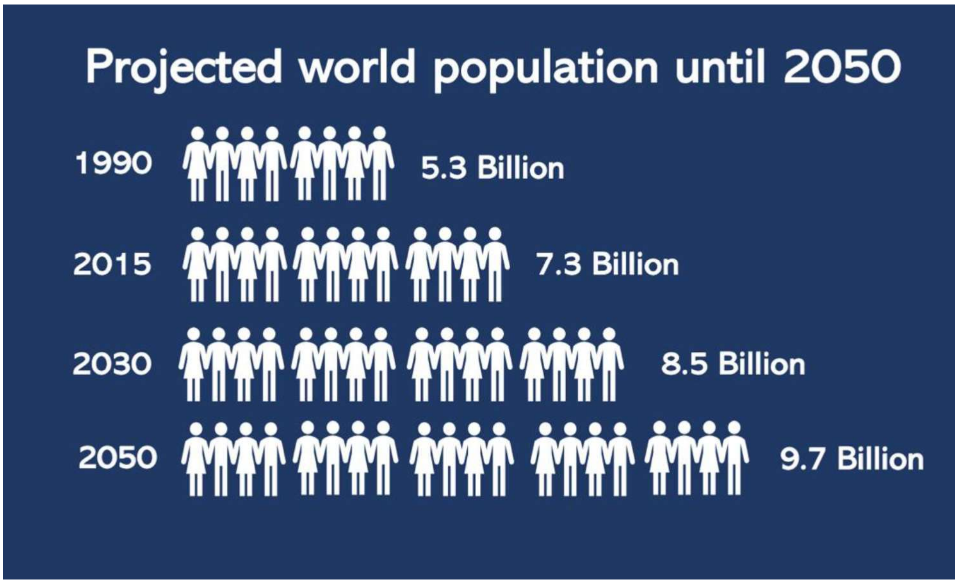


Figure 20: Projected world population growth (UN, 2018)

Increased wealth and prosperity

The established markets will be able to increase their demand due to population growth, but markets will also emerge from economies that are not yet exploited. Emerging economies, especially in Asia and Africa, are growing fastest measured in GDP (UN, 2018). In 2017, the Chinese economy grew at a faster pace than in 2016, which marked the first acceleration in growth since 2010. The short-run growth outlook for China is expected to remain solid at 6.3% in 2019, driven by domestic demand and an improvement in exports (UN,2018). Private consumption prevails as the country's main driver of growth due to healthy wage development, high household spending, rising disposable income and steady job creation (UN, 2018).

On the other hand, growth in GDP is not necessarily synonymous with inclusive growth. Africa's growth performance this century has been remarkably strong, with an annual growth rate of 4.7% between 2000 and 2015, up from 2.4% between 1980 and 2000 (UN, 2018). However, the Gini coefficient, a measure of income inequality, reduced only from 44.7% to

42.5% from 2000 to 2014 (UN, 2018). This creates concern whether or not the growth in Africa has been inclusive. Nevertheless, Africa's unprecedent growth is an indicator of a general increase in prosperity. The less resource-dependent countries in Africa, such as the United Republic of Tanzania, Ethiopia, Djibouti, Côte d'Ivoire, Ghana and Senegal, will continue to maintain growth above average, driven by improvements in infrastructure, a robust service sector, and a rising aquaculture industry.

The emergence of a growing middle class will be an important driver for demand in the aquaculture industry, considering that salmon is a product of high quality. With higher purchasing power from new markets, it is expected that these also want to buy higher quality food, which is often correlated with food containing high levels of protein. As a result of this, it is accessible to expect a growing demand for salmon.

Health trend

The western countries face a number of common health challenges, including increased obesity, more elderly people with complex disorders and several patients with chronic disorders. At the same time, expectations and demand for the health service are rising, supported by an increase in supply of new and expensive treatment methods and drugs (Regjeringen, 2012). In 2014, the number of obese adults exceeded the number underweight in the world (Imperial College London, 2016). Emerging health challenges has created a shift in focus towards eating healthier. The World Health Organization (WHO) recommends consuming 1-2 of fish servings per week, as it contains essential nutrients and will be protective against coronary heart disease (WHO, 2019). The global health trend will lead to higher demand for salmon and provide positive prospects for the industry. Considering that the growth potential for wild caught fish has reached its limit, an increase in fish consumption can only be met by growth in farmed fish.

One trend that can counteract the growth in demand for farmed salmon is consumer skepticism that it is not safe to eat. This comes from the underlying assumption that farmed salmon contains more pollutant substances and have less omega-3 than wild caught fish. Profitability prospects are thus to some extent dependent on consumer beliefs. However, today's salmon feed contains around 70% plant-based ingredients, which essentially means that farmed salmon now have a lower content of pollutants than wild caught salmonids (Forskning.no, 2017).

4.1.4 Technological factors

Technological factors include the technological landscapes and how this affects the markets. The market can be impacted through new ways of communicating, new methods of producing goods and services, or new ways of distributing goods and services (professionalacademy.com, 2019).

Research and development

In order to meet the strong growth in demand for salmon the industry need to increase its production volume. However, environmental concerns weigh heavily when licenses and biomass quotas are to be distributed by the government. Improved technology has the potential to solve some of the environmental challenges, for example regarding lack of feasible areas and better control over salmon lice. In order to stimulate technological development, the Norwegian Directorate of Fisheries allocates research and development licenses for farming (Norwegian Directorate of Fisheries, 2018a). The development licenses are special authorizations that can be awarded to temporary projects that involve significant innovation and significant investments. The purpose is to facilitate the development of technology that can help solve one or more of the environmental and area challenges facing the aquaculture industry, for example by construction of prototypes and test facilities, industrial design, equipment installation and full-scale sample production (Norwegian Directorate of Fisheries, 2018a). If the project succeeds, the development licenses may be converted into permanent, ordinary fish farming licenses. Strong incentives for research and development of new technology increases the likelihood that the industry will succeed in moving the biological barriers, and thereby increase the production. As of April 2019, there are ten ongoing full-scale projects using a total of 54 development licenses, while 20 applications for new projects are awaiting approval (Norwegian Directorate of Fisheries, 2019).

Disruptive technology

Due to the problems regarding salmon lice, escapes, lack of feasible areas, and environmental footprints there have been increased focus in new technologies and operating solutions. In recent years, resources have been devoted in order to development of land-based aquaculture. If this innovation comes wide into use, it can potentially have disruptive effect on the aquaculture industry. The unique natural production advantages that take place in Norway will not have the same significance, as it will be possible to produce salmon almost anywhere the world. It will no longer be necessary for other countries to import from Norway. AKVA Group is a company positioned to develop sustainable recirculation and land-based fish farming systems (AKVA Group, 2019). The technology is still at an early stage but has the potential to revolutionize the industry.

Offshore fish farming is another concept under development. The innovation combines technology from the offshore oil industry together with aquaculture in order to create floating fish farming cages in the ocean (SalMar, 2018b). The construction is a submersible plant that float stably with a depth of 100 to 300 meter. The design is robust and focuses on high Environment, Health and Safety-standards. All operations on board are automated and can be executed from a control center. Offshore farming can potentially be disruptive as the cages have the ability to lie further from land than traditional farming facilities, leaving them less exposed for salmon lice. Additionally, offshore fish farming can make it possible to farm salmon away from fjords and estuaries, which reduces the lack of feasible farming areas.

4.1.5 Environmental factors

Environmental factors refer to environmental impact, resource use, pollution, environmental waste, and environmental changes (Marine Harvest, 2018b). These factors have become important due to increased scarcity of materials, carbon footprints and ethical guidelines.

Salmon lice and diseases

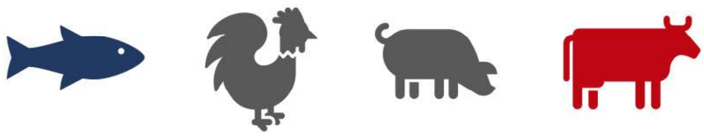
The aquaculture industry's undisputedly biggest challenge in recent years has been salmon lice, as it can lead to large financial losses due to the death of salmon that cannot be sold (SalMar, 2019a). Lice is not only a problem for farmed salmon but can also have major negative impact on the wild population that comes in danger of being infected. Farmed salmon that escapes from their cages carry parasites, lice and diseases that can spread to wild salmon and thus weaken the wild population's ability to withstand the stresses it faces in its natural environment. Lice from farmed fish is the leading cause of death in wild salmon that travels from the rivers to the sea (World Wide Fund for Nature, 2019).

The aquaculture industry has had some success with the use of cleaner fish – mainly lumpsuckers - in the cages that eat lice on farmed salmon (Marine Harvest, 2018b). These fish are used as an alternative to chemical and mechanical treatments for sea lice. However, reports published by animal welfare charity, OneKind (2018) highlights issues for cleaner fish that live in captivity and the health problems they suffer. As the use of cleaner fish does not hold in the long run, the industry is struggling to find a good solution to the salmon lice problem.

Environmental footprints

Fish Farming produces large amounts of waste that sinks below the seabed below the cages. The waste mainly consists of feces and excess fish feed, which adversely affects the wildlife on the bottom of the sea. Furthermore, plastic littering is a major problem. Small parts of plastic are blown out through the feed hoses, and when old cages are chopped up, pieces of plastic end up in the sea (World Wide Fund for Nature, 2019).

The carbon footprint from food is the greenhouse gas emissions produced by growing, rearing, farming, processing, transporting, cooking and disposing food. As illustrated by figure 21, the environmental impact of farmed salmon is 2.9 carbon equivalents per kilogram of edible product. The carbon footprint of chicken and pork are 2.7 kg and 5.9 kg, respectively, while beef cattle farming leaves the strongest footprint of 30 kilograms of CO2 equivalents per kilogram of edible meat (Marine Harvest, 2018b). Norwegian farmed salmon also requires significantly less fresh water in production compared to other protein sources.



Carbon footprint (kg CO2/kg edible meat)	2.9kg	2.7kg	5.9kg	30kg
Water consumption (litre/kg edible meat)	2,000L	4,300L	6,000L	15,400L

Figure 21: Environmental impact of different protein sources

4.1.6 Legal factors

Legal factors refer to health and safety, environmental and economic consideration, and consumer rights and laws. The dominating legal factor within the aquaculture is the licensing system that regulates the total biomass that each company is allowed to farm.

Licensing system

The aquaculture industry has been regulated by since 1973. The Norwegian government issue licenses to individual companies on the basis of predetermined criteria. There have been several distribution rounds of licenses and have occurred with irregular intervals. Historically, the criteria of distribution have varied as there have been different political goals for the aquaculture industry. This can create uncertainty for farming companies in the distribution of licenses.

On October 15th, 2017 the Norwegian government implemented a new traffic light system for the license distribution due to environmental concerns, with salmon lice as the most important indicator (Norwegian Directorate of Fisheries, 2018a). If the environmental impact assessment results are acceptable, production growth may occur through an increase in existing or new licenses (Norwegian Directorate of Fisheries, 2018a). Areas with good environmental conditions are marked with green light, which means that production can increase by 2% every other year, or up to 6% if the conditions are exceptional. Companies operating in an area with moderate salmon lice levels, marked with yellow light, will have to freeze its production volumes. Red light implicates poor environmental conditions with high levels of salmon lice, which means that the areas' total production capacity will be reduced. Figure 22 illustrates how the different areas have been categorized using the traffic light system.

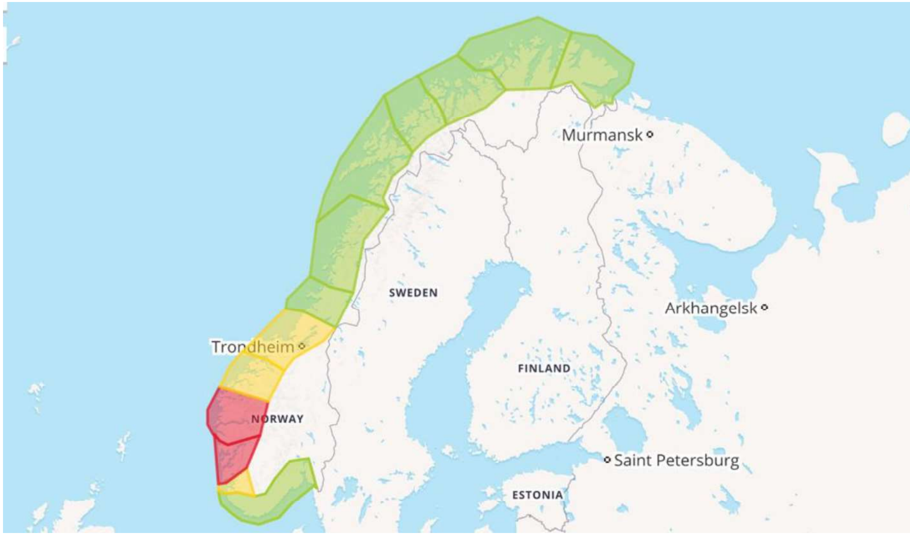


Figure 22: Assessment of regions according to the traffic light system

The transition from the old to the new licensing system represents a shift for the companies, from only having an individual responsibility to share a collective responsibility with other players operating in the same area. The Norwegian Seafood Council has criticized the traffic light system for being collectively punishing and distorting competition. With several companies operating in the same area, one players' actions can potentially limit other players opportunities for growth by irresponsible behavior (Guttormsen, 2015). The free-rider problem with actors not contributing their fair share will limit the production growth for the industry. In order to overcome salmon lice difficulties in each area, coordinated collaboration between all players is required, which is both time and cost-consuming, thus the industry's profitability can potentially be limited.

4.1.7 Summary of PESTEL-analysis

The PESTEL-analysis reveals the future opportunities and threats that the aquaculture industry are facing. The political conditions in Norway can be characterized as somewhat stable and predictable, but comprehensive changes in international relationships and political processes may have great impact on the aquaculture industry. The relationship with China has begun to normalize as a result of intense diplomatic efforts, and a rapid growth in Norwegian salmon's market share is expected in the coming years. Economic factors are characterized by the threat of appreciation of the Norwegian krone as well as the uncertainty regarding the fluctuations in salmon price. The historically low interest rate still makes it facilitates investments opportunities. The sociocultural factors indicate the possibility of increased demand for salmon, through the combination of population growth, increased prosperity, and a blooming health trend. Technological factors show opportunities in terms of innovations and new technology, but threats in the form of potential disruptive technology that can steal the market share of Norwegian salmon by rapidly increase production in other regions of the world. The latter could revolutionize the industry and change the geographical spread of salmon farming. Environmental factors include salmon lice, diseases, escapes and pollution. New and better solutions are necessary in order to be able to continue sustainable fish farming in the future. The legal factors and regulations today are strict and is expected to continue being so in the future. The transition from the old to the new licensing system represents a shift for the companies, from only an individual focus to a collective focus. An overall assessment of the macro-economic factors in the industry indicates that aquaculture will be profitable, as opportunities are greater than the threats.

There are weaknesses in the framework that can affect the results of the PESTEL analysis. The factors that form part of PESTEL have the potential to change in a short time. Laws and rules can be changed, and technology can become outdated. Any shift in the factors will make it difficult to pinpoint the prospects of an industry. It is therefore required that the model be regularly updated to be relevant. Regular gathering and updating of information are time-consuming processes, and the results are likely to have changed within the evaluation of data being processed. Nevertheless, we do not consider the framework's weaknesses to be a major challenge in our analysis. The reason for this is that the valuation of a company is an analysis of factors that are applicable at this moment. If a valuation of the company is to be carried out at a later date, the analysis must be done from scratch.

4.2 Porter's Five Forces

Porter's Five Forces is a strategic framework for conducting an external analysis of an industry's profitability (Porter, 2018). This is done by analyzing the strength of which each of the five forces affect the industry; threat of new entrants, the power of suppliers, the power of buyers, the threat of substitutes, and rivalry among existing competitors. Understanding the competitive forces, and its underlying causes, provides a framework for impacting the competition and profitability over time.

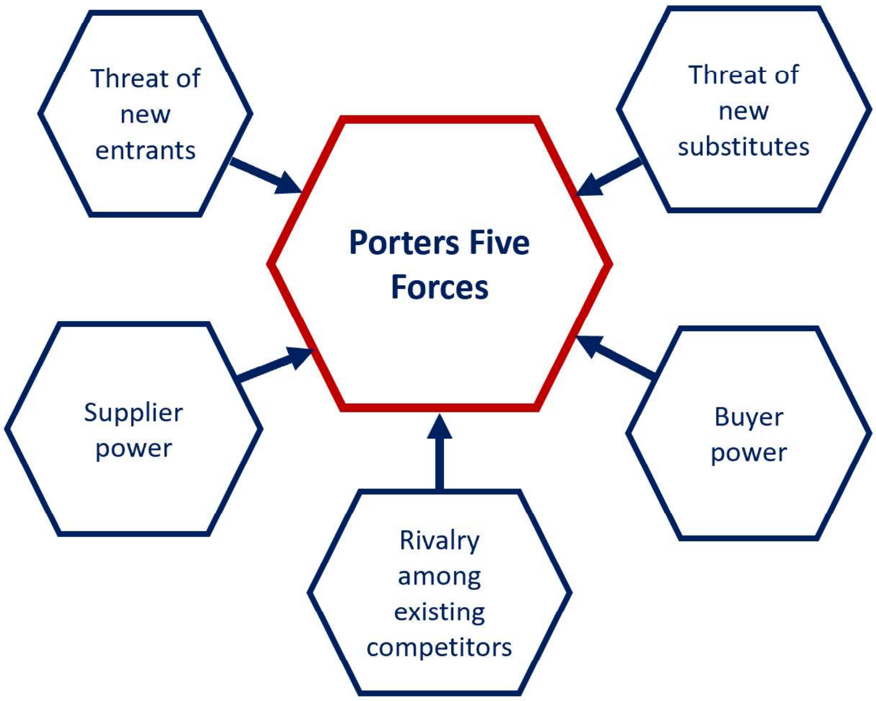


Figure 23: Porter's Five Forces

4.2.1 Industry definition

It is important to define the industry in which SalMar operates in order to conduct a concise and comparable analysis. According to Porter (2018), the industry definition should be determined by geographical area and product range. In our definition of the aquaculture industry we will focus on Norwegian fish farming companies that operate along the Norwegian coast. Atlantic salmon accounts for 95% of total harvested volume in Norway (Statistisk Sentralbyrå, 2018), rainbow trout accounts for 5%, while other fish species only make a marginal share of the harvested volume. Thus, we define the aquaculture industry as fish farming of Norwegian companies that operate in Norwegian waters.

4.2.2 Threat of entry

New entrants to an industry bring new capacity and a desire to gain market share that create pressure on prices, costs, and the rate of investment necessary to compete (Porter, The Five Competitive Forces That Shape Strategy, 2008). Thus, the threat of new entry put a cap on the profitability potential of an industry. The degree of threat depends on the strength of barriers to entry, which are advantages that incumbents have in relation to new entrants. We will focus on the most important barriers to entry; the license system, capital requirements, and location requirements.

4.2.2.1 The license system

All areas where salmon is farmed in Norway is regulated by the government, and farming licenses are distributed on the basis of a set of predetermined criteria. High number of applicants and the strict traffic light system makes it difficult for players to obtain new licenses. In order to get approval of a license application the company has to have a good track record among. Licenses are also sold by other farming companies. The demand for fish farming licenses has grown vastly, resulting in a price increase of 700% from 2003 to 2014. In 2003, one license cost NOK 10 million in the second-hand market, but reached NOK 70 million in 2014 (nrk.no, 2014). The difficulty to obtain licenses deter new entrants.

4.2.2.2 Capital requirements

As mentioned in the PESTEL-analysis, the fish farming is a capital-intensive industry that requires high investment costs. Production facilities, licenses and equipment are necessary in order to start production. Furthermore, the production cycle may take up to three years before the salmon can be sold and create revenue. Marine Harvest (2015) estimates that an equipment investment of EUR 3.5 million to EUR 4.5 million is required in order to produce 4000 tons of gutted weight equivalents (GWE). With a salmon sales price that equals the average in the period from 2013 to 2017, the payback time for the original investments would be approximately 9.5 years (Marine Harvest, 2017). High initial investment costs combined with long payback time makes it difficult for new players to enter.

4.2.2.3 Location requirements

Due to the specific requirements for feasible areas and sea temperature, there are only a limited number of areas available for salmon farming. There are few unutilized locations left for farming in Norway, which is reflected through the strict regulation of licenses. A way to increase the number of feasible areas is through offshore- or land-based farming. These technologies can cause geographical dispersion in fish farming and thus can create opportunities for new entrants. However, land-based and offshore fish farming are currently still under development and will take years to fully operationalize.

4.2.2.4 Summary

There are high barriers to entry in the aquaculture industry. A heavily regulated license system, high capital requirements and location requirements cause the threat of new entrants to be low. New technology and innovation have the opportunity to reduce the barriers to entry in the future. However, these innovations are still in an early and uncertain stage and the resources required to develop them will maintain high barriers to entry.

4.2.3 The power of suppliers

Powerful suppliers can capture some of the producer surplus by demanding higher prices, limiting quality, or shifting costs to its customers (Porter, The Five Competitive Forces That Shape Strategy, 2008). Suppliers can capture more of the values from the industry participants that are unable to pass on increasing cost in its own prices. Factors that determine the power of the suppliers are switching costs for the industry participants, the degree of product differentiation, and the degree of supplier concentration compared to the industry it sells to.

4.2.3.1 Fish feed

As illustrated in figure 14 fish feed is by far the largest expense component for the farming companies and accounts for almost 50% of the production costs. The importance of fish feed in the production of farmed salmon makes feed companies appear to be one of the most powerful suppliers to the aquaculture industry. Furthermore, the concentration is high among suppliers as they are few and large. Three large feed companies dominate the market, followed by Marine Harvest as shown in figure 24. The combination of few, powerful suppliers and the importance of fish feed allows the feed companies to set high prices. An analysis from The Norwegian Seafood Research Fund and Kontali (2018) found that feed costs per kilogram harvested salmon increased from NOK 14 to NOK 18 from 2014 to 2016, which represents a CAGR of 8.74%. The substantial raise is not only a result of feed companies raising the prices, but also comes from the depreciation of the Norwegian kroner and farming companies transitioning to more expensive feed types. However, increasing feed costs too much motivates industry participants to produce their own fish feed. An example of this is Marine Harvest who started their own production in order to become independent of suppliers. The fact that Marine Harvest has integrated backward may indicate that other players can choose to do the same, which will reduce the power of suppliers.

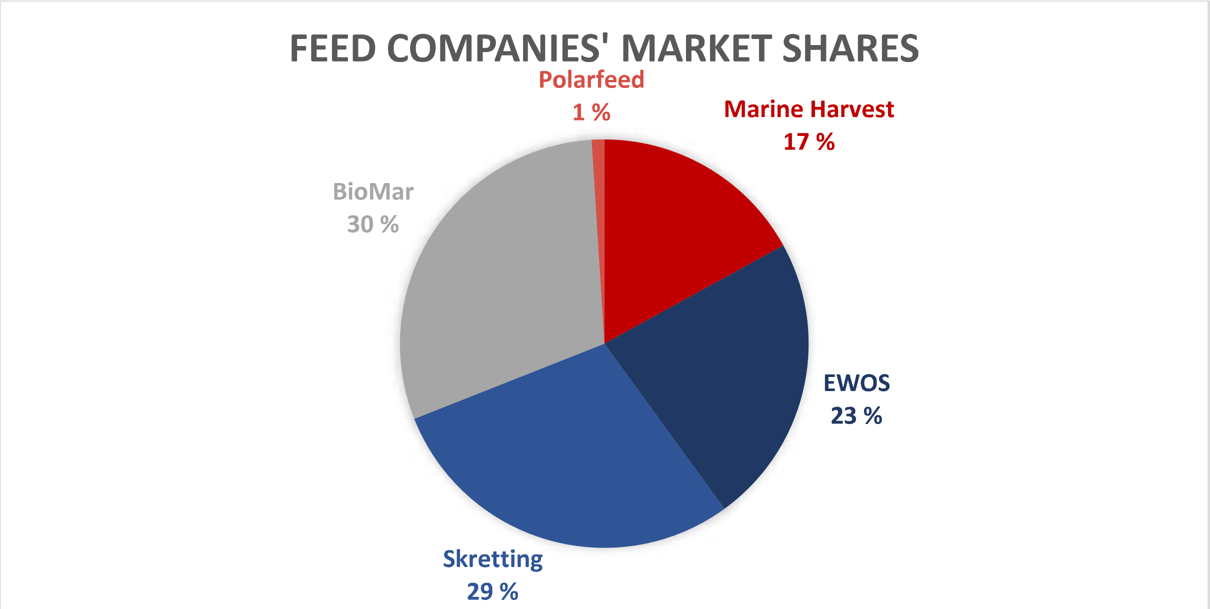


Figure 24: Feed companies' market share (Marine Harvest, 2018b)

Like the feed suppliers, the fish farming companies are also large and few with strong market shares. This reduces the concentration among suppliers in relation to industry participants.

There is a mutual dependency since the supplier group depends heavily on the fish farming companies for its revenues, which diminishes the power of suppliers in the industry.

Fish feed is essentially a homogenous product that is difficult to differentiate to great extent. This implies that the switching costs in changing suppliers are low for the fish farming companies. However, the feed contracts are cost reimbursement contracts, which means that the supplier is paid for all of its allowed expenses, plus additional payment to allow for a profit. This differs from fixed price contracts where the supplier is paid a negotiated price regardless of the incurred expenses. Cost reimbursement contracts increases the supplier surplus since any increase in commodity prices will fall on the industry participants. Thus, this increases the power of suppliers.

4.2.3.2 Summary

High concentration among suppliers combined with the importance of fish feed in salmon farming indicate that supplier's bargaining power is strong. Cost reimbursement contracts secures supplier surplus even if commodity prices increase. However, if feed costs rise too much industry participants will be motivated to start their own production like Marine Harvest. Few and large fish farming companies with strong market shares create mutual dependency and reduces some of the power of suppliers. The overall power of suppliers can be categorized as moderate.

4.2.4 The power of buyers

Powerful customers can capture producer surplus by demanding lower prices, better quality or more service (Porter, 2018). Buyers can set companies against each other by initiating costly competition, and thereby reduce the industry profitability. Factors that determine the power of buyers include the concentration of customers, the degree of product differentiation, switching costs, substitutes and price sensitivity.

4.2.4.1 Differentiation

Norwegian salmon has gained a reputation for being exclusive and of high quality. Farmed Atlantic salmon from Norway was the first type of salmon used in sushi and is now eaten in more than a hundred countries across the world (Norwegian Seafood Council, 2017). However, salmon is sold as homogeneous product, which makes it difficult to differentiate. This leads to low switching costs and will strengthen the power of consumers.

Concentration

Many consumers relative to producers lead to high concentration of market share among industry participants. The fish farming companies have a wide customer base of buyers with different sizes and geographical dispersion. Each consumer purchases in small volumes relative to the size of a single vendor and will have insufficient influence on prices. The power of buyers will therefore be reduced.

Summary

The consumers are highly fragmented, and often buy small volumes, which will reduce their degree of threat. We consider the bargaining power of consumers to be low, which increases the industry profitability.

4.2.5 The threat of substitutes

A substitute performs a similar or the same function as product but by different means (Porter, 2018). Industry profitability suffers when the threat of substitutes is strong, by potentially placing a ceiling on prices. If an industry does not differentiate itself from substitutes through product performance, marketing, or other means, it will suffer in terms of profitability and often growth potential from an investor’s point of view (Porter, 2018).

Farmed salmon contains rich amounts of protein; thus, substitutes will be considered other protein rich sources like chicken, pork and cattle. What distinguishes these products from a consumer perspective will be price, quality, and for some, environmental considerations will also be emphasized.

4.2.5.1 Price

Figure 25 illustrates the price development of salmon in comparison to other substitute products from 1980 to 2016. As can be observed from the graph, salmon has had a much higher price growth than other protein sources. The substitutes thus offer an attractive price-performance trade-off when compared to farmed salmon, which creates a tighter lid on the aquaculture industry's profit potential.

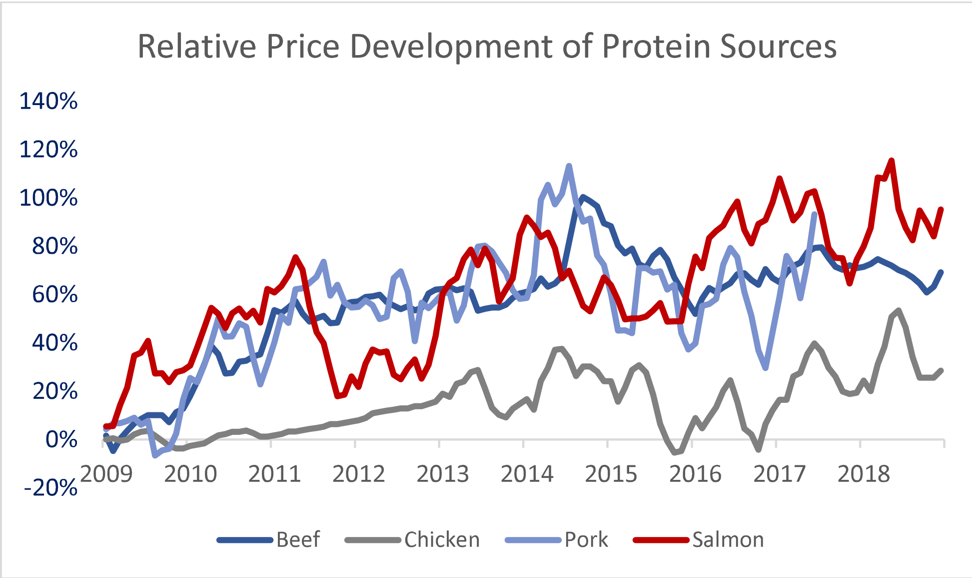


Figure 25: Relative price development of protein sources

4.2.5.2 Quality

In addition to rich amounts of protein, salmon contains many vitamins, minerals and fatty acids that promote a healthy lifestyle (NHI, 2016). The most important nutrients from fish are vitamin D and omega-3, both of which are challenging to get covered otherwise a diet. None of the substitute products contain omega-3 acids. Additionally, salmon contains one hundred times more vitamin D than pork, while chicken and beef do not have this nutrient at all (Matvaretabellen, 2019). Eating salmon have health promoting effects on the heart by providing more elastic arteries, reducing blood pressure, stabilizing heart rate, and thus reducing risk of heart disease. As mentioned in section 4.1.3, the World Health Organization recommends eating fish once or twice a week. The nutrition quality and health promoting effects strengthens the position of salmon in comparison to its substitutes.

4.2.5.3 Environmental considerations

As shown in figure 21, production of farmed salmon leads to less CO2 emissions compared to the substitute products. In 2009, one of Europe's leading independent research organizations, SINTEF in collaboration with Norwegian University of Science and Technology (NTNU) and Institutet för Livsmedel och Bioteknik i Sverige (SIK) analyzed the carbon footprint of 22 Norwegian food products. The carbon footprint includes both direct and indirect emissions of greenhouse gases related to production. According to the analysis, 1 kilogram of salmon fillet from farmed fish produces significantly lower CO2 emissions than pork, chicken, and cattle (SINTEF, 2011). Most of the CO2 emissions related to the production of farmed salmon are related to the value chain of the feed production. For consumers that have a growing commitment towards the environment, the threat of substitutes will be reduced.

