SALMAR ASA

COMPANY REPORT

SEAFOOD

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An Industry leader at a strong price

"The most profitable salmon in the pawn"

- I recommend holding **SalMar ASA** as the current share price reflects the FY target price of **NOK 436**. The expected dividend of NOK 25.5 per share in 2019, which results in a total shareholder return of 5.7%.
- The positively growing demand and a growing but growth-regulated salmon farming industry have pushed prices to record highs in recent years, resulting in high profits throughout the value chain. As the strong salmon price has stabilized itself, I expect SalMar to continue to utilize from the expected future salmon price above **NOK 60/KG**.
- SalMar's harvest volume is expected to grow from 143,000 tons in 2018 to 145,000 tons in 2019 (1.4%), a decrease in CAGR of 4% compared to 2017-2018 growth. However, a strong salmon price will contribute to total revenue of 11,9bn in 2019.
- The company has operated with historical margins among the best in the salmon farming industry as the firm profits from operating with a high level of cost efficiency. The future is set for SalMar, as continued strong operations and margins are expected.

Company description

SalMar ASA is a Norwegian fish farming company and one of the world's largest and most efficient producers of Atlantic salmon. The company's main activities include sea farming, broodfish and smolt production, processing and sale of farmed salmon.

Recommendation:	**Hold**
Vs Previous Recommendation	*HOLD*
Price Target FY19:	**436 NOK**
Vs Previous Price Target	*n.a*
Price (4-Jan-19**)**	**430 NOK**

Oslo Stock Exchange: Ticker (SALM)

52-week range (NOK)	**205-510**
Market Cap (NOKm)	**48,477**
Outstanding Shares (m)	**112.600**

Source: Bloomberg and company reports

Source: Bloomberg

(Values in NOK millions)	2017	2018E	2019F
Revenues	10,817	11,496	11,992
EBITDA	3,581	3,836	3,935
Net Profit	2,298	2,685	2,930
EPS (NOK)	20,4	24,9	25,5
P/E	12.2	17.2	17
EV/KG	205	331	304
EV/EBITDA	9	13.8	12.6
ROE	34%	33%	32.5%
ROIC	33%	35%	30%
Dividends (NOK)	20.2	24.9	25.5
FCF	2,548	1,303	2,433

Source: Bloomberg and company reports (own calculations)

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Executive summary

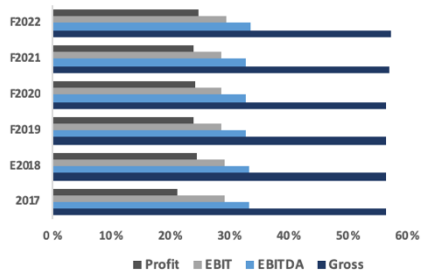
SalMar ASA, founded in 1991, is one of the biggest Atlantic salmon farming companies in the world and a cost-leader within the industry. The company sold Atlantic salmon worth NOK 10.817bn in 2017, resulting in a record high operational EBIT (29.2%) and record high level of price achievement (NOK 79.55 per kg harvested). In the coming years, SalMar's Atlantic salmon revenues are expected to expand by a CAGR of 5.65% until NOK 15.129bn in 2023.

The global development in consumption and export relative to salmon prices, increased demand for protein as the population grows, and a growing focus on healthier diets, all indicate that global demand will increase in the future. I feel confident that the market is able to absorb around 6-7% more Atlantic salmon at stable prices. Further, I expect the global supply growth to be between 4% and 4.6% each year until 2023, which is in line with Kontali Analyse's (4%) future supply expectations. As a result, I believe that we will continue to see a strong salmon price in the future and an average yearly salmon price above NOK 60 per kg in the coming years.

Though the company demonstrated an impressive harvest volume CAGR of 5.5% from 2017 – 2018, only a growth of 1.4% is expected from 2018 – 2019 as volumes will be low in Region Northern Norway (44,000 tons) in 2019, due to ongoing investments towards MAB optimization in the region, the main contributor will be Region Mid-Norway (95,000 tons). Still, a favorable salmon price will contribute to total revenue of NOK 11,9bn in 2019. However, harvest volumes are expected to get back on track as harvest from 2019 onwards of CAGR 5.46% is expected.