4.2.5.4 Summary

Disproportionally high rise in salmon prices may cause consumers to prefer less costly substitutes like chicken, pork, or cattle. However, consumer trends towards more a health-conscious lifestyle and environmental concern will have positive effect on the demand for salmon, in comparison to other protein sources. Threat of substitutes is therefore considered to be low/moderate.

4.2.6 Rivalry within the industry

According to Porter, internal rivalry is the strongest force of the five that affect the industry's profitability (Porter, How Competitive Forces Shape Strategy, 1979). Rivalry within the industry comes in form of new products, marketing campaigns, service improvements, and price wars; a period of fierce competition in which companies cut prices in an attempt to increase their share of the market (Porter, 2018). The degree to which profitability is affected depends on the intensity of the competition, and the basis on which the industry participants compete.

4.2.6.1 Consolidations

The aquaculture industry is concentrated with few and dominant players. Historically, the salmon industry has consisted of many small firms. However, during the last decade the industry has gone through a gradual consolidation process. This is illustrated in figure 26, where the three largest players, Marine Harvest, SalMar and Lerøy account for a total of 52% of the production volume in Norway. According to Marine Harvest (2018b), the consolidation is expected to continue in the future. Fewer and larger players means that the industry participants have less competition. This reduces the industry rivalry and thus profitability is expected to increase.

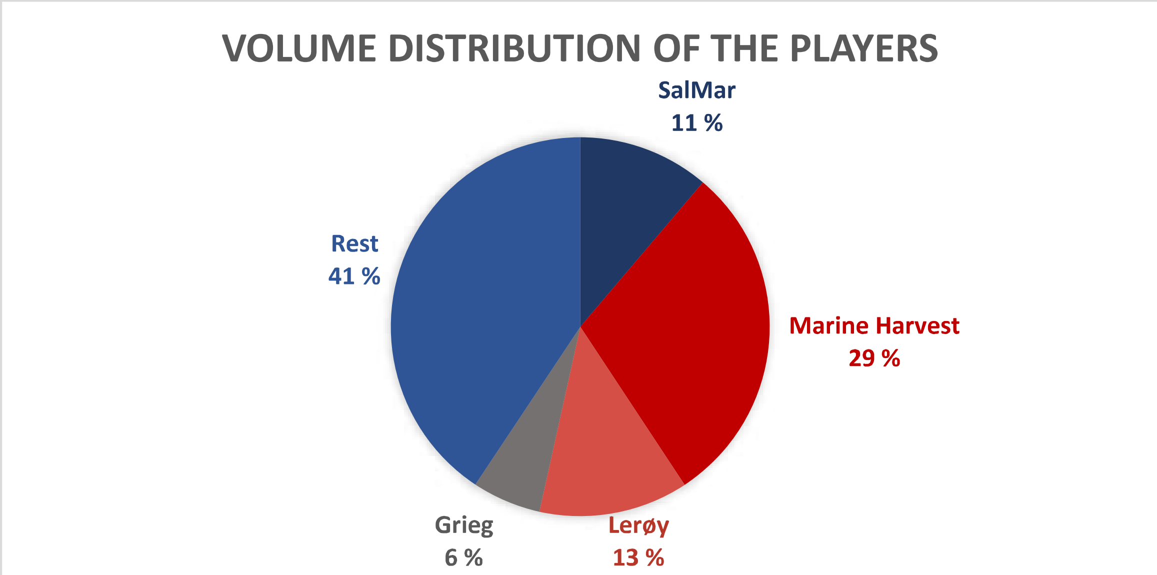


Figure 26: Volume distribution of the fish farming companies

4.2.6.2 Increased demand for salmon

Strong industry growth prevents fights for market share. The average human eats around 656 kilograms of food each year, whereof animal protein amounts for around 10% of the total diet. The UN estimates that the world population will pass 9.7 billion by 2050, and that there will be a 70% increase in demand for protein (Marine Harvest, 2018b). Considering that resources for increasing land-based protein production and wild caught fish is limited, farmed salmon will be an important contributor to this increase. The increase in global demand will lead to high salmon prices and promising profitability. Thus, strong demand growth is an important factor that reduces the rivalry within the industry.

4.2.6.3 Homogenous product

The aquaculture industry is characterized by low degree of product differentiation, since salmon is sold as a homogenous product. Processed salmon is difficult to differentiate as there are strict regulations for the end product. The Norwegian Food Safety Authority monitors aquaculture facilities, slaughterhouses and animal health personnel according to the regulations for fish farming, in addition to having its own monitoring and mapping program for medicinal residues and other foreign substances in farmed fish (The Norwegian Food Safety Authority, 2012). These are factors give limited opportunities for differentiation. This leads to nearly identical products and causes consumer switching costs to be low, which in turn increases rivalry among existing competitors.

4.2.6.4 Exit barriers

Exit barriers arise when highly specialized assets are difficult to dispose in case of bankruptcy. This keeps companies competing in the market even with low or negative returns. Profitability of other companies will thus be compromised as a result of excess capacity remaining in the market. Even with requirements for high investment costs and extensive equipment, the aquaculture industry operates with low exit barriers. The reason for this is that there is strong demand for licenses and production facilities in the second-hand market, which is reflected in the vast increase in the price of licenses, as mentioned in section 4.2.2 Thus, exiting the industry and selling licenses can be an attractive alternative compared to staying in the market and adding excess capacity. Low exit barriers reduced the rivalry among existing players.

4.2.6.5 Summary

Ongoing consolidations result in an industry with few and dominant players that diminishes the industry rivalry. Expectations of strong future growth in demand for salmon and low exit barriers further reduces the rivalry among existing players. On the other hand, rivalry emerges as a result of salmon being a homogeneous product. The customers' switching costs will then be low, which in turn increases the competition among players. We consider rivalry within the industry to be low.

4.2.7 Summary of Porter's Five Forces

Figure 27 illustrates the findings from the external analysis of the aquaculture industry's profitability, using Porter's Five Forces. Important factors that contribute to increased industry profitability are high barriers to entry in form of a heavily regulated license system, low rivalry within the industry as a result of consolidations and increased demand, low power of buyers as a result of fragmented consumers, and low/moderate threat of substitutes because of consumer trends. However, if salmon prices increase too greatly consumers may prefer less costly substitutes. Furthermore, high concentration among suppliers may capture some of the producer surplus, but the mutual dependency between fish farmers and feed companies keeps the power of supplier at a moderate level. The overall intensity of the five forces is low to moderate, which leaves an attractive industry with potential for high profitability.

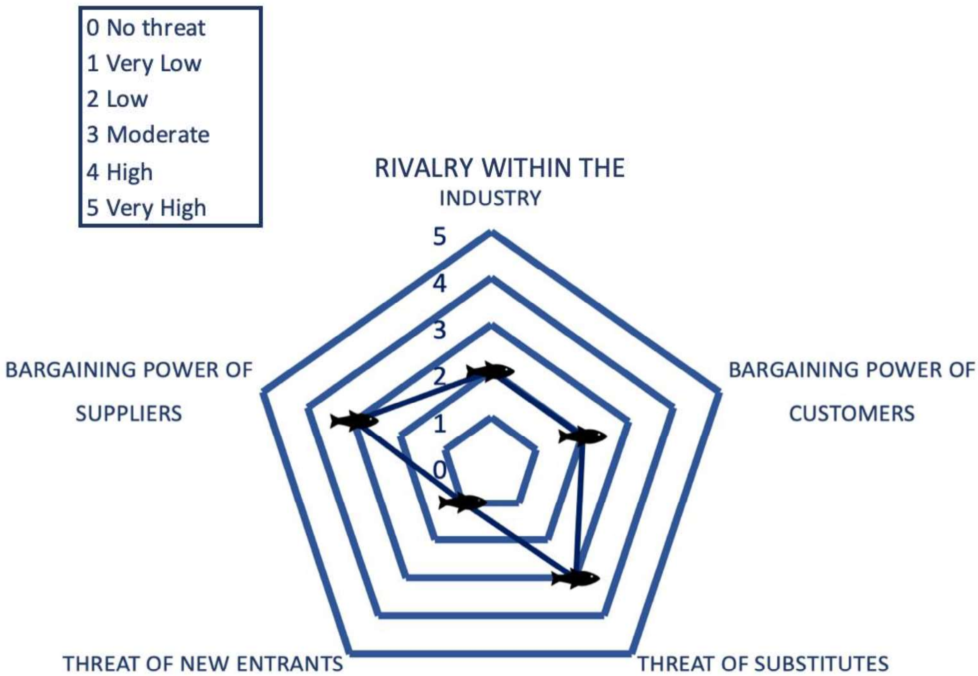


Figure 27: Summary of Porter's Five Forces

4.3 Internal Resource Analysis

In this section, we will evaluate SalMar's internal resources. A complete understanding of the SalMar's competitive advantage requires the analysis of the company's internal strengths and weaknesses. The VRIO Analysis will be used in order to consider whether or not SalMar has competitive advantage compared to the industry average. Then, the SVI-framework will be used to assess resources that SalMar are missing that can potentially create a competitive disadvantage. We will start by presenting the frameworks before using them in our analysis.

4.3.1 The VRIO Framework

VRIO is a framework for evaluation of the internal resources and thus the competitive advantage of an organization. A firm's resources and capabilities include all of the financial, physical, human, and organizational assets used by a firm to develop, manufacture, and deliver products or services to its customer (Barney, 1995). To evaluate the competitive implications of a company's resources, we analyze the resource through the following dimensions; *value* (V), *rareness* (R), *imitability* (I), and *organized* (O).

Value: Do a firm's resources and capabilities add value by enabling it to exploit opportunities and/or neutralize threats (Barney, 1995)?

Rareness: How many competing firms already possess these valuable resources and capabilities (Barney, 1995)?

Imitability: How difficult is it for competitors without the resource or capability to obtain it (Barney, 1995)?

Organization: Is the resource or capability supported fully through existing arrangements and can the organization exploit it properly (Barney, 1995)?

The results from the analysis are then inserted into the framework in figure 28 to determine if the given resource creates a competitive disadvantage, competitive parity, temporary competitive advantage, unexploited competitive advantage, or sustained competitive advantage (Barney, 1995).

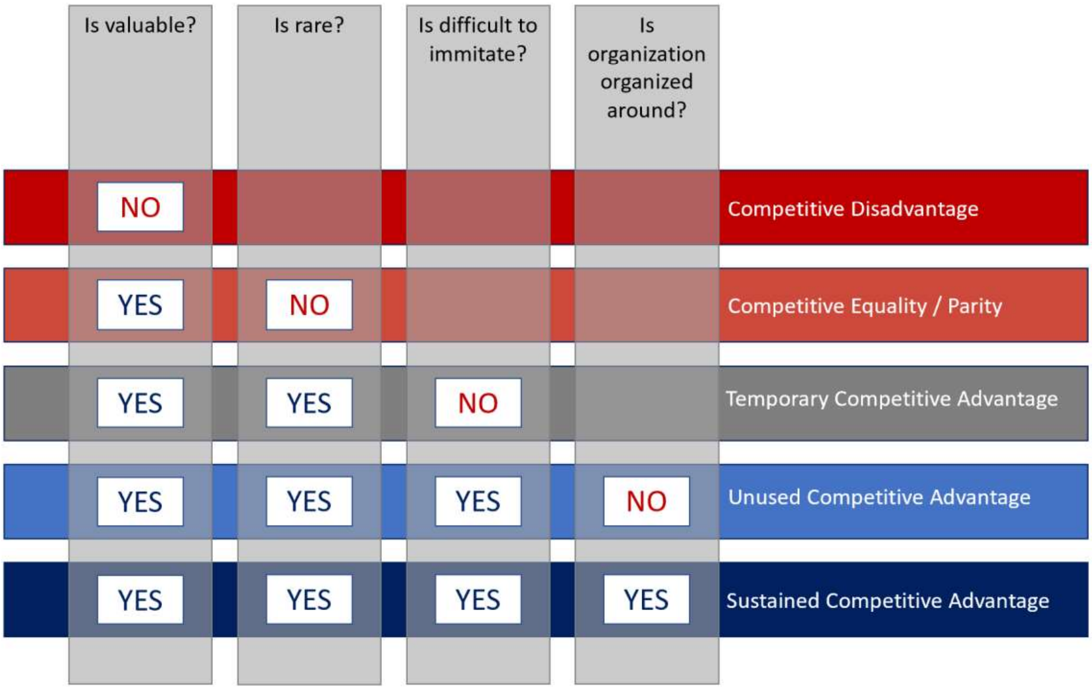


Figure 28: The VRIO-framework

4.3.2 The SVI-framework

The SVI-framework is developed by Jakobsen et al. (2016). The framework is used to analyze whether or not a company bears a competitive disadvantage when missing a resource. The SVI-framework is a tool to analyze a resource through the following dimensions; *missing* (S), *value* (V), *imitability* (I).

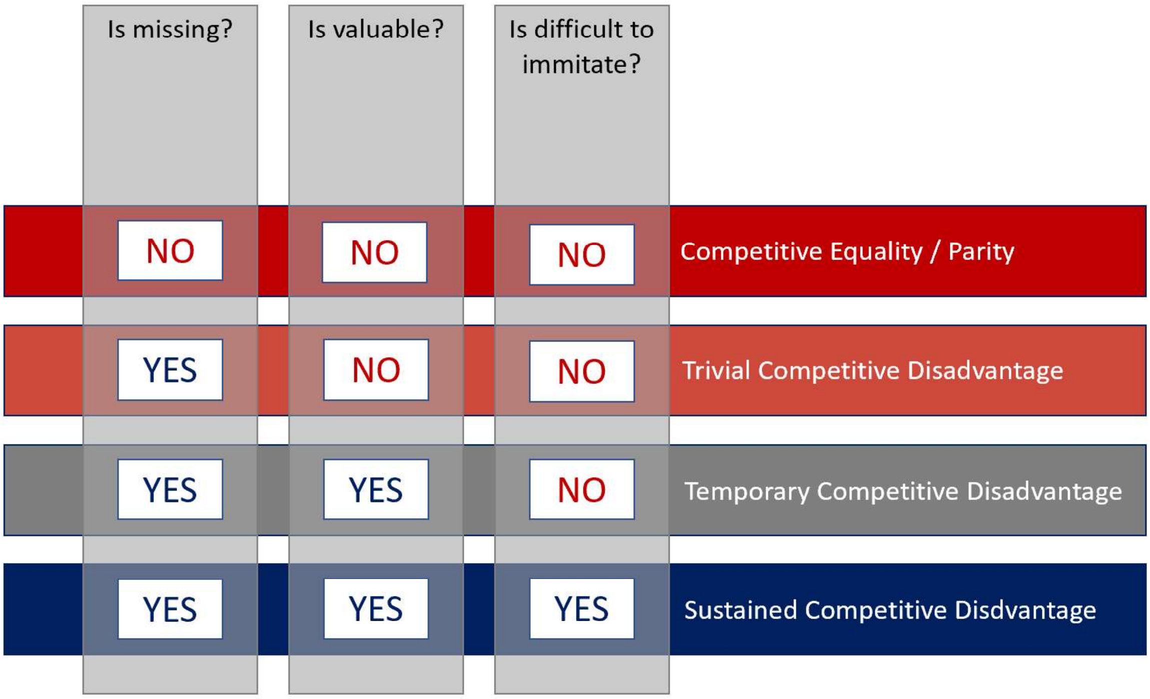


Figure 29: the SVI-framework

Missing: Assessing to what extent the company misses the resource, i.e. whether it is absent, or whether one has certain capacities for the resource on which it can be built (Jakobsen et al., 2016).

The dimensions value and imitability are defined in the VRIO-framework.

4.3.3 VRIO Analysis

4.3.3.1 InnovaMar: harvesting and processing facility

InnovaMar is SalMar's main harvesting and processing facility, located in Central Norway. It has the capacity to harvest up to 150,000 tons of salmon each year and stands out as one of the most cost-efficient production facilities in the world (SalMar, 2019e). Costs are reduced through increased automation and innovative use of technology enhances the quality of salmon (SalMar, 2019e). Based on this we wish to examine if InnovaMar can create a sustained competitive advantage.

Value: In 2009, SalMar decided to invest in what is today one of the world's most innovative and cost-effective facilities for harvesting and processing of salmon; InnovaMar. Through increased automation and new combinations of technical solutions, InnovaMar strengthens the company's competitiveness, increase its capacity and flexibility, and improve the quality of the products. The facility is an important piece in fulfilling the company's strategy, where industrial development and value creation are in focus (SalMar, 2019).

InnovaMar is considered to create value for SalMar.

Rareness: InnovaMar is the largest salmon harvesting and production facility in Norway, with the capacity to harvest up to 150,000 tons each year. Marine Harvest and Lerøy have similar production facilities, Ryfisk and Hitra, respectively. Both facilities can produce up to 70,000 tons of salmon, which is less than half the capacity that of InnovaMar. None of the comparable companies in the aquaculture industry have one single harvesting and processing facility that can match InnovaMar's capacity.

InnovaMar is considered to be rare.

Imitability: The capital expenditures related to construction and machinery of InnovaMar was approximately NOK 550 million. This represents a significant expense, and it is clear that competing firms face a cost disadvantage in imitating such a large production facility. However, it is possible for large competitors with strong financial resources to imitate a similar facility, but extensive financial investments and time-consuming construction processes create a disadvantage for competing companies.

InnovaMar is considered to be non-imitable in the short run but is capable of being imitated in the long run.

Organized: In order to realize InnovaMar's potential to create competitive advantage, SalMar must be organized to fully exploit the facility's production capacity. InnovaMar increased its harvested volume by 24%, from 70,500 tons in 2016 to 87,500 tons in 2017. Though there is still a gap between the current volume and InnovaMar's maximal capacity, SalMar is gradually moving in the right direction to fully exploiting the resource in the long run.

SalMar is organized to exploit the competitive potential of InnovaMar in the long run, though not to the fullest extent in the short run.

Summary of InnovaMar: Harvesting and processing facility InnovaMar represents a temporary competitive advantage. The resource is considered to be valuable, rare, and organized, but is capable of being imitated in the long run.

Resource	Valuable	Rare	Non-imitable	Organized	Result
InnovaMar	Yes	Yes	No	Yes	Temporary competitive advantage

Table 1: Summary of InnovaMar

4.3.3.2 Offshore fish farming technology

In 2015, SalMar was the first Norwegian fish farming company that was granted development licenses in order to build Ocean Farm 1, the world's first offshore fish farm. Ocean Farm 1 started as a full-scale pilot and designed to test both biological and technological aspects of offshore fish farming. If the project succeeds and the concept is implemented, it will have great implications for the aquaculture industry and SalMar's eight development licenses will be converted to permanent licenses. Additionally, SalMar has been granted eight new development licenses in December 2018 to further develop the concept "Smart Fish Farm", a specially designed deep-water facility for farming on the open sea. The project is in collaboration with MariCulture AS, a company of which SalMar owns 51% of the shares. Thus, we will examine if SalMar's offshore fish farms provide a basis for sustained competitive advantage.

Value: Traditional fish farming facilities along the shore face setbacks due to salmon lice, disease, escapes, and environmental waste. Moving farming facilities out to the open water can be a solution to these problems. The open sea reduces the lack of areas to farm salmon by offering more space, strong ocean currents, and less negative environmental impact. Strong ocean currents reduce the spread of parasites, diseases and pollution. At the same time, negative impact and interactions with the wild population is minimized due to greater distance to the shore and rivers. Offshore fish farming thus add value by enabling SalMar to exploit opportunities and neutralize costly threats such as salmon lice.

Offshore fish farming technology is considered to be valuable to SalMar.

Rareness: SalMar was the first Norwegian fish farming company that was granted development licenses with the purpose to develop offshore farming technology. Ocean Farm 1 is the world's first offshore fish farming facility, and SalMar serves the role of a pioneer within this technological field. Marine Harvest have been granted six development licenses for their project, "The Egg". The concept is a closed construction that is designed to overcome many of the same problems as Ocean Farm 1 regarding salmon lice and escapes. Nevertheless, none of the comparable companies have yet succeeded in developing offshore farming facilities like Ocean Farm 1.

The resource is rare.

Imitability: Capital expenditures related to the development of Ocean Farm 1 is approximately NOK 500 million, and the investment costs for Smart Fish Farm are estimated to be NOK 1.5 billion. Thus, replicating the technology represents a cost disadvantage for competing companies. Marine Harvest has applied for one of the industry's largest development projects with 36 licenses on their latest concept "Aqua Storm", which is referred to as offshore subsea production (Norwegian Directorate of Fisheries, 2018c). As of April 2019, there are a total of ten ongoing projects using 54 development licenses for projects that involve significant innovation and substantial investments (Norwegian Directorate of Fisheries, 2019). One of the criteria for holding development licenses is that if the project succeeds, the technology will be shared so that it benefits the entire industry. This makes it highly possible for competitors with strong financial capital to imitate SalMar's offshore fish farming technology.

The resource is capable of being imitated.

Organized: SalMar is considered a pioneer within offshore fish farming. In January 2019, the production from the pilot phase of Ocean Farm 1 was completed. The project has delivered promising results despite adverse events regarding fish escapes. After 15 months with offshore production, the harvested fish has shown good growth and high quality. The biological results reinforce the company's belief that farming salmon further out to sea the correct strategy to invest in (SalMar, 2019c). Ocean Farm 1's successful pilot phase has led SalMar to further develop offshore farming. In April 2018, SalMar acquired 51% of shares in MariCulture AS, and initiated development of Smart Fish Farm in collaboration with the existing owner. Smart Fish Farm is a deep-water construction for ocean fish farming and is estimated to cost approximately NOK 1.5 billion. With the extensive efforts invested into offshore fish farming it can be concluded that SalMar has organized itself to take advantage of this resource.

SalMar is organized to exploit offshore fish farming technology.

Summary of offshore fish farming: SalMar's offshore fish farming technology represents a temporary competitive advantage. The resource is considered to be valuable, rare, and organized, but can be imitated by competing companies.

Resource	Valuable	Rare	Non-imitable	Organized	Result
Offshore Fish Farming Technology	Yes	Yes	No	Yes	Temporary competitive advantage

Table 2: Summary of Offshore fish farming technology

4.3.4 SVI-Analysis

4.3.4.1 Location

Geographical location is an important factor in the aquaculture industry, as fluctuations in sea temperatures, prevalence of salmon lice and disease outbreaks are all factors that directly and indirectly affect business (SalMar, 2019a). Lice treatment and disease outbreaks account for a considerable amount of production costs, and thus an analysis of whether SalMar's geographical location creates a competitive disadvantage will be relevant.

Missing: High degree of geographical dispersion is preferred when farming salmon as it reduces the risk of disease outbreaks and salmon lice. The aquaculture industry produces in average 22% of its harvested volume in Central Norway, 37% in Northern Norway and 41% in Western Norway. SalMar stands out by harvesting approximately 70% of its volume in Central Norway, 30% in Northern Norway, and not having production facilities in Western Norway. According to Institute of Marine Research (2018), Central Norway is one of the areas that has the highest exposure of salmon lice. By having most of their production in Central Norway, SalMar is considered to be missing a better geographical location.

Value: Salmon lice is one of the greatest challenges of the aquaculture industry. By having approximately 70% of its production in Central Norway, SalMar is greatly exposed to disease outbreaks and salmon lice. With the new traffic light license system, Central Norway is characterized with partly yellow and red light as shown in figure 22, which implicates poor environmental conditions and high levels of salmon lice. The areas' total production capacity will be frozen, or in worst case be reduced if biological conditions do not improve (Norwegian Directorate of Fisheries, 2018a). SalMar's strong presence in Central Norway represents a disadvantage as it can put a lid on the company's potential to increase their production and also lead to high costs due to salmon lice.

Approximately 30% of SalMar's production takes place in Northern Norway, which is a region characterized with low levels of salmon lice. By having a large portion of their production in Northern facilities, SalMar can be able to balance out some of the competitive disadvantage caused by the strong presence in Central Norway. Moreover, improved technology and innovation can be able to solve problems with salmon lice in the future. The fish farming companies' strong demand for development licenses indicate that the industry is moving in the right direction to reduce salmon lice.

SalMar's location does bring a competitive disadvantage in the short run, but in the long run the disadvantage that resource brings is not of significant value.

Imitability: SalMar has devoted extensive efforts to establish a strong position in Central Norway. To reestablish their production capacity in other regions of the country would require large investments in equipment and facilities. The company would then face a cost disadvantage compared to competitors that are already established in other regions. On the other hand, SalMar already have a strong presence in Northern Norway and thus have good opportunities for expansion. The company announced in the summer of 2018 that they are investing in a new harvesting- and processing facility in Northern Norway, named InnovaNor (SalMar, 2019e). The facility will be ready to operate by 2020 and have the capacity to harvest up to 70,000 tons of salmon each year (SalMar, 2019e). InnovaNor will thus contribute to balance out some of the disadvantage caused by SalMar's strong presence in central Norway. It is also possible to acquire players in other regions or obtain new licenses either directly from the government or through the second-hand market.

The resource is capable of being imitated.

Summary of location: SalMar's location is considered to be a missing resource, but is not of significant value, and can be imitated. Thus, the resource can be characterized as a trivial competitive disadvantage.

Resource	Missing	Valuable	Non-imitable	Result
Location	Yes	No	No	Temporary competitive disadvantage

Table 3: Summary of location

4.4 SWOT-Analysis

The SWOT-analysis a framework used to evaluate an organization's strengths, weaknesses, and opportunities that may affect the future development of the company. SWOT is an abbreviation from the initial components of *strengths* (S), *weaknesses* (W), *opportunities* (O), and *threats* (T).

The framework combines results from the external PESTEL-analysis, the industry analysis using Porter's Five Forces, the internal VRIO-analysis and the SVI-analysis. Opportunities and threats are identified from the PESTEL-analysis and Porter's Five Forces. Strength and weaknesses are mapped from the internal analysis with VRIO and SVI. Opportunities and threats illustrate the position of the aquaculture industry as a whole, while strengths and weaknesses illustrate SalMar's current position. Figure 30 summarizes the most important findings within each of the four areas.

Figure 30: SWOT-analysis summary

The qualitative analysis plays an essential role in the coming sections of the thesis. Results from the strategic analysis will be prominent in the argumentation of choices that will be made in the financial statement analysis, as well as forecasting of SalMar's future performance.

5 Financial statement analysis

5.1 Period of analysis

Determining a reasonable time span of the financial analysis is important to gain accurate understanding of the company's performance. In order to determine the length of the financial analysis one needs to assess SalMar's development the past years. Knivsflå (2019b) argues that companies that have had rapid growth during the past years, for instance through merger and acquisitions, should be analyzed over a shorter time horizon. Companies that have developed stable over a sustained period can be analyzed over a longer time span, as historical numbers are to greater extent representative for future performance. On the other hand, Koller et al. (2015) recommend looking as far back as possible regardless of the company's evolvement. Using a timespan of ten years will allow to determine whether the company and the industry tend to revert to a normal level of performance, and whether short-term trends are likely to be permanent.

The aquaculture industry has been through many consolidations the past ten years, and SalMar stands out as one of the players with highest mergers and acquisitions activities. The frequent consolidations argue for a shorter time span for the analysis, as older financial statements may cease to reflect the current state of the company. However, as SalMar operates in a cyclical business, its beneficial to expand the time horizon to capture both economic recessions and booms.

Taking into consideration the momentums elaborated above, we find it reasonable to use a time span of nine years. Specifically, the thesis will analyze the financial statements presented in the annual reports from 2010 to 2018.

5.2 Details of the analysis

SalMar is a vertically integrated fish farming company that covers the value chain from broodstock, roe and smolt to value added products and sales (SalMar, 2019a). It can be argued that the company's different business areas should be analyzed separately instead of uniformly as one unit. The purpose of this would be to prevent overlooking trends that would impact a specific operating unit. On the other hand, SalMar's business areas are closely connected and share many of the same risks, for example fluctuating salmon prices, environmental issues, and technological changes. Additionally, the annual reports lack detailed information regarding the company's different segments. The analysis will therefore not be separated into business areas, but rather focus on the company as a whole.

The question is then raised whether the analysis should be based on SalMar ASA as the parent company, or the focus should be on the consolidated financial statements. The purpose of the consolidated statements is to eliminate internal transactions. Kaldestad & Møller (2011) suggest using the consolidated statement if the business is integrated. Furthermore, Knivsflå (2019b) argues that using consolidated statements gives a more precise presentation of the company. Based on SalMar's integrated business as well as limited information of the different segments we choose to base the analysis on the consolidated financial statements.

5.3 Comparable companies

As we have already argued for in section 2.3, Marine Harvest, Lerøy Seafood, and Grieg Seafood will be the comparable companies. These will create a basis when comparing SalMar's performances.

5.4 Historical financial statements

In this section we will present SalMar's financial statements from the period of 2010 to 2018. The numbers are obtained from SalMar's annual reports in its respective period and will be presented as they are stated in the annual report. The historical financial statements will then be reorganized for analytical purposes in the next section.

5.4.1 Income statement

Income Statement Reported	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sales revenues	3 399 868	3 800 204	4 180 414	6 228 305	7 160 010	7 303 506	8 963 239	10 755 452	11 301 338
Other operating revenues	29 564	33 299	24 377	17 555	25 877	22 696	66 575	61 786	41 216
Total operating revenues	3 429 432	3 833 503	4 204 791	6 245 860	7 185 887	7 326 202	9 029 814	10 817 238	11 342 554
Cost of goods sold	2 013 312	2 373 168	2 715 056	3 376 109	3 337 411	3 809 523	4 396 689	4 722 474	4 585 491
Change in stocks of goods in progress and finished goods	(401 629)	(395 900)	(390 297)	(324 914)	(162 119)	(246 712)	(395 871)	-	-
Payroll costs	313 290	391 745	483 215	623 053	710 430	765 881	861 534	929 100	1 040 438
Other operating expenses	436 040	726 150	885 983	1 086 299	1 142 953	1 272 186	1 377 795	1 584 825	1 768 036
Total operating expenses	2 361 013	3 095 163	3 693 957	4 760 547	5 028 675	5 600 878	6 240 147	7 236 399	7 393 965
EBITDA	1 068 419	738 340	510 834	1 485 313	2 157 212	1 725 324	2 789 667	3 580 839	3 948 589
Depreciation of PP&E and intangible assets	93 962	132 000	169 621	220 820	275 765	307 280	358 020	414 686	487 778
Write-downs of PP&E	1 668	543	547	5 000	2 399	14 169	-	3 926	-
Operational EBIT	972 789	605 797	340 666	1 259 493	1 879 048	1 403 875	2 431 647	3 162 227	3 460 811
Fair value adjustments	181 023	368 098	290 417	528 176	(232 349)	39 932	653 955	(370 015)	845 831
Non-recurring gains on acquisitions	-	(60 070)	7 776	161 755	-	-	-	-	-
EBIT	1 153 812	913 825	638 859	1 949 424	1 646 699	1 443 807	3 085 602	2 792 212	4 306 642
Income from investments in associates	147 365	97 999	93 909	157 980	96 136	40 242	286 844	208 941	252 933
Interest income	5 639	5 276	2 956	9 958	9 057	3 477	5 014	11 109	10 964
Financial income	18 495	2 774	50 177	374 357	2 044	685	78 142	-	-
Interest expenses	49 597	98 791	150 224	168 053	124 193	98 780	106 328	106 961	116 101
Financial expenses	14 931	24 410	27 173	1 596	902	5 744	7 193	49 100	1 871
EBT	1 260 783	896 673	608 504	2 322 070	1 628 841	1 383 687	3 342 081	2 856 201	4 452 567
Tax	302 667	13 106	127 062	418 695	413 364	254 891	691 090	558 402	873 343
Net Income	958 116	883 567	481 442	1 903 375	1 215 477	1 128 796	2 650 991	2 297 799	3 579 224

Table 4: SalMar's income statement 2010-2018

5.4.2 Balance sheet

Balance Sheet Reported	2010	2011	2012	2013	2014	2015	2016	2017	2018
Assets									
Non-Current Assets									
Licences.patents. etc	1 315 218	1 483 752	1 702 152	2 030 710	2 451 271	2 466 171	2 464 332	2 478 510	2 957 486
Goodwill	372 710	433 348	433 348	433 348	447 372	447 372	446 465	446 465	446 465
Total Intagible Assets	1 687 928	1 917 100	2 135 500	2 464 058	2 898 643	2 913 543	2 910 797	2 924 975	3 403 951
Property, Plant & Equipment									
Land, buildings & other real property	179 364	206 409	233 732	473 408	489 496	617 182	882 066	1 030 052	1 100 269
Plant, equipment & operating consumables	636 720	845 581	947 824	1 248 820	1 336 126	1 546 727	1 981 840	2 314 523	2 234 617
Vessels, vehicles, etc	55 951	74 455	87 247	137 096	191 953	239 863	273 616	260 195	256 604
Non-Financial Intangible Assets									
Investments In Associates	866 809	918 868	948 575	402 338	523 711	627 681	908 400	1 023 796	1 188 971
Pension fund assets	3 901	2 023	2 492	802	1 592	1 397	1 379	1 379	7 324
Other non-current receivables	13 702	5 371	19 789	5 609	13 922	7 129	50 238	55 677	19 206
Total Non-Current Assets	3 444 375	3 969 807	4 375 159	4 732 131	5 455 443	5 953 522	7 008 336	7 610 597	8 210 942
Current Assets									
Biological assets	1 580 934	1 420 788	1 986 213	3 077 150	3 114 684	3 306 052	4 997 001	4 135 523	5 305 616
Other inventory	128 973	227 935	303 682	171 539	206 454	328 216	224 783	259 050	459 934
Trade receivables	409 707	505 280	660 944	662 149	888 219	815 540	595 773	501 112	630 061
Other receivables	136 266	144 993	245 501	217 584	292 644	258 288	302 078	242 866	289 416
Bank deposits, cash & cash equivalents	107 062	47 621	55 336	1 070 998	166 963	273 696	273 715	177 098	239 596
Excess cash									-
Total Current Assets	2 362 942	2 346 617	3 251 676	5 199 420	4 668 964	4 981 792	6 393 350	5 315 649	6 924 623
Total Assets	**5 807 317**	**6 316 424**	**7 626 835**	**9 931 551**	**10 124 407**	**10 935 314**	**13 401 686**	**12 926 246**	**15 135 565**
Equity & Liabilities									
Equity									
Share capital	25 750	25 750	28 325	28 325	28 325	28 325	28 325	28 325	28 325
Treasury shares	(350)	(325)	(325)	(325)	(325)	(295)	(246)	(189)	(189)
Share premium fund	112 880	112 880	415 286	415 286	415 286	415 286	415 286	415 286	415 286
Other paid-in equity	25 685	38 337	49 957	32 822	34 834	57 768	85 673	114 188	114 188
Retained earnings	2 187 391	1 915 741	2 338 170	4 246 867	4 598 535	4 646 272	6 069 363	7 022 449	7 380 371
Non controlling interests	118 011	122 228	136 300	337 808	60 622	79 684	82 432	88 069	88 069
Total Equity	2 469 367	2 214 611	2 967 713	5 060 783	5 137 277	5 227 040	6 680 833	7 668 128	8 026 050
Non-Current Liabilities									
Deferred tax	761 633	738 475	872 398	1 199 557	1 262 594	1 230 815	1 495 301	1 362 222	1 368 749
Interest bearing long term	1 869 174	2 201 997	2 223 428	2 446 237	2 191 562	2 752 784	2 439 155	1 155 999	1 155 999
Pension liabilities	1 714	1 213	528	-	-	-	-	-	-
Other	-	-	-	-	-	402	402	-	-
Newly issued debt									1 149 592
Total Non-Current Liabilities	2 632 521	2 941 685	3 096 354	3 645 794	3 454 156	3 984 001	3 934 858	2 518 221	3 674 340
Current Liabilities									
Short term interest bearing debt	51 431	501 754	596 288	397 186	276 667	140 421	198 613	243 633	748 188
Trade payables	351 042	412 802	762 765	515 856	409 485	649 274	1 199 402	1 248 975	1 194 760
Tax payable	148 088	66 399	7 008	25 843	321 839	292 320	423 223	672 448	690 717
Public charges payable	48 023	52 980	43 192	93 532	143 757	153 262	189 136	170 716	300 591
Other current liabilities	106 845	126 195	153 515	192 556	381 226	488 996	775 622	404 125	500 919
Total Current Liabilities	705 429	1 160 130	1 562 768	1 224 973	1 532 974	1 724 273	2 785 996	2 739 897	3 435 175
Total Liabilities	3 337 950	4 101 815	4 659 122	4 870 767	4 987 130	5 708 274	6 720 854	5 258 118	7 109 515
Total Equity & Liabilities	**5 807 317**	**6 316 426**	**7 626 835**	**9 931 550**	**10 124 407**	**10 935 314**	**13 401 687**	**12 926 246**	**15 135 565**

Table 5: SalMar's balance sheet 2010-2018

5.5 Reorganized financial statements

Traditional financial statements as presented above are organized in a way which do not promote easy insights to operating performance and value. The purpose of reorganizing the financial statements is to gain awareness of the source behind the value creation and how the value creation is distributed to the owners and creditors (Koller et al., 2015).

To prepare the financial statements for analyzing economic performance, we need to reorganize the items on the balance sheet, income statement, and statement of cash flows into three categories: operating items, nonoperating items, and sources of financing (Koller et al., 2015).

5.5.1 NOPLAT

NOPLAT, or Net Operating Profit Less Adjusted Taxes, is the after-tax profit generated from core operations, excluding any income from non-operating assets or financing expenses. NOPLAT starts with earnings before interest, taxes, and amortization (EBITA) of acquired intangibles, which equals revenue less operating expenses (Koller et al., 2015). Thus, when calculating NOPLAT, we include only operational revenues and costs. In the following we will categorize the profit and losses into operating and non-operating.

5.5.1.1 Revenues

The operating revenues in SalMar are primarily related to SalMar's core operations. According to the notes, other operating revenues exists from sale of subsidiaries. One could argue that these are one-time events, but historically, SalMar have exited subsidiaries frequently in the past. We therefore consider the other operating revenues as operating.

5.5.1.2 Cost of goods sold

Cost of goods sold (COGS) are directly related to the core activities, while the depreciations are indirectly related to the core activities through the assets which depreciates. We therefore acknowledge both COGS and depreciations to be related to the core activities. We notice that the depreciations have had a substantial increase the past years, however this is a result of an increase in assets related to the core activities.

The total pension cost for SalMar break down into a defined-contribution portion and a defined benefits portion, as follows; Premiums paid into the defined-contribution scheme, costs relating to the defined-benefits plan, and accrued employer's national insurance contributions (SalMar, 2019a). Accrued employer's national insurance contributions are considered as non-operating cost and is therefore adjusted for.

To establish an effective ground for comparison against other companies with different leasing policies, the value of SalMar's operating leases for PP&E are included as assets, with a corresponding debt recorded as a financing item. Consequently, operational lease expenses concerning PP&E are subtracted from the reorganized P&L statement. This will avoid the effects of appearing capital light relative to identical companies that purchase the assets. Lease depreciation is based on SalMar's Economic life Depreciation plan of 10 years for property, plant & equipment.

5.5.1.3 Taxes

Taxes have been adjusted to an all-equity operating level by applying McKinsey's three-step process (Koller et al., 2015). The marginal tax rate originates from the expected tax at nominal tax rate in the tax reconciliation table (SalMar, 2019a). Furthermore, the marginal tax rate is multiplied by EBIT to calculate operating tax. After reorganizing the profit & losses we get the following scheme.

Reorganized P&L	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating revenues	**3 429 432**	**3 833 503**	**4 204 791**	**6 245 860**	**7 185 887**	**7 326 202**	**9 029 814**	**10 817 238**	**11 342 600**
Cost of goods sold	2 013 312	2 373 168	2 715 056	3 376 109	3 337 411	3 809 523	4 396 689	4 722 474	4 585 500
Change in stock of goods	(401 629)	(395 900)	(390 297)	(324 914)	(162 119)	(246 712)	(395 871)	-	-
Personnel expenses	313 290	391 745	483 215	623 053	710 430	765 881	861 534	929 100	1 040 400
Less: pension adjustments	1 968	(446)	(613)	(1 061)	(1 148)	(1 875)	(1 905)	(2 113)	-
Depreciation	95 630	132 543	170 168	225 820	278 164	321 449	358 020	418 612	487 800
Lease depreciation	13 994	22 976	24 798	61 866	52 624	47 086	41 837	35 718	35 718
Other operating expenses	436 040	726 150	885 983	1 086 299	1 142 953	1 272 186	1 377 795	1 584 825	1 768 000
Less: Operating leasing expense	(28 286)	(55 953)	(71 091)	(76 682)	(34 371)	(43 835)	(334 062)	(349 853)	(211 570)
Total operating expenses	**2 444 319**	**3 194 283**	**3 817 219**	**4 970 490**	**5 323 944**	**5 923 703**	**6 304 037**	**7 338 763**	**7 705 848**
EBIT (Own operations)	**985 113**	**639 220**	**387 572**	**1 275 370**	**1 861 943**	**1 402 499**	**2 725 778**	**3 478 475**	**3 636 752**
Income from investments in associates	147 365	97 999	93 909	157 980	96 136	40 242	286 844	208 941	252 900
EBIT (including associates)	**1 132 478**	**737 219**	**481 481**	**1 433 350**	**1 958 079**	**1 442 741**	**3 012 622**	**3 687 416**	**3 889 652**
Pension adjustments	1 968	(446)	(613)	(1 061)	(1 148)	(1 875)	(1 905)	(2 113)	-
Net leasing effects	(14 292)	(32 977)	(46 293)	(14 816)	18 253	3 251	(292 226)	(314 135)	(175 852)
Operating profit as reported (own operations)	**972 789**	**605 797**	**340 666**	**1 259 493**	**1 879 048**	**1 403 875**	**2 431 647**	**3 162 227**	**3 460 900**
Operating profit as reported (including associates)	**1 120 154**	**703 796**	**434 575**	**1 417 473**	**1 975 184**	**1 444 117**	**2 718 491**	**3 371 168**	**3 713 800**
Other interest income	5 639	5 276	2 956	9 958	9 057	3 477	5 014	11 109	11 109
Other financial income	18 495	2 774	50 177	374 357	2 044	685	78 142	-	-
Other interest expense	(49 597)	(98 791)	(150 224)	(168 053)	(124 193)	(98 780)	(106 328)	(106 961)	(106 961)
Other financial expense	(14 931)	(24 410)	(27 173)	(1 596)	(902)	(5 744)	(7 193)	(49 100)	(11 148)
Net financial expenses	(40 394)	(115 151)	(124 264)	214 666	(113 994)	(100 362)	(30 365)	(144 952)	(107 000)
Result before tax	1 079 760	588 645	310 311	1 632 139	1 861 190	1 343 755	2 688 126	3 226 216	3 606 800
Tax	302 667	13 106	127 062	418 695	413 364	254 891	691 090	558 402	873 300
Net result for the year	777 093	575 539	183 249	1 213 444	1 447 826	1 088 864	1 997 036	2 667 814	2 733 500

Table 6: Reorganized Profit & Losses 2010-2018

5.5.2 Invested capital

The traditional balance sheet mixes operating liabilities and sources of financing on the right side of the balance sheet. To compute invested capital, we must therefore reorganize SalMar`s balance sheet. Invested capital sums operating working capital; fixed assets; net other long-term operating assets; and, when appropriate intangible assets (Koller et al., 2015).

5.5.2.1 Total funds invested: uses

$$Invested\ capital = Operating\ working\ capital + fixed\ assets + net\ other\ longterm\ operating\ assets$$

Where:

$$Operating\ working\ capital = \ operating\ current\ assets - operating\ current\ liabilities$$

Further, we consider the following assets to be SalMar’s **operating current assets:**

- *Operating cash*

A widely recognized assumption is that the operating cash are 2% of the revenues. In the years where cash is above 2% we have therefore considered the 2% as operating cash. However, if the ratio has been less than 2% we have used the original ratio.

- *Receivables*

  We have treated the derivatives as non-operating and removed them from the receivables. All the remaining receivables are considered as operating.

- *Inventory*

  The whole inventory is considered as operational.

- *Biological assets operational*

  The biological inventory is valued at historical cost. We have however removed the fair value adjustments as a part of the operating current assets.

We consider the following liabilities as SalMar's **operating current liabilities**

- *Accounts payable.*

  All accounts payable are considered as operational.

- *Tax payable.*

  All tax payable is considered as operational.

- *Liabilities.*

  All liabilities are considered as operational except for the derivates, which are treated as non-operating.

We consider the following assets as SalMar's **net other long-term assets**

- *Other long-term receivables*

  The other long-term receivables are small and there are no details in the annual report indicating that the receivables are non-operating. We therefore consider these to be operating.

We consider the following assets as SalMar's **fixed assets**

- *Property, plants and equipment*

  The amount of PP&E which is leased is reported in the annual report. We have separated this in the reorganized balance sheet, and we have included it as operational.

- *Licenses*

As the farming licenses are the fundament for SalMar's business it is included as operational.

Invested capital included goodwill

All goodwill is considered as operational.

Invested capital included investments in associates

The income from the associates are considered as operational

Excess cash:

As mentioned earlier cash holdings above 2% are considered as excess cash.

Other financial assets:

Other financial assets are treated as nonoperational as they are not part of core operations.

Pension fund assets:

Pension fund assets are treated as nonoperational as they are not part of core operations

5.5.2.2 Total funds invested: Sources

Debt and debt equivalents:

- Pension liabilities
- Short-term debt
- Long-term debt
- Newly issued debt
- Capitalized operating leases

Equity and equity equivalents:

- Equity adjustments
- Deferred tax liabilities
- Equity

The complete reorganized balance sheet looks as follows:

Reorganized Balance Sheet	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total funds invested: Uses									
Operating cash	67 997	47 621	55 336	124 566	143 200	146 070	179 265	177 098	226 027
Trade receivables	409 707	505 280	660 944	662 149	888 219	815 540	595 773	501 112	630 061
Derivatives at fair value	27 355	-	65 032	17 636	4 410	32 399	37 490	-	5 080
Other non operating receivables	27 355	-	65 032	17 636	4 410	32 399	37 490	-	5 080
Other operating receivables	108 911	144 993	180 469	199 948	288 234	225 889	264 588	242 866	284 336
Inventory	128 973	227 935	303 682	171 539	206 454	328 216	224 783	259 050	459 934
Biomass - Change in fair value	391 416	(340 160)	268 749	529 433	(38 963)	147 263	1 052 535	(927 767)	934 782
Biomass - Historic cost	1 189 518	1 760 948	1 717 464	2 547 717	3 153 647	3 158 789	3 944 466	5 063 290	4 370 834
Biological assets operational	1 189 518	1 760 948	1 717 464	2 547 717	3 153 647	3 158 789	3 944 466	5 063 290	4 370 834
Operating current assets	**1 905 106**	**2 686 777**	**2 917 895**	**3 705 919**	**4 679 754**	**4 674 504**	**5 208 875**	**6 243 416**	**5 971 192**
Accounts payable	351 042	412 802	762 765	515 856	409 485	649 274	1 199 402	1 248 975	1 194 760
Tax payable	148 088	66 399	7 008	25 843	321 839	292 320	423 223	672 448	690 717
Derivatives at fair value	-	28 317	-	2 687	175 485	132 889	134 963	48 004	123 958
Other non operating current liabilities	-	28 317	-	2 687	175 485	132 889	134 963	48 004	123 958
Other operating current liabilities	154 868	150 858	196 707	283 401	349 498	509 369	829 795	526 837	677 552
Operating current liabilities	**653 998**	**630 059**	**966 480**	**825 100**	**1 080 822**	**1 450 963**	**2 452 420**	**2 448 260**	**2 563 029**
Operating working capital	1 251 108	2 056 718	1 951 415	2 880 819	3 598 932	3 223 541	2 756 455	3 795 156	3 408 163
Other long term recievables	13 702	5 371	19 789	5 609	13 922	7 129	50 238	55 677	19 206
Capitalized operating leases	139 941	229 757	247 984	618 663	526 241	470 862	418 365	357 181	761 854
Owned PP&E	732 094	896 688	1 020 819	1 240 661	1 491 334	1 932 910	2 719 157	3 247 589	2 829 636
PP&E	872 035	1 126 445	1 268 803	1 859 324	2 017 575	2 403 772	3 137 522	3 604 770	3 591 490
Licenses	1 315 218	1 483 752	1 702 152	2 030 710	2 451 271	2 466 171	2 464 332	2 478 510	2 957 486
Fixed assets	**2 187 253**	**2 610 197**	**2 970 955**	**3 890 034**	**4 468 846**	**4 869 943**	**5 601 854**	**6 083 280**	**6 548 976**
Invested capital (Excl. goodwill)	**3 452 063**	**4 672 286**	**4 942 159**	**6 776 462**	**8 081 700**	**8 100 613**	**8 408 547**	**9 934 113**	**9 976 345**
Goodwill	372 710	433 348	433 348	433 348	447 372	447 372	446 465	446 465	446 465
Invested capital (Incl. Goodwill)	**3 824 773**	**5 105 634**	**5 375 507**	**7 209 810**	**8 529 072**	**8 547 985**	**8 855 012**	**10 380 578**	**10 422 810**
Investments in associates	866 809	918 868	948 575	402 338	523 711	627 681	908 400	1 023 796	1 188 971
Invested capital (Incl. Investments in associates)	**4 691 582**	**6 024 502**	**6 324 082**	**7 612 148**	**9 052 783**	**9 175 666**	**9 763 412**	**11 404 374**	**11 611 781**
Excess Cash	39 065	-	-	946 432	23 763	127 626	94 450	-	13 569
Other financial assets	27 355	-28 317	65 032	14 949	-171 075	-100 490	-97 473	-48 004	-118 878
Pension funds assets	3 901	2 023	2 492	802	1 592	1 397	1 379	1 379	7 324
Total funds invested	**4 761 903**	**5 998 208**	**6 391 606**	**8 574 331**	**8 907 063**	**9 204 199**	**9 761 768**	**11 357 749**	**11 513 796**
Total funds invested: Sources									
Pension liabilities	1 714	1 213	528	-	-	-	-	-	-
Short term debt	51 431	501 754	596 288	397 186	276 667	140 421	198 613	243 633	748 188
Long term debt	1 869 174	2 201 997	2 223 428	2 446 237	2 191 562	2 752 784	2 439 155	1 155 999	1 019 117
Newly issued debt									-
Other	-	-	-	-	-	402	402	-	-
Capitalized operating leases	139 941	229 757	247 984	618 663	526 241	470 862	418 365	357 181	761 854
Debt and debt equivalents	**1 922 319**	**2 704 964**	**2 820 244**	**2 843 423**	**2 468 229**	**2 893 607**	**2 638 170**	**1 399 632**	**1 767 305**
Equity adjustment - fair value of biomass	-391 416	340 160	-268 749	-529 433	38 963	-147 263	-1 052 535	927 767	-934 782
Deferred tax liabilities	761 633	738 475	872 398	1 199 557	1 262 594	1 230 815	1 495 301	1 362 222	1 541 431
Equity	2 469 367	2 214 611	2 967 713	5 060 783	5 137 277	5 227 040	6 680 833	7 668 128	9 139 843
Equity and equity equivalents	**2 839 584**	**3 293 246**	**3 571 362**	**5 730 907**	**6 438 834**	**6 310 592**	**7 123 599**	**9 958 117**	**9 746 492**
Total funds invested	**4 761 903**	**5 998 210**	**6 391 606**	**8 574 330**	**8 907 063**	**9 204 199**	**9 761 769**	**11 357 749**	**11 513 797**

Table 7: Reorganized balance sheet

5.5.3 Free Cash Flow calculation

To be able to perform a Discounted Cash Flow (DCF) valuation, we need to calculate the company's free cash flow. The benefit of the free cash flow is that it remains entirely independent of financing and non-operating items.

$$FCF = NOPLAT + Noncash\ Operating\ Expenses - Investments\ in\ Invested\ Capital$$

Gross cash flow represents the cash flow generated by the company's operations and consist of the NOPLAT and noncash operating expenses in the equation above.

To be able to grow and run their existing business SalMar needs to reinvest some of their gross cash flow back into the company. Further, the free cash flow is derived from subtracting the gross investment from gross cash flow. According to Koller et al. (2015), the gross investments are segmented into five primary areas:

1. Change in operating working capital
2. Net capital expenditures
    - CAPEX = $Depreciation_t$ - Value of $PP\&E_{t-1}$ + Value of $PP\&E_t$
3. Change in capitalized operating leases
4. Investment in goodwill and acquired intangibles
5. Change in other long-term operating assets, net of long-term liabilities.

Free cash flow calculation	2010	2011	2012	2013	2014	2015	2016	2017	2018
NOPLAT	709 281	460 238	279 052	918 266	1 359 218	1 021 819	2 040 415	2 637 930	2 924 147
Depreciation	109 624	155 519	194 966	287 686	330 788	368 535	399 857	454 330	563 963
Gross Cashflow	**818 905**	**615 757**	**474 018**	**1 205 952**	**1 690 006**	**1 390 355**	**2 440 272**	**3 092 260**	3 488 110
Increase operational working capital	399 137	805 610	- 105 303	929 404	718 113	- 375 391	- 467 086	1 038 701	- 386 993
CAPEX	412 350	320 113	319 097	507 528	581 461	810 111	1 186 104	982 762	146 010
Investments in capitalized leases	103 919	139 941	229 757	247 984	618 663	526 241	470 862	418 365	357 181
Increase in operating assets, net other liabilities	379 302	168 534	218 400	328 558	420 561	14 900	- 1 839	14 178	478 976
Investments in goodwill and aquired intangibles	167 252	60 638	-	-	14 024	-	- 907	-	-
Gross investment	1 461 960	1 494 835	661 951	2 013 474	2 352 822	975 861	1 187 133	2 454 006	595 174
Free Cash Flow	**- 643 055**	**- 879 079**	**- 187 933**	**- 807 522**	**- 662 816**	**414 493**	**1 253 138**	**638 254**	**2 892 936**
Investment income (associates)	56 769	147 365	97 999	93 909	157 980	96 136	40 242	286 844	208 941
Other income (expenses)									
Non operating income	24 134	8 050	53 133	384 315	11 101	4 162	83 156	11 109	10 964
Non operating expenses	-12 963	(24 856)	(27 786)	(2 657)	(2 050)	(7 619)	(9 098)	(51 213)	-3 989
Non-operating taxes	26 835	(165 876)	18 542	61 591	(89 361)	(125 788)	5 728	(282 143)	-1 844
Increase in excess cash	- 61 834	(39 065)	-	946 432	(922 669)	103 863	(33 176)	(94 450)	13 569
Increase/decrease in investments	17 903	(55 672)	93 349	(50 083)	(186 024)	70 585	3 017	49 469	-70 874
Investments in associates	598 301	52 059	29 707	(546 237)	121 373	103 970	280 719	115 396	165 175
Non operating cash flow	**649 145**	(77 995)	264 944	887 270	(909 650)	245 309	370 588	35 012	321 943
Cash flow available to investors	**6 090**	**(957 074)**	**77 011**	**79 748**	**(1 572 465)**	**659 802**	**1 623 726**	**673 266**	**3 214 879**

Table 8: Free cash flow calculation 2010-2018

6 Historical performance

To be able to forecast SalMar's future performance, it is important to understand the company's past performance and the drivers behind the results. To assess SalMar's historical performance we will analyze the Return on Invested Capital (ROIC), revenue growth, license utilization as well as the credit health and capital structure. Some figures where we compare SalMar with its peers, the time horizon reaches to year 2017 instead of 2018. This is because the information required for the analysis had not been published by all of the industry participants when the information gathered ceased on 26.04.2019.

6.1 Return on Invested Capital (ROIC)

Return on Invested Capital (ROIC) measures the ratio of NOPLAT to invested capital (Koller et al., 2018). As NOPLAT and Invested Capital are explained in the financial statement analysis, these terms will not be elaborated any further in this section.

$$ROIC = \frac{NOPLAT}{Invested\ Capital}$$

ROIC will be analyzed both with and without goodwill. When including goodwill in the invested capital, SalMar's value creation is measured after acquisitions premiums are paid. Excluding the goodwill however gives a better measure of the companies underlying ability to create value. In the following diagram, we have included the historical ROIC both with and without goodwill as well as the salmon price.

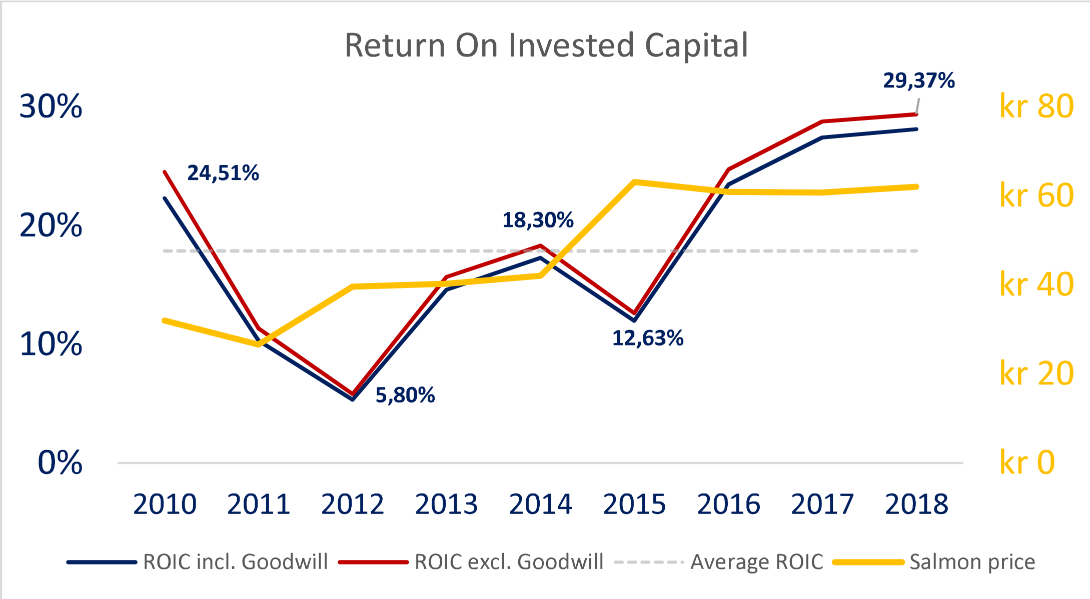


Figure 31: ROIC incl. and excl. Goodwill

From figure 31 observe an overall ROIC with high mean value, but with substantial variations. Not surprisingly, the ROIC excluding goodwill is higher than when taking goodwill into consideration. By including goodwill, we get a higher invested capital and lower ROIC because of the added the acquisition premiums. It can also be observed that the ROIC and salmon price seems to follow the same pattern, this is reasonable as the development of the salmon price accounts for a significant portion of SalMar's profit margins. We notice that 2012 and 2015 stands out negatively with significant drops in the ROIC, while 2017 had a record high ROIC of 28%.

As elaborated in 2.1, SalMar have been through many consolidations, and the comparable companies Lerøy, Grieg and Marine Harvest are no exceptions either. When comparing the companies' ROIC, we have included goodwill and by that take into account the company's competence at acquiring other farming companies. As we see from the figure 32 below SalMar has delivered the highest ROIC among its comparables each year except for 2011. The excellence in the ROIC compared to its competitors serves as an indicator that SalMar either have achieved higher asset turnover, generate higher profit margins than its competitors, or a combination of both.

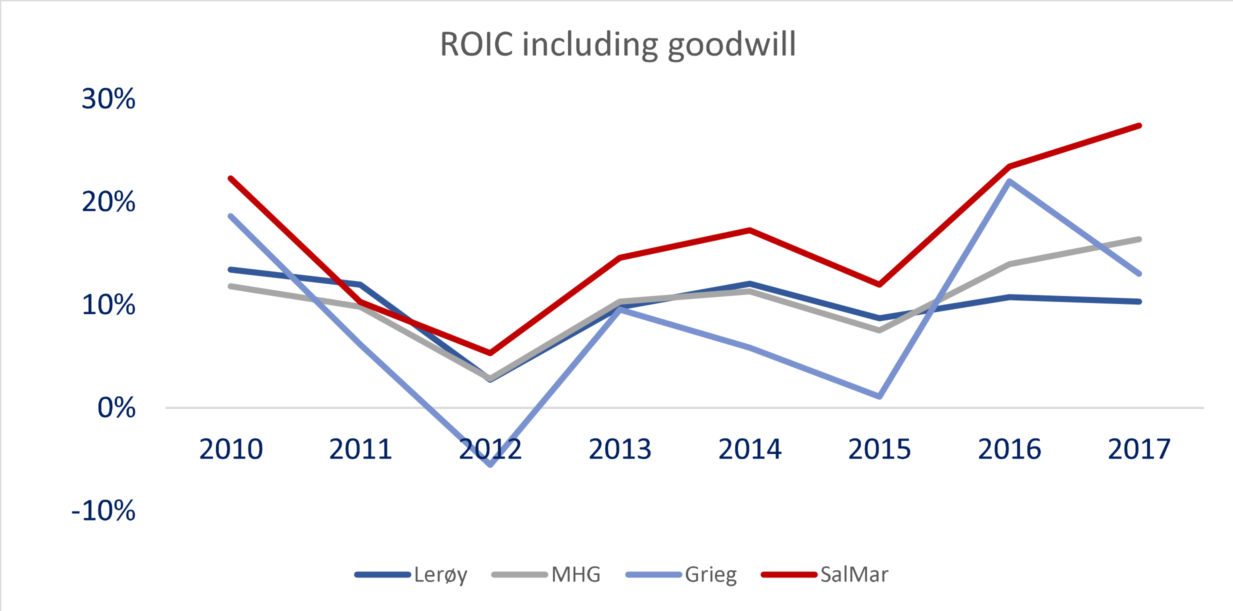


Figure 32: ROIC incl. Goodwill of comparable companies

6.1.1 ROIC Decomposition

To determine the source of SalMar's promising results we further need to decompose ROIC. Another way of expressing the ROIC is to see it as a product of the operating cash tax rate, profit margin and the asset turnover (Koller et al., 2015).

$$ROIC = Asset\ turnover * Profit\ Margin * (1 - Operating\ tax\ rate)$$

As the operating cash tax rate have been fairly stable the past years, we will not analyze this further, but rather prioritize the profit margin and asset turnover, which are illustrated in the figure below.