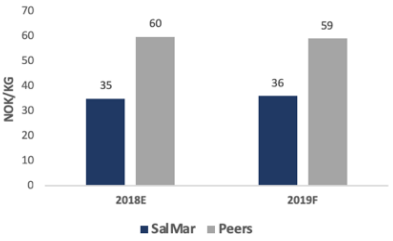
Overall, SalMar's historical profitability and performance has been the best in the industry. One of the reasons is their cost efficiency performance, which enables them to generate impressive margins even in periods with lower salmon prices. However, the company is not able to show the same results regarding sales revenue per kg as some of its peers in 2018 and 2019 **(Graph 3)**. But, with more focus on producing VAP, SalMar has managed to display a trend of achieving higher revenues per kg in recent years. By doing so, the company has been able to maintain a high-profit margin gap, even though they are demonstrating lower sales revenues/KG than their peers. As a result of their heavily cost-efficiency focus and growing VAP revenues, I believe going forward, the company will retain their strong position as one of the leading Atlantic salmon farming companies in the world.

Graph 1: Margins 2017-F2022



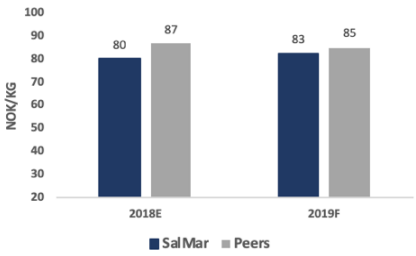
Source: Company reports

Graph 2: Cost of goods sold/KG harvested



Source: Bloomberg and company reports

Graph 3: Sales/KG harvested



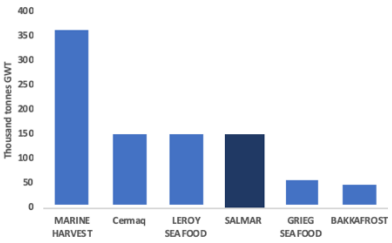
Source: Bloomberg and company reports

The target value of the company is **NOK 436** for FY2019, corresponding to a **Hold** at the potential upside of **1.4%** considering the price of NOK 430 January 2, 2019. Thus, I strongly believe that after the impressive 2018 performance, current pricing of SalMar ASA represents the company to a great extent.

Company overview

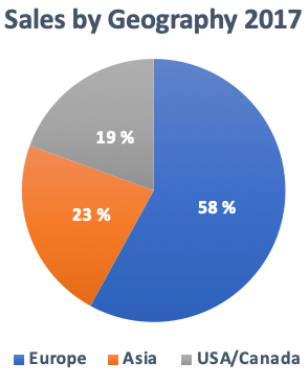
SalMar ASA was founded in Norway in 1991 by Gunnar Witzøe after an acquisition of a single license and a harvesting plant. Today, SalMar is one of the biggest producers **(Graph 4)** of farmed salmon and owns 100 licenses for marine production of Atlantic salmon in Norway. In addition, SalMar owns 50% of Norskott Havbruk AS, which in turn owns 100% of Scottish Sea Farms Ltd, the second largest producers of salmon in the UK, with a capacity of around 30,000 tons of harvested Atlantic salmon. Further, SalMar also owns 34% of the Icelandic aquaculture company Arnarlax Hf. Additionaly, SalMar runs a substantial secondary processing business, which is co-located with its headquarters in Frøya (SalMar, A, 2017). SalMar is a completely vertically integrated salmon farming enterprise that controls the entire value chain and is employing over 1,400 people. SalMar's head office is located on an island called Frøya in the Central Norway division. The InnovaMar processing plant is located in the same place and it is in this innovative and efficient processing plant which SalMar opened in 2010, with the goal to exploit the potential of the harvested salmon by processing the salmon into filets, steaks etc. Central Norway is the biggest location with 68 licenses and a total of 87,500 tons in 2017. The Northern Norway division holds 32 licenses and a total of 47,700 tons. Adding the 15,000 tons from the investment in Scottich Sea Farms, SalMar ended up with approximately 150 thousand tons of harvested salmon. Considering the utilization of their licenses, Central and Northern Norway ended on 1287- and 1490-tons head on gutted (HOG) per license in 2017. SalMar's main market is Europe, but sales are also focused in Asia and North-America **(Graph 5)**. In total, Salmar distributes Atlantic salmon to more than 50 different countries.