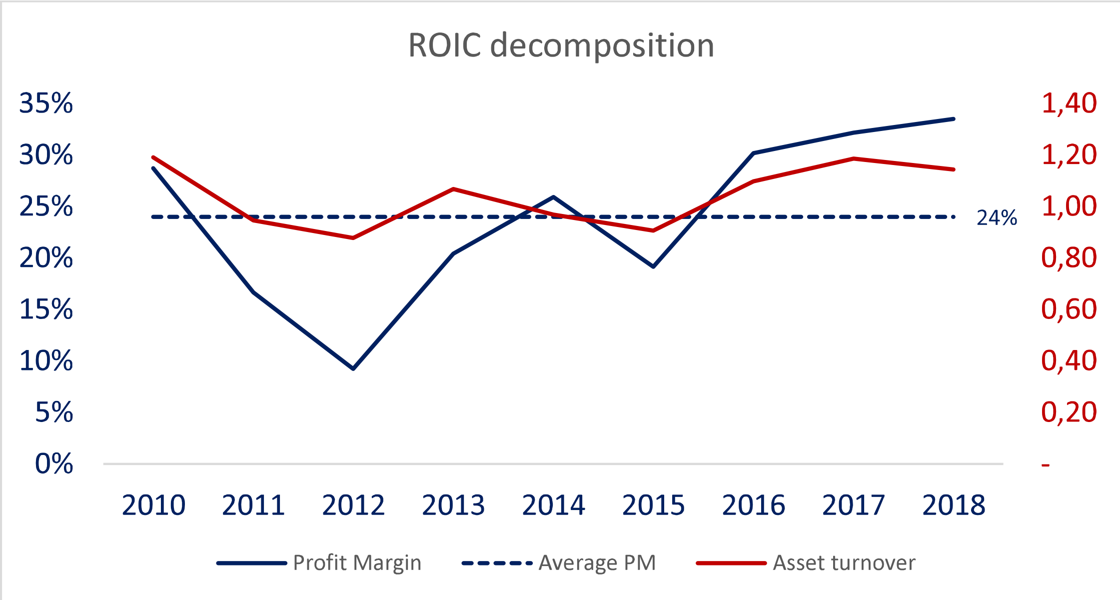


Figure 33: ROIC decomposition: Profit Margin and Asset Turnover

We see that the spike in ROIC in 2010 came from both increased profits as well as a historically high asset turnover, while the drop both in 2012 and 2015 were related to low profit margins.

We will investigate whether SalMar is superior at generating revenues from its assets or if the competitive advantage lies in creating higher profit margins. To do this, we need to compare the company's asset turnover and profit margins against its competitors.

6.1.1.1 Asset turnover

The asset turnover ratio measures the value of a company's sales or revenues relative to the value of its assets (Koller et al., 2015). In our case we have divided each companies' revenues with their invested capital to calculate asset turnover.

$$Asset\ turnover = \frac{Revenues}{Invested\ capital}$$

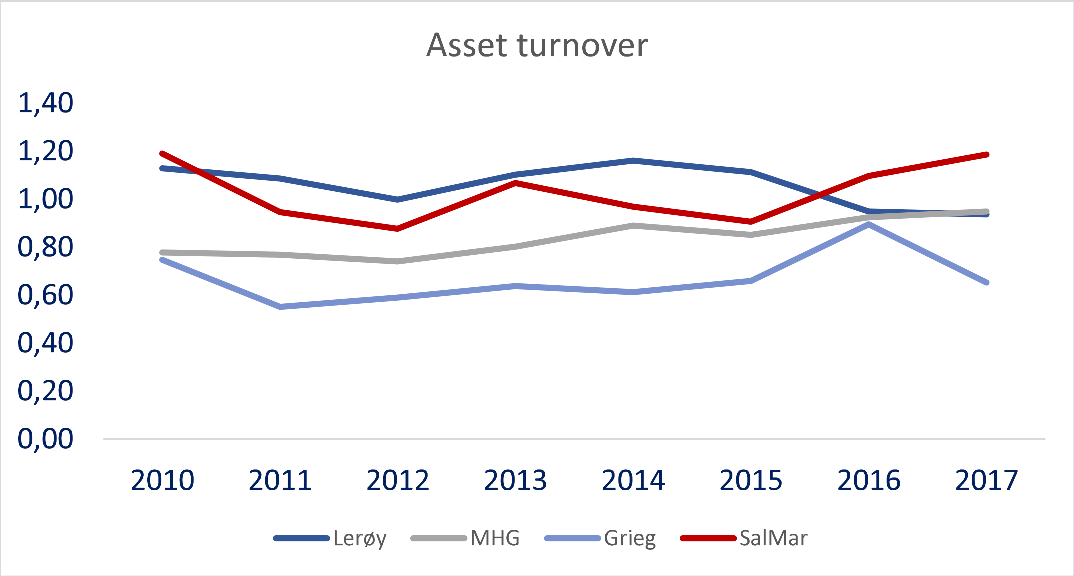


Figure 34: Asset Turnover of industry participants

From the figure 34 we see that for many years Lerøy have been the company able to generate most revenues from its assets. SalMar have however been right behind and in 2016 and 2017 SalMar bypassed Lerøys asset turnover. This indicates that SalMar are in line with their outlined strategy, which is to have the best operational efficiency in the business.

6.1.1.2 Profit margins

The profit margin ratio measures the company's EBITA to their revenues (Koller et al., 2015). In other words, this is the portion of the revenues that ends up as EBITA.

$$Profit\ margin = \frac{EBITA}{Revenues}$$

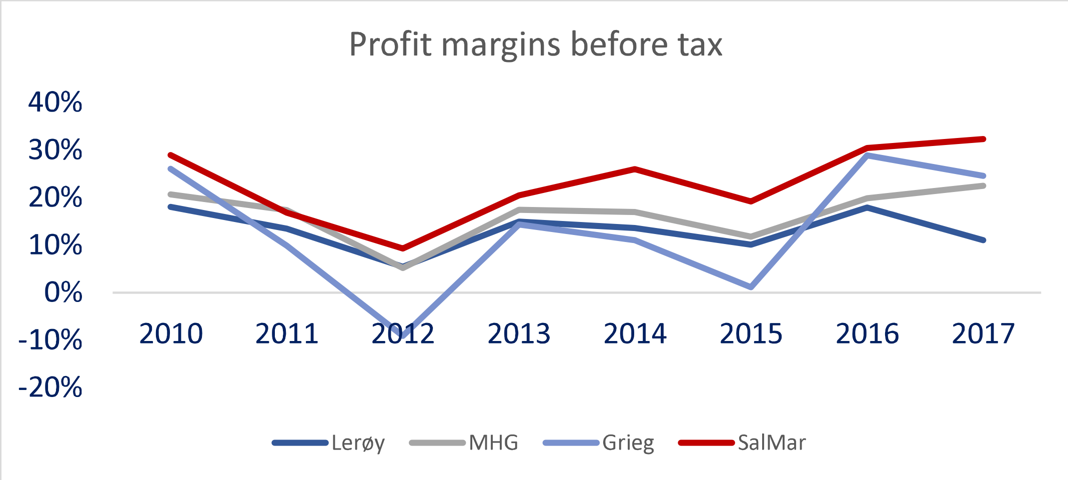


Figure 35: Profit margins before tax for industry participants

Figure 35 illustrates the profit margins before tax. We observe that for the past 10 years, SalMar has outperformed its competitors by consistently achieving the highest profit margin. As the industry is exposed to the same salmon prices, it is reasonable to think that the competitive advantage lies on the cost side. Therefore, we will further dive into and compare industry participants' cost of goods sold per harvest volume.

6.1.1.3 Cost of Goods Sold

In the figure 36 we have divided the cost of goods sold with the amount of salmon harvested for each company.

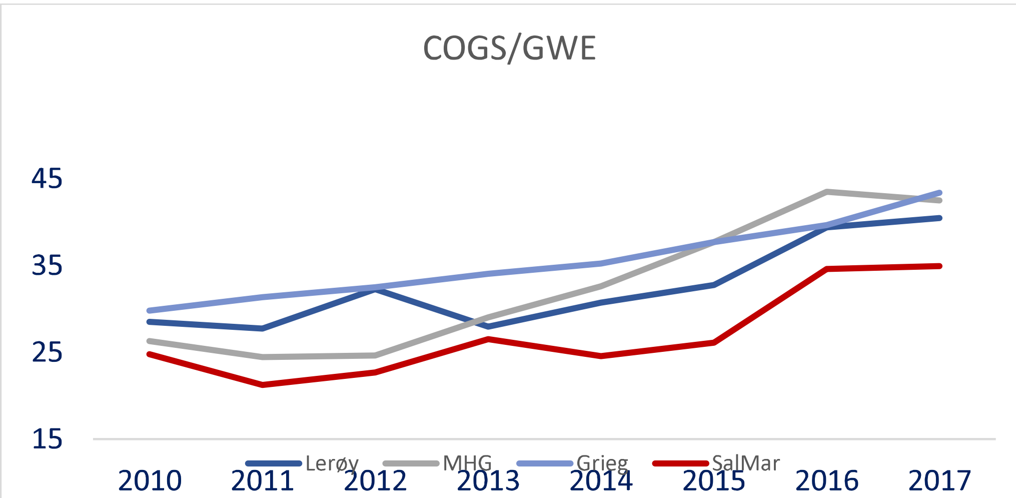


Figure 36: Cost of Goods Sold per gutted equivalents

As can be seen from the figure, the cost level of the industry participants seems to follow the same pattern. It is reasonable that they correlate as the companies operate in many of the same geographic areas and are exposed to the same environmental risks. Moreover, the fish farmers use many of the same fish feed suppliers, which exposes them to the same feed prices. In the period from 2010 to 2015 COGS had a steady increase with minor fluctuations, followed by a sharp rise from 2015 to 2016. The dramatic increase from 2015 to 2016 compared to previous years was due to an escalation in salmon lice combined with more expensive fish feed. In 2016 and 2017 SalMar devoted great efforts to treat for salmon lice, as well as allocating more resources to R&D projects with the purpose of preventing salmon lice in the future (SalMar, 2017). The cost of fish feed also increased these years as result of the feed companies transitioned to more expensive fish feed, which contributed to higher costs (Nofima, 2017). As mentioned in the strategic analysis, few fish feed suppliers with moderate market power allows for high feed prices.

If we narrow our analysis to SalMar specifically, we observe a steady track record of effective cost management the past 8 years, despite variations in external factors. Historically, SalMar have strived to have the best operational efficiency and to be the cost leader in the industry. In retrospect, SalMar's strategy and actions to support their strategic positioning seem successful. Despite the dramatic increase in COGS in 2016 and 2017, SalMar have been able to deliver their highest return on invested capital ever. The reason why this is possible brings us to the next factor to discuss, salmon price, which may be the component of highest relevance when trying to explain SalMar's record high ROIC.

6.1.1.4 Salmon price

The development of the salmon price the past years has been volatile. During the period relevant for our analysis, we observe from figure 11 that the salmon price has been through a dramatic increase. At the highest peak, the price has almost been four times as high as it was in 2011. As argued in section 2.2.3, the sharp rise in the salmon price reflects that the increase in demand have not been met by a corresponding increase in supply. However, the depreciation of the NOK exchange rate, driven by the recession in the oil sector, made the effects of increased demand for salmon more apparent than normal. This is important to bear in mind when assessing the real strength of the market in 2016 and 2017. In summary, the high salmon price has outperformed the increase in costs the past years. This have contributed to high margins for SalMar, which again have enabled SalMar to deliver record high return on their invested capital.

6.2 Revenue Growth Analysis

SalMar have in the recent years experienced a magnificent increase in revenues. The revenues are in general determined by the salmon price, harvest volume, the portion of the salmon that becomes VAP as well as the price SalMar receives for the VAP. Most of the harvested salmon becomes slaughtered, prepared for transport and sold at the spot salmon price. The remaining part gets processed and transformed to value added products which enables SalMar to receive a higher price. However, as the VAP processing is associated with extra costs, there is a trade-off between increased revenues or reduced costs.

Figure 37: Illustration of SalMar's revenues

In the figure 38 below, we have illustrated how much of the salmon that gets sold at the salmon price and how much that gets processed and transformed into VAP. The red column represents the amount of salmon which becomes VAP while the blue column represents the portion which gets sold at the spot price. We have also included a red and blue line which illustrates the salmon spot price and the VAP price achieved.

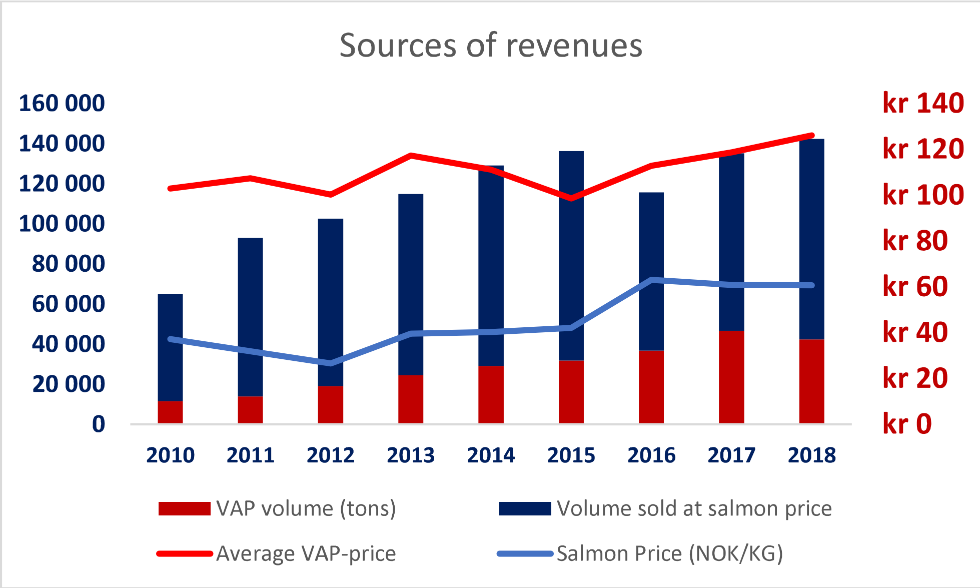


Figure 38: Sources of revenues

Since the salmon price is given by the clearance of supply and demand in the market, SalMar only have the ability to increase its revenues through increasing harvested volume or the ratio of salmon which becomes VAP. As we have already discussed the salmon price, we will proceed to give a brief description of the historical harvested volume as well as the VAP ratio, and then decompose the revenue growth into volume and price growth.

6.2.1 Harvested volume

SalMar's harvest volume is highly dependent of how many licenses they operate. We have therefore included the harvest volume and the number of licenses together in figure 39. The blue columns illustrate how much salmon that have been harvested in tons, while the red line shows how many licenses the company have been in possession of each year.

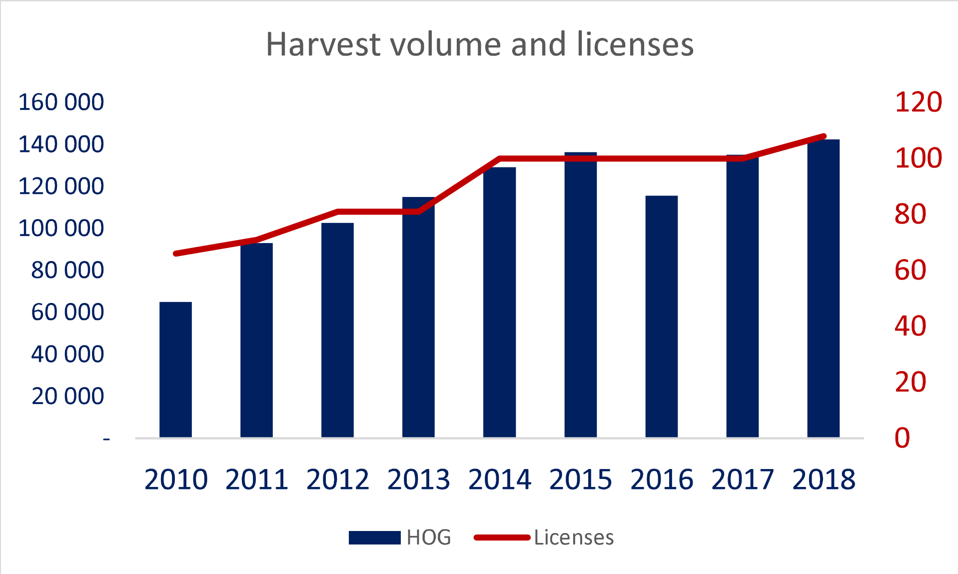


Figure 39: Relationship between harvest volume and number of licenses

SalMar have the past years been able to increase their harvest volume through operating improvements, which we will come back in section 6.2 when we discuss license utilization. One of the major sources of volume growth comes from consolidations, which has been giving SalMar access to new farming licenses. Another source behind volume growth came from the start of operations at the harvesting- and processing facility InnovaMar in 2011. Increased processing capacity lead SalMar to acquire Bringvor Laks AS, Krifo Havbruk AS and Villa Miljølaks AS. The acquisition added new licenses and a total of 10,000 tons GWE in the same year. In 2014, the harvested volume increased by 12.3%. The volume growth was possible due to an acquisition of the Rauma Group, combined with being granted 8 new licenses, which allowed SalMar to increase their fish farming licenses from 81 to 100. During the past four years, the number of licenses has remained the same, which in turn have caused a stabilization in harvest volumes as well. Year 2016 stands out with a slight drop in harvested volume due to high levels of salmon lice.

6.2.2 Value added product ratio

The VAP ratio are calculated by dividing the amount of salmon that have been processed into VAP with the total amount of salmon which SalMar have harvested.

$$VAP\ ratio = \frac{Harvested\ salmon\ transformed\ to\ VAP}{Total\ amount\ of\ harvested\ salmon}$$

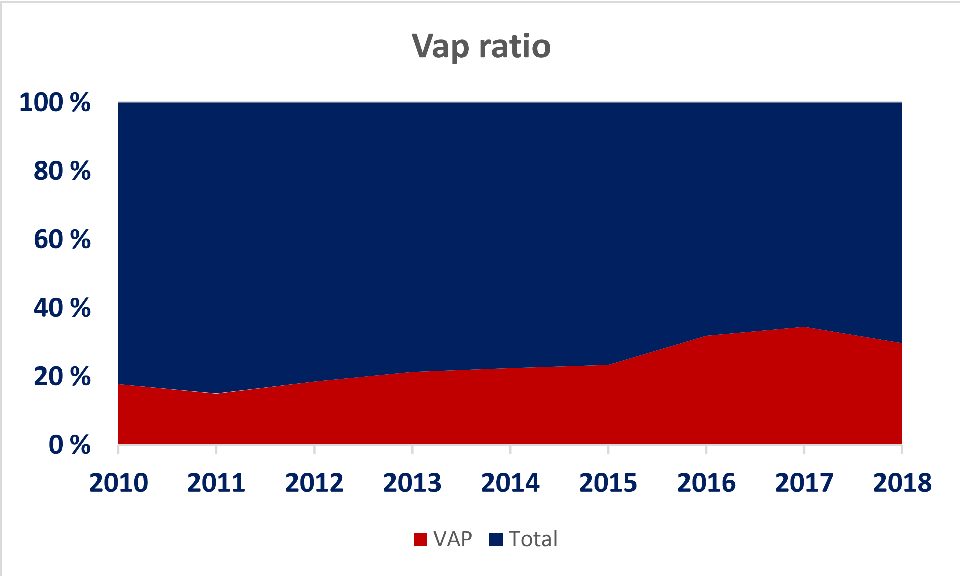


Figure 40: VAP ratio.

As can be seen from figure 40, the ratio of processed salmon has been increasing steadily from 2011 to 2017. However, the ratio had a slight decrease from 35% in 2017 to 30% in 2018. The increased VAP ratio contributes to higher revenues in form of enabling SalMar to take a higher price for the salmon.

6.2.3 Decomposition of growth analysis

To ease our decomposed revenue growth analysis, we have chosen to exclude the VAP ratio from it. The consequence is that we are unable to separate the pure effect from the VAP ratio on price growth. However, the effect of the VAP ratio is still present as it affects the price/revenue SalMar receives.

To further decompose the revenue growth into price and volume growth, figures from 2009 are compared with the price and production volume of the given year. By multiplying annual changes in salmon price while holding the volume sold from 2009 constant, we get revenue increase from price changes. In the same manner, revenue increase from production is calculated by multiplying annual changes in volume with the price from 2009 held constant. Total revenue growth is further calculated as a product of percentage growth of the two main drivers. SalMar started to report volume sold from the year 2014 and on. From 2009 to 2014, harvested volume is used as a representation for volume sold.

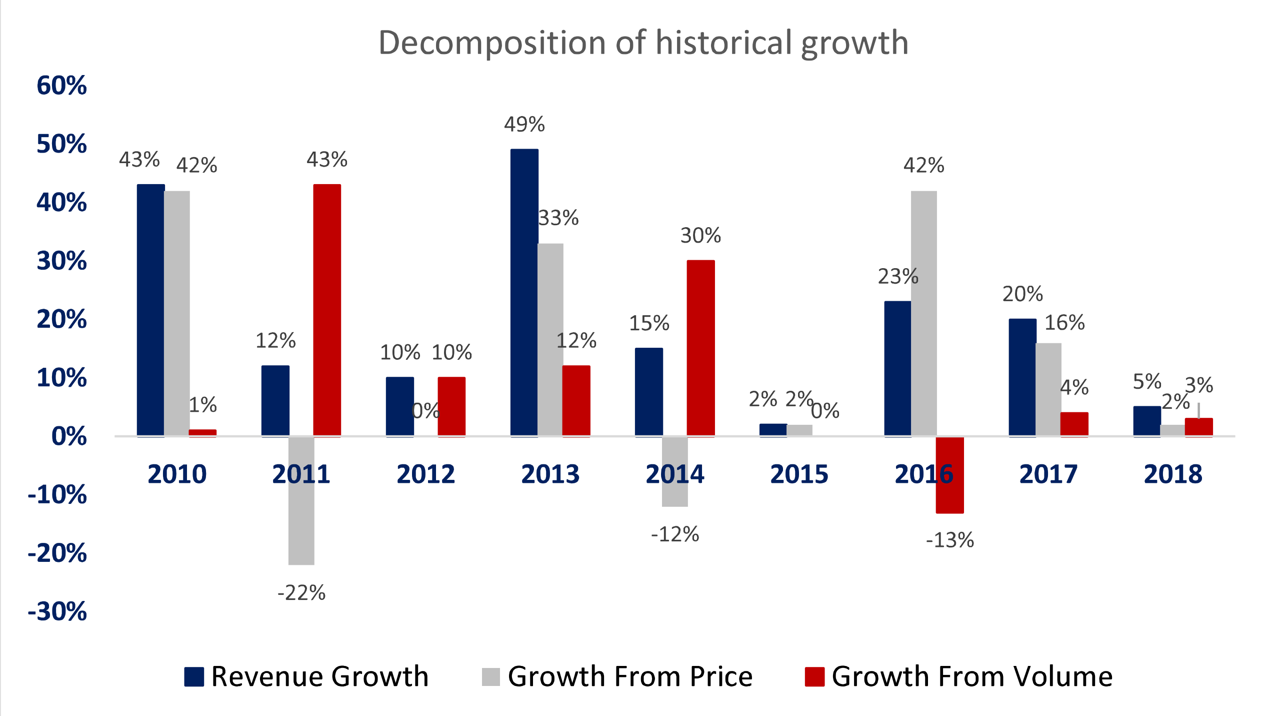


Figure 41: Decomposition of historical growth 2010-2018.

The source of growth in revenue often has been a combination of increased salmon price along with volume growth. However, there are years where either change in price or volume have solely been the source for revenue growth.

In 2010 the growth in revenue mainly came from increased salmon price, as SalMar harvested only 1 percent more salmon compared to the previous year. However, in the following year, the situation changed and the growth in volume was the only source to revenue growth. The growth in volume came from the acquisition of Bringsvor Laks AS, Krifo Havbruk AS and Villa Miljølaks AS, which gave SalMar new farming licenses. Furthermore, the volume increase in 2012 came mainly from the acquisition of 10 licenses from Villa Arctic AS. In 2013, a combination of high salmon price and better operating efficiency resulted in the period's highest revenue growth of 49% from the year before. The acquisition of the Rauma Group in addition to gaining 8 new farming licenses lead to increased harvest volume, which was the sole contributor to 15% increased revenues in 2014. In 2016, we see an increase of revenues of 23% despite that the harvest volume was reduced by 13%. This was due to the strong salmon price the given year. In 2017 and 2018 the revenue increase was both due to a combination of increased volume and higher salmon prices.

6.3 Operating Data Analysis

6.3.1 License utilization

License utilization measures the harvested volume to the number of licenses SalMar holds. In other words, the license utilization works as an indicator of SalMar's operating efficiency.

$$License\ Utilization = \frac{Harvested\ volume}{Number\ of\ licenses}$$

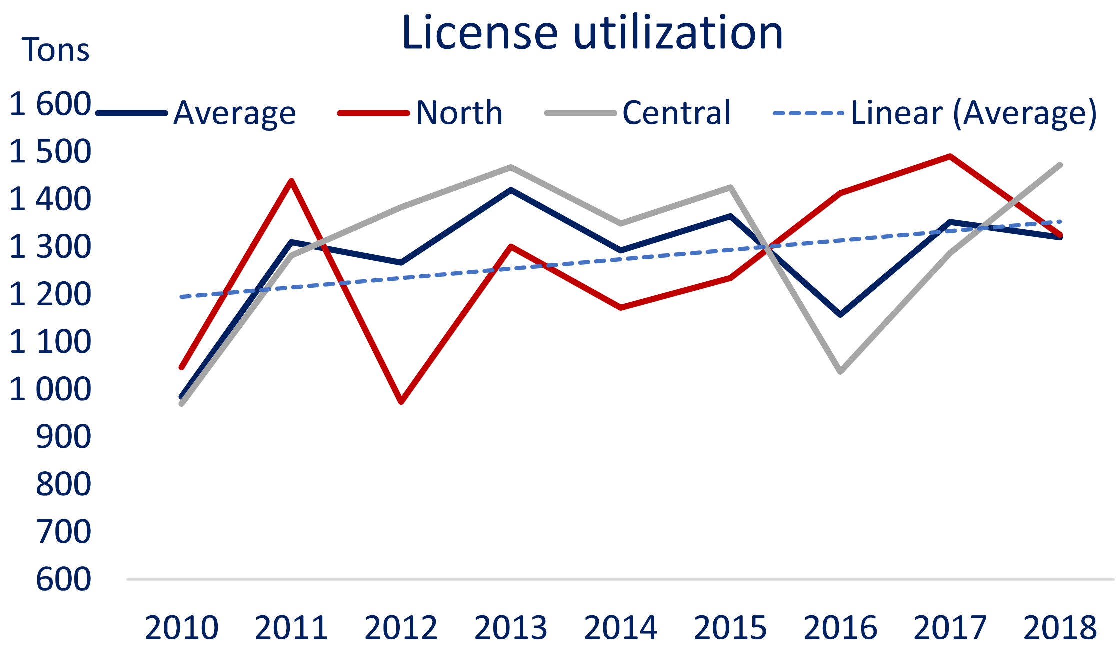


Figure 42: License utilization 2010-2018

From 2010 to 2018, SalMar's license utilization have been fluctuating along with the environmental conditions they operate in. In addition, the harvest volume varies between the years due to the production cycle of salmon. However, on an aggregate level we observe a trend where the license utilization has increased. The increase is primarily due to technological innovations and operating improvements over the years which have allowed better utilization and efficiency (SalMar, 2018).

There is one year that deviates from the trend. In 2016, the company experienced a sharp drop in production as the central part of Norway was subject to substantial levels of salmon lice. This drastically reduced the amount of salmon which were eligible for harvesting. 2016's poor biological conditions harmed all players in the industry which operated in Central Norway. On the other hand, the production facilities in the Northern Norway were not subject to the increase in salmon lice. In fact, the facilities in the northern part increased their license utilization in 2016.

In 2017, SalMar harvested 20,000 tons more than in 2016, and thus managed to achieve the same utilization levels as in 2015. The improved biological conditions came because of the company's extensive investments against salmon lice in 2016 (SalMar, 2017). As can be observed from figure 42, there was better utilization in the northern part than the central part of Norway. This is because there were slightly better production environments in the north, in form of more correct water temperatures, currents, and less problems related to salmon lice than in Central Norway. However, in 2018 this was the opposite again, and central Norway experienced a substantial improvement in the biological conditions.

6.4 Credit Health and Capital Structure

In the last step of our historical analysis we will focus on the financing of SalMar's operations. To assess the strength of SalMar's capital structure, we will examine two related, but distinct concepts: liquidity and leverage. Liquidity measures the company's ability to meet short-term obligations, such as interest expense, rental payments, and required principal payments. Leverage measures the company's ability to meet obligations over the long term. (Koller et al., 2015)

6.4.1 Interest coverage

An EBIT/Interest ratio of two or higher are generally considered as acceptable (Investopedia, 2019c). Figure 43 reveals that SalMar's EBIT/Interest ratio has been beyond acceptable level from 2010 to 2018. The lowest value measured was in 2012 where the ratio was 4.3, which is still over the double of what's considered acceptable.

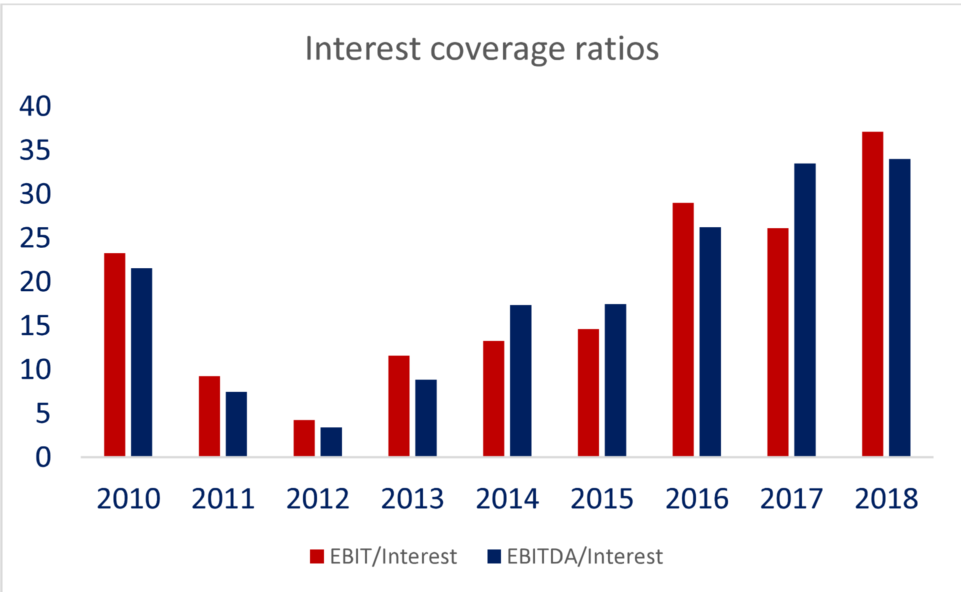


Figure 43: Interest coverage ratios 2010-2018

The PESTEL-analysis in section 4.1.2 revealed that the interest rates have dropped significantly from 2015 and on, making interest coverage ratios in these years exceptionally high. SalMar achieved the period's highest EBIT/Interest rate of 29 in 2016, which is highly correlated with the record low key policy rate of 0.50% the same year. Low interest rates are one of the reasons for extraordinary high interest coverage ratios the past years. It is also worth emphasizing that SalMar's high level of equity financing in combination with high profit margins also impact the ratios in a positive way, leading to lower credit risk for the company.

6.4.2 Debt ratio

In order to evaluate leverage in a low interest rate environment, analysts prefer measuring and evaluating debt multiples such as debt to EBTIDA or debt to EBIT (Koller et al. 2015).

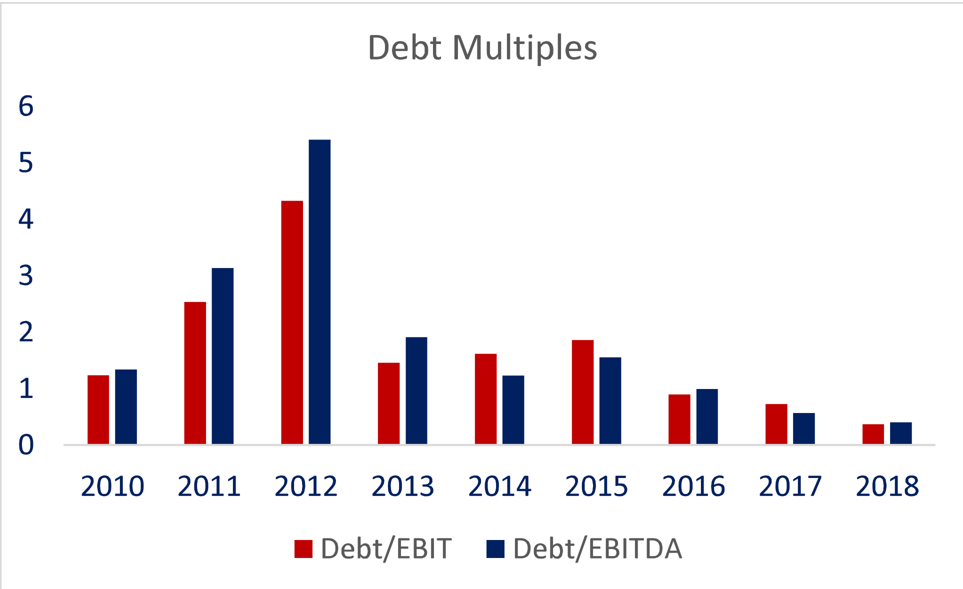


Figure 44: Debt multiples

SalMar's debt to EBIT and EBITDA tend to be more stable during the past few years. Due to the company's high equity ratio we see that the debt to EBIT and EBITDA have fluctuated around one in the years from 2013 to 2018. This means that the EBIT and EBITDA have been as high as their debt, which is considered highly satisfactory from a credit risk perspective.

Furthermore, the past five years has shown a trend of decreasing debt ratios. This is a sign of good credit health as it implies that SalMar either pays off its debt or increases their earnings. As mentioned earlier SalMar have experienced a remarkable increase in their revenues the past years.

6.4.3 Equity ratio

In further assessment of the company's leverage, we will measure the equity ratio over time. Additionally, a comparison of the equity ratios of the comparable companies will be carried out. The equity ratio shows how much of a company's assets is funded by equity. The higher the ratio, the more equity the company has used to fund its assets. The equity ratio is given as:

$$Equity\ ratio = \frac{Book\ value\ equity}{Book\ value\ equity + liabilities}$$

A high share of equity works as a buffer, as companies with high equity ratios will be better prepared to handle recessions and unpredicted events. With a high share of equity, the capital will also last longer, causing the company to be less likely to being drained for capital and insolvent (Koller et al., 2015). This further lowers the creditors risk and interest cost for the company.

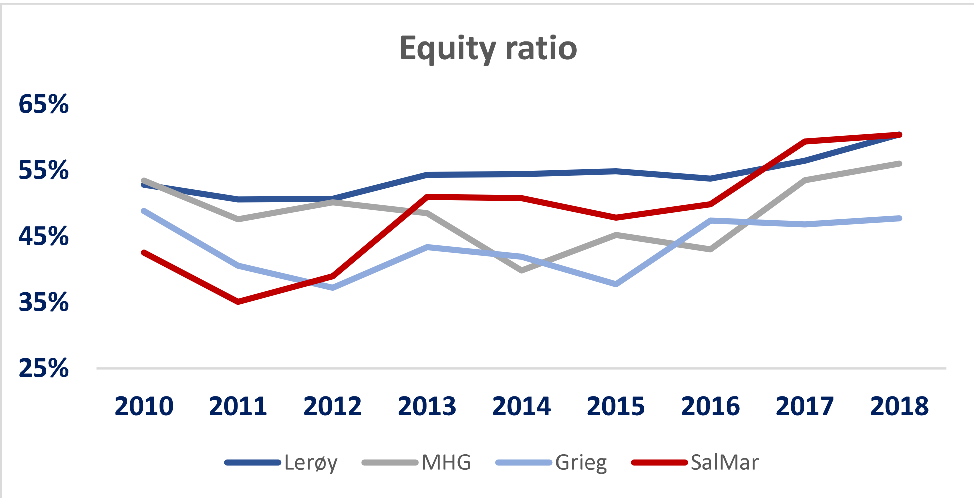


Figure 45: Industry participant's equity ratio

Figure 45 illustrates that the companies' equity ratios have been fluctuating. Despite the variations, SalMar's and the rest of the industry participants' ratios can be considered as robust. It must further be emphasized that variations in the equity ratio should be expected in a cyclical industry as the aquaculture industry. We see that since 2010, SalMar improved from having the lowest equity ratio in the industry to having the industry's highest in 2017. SalMar's equity ratio have been acceptable every year, but an equity ratio of 60% in 2017 suggests that SalMar is very well prepared for the future.

7 Forecasting performance

7.1 Length and detail of the forecast

Aquaculture is a highly volatile industry, which makes it unlikely that SalMar will perform exactly as we forecast. However, one can expect the company's cash flow to fluctuate around predictions. The strong cash flows in a boom, will cancel out the low cash flows in recessions. To account for different outcomes, we have included a bull, base and bear scenario in our forecasting of each of the. The purpose of introducing three scenarios is to model for uncertainty. A bull case represents a boom in the industry, a base case represents what's most likely to incur, while a bear case represents a recession in the industry.

The forecasting of SalMar's future performance is mainly focused around the company's revenues and costs, which are considered the most important factors. To forecast the line items in the financial statements we have utilized the McKinsey's framework for *Components of a Good Model* by Koller et al. (2015). For each line item we have identified the key driver and created a set of historical ratios, which are then used as a base for forecasting ratios. For each of the historical ratios we have used the average, the last five-year average and the median to set the target forecasting ratio. The length of our forecast will be 10 years.

7.2 Revenue forecast

7.2.1 Top-down and bottom-up method

To build SalMar's revenue forecast, a combination of a *top-down* and *bottom-up* forecast is used. The top-down approach estimates revenues by sizing the total market, determining market share, and forecasting prices (Koller et al., 2015). For mature industries such as aquaculture, the aggregate market grows slowly and is closely tied to economic growth and other long-term trends. This can for instance be a growing global population, increased wealth, and shifting consumer trends towards healthier lifestyle. In these situations, the focus will be on forecasting SalMar's market share compared to its peers. To do this, we will use the findings from the strategic analysis in section 4 to determine which companies have the capabilities and resources to compete effectively and capture market share. Koller et al. (2015) argues that one place to start is with the company's historical performance. But more importantly, we will emphasize the current external macro-economic and internal situation of SalMar in order to address how the company is positioned for the future. When forecasting short-term performance using the top-down method, the focus should be on the company's announced intentions and capabilities for growth (Koller et. Al, 2015).

Whereas the top-down method looks at the aggregate market and predicts the object of valuation's share and price changes, a bottom-up approach is built on projections of customer demand (Koller et al., 2015). In our forecast we will combine the top-down and bottom-up approach in order to get a comprehensive understanding of SalMar's future performance. Regardless of method, Koller et al. (2015) warns that forecasting revenues over long time is imprecise. This comes from the fact that customer preferences, technologies and corporate strategies change, combined with the volatility of the aquaculture industry.

As mentioned in the revenue analysis SalMar's revenues are determined by the following four factors. Therefore, our revenue forecast will be built on trying to forecast these factors.

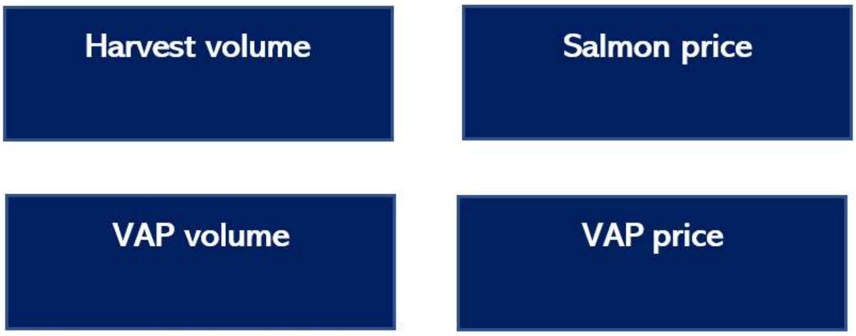


Figure 46: Four factors determining SalMar's revenue

7.2.2 Harvest volume

SalMar's production facilities are segmented into two areas, Central Norway and Northern Norway. Along with geographical differences, the areas differ in terms of environmental conditions. The northern part of Norway is considered as more attractive to produce salmon due to lower levels of salmon lice, which in general enables a higher license utilization.

As elaborated in the PESTEL-analysis, the Norwegian government has developed the traffic light system for allocation of fish farming licenses. This regulation tool categorizes different production zones into green, yellow or red. The color given for a production area will then determine whether the farming facilities are able to grow, remain the same or must reduce their production. Therefore, our forecast for future growth in production need to take into consideration these regulations. We will also asses the future operating efficiency as well as the biological conditions when forecasting harvest volume. In other words, to assess future harvest volume we need to look at the prospects for the regulations as well as the interrelated factors operating efficiency and biological conditions.

7.2.2.1 Regulations and biological conditions

The colors from the traffic light system are based on how severe impact the aquaculture industry has on the environment in a production area, as well as the occurrence of salmon lice. A green production zone allows for an increase in MAB of 2%, while a yellow zone indicates a freeze in production. If the production area is categorized red, the conditions in the production area are not satisfactory and one must reduce the production amount if conditions do not improve within 2 years.

There is one exception for the growth rules. Independent of which production area a facility is located, one can apply for up to 6% growth given excellent conditions around the specific farming facility. An overview of where SalMar's production facilities are located are presented in the table below.

Location	Northern-Norway	Central-Norway
Green	32	8
Yellow	0	60
Red	0	0
Total licenses	32	68

Table 9: Distribution of SalMar's licenses

From table 9 we see that SalMar have no facilities in red zones. All the northern facilities have been categorized as green while eight licenses in Central Norway are considered as green. The rest of the 60 licenses in Central Norway are operating in a yellow area.

All of SalMar's northern facilities applied for increase in production in 2019, while only 8 of the licenses in central Norway applied for the 2% growth (Norwegian Directorate of Fisheries, 2019d). Furthermore, the company applied for an extraordinary 6% increase in five of the licenses in north as well as one of the licenses in Central Norway.

7.2.2.2 Offshore fish farming

SalMar have the potential to increase their number of licenses and thus harvesting volume through developing offshore fish farming. The company has been granted 16 development licenses for their two projects Ocean Farm 1 and Smart Fish Farm. Ocean farm 1 ended its pilot phase in January 2019 and resulted in an offshore harvested volume of 5,100 tons GWE using eight development licenses. If the pilot project is characterized as successful, SalMar have the possibility to transform the development licenses into permanent traditional licenses for a fee of NOK 10 million per license.

On Februrary 25th, 2019, SalMar announced that they will pursuit the project Smart Fish Farm which, like Ocean Farm 1, have also been granted eight development licenses. Smart Fish Farm is estimated to cost around NOK 1.5 billion. The company points out that this construction is unlike anything designed in the past. If the offshore construction succeeds, it will be possible to farm salmon in the open sea, and hardly any restrictions on the choice of location (Kyst.no, 2019). Smart Fish Farm will be a semi-submersible production facility. According to the founder of SalMar, Gustav Witzøe, Smart Fish Farm will be designed in a way that allows for treat against lice and diseases in a far more efficient and gentle way than other development projects, and with a construction that makes it virtually impossible for salmon to escape from (Kyst.no, 2019).

If Ocean Farm 1 and Smart Fish Farm meet the expectations in the development phase, it can be able to solve the area limitations and environmental challenges that characterizes the aquaculture industry. The government’s main objective and requirements will then be met, which will benefit the entire industry.

7.2.3 Salmon price

The salmon price is determined by the evolvement in demand and supply. To be able to forecast the salmon price one should therefore take a deeper look at the prospects for some of the key factors driving the demand and supply side in the industry.

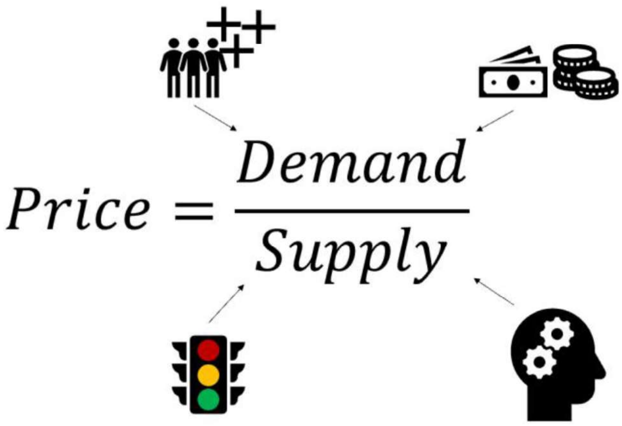


Figure 47: Decomposition of salmon price

7.2.3.1 Demand

Population growth

The main driver for increased demand for salmon is population growth. The UN estimates that the world population will increase by 25% from 2020 to 2050. As elaborated in the PESTEL-analysis, SalMar estimates that the world must produce 70% more food within 2030, and that this must be done using less resources and with minimal environmental footprint. Aquaculture requires less water consumption per kilogram of edible meat and leaves less carbon emissions than other protein sources. In addition to this, traditional wild catch of salmonids is maximized, which enhances the importance of fish farming to maintain food production. As seen from figure 8 and 24, we observe that Norway produces more than 50% of the global salmon production, whereof SalMar holds approximately 11% market share of the Norwegian harvested volume.

Increased wealth and health

From the PESTEL-analysis we saw that the emergence of a growing middle class will be an important driver for demand in the aquaculture industry, considering that salmon is a product of high quality. With higher purchasing power from new markets, it is expected that these also want to buy higher quality food, which is often correlated with food containing high levels of protein. At the same time, western markets with already high purchasing power face a number of common health challenges which has caused a shift in focus towards eating healthier. As a result of this, it is accessible to expect that a considerable share of the 70% increase in demand for food within 2030 will come from salmon.

International political conditions

Norwegian farming companies export around 95% of its harvested volume abroad. Over the past 3 years China's primary salmon supplier has shifted from Norway to Chile due to political trade barriers. However, it is expected that Norway will be able to recapture a market share of 65% of China’s salmon import in the long run. As a result, the demand for Norwegian salmon is expected to increase.

7.2.3.2 Supply

Regulations

Historically, there have been a slow increase in number of licenses, from 848 in 2002 to 1015 in 2017. The introduction of the traffic light system is further an indication that the government will prevent the industry from increasing production rapidly by putting sustainable development ahead of profitability. This indicates that the number of traditional licenses will remain constant in the short-run before environmental issues are being handled, which in turn will put a lid on the supply side of the industry. Furthermore, transitioning to the traffic light system means that the companies operating in a given area share the environmental responsibility with other players in the same area. A collective responsibility among competing companies can cause the free-rider problem to prevent improvement of the environmental conditions. On the other hand, there are great potential for growth in development licenses. As of April 2019, there are a total of ten ongoing projects using 54 development licenses approved by the government. The SWOT-analysis revealed development licenses represent an opportunity, and as a pioneer within offshore fish farming, SalMar is well under way of exploiting the potential that these licenses bring.

Innovations

Environmental considerations are the main reason behind the government's restrictive policy when it comes to issuing new farming licenses. Therefore, there are several initiatives initiated with the purpose to farm salmon in new and more environmentally friendly ways. If any of the ten ongoing development projects succeeds, the technology will be shared with all fish farming companies and benefit the industry as a whole. The supply side of the industry will then be strengthened, which will contribute to decrease the salmon price. Innovations like SalMar's Ocean Farm 1 and Smart Fish Farm will have the potential to challenge the existing limitations in the supply side of the industry.

Forward

A forward contract is a customized contract between two parties to buy or sell an asset at a specified price on a future date (Investopedia, 2019a). There is a forward market for the salmon price managed by the Fish Pool market exchange. The forward contracts could be interpreted as what the market believes the salmon prices will be in the future. The market's view of the salmon price is illustrated in the graph below.

	2019e	2020e	2021e
Forward prices Salmon (26.04.2019)	60,59	60,7	59,25

Table 10:Forward prices

7.2.3.3 Income from associates

SalMar's income from associates is from their ownership in Scottish Sea Farms (50%) and Arnalax (34%). To evaluate the value added from these associates in the future, we have assumed that they will continue to grow at the same rate as the compound annual growth rate from the prior 8 historical years.

7.2.4 VAP ratio

The VAP ratio is important to consider when forecasting as it has a great impact on both the revenues and costs for SalMar. In our forecast we have used a VAP ratio of 30%, which reflects the average of the previous years. In 2021, we assume that the VAP ratio will increase as result of the expected start of InnovaNor in 2020. As described in the internal resource analysis, InnovaNor is facility under construction that will increase SalMar's processing capacity.

7.2.5 VAP price

As there is a lack of detailed information about the various VAP products, we have chosen to use the average price from previous years as an indication of the premium above the salmon price SalMar receives after processing the fish. However, the VAP price is expected to vary in the future along with changes in salmon prices.

7.2.6 Cost of Goods Sold

According to the Norwegian Seafood Research Fund (FHF), the industry's production costs has increased by over 90% from 2005 to 2017 (ilaks.no, 2017). The main drivers behind the increase in costs are increased feed costs and the cost related to fighting salmon lice. In this section, we will forecast cost of goods sold per kilogram of harvested salmon.

7.2.6.1 Fish feed

Fish feed companies have moderate market power, which allow them to raise feed costs. Fish feed stands out as the largest salmon production cost, and accounts for around 47%. An increase in fish feed thus represent a threat to the industry. The EU holds the largest share of Norwegian salmon, and as of April 2019, the exchange rate between EUR and NOK currently stays at a high level compared to past observations. According to FHF and Kontali (2017), fish feed has increased from NOK 14 per kilo in 2014 to NOK 18 per kilo in 2016. This represents a CAGR of 8.74%. The combination of high concentration among suppliers, and the importance of fish feed will allow feed companies to sustain high prices in the future.

7.2.6.2 Exchange rate

As presented in the PESTEL-analysis section 4.1.2, commodity prices are set in international currencies like EUR and USD. Depreciation of NOK against these currencies leads to increased feed costs for the Norwegian fish farming companies. Since fish feed accounts for approximately 47% of production costs, an increase in feeding costs will have perceptible impact on cost of goods sold.

7.2.6.3 Salmon lice and disease

An important driver behind COGS is the biological condition in the harvesting area. The struggle to overcome sea lice has been the industry's biggest challenge since the beginning. Nofima, a Norwegian food research institute, estimates that the cost salmon lice have increased from just over NOK 1 per kilo in 2011 to NOK 4.25 per kilo in 2016 (Nofima, 2018). This represents a CAGR of 33.56%. The most important changes from 2015 to 2016 have been reduced costs for pharmaceuticals related to bath treatment, but increased costs for mechanical treatment, cleaner fish and mortality. In 2016 and 2017 SalMar devoted extensive resources and efforts to try to find a persistent solution to the salmon lice problem.

7.3 Scenario analysis

The future can take many paths. In this section, we will use scenario analysis in line with Koller et al. (2015) to deepen the understanding that our valuation model provides. Harvested volume, salmon price, and COGS are considered the key uncertainties that affect SalMar's future performance, and thus we will use these uncertainties to construct multiple forecasts. We will construct a comprehensive forecast consisting of a base, bull, and bear case, before we weight the resulting equity valuations by their probability of occurring. Collectively, the scenarios should capture the future states of the world that would have the most impact on value creation over time with a reasonable chance of occurrence (Koller et al., 2015).

7.3.3 **Base case**

7.3.3.1 Harvested volume

Although there are considerable uncertainties related to assessments of future conditions, both in terms of market and production-related elements, SalMar believes that the Group's prospects are very good. The harvest volumes for 2019 are expected to be higher than in 2018. This is primarily due to the fact that SalMar has a higher holding of salmon in the sea at the beginning of 2018 than was the case one year ago. The company reports an expected harvest volume of 145,000 ton in 2019 (SalMar, 2019a).

SalMar's Central region holds 68 fish farming licenses, whereof 8 have applied for a 2% increase, and one for a 6% increase. The company reports that the salmon lice situation in Central Norway is improving. SalMar has over time made extensive investments in expertise and capacity to handle biological challenges in the best possible way. This has been done for example through procurement of important equipment to be able to produce larger smolt in order to reduce the production time in the sea, and mechanical tools to ensure sanitary slaughtering. The efforts have produced good results, and the biological situation in the region of Central Norway shows good signs of improvement (SalMar, 2019a). This leads to an increase in harvest volume of 1% due to improved biological conditions. On the other hand, the PESTEL- and SWOT-analysis revealed that Central Norway is still one of the regions with greatest density of salmon lice. This puts a lid on the volume growth potential of the region, since salmon lice serves as the main indicator for whether or not MAB is allowed to increase due to the traffic light system. In the base case, we therefore take into account that all of the 8 of SalMar's applications for increasing MAB in Central-Norway will be approved. In addition, the single license which have applied for a 6% growth will be granted this growth.

Our prediction for the Central-Norway looks like this:

Central Norway - Base case		
MAB-Growth	2 %	6 %
# licenses applied for growth	8	1
# licenses approved for growth	8	1
Total # licenses	68	
Increased MAB	0,32 %	
Improved biological conditions	1 %	
Estimated annual growth central	**1,2 %**	

Table 11: Harvest volume Central Norway - Base case

Northern Norway has good potential for further production growth due to its good biological conditions (SalMar, 2019a). SalMar's Northern section has good natural circumstances for sustainable production that the segment manages through knowledge and targeted development. When it comes to the prospects for salmon lice, it is likely that the comprehensive efforts in 2016, 2017 and 2018 will cause the levels of lice to stabilize at a moderate level. During these two years, SalMar have devoted considerable investments to R&D projects with the purpose of preventing salmon lice in the future (SalMar, 2019a). Overall, the salmon lice situation in north has been better than in Central Norway. In our base case, we therefore assume that 27 of the 32 licenses in Northern Norway will get approval for increasing MAB by 2% every other year, while the remaining 5 will get an extraordinary MAB-increase of 6%. Additionally, harvest volume will be able to increase by 1.5% due to improved biological conditions. This equals a 2.6% annual increase in harvested volume for SalMar North.

Our prediction for the Northern-Norway looks like this:

Northern Norway - Base case		
MAB-Growth	2 %	6 %
# licenses applied for growth	27	5
# licenses approved for growth	30	2
Total # licenses	32	
Increased MAB	2,25 %	
Improved biological conditions	1,5 %	
Estimated annual growth North	**2,6 %**	

Table 12: Harvest volume Northern Norway - Base case

7.3.3.2 Offshore fish farming

SalMar is continuously working to develop the most sustainable operating areas and the best solutions. In the VRIO-analysis of the company's resources, we saw that the realization of the offshore farming facilities Ocean Farm 1 and Smart Fish Farm represent opportunities for further growth for SalMar. Ocean Farm 1 and Smart Fish Farm have both been granted 8 development licenses each, which equals approximately 5,100 tons GWE. Ocean Farm 1 harvested its first volumes by the end of the project's pilot phase in 2018, meaning that the next harvesting round is expected to be in 2020 and every other year after that, considering a production cycle of 18-24 months. We consider that the time it takes to operationalize Smart Fish Farm will be the same as for Ocean Farm 1. With the announcement of Smart Fish Farm in February 25th, 2019, the project is expected to be ready to harvest by the end of 2022.

In the base case, we assume that the 16 offshore licenses will get approved increase in MAB of 2% every other year due to the good biological conditions in the sea. This equals a 1% increase annually, and our prediction for offshore fish farming is illustrated below:

Offshore - Base case	
Increased MAB	2 %
Estimated annual growth Offshore	**1,00 %**

Table 13: Harvest volume Offshore - Base case

7.3.3.3 Salmon Price

The PESTEL-analysis from section 4.1.2 showed that the salmon price is determined by demand and supply. It was further shown that the forward price for salmon is created from trading forward contracts with Fish Pool. Forward prices thus contain the market's expectations of future salmon prices, which makes forward prices as reasonable starting point for future estimates. In our base case, we will therefore use forward prices from the valuation date 26.04.2019 to 31.12.2021. From 2022 and forth, we assume a simplified inflation rate of 2.5% annually.

The salmon price for the base case, as well as for the bull and bear case are as follow:

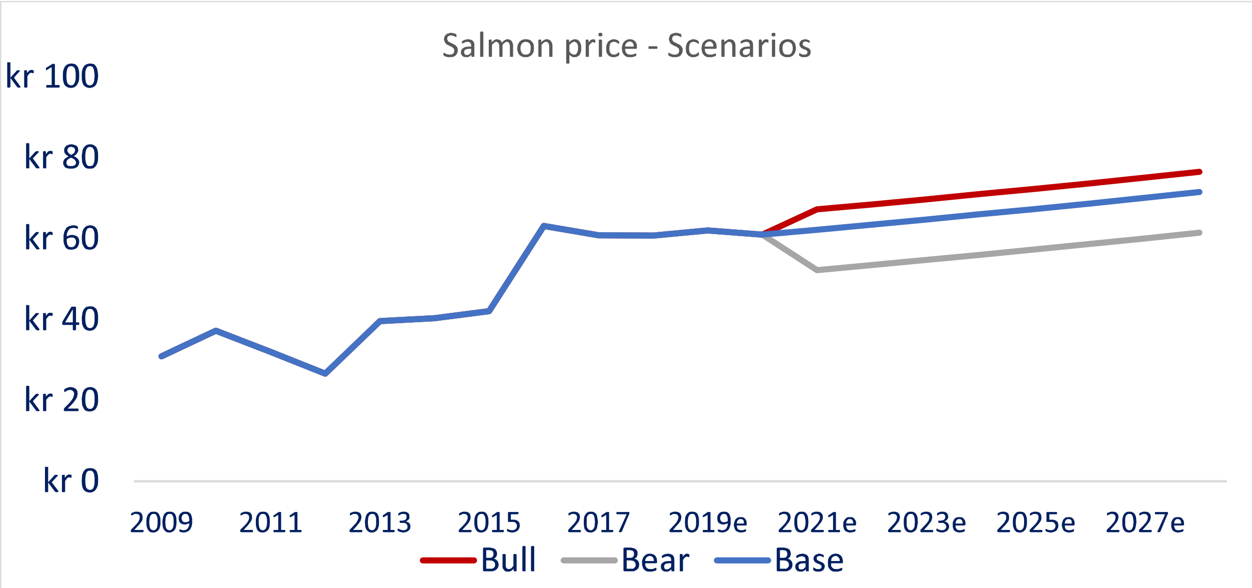


Figure 48: Salmon price for each of the scenarios

7.3.3.4 COGS/kg

From figure 14 we can observe that fish feed is the largest expense post in production of salmon. From 2014 to 2016, feed costs increased with a CAGR of 8.74%. We have used these figures as a basis for further forecasting of COGS per kilogram. The significant increase in fish feed comes from a combination of feed companies increasing the prices, depreciation of the NOK, and farming companies transitioning to more expensive feed types (Nofima, 2018). In the base case, we assume that not all of the three factors behind increased fish feed will come into play at the same rate as it has historically. We have taken into account that SalMar does not further transition to more expensive feed, and that the exchange rate between NOK and EUR is stabilized. We therefore estimate an increase in fish feed of 3.5% annually. Another important driver behind COGS is the amount of salmon lice in the harvesting facilities. High levels of salmon lice require actions and responses in order to rectify the biological conditions, which in turn will drive up the COGS/kg. In the base scenario, we assume that the biological conditions in SalMar's farming facilities are unchanged from previous years, which leaves the cost of environment and maintenance constant. All factors combined; we estimate a 2.8% increase in COGS/kg.

COGS - Base case		% of COGS
Growth in fish feed expenses	3,50 %	47 %
Salmon lice treatment	1,00 %	7 %
Other	2,00 %	56 %
Growth in COGS due to biological conditions	**2,8 %**	

Table 14: COGS - Base case

7.3.4 Bull case

7.3.4.1 Harvested volume

In the bull case, we have taken into account that SalMar will reap the benefits of the previous efforts against salmon lice, and that the R&D projects will give a payoff above expectation. This will facilitate good farming conditions both in Central and Northern Norway. As described in the PESTEL-analysis better farming conditions will lead to more facilities being eligible for volume growth. Central Norway will get approval for a 2% volume growth in 8 out of 8 applications. In Northern Norway, all 32 licenses will get approval for volume growth, whereof 27 get a 2% increase and the remaining 5 get a 6% MAB increase. Improved biological conditions will further lead to a 2% in Central-Norway and 3% in North. These mentioned assumptions give the following increase in harvested volume:

Central Norway - Bull case		
MAB-Growth	2 %	6 %
# licenses applied for growth	8	1
# licenses approved for growth	8	1
Total # licenses	68	
Increased MAB	0,32 %	
Improved biological conditions	2 %	
Estimated annual growth central	**2,2 %**	

Table 15: Harvest volume Central Norway - Bull case

Northern Norway - Bull case		
MAB-Growth	2 %	6 %
# licenses applied for growth	27	5
# licenses approved for growth	27	5
Total # licenses	32	
Increased MAB	2,63 %	
Improved biological conditions	3 %	
Estimated annual growth North	**4,3 %**	

Table 16: Harvest volume Northern Norway - Bull case

7.3.4.2 Offshore fish farming

When forecasting the bull scenario for offshore fish farming, we have taken into account that the pilot phase of Ocean Farm 1 is completed by the end of 2018. The project project succeeds, which initiates the manufacturing of Smart Fish Farm. The time required to construct the facility and the production cycle of salmon will take up to three years. Accordingly, it is reasonable to believe that Smart Fish Farm will be ready to harvest in 2022, with the capacity of 8 new licenses. The process repeats itself, resulting in a third offshore farming facility being ready to harvest in year 2026, with a total of 24 offshore licenses. As we saw from the VRIO-analysis, farming salmon out in open waters leads to less salmon lice, disease, escapes and environmental waste. Due to the good biological conditions in the sea, we assume that all offshore licenses will get approval for a 4% increase in MAB every other year. Our bull case forecast of offshore fish farming is illustrated below in table 17:

Offshore - Bull case	
Growth from increased MAB	4 %
Estimated annual growth Offshore	**2,0 %**

Table 17: Harvest volume Offshore - Bull case.

7.3.4.3 Salmon price

Forward prices from Fish Pool indicate, as of April 26, 2019, an average salmon price for May and June of NOK 67.0 and NOK 62.0 respectively and NOK 58.12 for the third quarter. For 2019, the total supply of Atlantic salmon is expected to increase by 6 per cent, which corresponds to 134,000 tons of salmon. Of the total growth, 56% will come from Norway.

In our bull case estimate, we have taken into account mechanisms revealed from the PESTEL-analysis. There will be strong growth on the demand side due to the combination of population growth, an emerging health trend and a growing middle class. Furthermore, global biological challenges, and regulations will reduce global supply. Prospects for continued good demand, combined with moderate supply growth, are expected to give high market prices for Norwegian salmon. On top of the 2.5% inflation in the base case, we predict in the bull scenario a 2.5% increase, resulting in a total of 5% annual growth in salmon prices.
In the bull scenario we use our predictions from the base case, but add NOK 5 for each year. This results in a price that is NOK 5 higher each year compared to our base case.

7.3.4.4 COGS/kg

The analysis of Porter's Five Forces in section 4.2.3 disclosed that there is a mutual dependency between feed companies and fish farmers. Like the feed suppliers, farming companies are also large and few with strong market shares. By raising feed prices excessively, the feed suppliers risk that industry participants transition into producing their of fish feed, like Marine Harvest. In the bull case, we have taken into account that the mutual dependency reduces the power of suppliers, and thus leads to a lower increase in feed costs of 4%. Furthermore, the comprehensive efforts against salmon lice in 2016 and 2017 will have positive effect on the biological condition in SalMar's operating facilities. This will cause costs spent on salmon lice treatment to decrease by 1% annually. These factors combined will lead to an annual raise in COGS/kg of 2.5%.

COGS - Bull case		% of cogs
Fish feed growth	3,00 %	47 %
Salmon lice treatment	-1,00 %	7 %
Other	2,00 %	56 %
Growth in COGS due to biological conditions	**2,5 %**	

Table 18: COGS - Bull case

7.3.5 Bear case

7.3.5.1 Harvested volume

From the PESTEL-analysis in section 4.1.5, we saw that salmon lice, diseases and escapes are the biggest environmental challenges in the aquaculture industry. These challenges were further categorized as a threat in the SWOT-analysis. Additionally, SalMar's strong presence in Central Norway, where there are high levels of salmon lice, is considered a competitive disadvantage according to the SVI-analysis. In the bear case we expect the biological conditions to remain the same and therefore not contributing to any improved operating efficiency both in north and Central Norway. This leads to only 4 out of 8 licenses in Central Norway being approved, only 15 of 27 northern licenses get 2% increase approved, and 3 will be eligible for a 6% increase. Harvest volume will also increase by an additional 0.5% due to improved biological conditions. In other words, the production in Central Norway will experience a minor increase of 0.1%, while the facilities in Northern Norway will continue growing the harvest volume 0.7% every year. Our prediction for the bear case harvest volume is illustrated below in table 19 and 20.

Central Norway - Bear case		
MAB-Growth	2 %	6 %
# licenses applied for growth	8	1
# licenses approved for growth	4	0
Total # licenses	68	
Increased MAB	0,12 %	
Improved biological conditions	0,00 %	
Estimated annual growth central	**0,1 %**	

Table 19: Harvest volume Central Norway - Bear case

Northern Norway - Bear case		
MAB-Growth	2 %	6 %
# licenses applied for growth	27	5
# licenses approved for growth	15	3
Total # licenses	32	
Increased MAB	1,50 %	
Improved biological conditions	0,50 %	
Estimated annual growth North	**0,7 %**	

Table 20: Harvest volume Northern Norway - Bear case

7.3.5.2 Offshore fish farming

When predicting the bear case for offshore fish farming, we consider the possibility that Smart Fish Farm does not deliver promising results for deep-water fish farming. The project will be considered a failure, and no further offshore facilities will be manufactured. This will leave Ocean Farm 1 the only offshore farming facility throughout the forecasting horizon.

Offshore - Bear case	
Growth from increased MAB	0 %
Estimated annual growth Offshore	**0,00 %**

Table 21: Harvest volume Offshore - Bear case

7.3.5.3 Salmon price

From section 4.1.4 we saw that disruptive technology may have the ability to solve many of the biological barriers that are restricting the supply side of the industry. In the bear case, we have assumed that innovations like land-based and offshore fish farming succeeds. This will cause a shift in the global supply of salmon, since disruptive technologies can make It possible to farm salmon away from fjords and estuaries with special water conditions. New entrants in the market will increase the supply of salmon, which will lead to a salmon price NOK 10 lower each year than what's forecasted in the base case. The future price patterns are illustrated earlier in the base case discussion.

7.3.5.4 COGS/kg

In the bear case, we assume an increase in fish feed costs as a result of feed companies raising the prices and the Norwegian kroner being depreciated against the Euro. This will lead to an annual feed cost increase of 5%. In addition to this, SalMar's competitive disadvantage from their position in Central Norway comes into play, causing an increase in costs for salmon lice treatment of 2% annually. All factors combined leads to a 3.6% annual increase in COGS/kg.

COGS - Bear case		% of cogs
Fish feed growth	5,00 %	47 %
Salmon lice treatment	2,00 %	7 %
Other	2,00 %	56 %
Growth in COGS due to biological conditions	**3,6 %**	

Table 22: COGS - Bear case

7.3.6 Probability for the different scenarios

We consider the base case to be the most likely to occur and we give this a probability of 70% to occur. The aquaculture industry is currently in a boom if we study the historical development in the industry. We find it more likely that the industry will face a bear scenario than a bull scenario, therefore we set the probability for a bear scenario to be 20%, and the probability for a bull scenario to be 10%.

7.4 Forecasted income statement

Financial Statements (NOK 1000)	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e
Income Statement - Base case										
Sales revenues	11 150 689	11 496 015	11 538 562	12 552 906	12 275 698	13 356 055	13 066 016	14 216 854	13 913 645	15 139 747
Other operating revenues	57 836	59 627	59 848	65 109	63 671	69 275	67 771	73 740	72 167	78 527
Total operating revenues	11 208 526	11 555 642	11 598 410	12 618 016	12 339 369	13 425 330	13 133 786	14 290 594	13 985 812	15 218 273
Cost of goods sold	4 850 985	5 254 983	5 297 280	5 936 946	5 785 661	6 479 411	6 320 200	7 072 701	6 905 375	7 583 919
Change in stocks of goods	(290 686)	(314 895)	(317 430)	(355 761)	(346 695)	(388 267)	(378 726)	(423 819)	(413 792)	(454 452)
Payroll costs	977 297	1 029 502	1 009 178	1 099 859	1 042 284	1 135 083	1 076 668	1 171 643	1 112 388	1 209 599
Other operating expenses	1 782 775	1 837 986	1 844 788	2 006 962	1 962 641	2 135 369	2 088 998	2 272 994	2 224 517	2 420 546
Total operating expenses	7 320 370	7 807 575	7 833 816	8 688 006	8 443 890	9 361 596	9 107 139	10 093 520	9 828 488	10 759 612
EBITDA	3 888 155	3 748 068	3 764 594	3 930 010	3 895 479	4 063 734	4 026 647	4 197 074	4 157 324	4 458 662
Depreciation of PP&E and intangible assets	441 697	457 804	482 258	472 738	699 693	672 722	716 193	688 829	733 319	705 562
Write-downs of PP&E	7 429	7 700	8 111	7 951	11 768	11 315	12 046	11 586	12 334	11 867
Operational EBIT	3 439 030	3 282 564	3 274 225	3 449 321	3 184 018	3 379 697	3 298 408	3 496 660	3 411 671	3 753 100
Fair value adjustments	845 831	845 831	845 831	845 831	845 831	845 831	845 831	845 831	845 831	845 831
Non-recurring gains on acquisitions										
EBIT	4 284 861	4 128 395	4 120 056	4 295 152	4 029 849	4 225 528	4 144 239	4 342 491	4 257 502	4 598 931
Income from investments in associates	195 558	203 303	211 353	219 723	228 424	237 470	246 873	256 650	266 813	277 379
Interest income	7 537	7 016	7 233	7 260	7 898	7 724	8 403	8 221	8 945	8 754
Financial income	-	-	-	-	-	-	-	-	-	-
Interest expenses	86 227	86 227	86 227	86 227	86 227	86 227	86 227	86 227	86 227	86 227
Financial expenses	1 871	1 871	1 871	1 871	1 871	1 871	1 871	1 871	1 871	1 871
EBT	4 399 859	4 250 616	4 250 545	4 434 037	4 178 073	4 382 624	4 311 418	4 519 263	4 445 162	4 796 966
Tax	1 011 967	977 642	977 625	1 019 829	960 957	1 008 003	991 626	1 039 431	1 022 387	1 103 302
Net Income	3 387 891	3 272 974	3 272 919	3 414 209	3 217 116	3 374 620	3 319 792	3 479 833	3 422 774	3 693 664

Table 23: Forecasted income statement 2019-2028 - Base case

7.5 Forecasted balance sheet

Balance Sheet - Base case	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e
Assets										
Non-Current Assets										
Licences.patents. etc	2 820 375	2 820 375	2 820 375	3 029 292	3 029 292	3 029 292	3 029 292	3 029 292	3 029 292	3 029 292
Goodwill	446 465	446 465	446 465	446 465	446 465	446 465	446 465	446 465	446 465	446 465
Total Intagible Assets	3 266 840	3 266 840	3 266 840	3 475 757	3 475 757	3 475 757	3 475 757	3 475 757	3 475 757	3 475 757
Property, Plant & Equipment										
Land, buildings & other real property	1 063 680	1 120 499	1 098 379	1 197 075	1 134 411	1 235 412	1 171 835	1 275 205	1 210 712	1 316 515
Plant, equipment & operating consumables	2 390 086	2 517 758	2 468 054	4 189 824	4 049 017	4 275 967	4 133 108	4 365 380	4 220 466	4 458 205
Vessels, vehicles, etc	268 690	283 042	277 455	302 386	286 556	312 070	296 010	322 121	305 830	332 557
Non-Financial Intangible Assets										
Investments In Associates	1 188 971	1 188 971	1 188 971	1 188 971	1 188 971	1 188 971	1 188 971	1 188 971	1 188 971	1 188 971
Pension fund assets	7 324	7 324	7 324	7 324	7 324	7 324	7 324	7 324	7 324	7 324
Other non-current receivables	32 773	33 788	33 913	36 894	36 079	39 254	38 402	41 784	40 893	44 497
Total Non-Current Assets	8 218 364	8 418 222	8 340 935	10 398 231	10 178 116	10 534 756	10 311 407	10 676 543	10 449 953	10 823 826
Current Assets										
Biological assets	4 157 163	4 379 227	4 292 775	4 678 508	4 433 597	4 828 340	4 579 860	4 983 859	4 731 804	5 145 313
Other inventory	295 723	320 351	322 930	361 925	352 702	394 994	385 288	431 162	420 962	462 327
Trade receivables	1 010 792	1 042 096	1 045 952	1 137 901	1 112 773	1 210 705	1 184 414	1 288 735	1 261 250	1 372 394
Other receivables	406 605	419 197	420 748	457 736	447 627	487 022	476 446	518 411	507 354	552 064
Bank deposits, cash & cash equivalents	223 014	229 920	230 771	251 058	245 514	267 121	261 320	284 337	278 273	302 795
	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %
Excess cash	1 542 800	1 402 000	1 896 266	0	565 398	297 471	1 056 525	787 228	1 561 417	1 353 417
Total Current Assets	7 636 096	7 792 790	8 209 443	6 887 127	7 157 612	7 485 654	7 943 854	8 293 732	8 761 060	9 188 309
Total Assets	**15 854 460**	**16 211 013**	**16 550 378**	**17 285 358**	**17 335 727**	**18 020 410**	**18 255 261**	**18 970 275**	**19 211 014**	**20 012 135**
Equity & Liabilities										
Equity										
Share capital	28 325	28 325	28 325	28 325	28 325	28 325	28 325	28 325	28 325	28 325
Treasury shares	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(140)
Share premium fund	415 286	415 286	415 286	415 286	415 286	415 286	415 286	415 286	415 286	415 286
Other paid-in equity	153 895	153 895	153 895	153 895	153 895	153 895	153 895	153 895	153 895	153 895
Retained earnings	8 789 537	9 116 835	9 444 126	9 785 547	10 107 259	10 444 721	10 776 700	11 124 683	11 466 961	11 836 327
Non controlling interests	91 729	91 729	91 729	91 729	91 729	91 729	91 729	91 729	91 729	91 729
Total Equity	9 478 632	9 805 930	10 133 221	10 474 642	10 796 354	11 133 816	11 465 795	11 813 778	12 156 056	12 525 422
Non-Current Liabilities										
Deferred tax	2 118 456	2 040 839	2 041 252	2 156 392	2 010 720	2 138 508	2 094 840	2 225 404	2 179 932	2 384 581
Interest bearing long term	1 019 117	1 019 117	1 019 117	1 019 117	1 019 117	1 019 117	1 019 117	1 019 117	1 019 117	1 019 117
Pension liabilities	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Newly issued debt	-	-	-	74 752	-	-	-	-	-	-
Total Non-Current Liabilities	3 137 573	3 059 956	3 060 369	3 250 261	3 029 837	3 157 625	3 113 957	3 244 521	3 199 049	3 403 698
Current Liabilities										
Short term interest bearing debt	748 188	748 188	748 188	748 188	748 188	748 188	748 188	748 188	748 188	748 188
Trade payables	977 742	1 059 169	1 067 695	1 196 623	1 166 130	1 305 959	1 273 870	1 425 540	1 391 815	1 528 579
Tax payable	690 717	690 717	690 717	690 717	690 717	690 717	690 717	690 717	690 717	690 717
Public charges payable	207 644	214 075	214 867	233 756	228 594	248 712	243 311	264 741	259 095	281 927
Other current liabilities	613 964	632 978	635 321	691 171	675 908	735 393	719 423	782 789	766 094	833 604
Total Current Liabilities	3 238 255	3 345 127	3 356 787	3 560 455	3 509 537	3 728 969	3 675 509	3 911 976	3 855 909	4 083 015
Total Liabilities	6 375 828	6 405 083	6 417 156	6 810 716	6 539 373	6 886 594	6 789 465	7 156 496	7 054 958	7 486 713
Total Equity & Liabilities	**15 854 460**	**16 211 013**	**16 550 378**	**17 285 358**	**17 335 727**	**18 020 410**	**18 255 261**	**18 970 275**	**19 211 014**	**20 012 135**

Table 24: Forecased balance sheet 2019-2028 - Base case

8 Cost of capital

Cost of capital refers to the opportunity cost of making a specific investment. An investor will demand higher return given higher risk (Sharpe, 1964). In this section we will first estimate the cost of equity and debt for SalMar. We will then weight the rate of returns against their respective shares of the capital structure to get the weighted average cost of capital (WACC).

8.1 Cost of equity

There are different models that can be used for estimating the cost of equity, such as the Capital Asset Pricing Model (CAPM), Fama-French five factor model and the Arbitrage Pricing Model (Kaldestad & Møller, 2016). The CAPM model estimates the discount rate using systematic risk while the Arbitrage Pricing Model and Fama-French model use several different factors in a regression analysis.

Studies indicates that the CAPM does not hold in its simplest form. Irrational pricing or risk have been among the explanations for the empirical weaknesses of the CAPM (Fama & French, 2015). Despite its empirical shortcomings, other models have not gained any prevalence in comparison to CAPM. A reason for this could be that higher historical explanation may not be correlated with higher predictive power (Kaldestad & Møller, 2016). We will therefore, despite the criticism, use the CAPM when estimating SalMar's cost of equity.

8.1.1 Capital Asset Pricing Model

The capital asset pricing model was introduced by Treynor (1962) and Sharpe (1964), and further developed by Lintner (1965), Mossin (1966), Fama (1968) and Long (1972). The discount rate in the CAPM is based on the business' systematic risk. One should only be compensated for bearing systematic risk since unsystematic risk may be diversified away by investors (Kaldestad & Møller, 2016)

According to the CAPM formula, the discount rate for the security is defined as follows (Koller et al, 2015):

$$E(R_i) = R_f + \beta_i\big(E(R_m) - R_f\big)$$

$E(R_i)$ = Expected return for security i

R_f = Risk-free rate

β_i = Security i´s sensitivity to the market

$E(R_m)$ = Expected return of the market

The CAPM ignores idiosyncratic risk and shows that equity capital is only determined by beta; a measure how a company's stock price responds to movements in the overall market. Only beta risk that is priced as idiosyncratic risk could be diversified away by holding several securities (Koller et al, 2015).

8.1.2 Risk-free rate of return

The risk-free rate is a significant component when evaluating investments, as risky projects need to deliver better return than the return that can be achieved without being exposed to risk (Kaldestad & Møller, 2016). A reasonable assumption is that a risk-free return needs to have a cash flow in the same currency as the investment to avoid currency risk. To minimize this risk, it is reasonable to use the return from government obligations to estimate the risk-free rate (Damadoran, 2012). Determining time horizon of the risk-free rate is an important factor. Kaldestad & Møller (2016) draws attention to both benefits and disadvantages by using different time horizons.

8.1.2.1 Different risk-free rate for each period

Different risk-free rate for each time period means discounting every single year with a risk-free rate adjusted for each respective cash flow. In other words, the cash flow in year one will be discounted with a one-year discount rate, and the cash flow in year two will be discounted with a two-year discount rate and so on. As the CAPM is considered as a one-period model, this method is reasonable. However, as it requires effort and the cost-benefit ratio is fairly high, this solution has gained small prevalence (Kaldestad & Møller 2016).

8.1.2.2 Short-term interest rate

By basing the risk-free rate on a short-term interest rate, the expected and realized return will be practically the same. Damodaran (2012) argue that this is a requirement for an asset to be categorized as risk-free, since an asset is not considered as risk free if the expected return does not equal the realized return. Another benefit is that short-term interest rates are unaffected by risk premium linked to inflation risk and illiquidity. However, the disadvantage by using short-term interest rates is the occurrence of higher fluctuations between the years, hence resulting in a more unstable discount rate (Kaldestad & Møller, 2016).

8.1.2.3 Long-term interest rate

One can argue that a risk-free rate should have a time horizon which reflects the investment horizon. This speaks for a long-term interest rate for SalMar. However, unlike the short-term interest rate, the long-term interest rate includes a premium for inflation risk and illiquidity (Kaldestad & Møller, 2016).

8.1.2.4 Choice of risk-free rate

A long-term government obligation occurs to be the most reasonable choice, which can be explained by the fact that it represents a compromise by being both theoretical correct as well as a practical choice (Kaldestad & Møller, 2016). However, it is worth mentioning that a long-term government obligation should be avoided when the slope of the yield curve is steep, or a high portion of the cash flow is being received in an early state of the investment horizon.

Based on the discussion above we chose to use a ten-year Norwegian government obligation as a proxy for the risk-free rate. We will use the average ten-year Norwegian government obligation rate from 2018, which was at 1.88% (Norges Bank, 2019).

As the macroeconomic outlook indicates that the interest rate will increase gradually, we find it reasonable to use a different risk-free rate when estimating a discount rate for the terminal value. The past 20 years the average 10-year discount rate have been 3.83%. For the terminal value we will therefore use a risk-free rate of 3.8% to represent an increase in the macroeconomic conditions.

8.1.3 Market risk premium

The market risk premium is the rate of return that an investor will demand when investing in a risky asset instead of a risk-free asset (Penman, 2013). Damodaran (2017) states that the risk premium is a function of volatility and risk aversion. Historically, investors have used a constant risk premium, but after the financial crisis a varying risk premium has been the more frequent choice. The reason behind this is that the market risk premium in the stock market have increased while the interest rates have moved the opposite way (Koller et al, 2015).

As the future is unobservable it is challenging to determine what the risk premium should be. There are three suggested ways of estimating the market risk premium, (1) base the market risk premium on historical risk premiums, (2) implied risk premium determined by fundamental factors in the market as well as (3) surveys (Damodaran, 2016).

8.1.3.1 Historical risk premium

When using historical estimates, we estimate the average excess return under the assumption of a constant market risk premium. The calculation of the average can both be done using a geometric or arithmetic average. The chosen time horizon has a great impact, the benefit of using longer time horizon is that it will smoothen the biggest fluctuations, while one can argue that shorter time horizons are of higher relevance (Kaldestad & Møller, 2016).

8.1.3.2 Implied risk premium determined by fundamental factors in the market

The auditing and consulting firm PricewaterhouseCoopers (PwC) has in collaboration with Norske Finansanalytikeres Forening (NFF) conducted a research of “The risk premium in the Norwegian market” the past seven years (PricewaterhouseCoopers, 2018). In the research which was performed in 2013-2014 PwC found that the implied risk premium was 5.0% in the period (PricewaterhouseCoopers, 2014).

8.1.3.3 Empirical findings

In 2015, the reports from PwC went from researching the implied risk premium to becoming pure surveys. The result of the latest survey was that the both the average of the survey and the median suggests a market risk premium of 5% in 2018 (PricewaterhouseCoopers, 2018). Since 2012 the results from PwC's reports have varied between a market risk premium of 4.9% and 5.2%.

8.1.3.4 Method of choice and market risk premium

The market risk premium has fluctuated between 4.9% and 5.2% the past seven years according to PwC reports, the latest report states a market risk premium of 5% (PricewaterhouseCoopers, 2018). These results combined with Koller et al (2015) suggestions of using a market risk premium of 5 %, make us confident that a market risk premium of 5% is a reasonable assumption.

8.1.4 Equity Beta

The beta measures a security's sensitivity to the market (Koller et al., 2015). The stock market's average Beta is 1, and if the Beta of a security is 1 it fluctuates perfectly along with the stock market. Said differently, the beta measures how exposed the security is for systematic risk (Damodaran, 2012). Mathematically the beta can be expressed as follows (Koller et al 2015).

$$\beta_e = \frac{Cov(k_e, k_m)}{\sigma^2(k_m)}$$

As individual company betas could in any point of time be heavily influenced by non-repeatable events, it is recommended using an industry peer median rather than the historically measured beta for a single company only (Koller et al 2015). We have therefore collected the beta for SalMar and its comparable companies from Bloomberg.

The betas must be transformed to unlevered betas in order to make them independent of the company's capital structure. Then, we find the average and adjust the beta again to SalMar's current capital structure. The betas are illustrated in the table below (Bloomberg):

	Equity beta	Market Cap.	Debt	Unlevered Beta	D/E
LSG	0,792	39 265 682	5 582 566	0,7129	0,142
Mowi (MHG)	0,747	93 520 236	11 318 442	0,6826	0,121
GSF	1,014	11 297 355	2 400 284	0,8698	0,212
SALM	0,812	48 252 290	1 767 300	0,7894	0,037
Industry median	0,80			0,7512	

Table 25: Industry participant betas
Source: Bloomberg terminal

Betas obtained from historical data must be adjusted in order to reflect the company's future performance. As betas tends to revert to 1 in the long run (Blume, 1975), a method called beta smoothing is applied in the following manner:

$$Adjusted\ beta = \frac{1}{3} + \frac{2}{3} * (Raw\ beta)$$

Beta	
Industry beta unlevered	0,75
Debt beta	**0,05**
Debt / Equity	3,64 %
Beta relevered	0,78
Beta Adj.	**0,85**

Figure 49: Adjusted Beta

8.1.5 Cost of equity calculation

Based on the discussion above as well as estimates of the parameters in the CAPM we get the following cost of equity for SalMar for the forecasting period, 2019-2028, and the terminal value, T:

Cost of equity	2019-2028	T
Risk free rate	1,88 %	3,80 %
Beta	0,85	0,85
Market risk premium	5,00 %	5,00 %
Cost of Equity	**6,1 %**	**8,1 %**

Table 26: Cost of equity

As explained earlier we use a different risk-free rate for the terminal value. We therefore need to calculate a new cost of equity, as illustrated in table 26.

8.2 Cost of debt

There are several different approaches to estimate SalMar's cost of debt. According to Damodaran (2012) a company's cost of debt will be determined by three factors, (1) the risk-free rate, (2) the credit risk premium and (3) the tax shield from debt financing.

The risk-free rate will always be the base point when estimating the cost of debt, as this is the return one will receive by holding non-risky assets. When this rate increases the alternative cost increases, hence the cost of debt for the company must increase as well. The cost of debt which the company achieves in the market will reflect the possibility of the debt to default, or the possibility for the company to enter financial distress. The spread between historical cost of debt and historical risk free-rate are referred to as the credit risk premium. Using an after-tax cost of debt instead of pre-tax cost of debt is to ensure consistency between the discount rate and the cash flows which become discounted.

8.2.1 Risk-free rate of return

Kaldestad & Møller (2016) argues that it is important to have consistency when estimating the risk-free rate in the cost of equity and debt. When estimating the risk-free rate earlier in this thesis we used 10-year Norwegian government bonds. As Kaldestad & Møller (2016) emphasizes the importance of consistency, we choose to apply the same risk-free rate when estimating the cost of debt. We therefore apply the same risk-free rate as in the cost of equity estimation of 1.9%.

8.2.2 Credit risk premium

SalMar have had an average historical credit risk premium of 2.6% the past three years. We estimate this to continue as we assume SalMar to have constant bankruptcy risk and leverage in the future.

8.2.3 Tax rate

At last the tax rate has to be determined in order to get a risk-free return after tax. Kaldestad & Møller (2016) argues for using a nominal company tax as the cash flows reflects the tax which gets paid; hence it is not necessary to determine the effective tax rate. Damodaran (2012) also argues for using the marginal tax rate, which equals nominal company tax rate. In 2019 the Norwegian company tax rate was reduced from 23% to 22%.

8.2.4 Cost of debt calculation

The credit premium remains the same for both the forecasting period as well as for the terminal value. This gives us a cost of debt of 4,5% in the forecasting period and 6,4% for the terminal value as illustrated in the table below

Cost of debt	2019-2028	T
Risk free rate	1,88 %	3,80 %
Credit premium	2,63 %	2,63 %
Cost of Debt	**4,5 %**	**6,4 %**
Tax rate	22 %	22 %
Cost of Debt after tax	**3,5 %**	**5,0 %**

Table 27: Cost of debt

8.3 Weighted Average Cost of Capital (WACC)

8.3.1 Company's target capital structure

After determining the cost of debt and equity, the last step before calculating the WACC is to determine the weight of the capital structure. It is desirable to use the target capital structure instead of the current capital structure (Kaldestad & Møller, 2016). Since we only have access to public information, we are unable to receive SalMar's target capital structure. Other solutions therefore consist of using todays capital structure, the industry capital structure or find a normalized capital structure (Koller et al, 2015).

It is favorable to use the market weights when estimating the WACC instead of the book value. The reason behind this is that the WACC should be an expression of the capitals alternative cost. By using book values, one will not receive a correct interpretation of the capital which could alternatively be allocated other places (Koller et al, 2015).

In determining the capital structure, we will calculate the market value of SalMar's equity, but use the book value of debt. However, the book value for debt reported on the balance sheet reasonably approximates the current market value of the debt (Koller et al, 2015).

Equity	
# shares outstanding	113 299 999
Share price (closing 26.04.18)	382,7
Market capitalization	**43 359 910**

Debt	
Short term debt	748 188
Long term debt	1 019 117
Capitalized operating leases	761 854
Excess cash	-
Debt and debt equivalent	**2 529 159**

Table 28: Value of equity and debt

$$\frac{Equity}{Equity + Debt} * Re + \frac{Debt}{Equity + Debt} * Rd * (1 - Tax) = WACC$$

WACC		**2018-2019**	**T**
E/V	0,95	6,2 %	8,1 %
D/V	0,05	3,7 %	5,2 %
Tax rate	22 %		
WACC		**6,0 %**	**7,8 %**

Table 29: Weighted Average Cost of Capital

9 Fundamental valuation

Based on the forecasting and the probabilities from the scenario analysis we will estimate the future cash flow for each of the scenarios. We will then discount the cash flows with the WACC which we calculated in the previous chapter. At last we will adjust for debt and hybrid claims to receive the value of SalMar's equity.

9.1 Enterprise value

Our DCF-model consists of a two-stage growth model; an explicit forecasting period of ten years up to 2028 for each of the scenario and the following infinite period with a constant growth of 2.5%, based on historical inflation rates (SSB,2019). We will assume that SalMar will not be able to deliver excess return on their new invested capital (RONIC) in the long run, implying that the RONIC will be equal to the WACC for the infinite period. One can argue that the higher growth rate in our bull scenario implies a higher WACC than our base scenario. Likewise, one can also assume the opposite in the bear scenario. We therefore consider these two opposed effects to offset each other, thereby applying the same WACC for all the scenarios.

Due to seasonal fluctuations we have chosen to use the average cash flow from 2025-2028 in our forecasting to represent the cash flow in the terminal value.

For the base case we get the following cash flow:

	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	T
Discounted Cash Flow - Base case	1	2	3	4	5	6	7	8	9	10	Terminal value
FCF	515 137	1 937 695	2 488 222	50 770	2 729 184	1 706 802	2 838 668	1 798 533	2 948 363	1 970 197	2 388 940
Terminal Value											69 808 178
Cash flow from associates	252 933	195 558	203 303	211 353	219 723	228 424	237 470	246 873	256 650	266 813	266 813
Terminal value associates											7 606 484
Present value of FCF	485 943	1 724 291	2 088 704	40 203	2 038 664	1 202 704	1 886 916	1 127 766	1 743 991	1 099 349	38 952 205
Present value of FCF from associates	238 599	174 021	170 660	167 363	164 130	160 960	157 850	154 801	151 811	148 879	4 244 335

Table 30: Cash flow - Base case

For the bull case we get the following cash flow:

	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	T
Discounted Cash Flow - Bull case	1	2	3	4	5	6	7	8	9	10	Terminal value
FCF	499 216	2 010 050	3 072 704	854 247	2 096 843	2 630 352	3 828 218	1 109 053	4 372 375	4 616 192	3 481 459
Terminal Value											101 733 120
Cash flow from associates	252 933	195 558	203 303	211 353	219 723	228 424	237 470	246 873	256 650	266 813	266 813
Terminal value associates											7 606 484
Present value of FCF	470 925	1 788 678	2 579 339	676 447	1 566 314	1 853 486	2 544 689	695 429	2 586 310	2 575 785	56 765 977
Present value of FCF from associates	238 599	174 021	170 660	167 363	164 130	160 960	157 850	154 801	151 811	148 879	4 244 335

Table 31: Cash flow - Bull case

For the bear case we get the following cash flow:

	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	T
Discounted Cash Flow - Bull case	1	2	3	4	5	6	7	8	9	10	Terminal value
FCF	796 815	1 783 365	1 726 375	- 902 396	1 825 296	705 325	1 886 319	748 864	1 947 723	792 598	1 343 876
Terminal Value											39 269 940
Cash flow from associates	252 933	195 558	203 303	211 353	219 723	228 424	237 470	246 873	256 650	266 813	266 813
Terminal value associates											7 606 484
Present value of FCF	751 658	1 586 958	1 449 182	- 714 575	1 363 472	497 009	1 253 872	469 573	1 152 100	442 261	21 912 200
Present value of FCF from associates	238 599	174 021	170 660	167 363	164 130	160 960	157 850	154 801	151 811	148 879	4 244 335

Table 32: Cash flow - Bear case

9.2 From enterprise value to value per share

Finding the value per share is about subtracting all relevant claims from enterprise value which is not owned by equity holders. For SalMar these claims could be categorized as debt and hybrid claims.

9.2.1 Net Debt

When determining SalMar's net debt we subtract the excess cash from the company's total debt and debt equivalents. SalMar's debt and debt equivalents consists of short-term debt, long term debt and the capitalized operating leases. If the cash and cash equivalents surpass 2% of the company's revenues, we consider it as excess cash. In 2018, SalMar`s cash and cash equivalents equaled 2.12% of the company's revenues. As these values do not significantly exceed 2%, we choose to not subtract any excess cash.

9.2.2 Hybrid claims

The hybrid claims consist of employee stock options as well as non-controlling interests. The non-controlling interest and the employee stock options are gathered from SalMar's annual report from 2018.

9.2.3 Number of shares

SalMar's has 113,299,999 shares outstanding, whereof 754,922 are considered as treasury shares.

9.2.4 Value per share

After subtracting the debt and debt equivalents and hybrid claims, we get the enterprise value. We then divide them with the number of diluted shares. For each of the scenarios we get the following share value.

BASE

DCF Value per share	
Present value of DCF explicit period	13 438 529
Present value of terminal value	32 789 506
Value of operating assets	**46 228 035**
Present value of DCF from associates explicit period	1 689 074
Present value of terminal value from associates	4 244 335
Enterprise value SalMar	**52 161 444**
Debt and debt equivalents	**2 529 159**
Hybrid Claims	
Employee stock options	39 707
Non-controlling interests	91 729
Equity value	49 500 849
Total number of shares	113 299 999
Treasury shares	754 922
Number of diluted	112 545 077
Value per share	**439,83**
Stock price (Closing 26.04.19)	382,70
Upside	**14,93 %**

Table 33: Value per share - Base case

BULL

DCF Value per share	
Present value of DCF explicit period	17 337 402
Present value of terminal value	47 784 928
Value of operating assets	**65 112 329**
Present value of DCF from associates explicit period	1 689 074
Present value of terminal value from associates	4 244 335
Enterprise value SalMar	**71 055 738**
Debt and debt equivalents	**2 529 159**
Hybrid Claims	
Employee stock options	39 707
Non-controlling interests	91 729
Equity value	68 395 143
Total number of shares	113 299 999
Treasury shares	754 922
Number of diluted	112 545 077
Value per share	**607,71**
Stock price (Closing 26.04.19)	382,70
Upside	**58,80 %**

Table 34: Value per share - Bull case

BEAR

DCF Value per share	
Present value of DCF explicit period	8 251 511
Present value of terminal value	18 445 431
Value of operating assets	**26 696 942**
Present value of DCF from associates explicit period	1 689 074
Present value of terminal value from associates	4 244 335
Enterprise value SalMar	**32 630 351**
Debt and debt equivalents	**2 529 159**
Hybrid Claims	
Employee stock options	39 707
Non-controlling interests	91 729
Equity value	29 969 756
Total number of shares	113 299 999
Treasury shares	754 922
Number of diluted	112 545 077
Value per share	**266,29**
Stock price (Closing 26.04.19)	382,70
Upside	**-30,42 %**

Table 35: Value per share - Bear case

We see that both the bull and base scenario consider SalMar as undervalued while the bear scenario sees SalMar as overvalued. By using the weights from the scenario analysis, we get a value per share of NOK 422. According to the DCF analysis SalMar is therefore undervalued. However, there are significant levels of uncertainty related to the value estimate, and we have therefore included a sensitivity analysis.

9.3 Sensitivity analysis

In the sensitivity analysis we will point out the input variables which have the biggest impact on our estimates from the base case. The analysis examines how sensitive our value estimate is given changes in the respective input variables. We will separate the factors in regard to whether they are impacting the free cash flow or the discount rate. Variables affecting the free cash flow are harvest volume, salmon price, and cost of goods sold, while the risk-free rate and equity beta affects our estimated discount rate.

9.3.1 Variables affecting cash flow

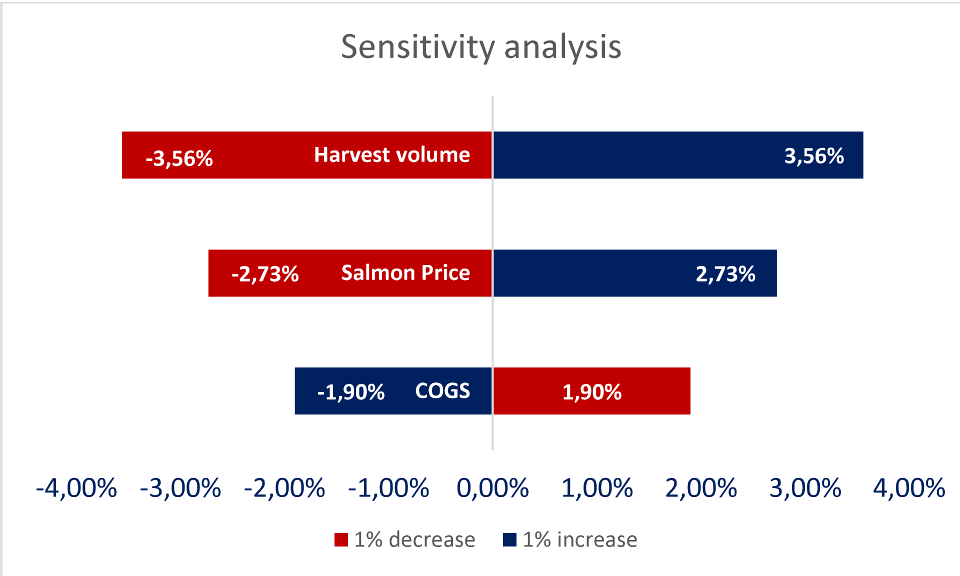


Figure 50: Variables affecting cash flow

<u>Harvest volume</u>

The harvest volume impacts the revenues which ultimately influence the cash flow. For our forecasting period we have outlined a detailed view for the harvest volume. Our predictions are based on the industry's regulations which are considered to be stable and predictable. However, the impact of environmental conditions on the production volume remains uncertain. It is therefore interesting to see how changes in the harvest volume impacts the share price of SalMar given all else being equal. Figure 50 illustrates how changes in harvest volume would impact SalMar's share price. We observe that if the harvest volume increases annually with 1%, the free cash flow will increase by 3.56%.

Salmon price

Along with harvest volume, salmon price also determines the revenues. How changes in salmon price influence the revenues is probably the most interesting to look at in the sensitivity analysis. This is because salmon prices are volatile and is by far the most uncertain input factor in our fundamental valuation. Our estimates for the salmon price are based on forward prices until 2021. After that, it is projected that the price will increase in tact with the rate of inflation. The combination of forward prices and expectations of inflation rate make a good foundation for future salmon prices, but it is highly unlikely that the prices will follow this exact pattern. In figure 50, we have illustrated how the changes in salmon price impacts the share price. We see that a 1% increase in salmon prices leads to a 2.7% increase in share price. Correspondingly, a 1% decrease in salmon prices leads to a 2.7% decrease in the share price.

Cost of gods sold

The cost of cods sold impacts the profit margin that SalMar are able to achieve. Our projections are based on the company's historical development of costs combined with findings from the strategic analysis. From section 7.2.6 we saw that factors like the price of fish feed, international exchange rates and the amount of salmon lice and disease affect the company's cost of goods sold. This brings uncertainty to our future forecast of SalMar's share value.

In figure 50, we observe that 1% increase/decrease in cost of goods sold will decrease/increase SalMar's share value with 1.9%. We notice that the COGS have an opposite color compared to the harvest volume and salmon price, as an increase in costs will have a negative impact on the company's share value.

9.3.2 Variables affecting discount rate

Risk-free rate

The risk-free rate is estimated to be 1.9% and 3.8% for the forecasted period and terminal period, respectively. Any change in risk free rate will naturally affect our estimated discount rate.

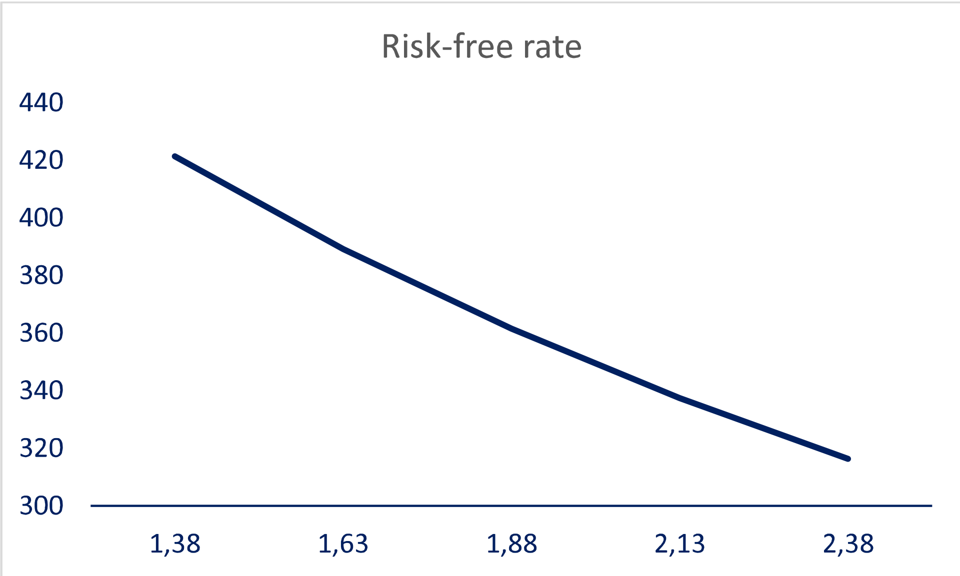


Figure 51: Impact of risk-free rate on SalMar's share price

We see that SalMar's share value varies between 422 and 320 when we use a risk-free rate interval of 1,88% +- 0,5%. Due to the long forecasting period, even small changes in the risk-free rate have significant impacts on the share value.

Equity beta

The equity beta is calculated by gathering beta calculations for SalMar and its peers. This value is determined by the choice of the time horizon of the forecast and which companies we consider as SalMar's comparables. It is therefore expedient to observe how changes in the equity beta affect the value of SalMar.

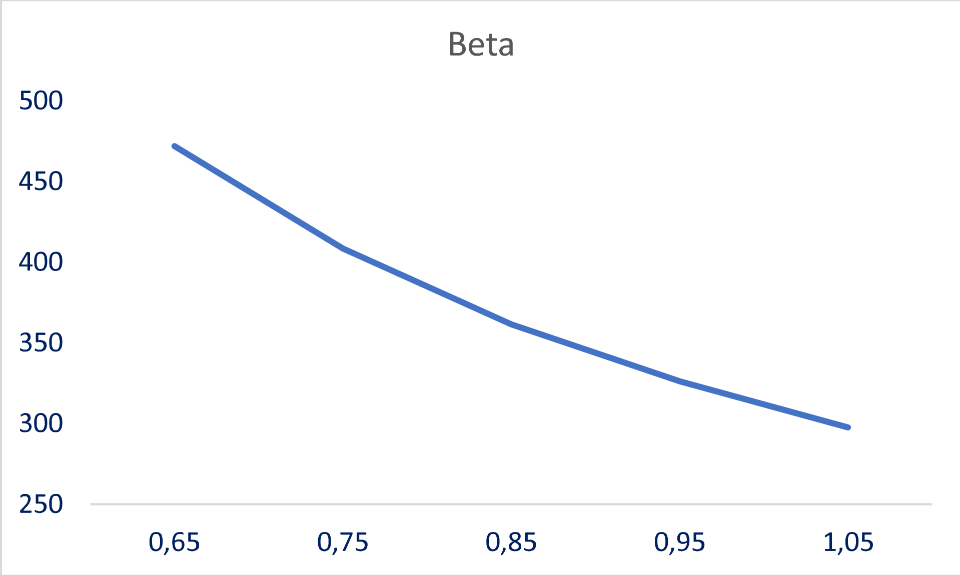


Figure 52: Impact of beta on SalMar's share price

From the figure 52, we observe that a reduction in the equity beta will affect the share value more than if we increase the equity beta. The equity beta is included in the CAPM and are thereby affecting the discount rate. Its reasonable that a lower beta/reduced equity risk yields a lower discount rate and a higher share value.

9.3.3 Variables affecting terminal value

Perpetuity growth rate

Based on historical inflation rates in Norway (SSB, 2019) we have determined an appropriate perpetuity growth rate for SalMar of 2.5% in our DCF model. Since the terminal value represents a major part of the cash flow in our DCF-model, it is important to address how changes in the future growth rate affects the value of SalMar. In figure 53 we have illustrated how the share price and terminal value will be affected when the perpetuity growth varies between 2 and 3%.

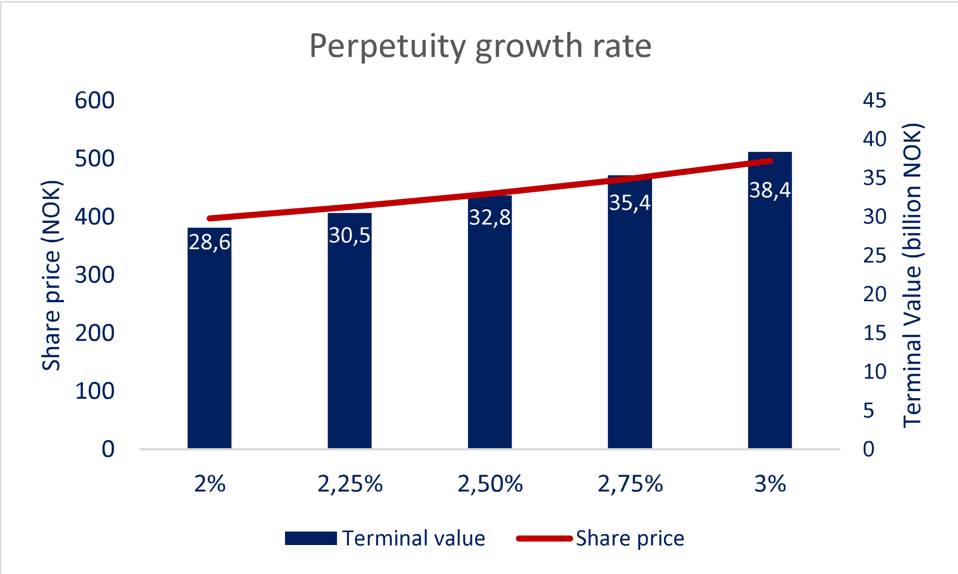


Figure 53: Impact of perpetuity growth rate on terminal value

As can be observed, the share price ranges from around NOK 422 to NOK 500, while the terminal value varies between NOK 28.6 billion and NOK 38.4 billion depending on which perpetuity growth rate we apply in the model.

Long term WACC

Different discount rates are applied for the terminal value and for the explicit forecasting period. This section will solely focus on how the terminal value is affected by changes in our long term WACC. As calculated earlier in the thesis we apply a long term WACC of 7.85%. We will address how this long term WACC affects the share price and terminal value when the rate varies between plus 1% and minus 1%. In the figure below, the share price varies between NOK 450 and NOK 415 depending which long term WACC we apply. Furthermore, the terminal value changes between NOK 36 and NOK 30 billion.

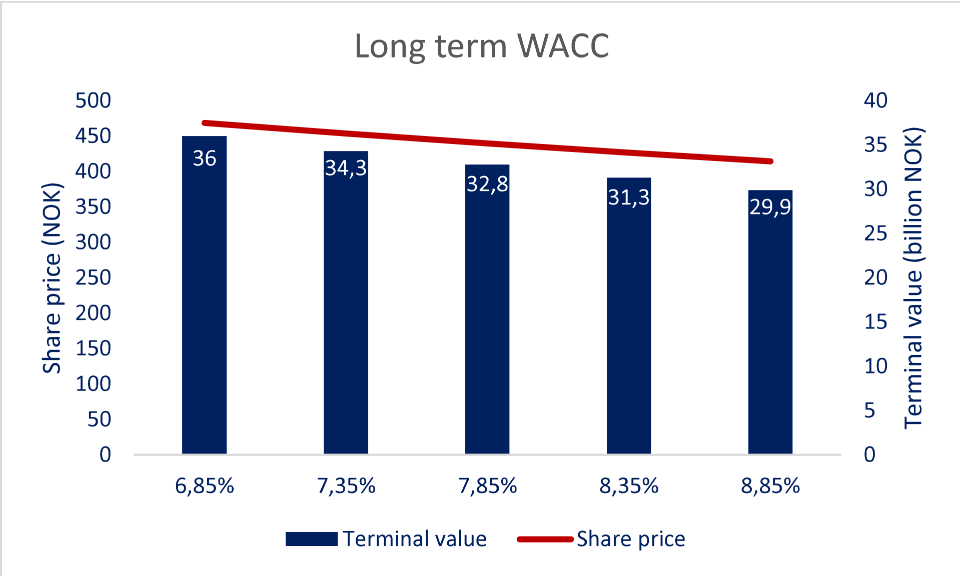


Figure 54: Impact of long term WACC on terminal value

10 Comparable valuation: Multiples

The idea behind multiples for valuation is that similar assets should sell for similar prices, whether they are houses or shares of stock. Companies in the same industry and with similar performance should trade at the same multiple (Koller et al, 2015).

A multiple is a ratio calculated by using a comparable company's stock price and a number gathered from their balance sheet or income statement, for instance Price/EBITDA. The multiple is then multiplied by the equal number in the balance sheet or income statement for the object of valuation (Damodaran, 2012). This valuation method differs from the DCF-model as we now use a price the market already has found, based on the market's expectation of future cash flow.

A weakness of using multiples is that we must assume that it is the same relationship between the value and the factor for the company we study and for the comparable companies (Kaldestad & Møller, 2016). Penman (2013) warns that one should be critical when using multiples, as the method does not necessarily represent the fundamental values.

In our comparable valuation we will use the companies which we have considered as comparable companies from the strategic analysis. Despite that the method builds on the assumption that the average industry multiple reflects be the correct price, we find two weaknesses by using multiples. First, one can discuss if four comparable companies are good enough to say something about the industry average and correct price. Next, the companies are not completely identical, so there could be firm-specific factors which implies that the company of interest should not be valued in the same manner. On the other hand, all the companies are traded on Oslo Stock Exchange with a relative high trading frequency, which should give a good and efficient pricing mechanism. The method is popular as it is quick, does not require much information about the companies and is considered as easy to undertake.

We will use multiples which are based on both the balance sheet and income statement. The multiples we have decided to use are EV/EBITDA, Price/Book, and EV/Sales. The EV/EBITDA multiple is especially popular among the financial analysts covering the salmon industry, while P/E will be omitted from the analysis as explained in section 3.1.2.

10.1 EV/EBITDA

The enterprise valuation consists of the market value of the equity as well as the debt. EV/EBITDA gives us a company's result before interest, taxes, depreciation and amortization relative to the EV.

	SalMar	Lerøy	Grieg	Mowi (MHG)	Industry average
EV/EBITDA	10,82	8,04	7,62	10,12	8,59

Table 36: EV/EBITDA multiples

The table above shows which multiple the industry participants trade at. SalMar trades at the highest multiple, tightly followed by Marine Harvest. This indicates that the market has higher expectations to SalMar's and Marine Harvest's future earnings. One of the reasons behind this could be the that SalMar and Marine Harvest are very innovation oriented. As mentioned in the strategic analysis, coming up with new and more sustainable solutions are crucial for being granted new farming licenses in the future. Therefore, SalMar and Marine Harvest may be subject to higher multiples as the market expect them to be among the players which are able to create new ways to farm salmon. SalMar has as mentioned the Ocean fish farm 1 and Smart Fish Farm, while Marine Harvest has the offshore farming solution called Egget.

Based on the industry average, where SalMar is excluded, SalMar's share value is priced at NOK 277.9 per share. This represents a downside of -27.4% from the share price of NOK 382.7 as of 26.04.2019, which indicates that the company is overvalued.

EV/EBITDA	
Multiple	8,59
X EBITDA	3 948 589
= EV	33 931 541
- Debt	2 529 159
- Hybrid claims	131 436
= Equity value	31 270 946
/ Number of stocl	112 545
= Share value	277,9

Table 37: Share value according to EV/EBITDA

10.2 Price/Book

The price/book multiple measures the ratio between the stock price and the book value of the shares. When observing the P/B ratios for the industry participants in the table below, we again see that SalMar trades at the highest multiple.

	SalMar	Lerøy	Grieg	Mowi (MHG)	Industry average
Price/Book	4,80	2,01	2,61	3,56	2,73

Table 38: P/B Multiples

All the companies trade at a multiple above 1, indicating that the market believes that the equity will be increased in form of earnings in the future. As the financial statement only to a limited degree reflects the market value of the assets, it's hard to say whether the multiple reflects strong beliefs in the future, undervalued assets or a combination of both. The aquaculture industry allocates a lot of resources towards R&D projects. While the R&D project are reflected by the market in future earnings, SalMar may not be able to capitalize the projects due to IFRS' strict rules of capitalizing R&D projects. This leads to a lower equity value than what it should and may be one of the explanations behind SalMar's high multiple. By using the industry average, SalMar's share should trade at NOK 197.8 representing a downside of -48,3% compared to the share price of 382,7 as of 26.04.2019. This again indicates that SalMar is overvalued.

P/B		
	Multiple	2,73
X	Book value equi	9 139 843
=	EV	24 921 305
-	Debt	2 529 159
-	Hybrid claims	131 436
=	Equity value	22 260 710
/	Number of stocl	112 545
=	Share value	197,8

Table 39: SalMar's share value according to P/B

10.3 EV/Sales

The EV/revenues multiple is calculated by taking the ratio between the enterprise value and revenues. This ratio should only be a supplement to other multiples, as it implicitly assumes that the comparable companies have the same margins (Kaldestad & Møller, 2016). As elaborated in the historical performance analysis there are differences in the cost level for the companies. However, these differences are not large enough to make the multiple inapplicable.

	SalMar	Lerøy	Grieg	Mowi (MHG)	Industry average
EV/Sales	4,21	1,94	1,78	3,56	2,43

Table 40: EV/Sales multiples

Also here, SalMar trades at the highest multiple. In fact, it trades at the double that of Lerøy and Grieg. At first glance SalMar seems way expensive than their competitors, but as mentioned the calculation assumes same margins in the business. It is thus important to bear in mind that SalMar achieves the highest margins in the industry, which makes is reasonable that they also trade at the highest EV/Sales multiple. Based on the industry average, SalMar should trade at NOK 220.8, which represents a downside of -42,3% from the share price of NOK 382.7 (26.04.2019).

EV/Sales	
Multiple	2,43
X Sales	11 342 554
= EV	27 524 598
- Debt	2 529 159
- Hybrid claims	141 623
= Equity value	24 853 816
/ Number of stocl	112 545
= Share value	220,8

Table 41: Share value according to EV/Sales

10.4 Summary of valuation using multiples

The three multiples we have chosen to use in our comparable analysis all tells the same story. SalMar have the highest multiple for each of the scenarios, which could be an indication that the company is overvalued compared to its competitors. However, we are unable to conclude that SalMar is overvalued based solely on these calculations.

We have for instance argued that the market may expect higher earnings for SalMar than its competitors due to their focus on innovation and R&D. Furthermore, IFRS' strict rules for capitalizing R&D costs may lead to an unfairly low equity value for SalMar. At last, SalMar has achieved an outstanding ROIC compared to its competitors. These are all factors which could defend the fact that SalMar trades at higher multiples than the other industry participants. Despite this, all multiples tell the same story; SalMar is overvalued, but with varying magnitude. We have therefore calculated the multiples' average. By doing so, we get a share price for SalMar at NOK 232.2.

Summary	
EV/EBITDA	277,9
EV/Sales	220,8
P/B	197,8
Average	232,2

Table 42: Average multiple share value

10.5 Weighting the value estimates

The fundamental valuation and comparative valuation gave estimates of NOK 422 and NOK 232, respectively. The purpose of weighting the value estimates is to arrive at one final weighted value estimate per share for SalMar.

Section 9.3 revealed that the fundamental valuation method carried high levels of uncertainty related to input factors. A significant proportion of the value estimate is explained by the size of the figures we have forecasted in regard to harvest volume, salmon price and cost of goods per kilogram. The comparable valuation on is in turn unaffected by what the individual expectations but is rather based on the market's assessment of the companies. On the other hand, it is as mentioned, challenging to address identical comparable companies as they often differ from the object of valuation in many areas. For instance, section 6 proved that there are significant differences in SalMar's historical performance compared to its peers. As mentioned in section 3, fundamental valuation is the preferred valuation technique. This method requires considerably more effort to perform compared to the comparative valuation. The fundamental value estimate will therefore be weighted more heavily than that of the multiples. The weight ratio between the two methods is set at 85% and 15% in favor of the fundamental value estimate.

11 Conclusion

The purpose of this master thesis has been to estimate the equity value of SalMar. Fundamental valuation was chosen as the main method, while a valuation using comparable companies has served as a supplement. In this section we will summarize the main findings, weight the estimates from the two valuation methods, and propose an investment recommendation.

SalMar and the industry was presented in section 2. Three companies, including Marine Harvest, Lerøy, and Grieg seafood were chosen as comparable companies, and together with the object of valuation they form the aquaculture industry. Section 3 covered various valuation techniques, followed by a discussion and presentation of the two methods that were to be used throughout the thesis; fundamental valuation and comparable companies using multiples. Furthermore, a strategic analysis was performed in section 4. The PESTEL-framework were used to highlight external macroeconomic factors affecting the industry, while Porter's Five forces defined the competitive forces that industry participants are facing. The main findings were that license system limits growth, and that the industry thus depends on solving the environmental challenges in order to achieve further growth. The industry's largest opportunity lies in technological innovation that have the potential to reduce salmon lice. SalMar's internal resources were analyzed using the VRIO-framework and SVI-framework. InnovaMar along with offshore fish farming facilities give the company a temporary competitive advantage, while their strong presence in regions with high levels of salmon lice represents a temporary competitive disadvantage.

In section 5, the historical financial statements from 2009 to 2018 were reorganized and normalized with the purpose of preparing the data for further analysis. Analyzes of SalMar's historical performance in section 6 revealed that the company has delivered the highest ROIC among its competitors each year, except for in 2011. The excellence in the ROIC compared to other industry participants was further proven to come from consistently high profit margins and cost efficiency. Furthermore, forecasts of the company's future performance were calculated in section 7, based on key drivers like salmon price, harvested volume, and cost of goods sold per kilogram. A scenario analysis consisting of a base, bear and bull case were presented to reflect the different possible future outcomes.

Section 8 focused on calculating the weighted average cost of capital, before a fundamental valuation was performed in section 9. By weighting the different scenarios and discounting the future cash flows, the first estimate of SalMar's value per share fell on NOK 422 As there was considered to be high uncertainty related to the estimate, a sensitivity analysis of harvest volume, salmon price, and COGS/kg was carried out. The level of uncertainty regarding was proven to be high. Furthermore, the comparative valuation using multiples in section 10 gave an average estimate of NOK 232.2 per share.

Combining the fundamental and comparable valuation results in a target price of NOK 393.6 per share. SalMar's market price on 26.04.2019 was NOK 382.7. Thus, our final weighted estimated value represents a 2.8% premium above the market price.

12 SalMar from an Investor's point of view

This final section is based on our analysis and findings in the thesis but is written to investors considering investing in SalMar. We wish to show investors how SalMar have performed in the past, our beliefs for the future performance and based on this we will issue an investment recommendation based on our findings.

<u>SalMar's historical performance</u>

Evaluating stock performance is something that is very individual to each investor. Just as every person has different appetite for risk, plans for diversification and investing strategies, every investor has different standards for evaluating stock performance. One investor may expect an average annual return of 10% or more, while another may look to add to his portfolio with a stock that is not correlated with the stock market (Investopedia, 2019b).

<u>Brief history</u>

We have chosen to focus on the development of the aquaculture industry the past five years. Lack of feasible production areas, strict regulations, and increased demand have driven the salmon price to new heights. Fish farmers have enjoyed extraordinary profits, which have attracted investors and ultimately lead to a higher share price. Since the start of aquaculture, the industry has never been through a similar boom as they have during the period we are about to present.

<u>Perspective</u>

To illustrate the development that the aquaculture industry has been through we have compared the Oslo Seafood Index (OSLSFX) index with the OSEBX index. The OSLSFX index consists of shares which belong to companies that operates in the aquaculture industry, while the OSEBX index is an investible index which comprises the most traded shares listed on Oslo Stock Exchange. The graph below illustrates the development of the two indexes the past five years.

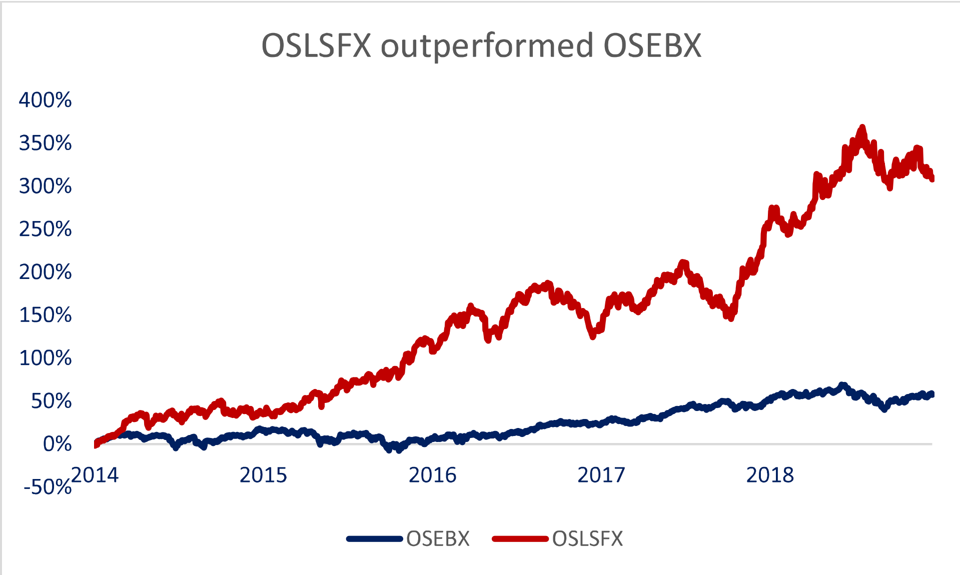


Figure 55: OLSFX index vs OSEBX index

As can be seen, the seafood index has outperformed the OSEBX index. In fact, an investor exposed to the OSLSFX have achieved a return around 250% higher than an investor exposed to the OSEBX index the past five years.

<u>Competitors</u>

The OSLSFX have had a strong and steady increase the past five years. However, SalMar have experienced an even greater journey than the OSLSFX. SalMar followed the index tightly until late 2017 before the company's share price did a jump relative to the seafood index, as illustrated below. SalMar's outperforming of the seafood index could be related to their ability to create the greatest ROIC in the industry.

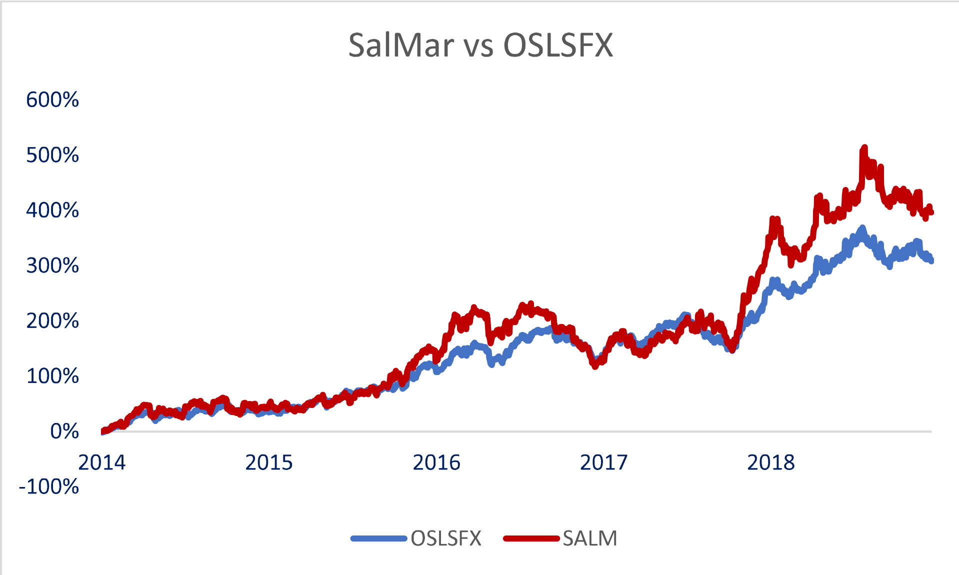


Figure 56: SalMar vs OSLSFX

Sharpe ratio

The Sharpe ratio was developed by William F. Sharpe and is used to get an understanding of the return of an investment compared to its risk (Bodie et al., 2014). It is widely used to evaluate the performance of investment managers, and could be defined as follows:

$$Sharpe\ ratio = \frac{R - R_f}{\sigma}$$

Where R is the return of the investment, R_f is the risk-free rate. The numerator represents an investment's risk premium, while σ in the denominator is the risk measured by standard deviation (Bodie et al., 2014). The importance of the trade-off between reward and risk suggests that the Sharpe ratio measures the attraction of an asset by the ratio of risk premium to standard deviation of excess return.

The Sharpe ratio is an easy way of assessing the relationship between return and risk, but it builds on an assumption that does not always hold. The Sharpe ratio uses the standard deviation of returns in the denominator as its proxy of total portfolio risk. This assumes that returns are normally distributed. Unfortunately, deviations from normality of asset returns are quite significant and difficult to ignore (Bodie et al., 2014). Returns in the financial markets are asymmetric, also known as skewed, from the average because of many surprising drops or spikes in prices.

Sharpe ratio	
Time period	2014 - 2018
Frequency	Monthly
Average monthly return	3,4 %
Standard deviation	9,6 %
Annualized return	40,7 %
Annualized risk free rate	1,8 %
Annualized standard deviation	33,2 %
Sharpe ratio	**1,2**

Table 43: SalMar's Sharpe ratio 2014-2018

A Sharpe ratio of 1 or above is considered as good, a ratio of 2 or above is considered as very good, while a Sharpe ratio above 3 is considered to be excellent (Investopedia, 2019e). SalMar has had an average monthly return of 3.4%, which equals an annual return of 40.7% and a standard deviation of 9.6%, which equals an annual standard deviation of 33.2%. These values result in a Sharpe ratio of 1.2, which is considered as good.

As single stocks hold both systematic and unsystematic risk its usually difficult to achieve a satisfactory Sharpe ratio. Nevertheless, due to SalMar's outstanding returns the past five years, the company has been able to achieve a good ratio. The Sharpe ratio is less relevant for well diversified investors since it utilizes total risk. Such investors may prefer the Treynor ratio, which utilizes the beta in its denominator, and thereby ignoring the unsystematic risk that is included in the Sharpe ratio.

Treynor ratio

The Treynor ratio is a portfolio performance measure that adjusts for systematic risk (Corporate Finance Institute, 2019). It shares similarities with the Sharpe ratio, in the way that both measure the risk and return of a portfolio. The difference lies in the way of measuring risk. While the Sharpe ratio uses the standard deviation of portfolio returns, the Treynor ratio utilizes the portfolio beta as an indicator the portfolio's systematic risk (Corporate Finance Institute, 2019). We could therefore express the Treynor ratio as follows:

$$Treynor\ ratio = \frac{R - R_f}{\beta_p}$$

Where R is the return of the investment, R_f is the risk-free rate and β_p is the investment's volatility measured by the portfolios beta.

For SalMar and its competitors, we get the following Treynor calculations for the period of 20.03.2018 – 20.03.2019.

	GSF	MHG	Lerøy	SalMar
Return	56,2 %	40,0 %	39,2 %	48,2 %
Risk-free	1,9 %	1,9 %	1,9 %	1,9 %
Beta	1,01	0,75	0,79	0,81
Treynor	**0,54**	**0,51**	**0,47**	**0,57**

Table 44: Treynor ratio for SalMar and its competitors

If we solely look at the returns, we see that Grieg Seafood (GSF) has delivered the highest return. But if we adjust for the beta, we observe that SalMar achieves the highest Treynor ratio among its competitors.

Wrap up of historical performance

We started by illustrating how the aquaculture industry have outperformed the stock market, in addition to SalMar's performance compared to the rest of the industry. Further, we calculated a Sharpe ratio which gave us a numerical value that confirmed that SalMar has delivered a good risk-return ratio the past years. At last, we calculated the Treynor ratio for the industry participants. This ratio illustrated that SalMar have offered the best return over systematic risk ratio in the industry.

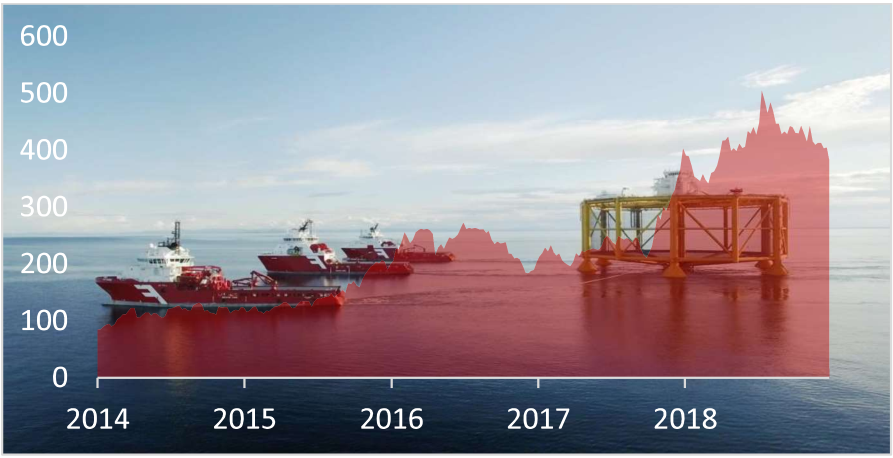


Figure 57: SalMar's share price the past years

There is no doubt that being in the same boat as SalMar the past years have provided the investors on board with generous returns. Both in forms of dividends and increased share price. However, it is worth emphasizing that since the dawn of aquaculture, the industry has never seen such a boom as they have the past five years. Since past performance is no guarantee for future performance, it is therefore important to assess factors that will impact SalMar in the future.

SalMar tomorrow

There are a variety of different variables, both indigenous and exogenous, that can impact SalMar's ability to create value in the future. As we have seen in recent years, the salmon prices can be highly volatile, and many factors can take a term for the better or worse overnight. We have analyzed and identified the three most important factors that affect SalMar's ability to create value.

Salmon Price

SalMar are currently enjoying historically high salmon prices compared to earlier years. We believe that this level is the new norm and that the strong demand for salmon will continue to maintain high prices for the years to come as well. These predictions are supported by the forward prices for salmon from Fish Pool, which reflects what the market believe will be the future price.

Harvest volume

There are two ways to increase the harvest volume; either by increasing the biomass from current farming licenses or come up with innovations that make them eligible to apply for development licenses. In order to stimulate growth from existing licenses it is necessary to improve the biological conditions, as this is the main criteria when the government allocates growth applications. SalMar has 30% of its volume harvested in Northern Norway, categorized as a green production region. Additionally, the biological improvement in Central Norway in 2018 shows that SalMar has the ability to mend previously non-favorable areas and has thereby proven to be well appointed for the future.

Innovations

As the government no longer issues traditional farming licenses, industry participants are eager to discover innovations that make them eligible for development license. SalMar has invested vast resources to create more environmentally friendly ways to farm salmon, thereof offshore facilities that allow them to farm salmon in open waters. In 2018, the company harvested their first volumes from the offshore pilot project, Ocean Farm 1, with a promising outcome. However, despite the positive results, offshore fish farming technology demands a substantial amount of capital expenditure. Thus, it remains to be seen if SalMar will maintain its position as a cost leader in the business in the future.

Authors:
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Stock Information

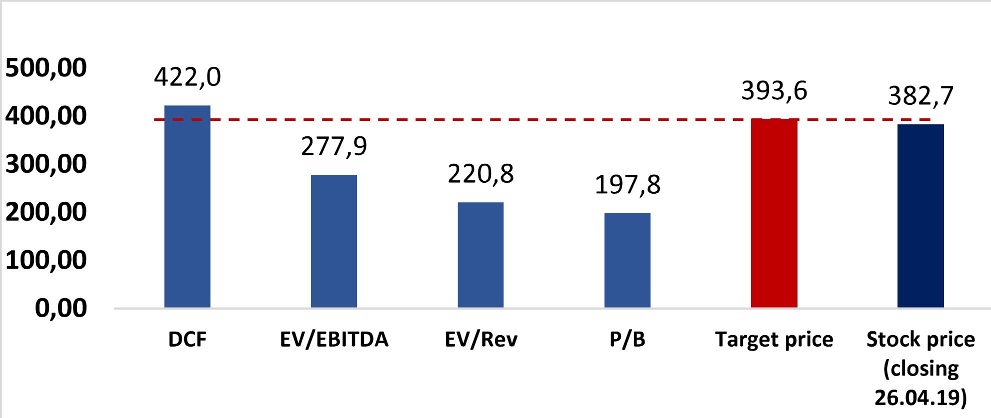
Shares Outstanding	113.3M
Market Cap (MNOK)	48 252
EV (MNOK)	50 781

Valuation Date: 26/04/19 **Industry:** Seafood **Recommendation:** HOLD
Country: Norway **Current Price:** 382.7 **Target Price:** 393.6
Ticker: SALM **Reporting Currency:** NOK **Upside:** +2.85%

Key Facts (2018)

EBITDA (MNOK)	3 948
EBITDA Margin	35 %
EBIT (MNOK)	3 460
Net Profit (MNOK)	3 579
Total Assets (MNOK)	15 135
Equity Ratio	95.0 %
Harvest Vol. (tonnes)	142 500
EBIT/kg	24.28
EV/EBIT	14.70
EV/EBITDA	12.86
P/E	15.91
Net CF operations (MNOK)	2 781

INVESTMENT SUMMARY

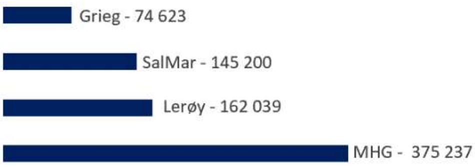


We issue a HOLD recommendation on SalMar ASA (SALM) with a target price of NOK 393.6, representing a 2.85% upside from the closing price of NOK 382.7 per share of April 26th, 2019. Our recommendation is based on the following key considerations: i) SalMar is one of the world's largest, most efficient and well-run producers of farmed salmon, that will continue to create value for its shareholders in the future, ii) we see continued growth in the global demand for Atlantic salmon which will help maintain the record high salmon prices we have seen through the previous year, iii) SalMar are far ahead in finding new ways to farm salmon and have positive experiences with their offshore fish farming iiii) but at the current share price the market seems to have priced in all future growth opportunities and assumed that the current salmon price is the new norm, limiting the upside of the stock.

Stock Performance

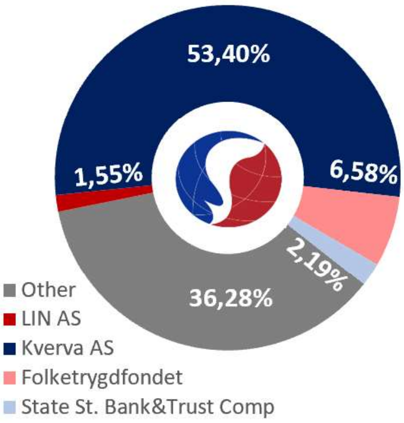
Month	-3.02%
YTD	-7.40%
1 Year	4.09%

Competitors



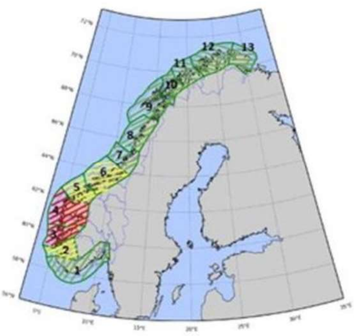
All figures in tonnes GWT for 2018, Source: Annual reports 2018

Ownership structure



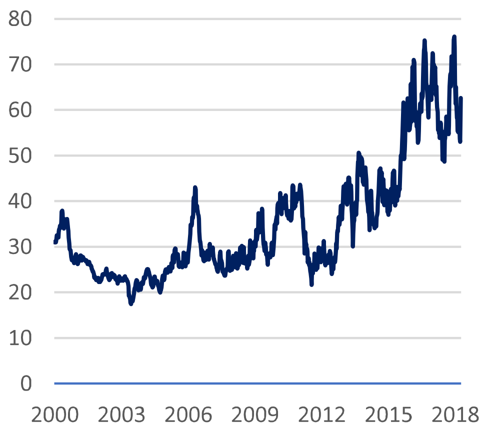
Source: Annual Report 2018

Traffic light system



Norwegian Traffic Light System, Source: https://www.regjeringen.no/no/aktuelt/regjeringen-skrur-pa-trafikklyset/id2577032/

Salmon Price



Source: FishPool

13 Table of figures

14 References

Akva Group. (2019). *Landbasert oppdrett*. Retrieved from https://www.akvagroup.com/landbasert-oppdrett

Barney, J. B. (2019, March 26). *Looking inside for Competitive Advantage.* Retrieved from jstor.org: https://www.jstor.org/stable/pdf/4165288.pdf?refreqid=excelsior%3A75568f4ff891c75ffed23b427f5cf99e

Blume, M. E. (1975). *BETAS AND THEIR REGRESSION TENDENCIES.* Retrieved from Wiley Online Library: https://onlinelibrary.wiley.com/doi/full/10.1111/j.1540-6261.1975.tb01850.x

Black, F. J. (1972). *The Capital Asset Pricing Model: Some Empirical Tests.* Retrieved from https://pdfs.semanticscholar.org/ca5c/1407b5cf8257a7efbe425e72e9d8e17897c1.pdf

Bodie, Z., Kane, A., & Marcus, A. J. (2014). *Investments.* New York: McGraw-Hill/Irwin.

Corporate Finance Institute. (2019). *What is the Treynor Ratio?* Retrieved from Corporatefinanceinstitute.com: https://corporatefinanceinstitute.com/resources/knowledge/finance/treynor-ratio/

Damodaran, A. (2012). *Investment Valuation* (Vol. Third Edition). New Jersey: Wiley.

Damodaran, A. (2016). *Damodaran Online.* Retrieved Mai 20, 2019 from People.stern.nyu.edu/adamodar: http://people.stern.nyu.edu/adamodar/pdfiles/invfables/ch3new.pdf

Dagens Næringsliv. (2017, Februar 2). *Dette møtet kan bli verdt ti mrd.* Retrieved from https://www.dn.no/havbruk/tromso/norges-sjomatrad/sjomat/dette-motet-kan-bli-verdt-ti-mrd/2-1-36858

e24.no. (2012, September 19). *Kinas Nobel-raseri rammer norsk fisk knallhardt*. Retrieved from https://e24.no/makro-og-politikk/kinas-nobel-raseri-rammer-norsk-fisk-knallhardt/20276015

E24.no. (2019, Februar 17). *Kina-toget går fra norsk laks*. Retrieved from https://e24.no/makro-og-politikk/laks/sjoematraadet-kina-toget-gaar-fra-norsk-laks/24510078

EY. (2017, Februar 10). *EY.* Retrieved from https://www.ey.com/Publication/vwLUAssets/EY_-_The_Norwegian_Aquaculture_Analysis_2017/$FILE/EY-Norwegian-Aquaculture-Analysis-2017.pdf

Fama, E. F. & French, K. R. (2015). *A Five-Factor Asset Pricing Model.* Retrieved from Journal of Financial Economics: https://www.sciencedirect.com/science/article/pii/S0304405X14002323

Fish Pool. (2019a, March 26). *Price History*. Retrieved from http://fishpool.eu/price-information/spot-prices/history/

Forskning.no. (2017, December 16). *Hvor sunn er oppdrettslaksen?* Retrieved from https://forskning.no/fiskehelse-mat-ny/spor-en-forsker-hvor-sunn-er-oppdrettslaksen/302328

Framtida.no. (2017, May 24). *Havbasert fiskeoppdrett er framtida*. Retrieved from https://framtida.no/2014/09/25/havbasert-fiskeoppdrett-er-framtida

Grieg Seafood. (2010). *Annual Report 2009.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2011). *Annual Report 2010.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2012). *Annual Report 2011.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2013). *Annual Report 2012.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2014). *Annual Report 2013.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2015). *Annual Report 2014.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2016). *Annual Report 2015.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2017). *Annual Report 2016.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2018). *Annual Report 2017.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Grieg Seafood. (2019). *Annual Report 2018.* Bergen: Grieg Seafood ASA. Retrieved February 1, 2019 from https://www.griegseafood.no/inverstors/annual-reports/

Guttormsen, A. (2015). *Meld St. 16 2014-2015.* Retrieved Februar 20, 2019 from Regjeringen.no: https://www.regjeringen.no/no/dokumenter/meld.-st.-16-2014-2015/id2401865/sec1

Ilaks.no. (2017, September 1). *Produksjonskostnadene opp 96 prosent på 12 år*. Retrieved from https://ilaks.no/produksjonskostnadene-opp-96-prosent-pa-12-ar/

Ilaks.no. (2018, December 14). *SalMar fikk bare halvparten av utviklingstillatelsene de søkte om for «Smart Fish Farm», men påklager ikke vedtaket.* Retrieved from https://ilaks.no/salmar-fikk-bare-halvparten-av-utviklingstillatelsene-de-sokte-om-for-smart-fish-farm-men-paklager-ikke-vedtaket/

Imperial College London. (2016, March 31). *World's obese population hits 640 million, according to largest ever study*. Retrieved from https://www.imperial.ac.uk/news/171536/worlds-obese-population-hits-640-million/

Institute of Marine Reseach. (2018, September 24). *Mest lakselus på villaks på Vestlandet og deler av Midt-Norge.* Retrieved from fiskeribladet.no: https://fiskeribladet.no/tekfisk/nyheter/?artikkel=62537

Investopedia. (2019a). *Forward Contracts*. Retrieved from Investopedia.com: https://www.investopedia.com/terms/f/forwardcontract.asp

Investopedia. (2019b). *How to valuate stock performance.* Retrieved from Investopedia.com: https://www.investopedia.com/articles/investing/011416/how-evaluate-stock-performance.asp

Investopedia. (2019c). *Interest Coverage Ratio Definition.* Retrieved from Investopedia.com: https://www.investopedia.com/terms/i/interestcoverageratio.asp

Investopedia. (2019d). *What Is Considered a Good Price-To-Book Ratio?.* Retrieved from Investopedia.com: https://www.investopedia.com/ask/answers/010915/what-considered-good-price-book-ratio.asp

Investopedia. (2019e). *What is a good a Good Sharpe Ratio?.* Retrieved from Investopedia.com: https://www.investopedia.com/ask/answers/010815/what-good-sharpe-ratio.asp

Jakobsen, S.-E., Berge, D., & Aarset, B. (2003, Juni). *Regionale og distriktspolitiske effekter av statlig havbrukspolitikk.* SNF. Bergen: Regjeringen.no. Hentet Februar 18, 2016 from Regjeringen: https://www.regjeringen.no/globalassets/upload/kilde/krd/rap/2003/0006/ddd/pdfv/182943-a16_03.pdf

Kaldestad, Y., & Møller, B. (2015). *Verdivurdering: teoretiske modeller og praktiske teknikker for å verdsette selskaper* (1. utgave), Bergen: Fagbokforlaget.

Knivsflå, K. (2019a). BUS440 Forelesning 1: Regnskapsanalyse og verdivurdering. Bergen, Norge: Norges Handelshøyskole. Retrieved Mars 5, 2019 from http://course.nhh.no/master/BUS440/plansjar.htm

Knivsflå, K. (2019b). BUS440 Forelesning 14: Fremtidsrekneskap; Andre budsjettdrivarar. Bergen: Norges Handelshøyskole. Retrieved March 20, 2019 from http://course.nhh.no/master/bus440/plansjar/2016/BUS440%20-%2014%20-%202016.pdf

Koller, T., Goedhart, M., & Wessels, D. (2015). *Valuation Measuring and Managing the*

Kyst.no. (2018, April 13). *Salmar vil utvikle enda større havmerd - har kjøpt seg inn i MariCulture AS*. Retrieved from https://www.kyst.no/article/salmar-vil-utvikle-enda-stoerre-havmerd/
Value of Companies (Vol. 6th edition). New Jersey: Wiley.

Laksefakta.no. (2018, August 21). *Hva er i fôret til laksen?* Retrieved from https://laksefakta.no/hva-spiser-laksen/hva-er-i-foret-til-laksen/

Lerøy. (2010). *Annual report 2009.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2011). *Annual report 2010.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2012). *Annual report 2011.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2013). *Annual report 2012.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2014). *Annual report 2013.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2015). *Annual report 2014.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2016). *Annual report 2015.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2017). *Annual report 2016.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2018). *Annual report 2017.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lerøy. (2019). *Annual report 2018.* Bergen: Lerøy ASA. Retrieved February 3, 2019 from https://www.leroyseafood.com/en/investor/reports-and-webcast/annual-reports/

Lien, L. B., Knudsen, S. E., & Baardsen, Ø. T. (2016). *Strategiboken.* 5068 Bergen: Fagbokforlaget Vigmostad & Bjørke AS.

Malkiel, B. G. (2003). *The Efficient Market Hypothesis and Its Critics*. Retrieved from American Economic Association: https://www.aeaweb.org/articles?id=10.1257/089533003321164958

Marine Harvest. (2010). *Annual Report 2009.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2011). *Annual Report 2010.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2012). *Annual Report 2011.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2013). *Annual Report 2012.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2014). *Annual Report 2013.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2015). *Annual Report 2014.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2016). *Annual Report 2015.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2017). *Annual Report 2016.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2018a). *Annual Report 2017.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Marine Harvest. (2018b). *Salmon Farming Industry Handbook 2017.* Retrieved February 9, 2019 from Marine Harvest: http://www.mowi.com

Marine Harvest. (2019). *Annual Report 2018.* Bergen: Marine Harvest ASA. Retrieved February 3, 2019 from http://www.mowi.com/investor/annual-reports/

Mattilsynet. (2017). *Lakselusrapport sommeren 2017.* Retrieved from mattilsynet.no: https://www.mattilsynet.no/fisk_og_akvakultur/fiskehelse/fiske_og_skjellsykdommer/lakselus/mattilsynets_lakselusrapport_sommeren_2017.27845/binary/Mattilsynets%20lakselusrapport%20sommeren%202017

Mattilsynet. (2019, January 2). *Oppdrettfisk til mat*. Retrieved from Mattilsynet.no: https://www.mattilsynet.no/mat_og_vann/produksjon_av_mat/fisk_og_sjomat/oppdrettsfisk/

Matvaretabellen.no. (2019). *Laks, oppdrett, rå*. Retrieved from http://www.matvaretabellen.no/laks-oppdrett-raa-04.220

NHI.no. (2016, May 6). *Spis mer fisk*. Retrieved from https://nhi.no/kosthold/ernaring/fisk-er-sunt/

Nofima. (2018, January 4). *Dyr lus og dyrere fôr*. Retrieved from https://nofimaas.sharepoint.com/sites/public/Cristin/Rapport%2024-2017.pdf

Norges Bank. (2019, March). Retrieved from https://www.norges-bank.no/pengepolitikk/Styringsrenten/

Norges Bank. (2019). *Statsobligasjoner årsgjennomsnitt.* Retrieved from Norges-bank.no: https://www.norges-bank.no/tema/Statistikk/Rentestatistikk/Statsobligasjoner-Rente-Arsgjennomsnitt-av-daglige-noteringer/

Norwegian Directorate of Fisheries. (2018a, Februar 21). *Tildeling og tillatelser*. Retrieved from https://www.fiskeridir.no/Akvakultur/Tildeling-og-tillatelser/Kapasitetsjustering-Trafikklyssystemet/Produksjonsomraader

Norwegian Directorate of Fisheries. (2018b, November 8). *Lønnsomhetsundersøkelse for laks og regnbueørret*. Retrieved from https://www.fiskeridir.no/Akvakultur/Statistikk-akvakultur/Statistiske-publikasjoner/Loennsomhetsundersoekelser-for-laks-og-regnbueoerret

Norwegian Directorate of Fisheries. (2018c, February 2). *Utviklingstillatelser.* Retrieved from https://www.fiskeridir.no/Akvakultur/Tildeling-og-tillatelser/Saertillatelser/Utviklingstillatelser

Norwegian Directorate of Fisheries. (2018d, February 2). *47 oppdrettsselskap har søkt om vekst*. Retrieved from https://www.fiskeridir.no/Akvakultur/Nyheter/2018/0218/47-oppdrettsselskap-har-soekt-om-vekst

Norwegian Food Safety Authority. (2012, November 26). *Oppdrettfisk til mat.* Retrieved from https://www.mattilsynet.no/mat_og_vann/produksjon_av_mat/fisk_og_sjomat/oppdrettsfisk/

Norwegian Ministry of Fisheries and Coastal Affairs. (n.d.). *Strategy for a competitive Norwegian aquaculture industry.* Retrieved from https://www.regjeringen.no/globalassets/upload/kilde/fkd/reg/2005/0001/ddd/pdfv/255327-l-0525_akvakulturloveneng.pdf

Norwegian Seafood Council. (2017). *Atlantisk laks*. Retrieved from https://seafood.azureedge.net/49505d/globalassets/markedsforing/materiell/visningsanlegg/norsk/brosjyre/salmon-fact-sheet_no.pdf

NRK.no. (2014, March 28). *Kjempegevinst for oppdretterne*. Retrieved from https://www.nrk.no/nordland/kjempegevinst-for-oppdretterne-1.11634652

OneKind. (2018). *Cleaner fish welfare on salmon farms.* Retrieved from https://www.onekind.scot/wp-content/uploads/OneKind-Cleaner-Fish-Report.pdf

Oslo Stock Exchange. (2019, April 26). *Kurser og marked*. Retrieved April 26 2019 from Oslo Børs: https://www.oslobors.no/markedsaktivitet/#/details/SALM.OSE/overview

Oslo Stock Exchange. (2019, April 26. *Lerøy Seafood Group.* Retrieved April 26, 2019 from Oslo Børs: https://www.oslobors.no/markedsaktivitet/#/details/LSG.OSE/overview

Oslo Stock Exchange. (2019, April 26). *Grieg Seafood.* Retrieved April 26, 2019 fra Oslo Børs: https://www.oslobors.no/markedsaktivitet/#/details/LSG.OSE/overview

Oslo Stock Exchange. (2019, April 26). *Marine Harvest.* Retrieved April 26, 2019 from Oslo Børs: https://www.oslobors.no/markedsaktivitet/#/details/MOWI.OSE/overview

Penman, S. H. (2013). *Financial statement analysis and security valuation* (5th edition). New York: McGraw-Hill.

Porter, M. E. (1979). *How Competitive Forces Shape Strategy.* Retrieved from hbr.org: https://hbr.org/1979/03/how-competitive-forces-shape-strategy

Porter, M. E. (2018, January). *The Five Competitive Forces That Shape Strategy.* Retrieved from:http://www.business.uwm.edu/gdrive/Goranova_M/Readings_712/Porter%205%20forces.pdf

Professional Academy. (2019, February 10). *Marketing Theories - PESTEL Analysis.* Retrieved from professionalacademy.com: https://www.professionalacademy.com/blogs-and-advice/marketing-theories---pestel-analysis

PricewaterhouseCoopers. (2014). *Risikopremien i det norsk markedet 2013-2014*. Retrieved from PricewaterhouseCoopers: https://www.pwc.no/no/publikasjoner/verdivurdering/risikopremien-2013-2014.pdf

Regjeringen. (2006, January). *The Aquaculture Act.* Retrieved from https://www.regjeringen.no/globalassets/upload/kilde/fkd/reg/2005/0001/ddd/pdfv/255327-l-0525_akvakulturloveneng.pdf

Regjeringen.no. (2012). *God kvalitet - trygge tjenester*. Retrieved from https://www.regjeringen.no/no/dokumenter/meld-st-10-20122013/id709025/sec1

Regjeringen. (2018a, Juli 10). *Fisk og EU*. Retrieved from Regjeringen: https://www.regjeringen.no/no/tema/mat-fiske-og-landbruk/fiskeri-og-havbruk/rad-1/fiskeri-ny/internasjonalt-fiskerisamarbeid/rydde-internasjonalt/fisk1/id685828/

Regjeringen.no. (2018b, November 9). *Eksport til Russland og Krim*. Retrieved from https://www.regjeringen.no/no/tema/utenrikssaker/Eksportkontroll/sanksjoner-og-tiltak1/sanksjoner-russland/id2008497/

SalMar. (2010). *Annual report 2009.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2011). *Annual report 2010.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2012). *Annual report 2011.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2013). *Annual report 2012.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2014). *Annual report 2013.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2015). *Annual report 2014.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2016). *Annual report 2015.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2017). *Annual report 2016.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2018). *Annual report 2017.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2019a). *Annual report 2018.* Kverva: SalMar ASA. Retrieved January 30, 2019 from: http://hugin.info/138695/R/1410645/363167.pdf

SalMar. (2019b, February) *Dividend.* Retrieved from: https://www.salmar.no/en/dividend/

SalMar. (2019c, February). *Offshore Fish Farming*. Retrieved from https://www.salmar.no/en/offshore-fish-farming-a-new-era/

SalMar. (2019d, February). *Strategy & Vision*. Retrieved from: https://www.salmar.no/en/strategy-vision/

SalMar. (2019e). *InnovaMar.* Retrieved from https://www.salmar.no/en/innovamar-from-dream-to-reality/

Sharpe, W. F. (1964). *CAPITAL ASSET PRICES: A THEORY OF MARKET EQUILIBRIUM UNDER CONDITIONS OF RISK.* Retrieved from https://onlinelibrary.wiley.com/doi/10.1111/j.1540-6261.1964.tb02865.x

Sintef. (2011, January 14). *Miljøregnskap for sjøprodukter*. Retrieved from https://www.sintef.no/siste-nytt/miljoregnskap-for-sjomatprodukter/

Statistisk sentralbyrå. (2018, October 25). *Akvakultur*. Retrieved from SSB.no: https://www.ssb.no/fiskeoppdrett

Statistisk sentralbyrå. (2019). *Konsumprisindeks.* Retrieved from Statistisk sentralbyrå: https://www.ssb.no/kpi?fane=tabell

The Norwegian Seafood Research Fund. (2018, October 2). *Analyse av landbasert oppdrett av laks: Produksjon, økonomi og risiko*. Retrieved from https://www.fhf.no/nyheter/2018/oktober/0210/analyse-av-landbasert-oppdrett-av-laks-produksjon,-oekonomi-og-risiko/

TheFishSite.com. (2017, August 14). *China's demand for Atlantic salmon set to grow by 25 percent per year*. Retrieved from https://thefishsite.com/articles/consumption-predictions-for-atlantic-salmon

United Nations. (2017). *World Economic Situation and Prospects 2018*. Retrieved from https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf

World Health Organization. (2019). *Population nutrient intake goals for preventing diet-related chronic diseases:*. Retrieved from https://www.who.int/nutrition/topics/5_population_nutrient/en/index13.html

World Wide Fund for Nature. (2019). *MILJØVENNLIG OG BÆREKRAFTIG FISKEOPPDRETT.* Retrieved from https://www.wwf.no/dyr-og-natur/hav-og-fiske/miljøvennlig-bærekraftig-fiskeoppdrett