Graph 4: Producers of Atlantic salmon based on harvest volumes



Source: Annual reports

Graph 5



Source: Annual reports

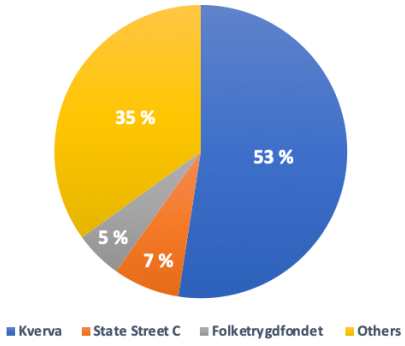
The company's main ambition is to be the world's best aquaculture company. Driven by their vision; a "Passion for Salmon", they believe it can be achieved by operating a focused value chain, with significant emphasis on upstream activities. SalMar has two defined strategic objectives regarding their business operations;

- Produce all fish at the lowest cost by having the best operational efficiency.
- Optimize the yield from their salmon in order to achieve the best possible price.

In order to be the best, SalMar states the importance that all growth must be sustainable environmentally, socially, and financially (SalMar, A, 2017).

Ownership

Graph 6: Ownership of SalMar



Source: Annual reports

SalMar ASA currently has 112.7m ordinary shares outstanding and has been publicly listed on the Norwegian Oslo Stock Exchange since 2007. Kverva AS is the main shareholder of SalMar ASA with 52.5 % of the company's shares. Kverva AS is controlled by SalMar's founder, Gustav Witzøe (SalMar, A, 2017). The second largest is State Street Corp with 7.35 %, and the third largest is Folketrygdfondet with 5.25 % **(Graph 6)**. Folketrygdfondet is a long-term financial investment institution owned by the Norwegian Ministry of Finance that manages the Government Pension Fund in Norway. The rest of the owners are mainly institutional investors, which holds positions less than 2.2 %. This includes institutional investors like JP. Morgan Chase Bank and Morgan Stanley and Co. In total, the 20 largest shareholders own 81.9 % of the shares in SalMar. A vast majority of the shares in SalMar is owned by investors with a long-term perspective, meaning that the future is likely to be stable on the owner side.

Corporate Governance

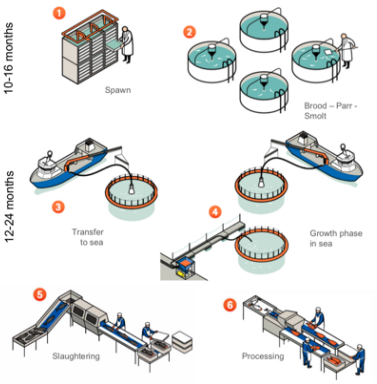
SalMar's executive management team has been one of the key driving forces behind the Company's strong growth. Currently, the management consists of 11 members. The founder of SalMar, Gunnar Witzøe, still maintain an active role in the Company as the Director of Strategic Projects. The CEO, Olav-Andreas Ervik took up the position as CEO in April this year. He has been in the Company since 2014, and he has had a wide experience within the industry, gained through different positions in companies within the salmon industry since 1994 (SalMar, A, 2017). SalMar aims to keep a high standard of corporate governance. The Company states that good governance integrated into the Company results in strong public confidence in the Company and contributes to long-term value creation by regulating the reciprocal roles and responsibilities of shareholders, the board of directors and the management (SalMar, A, 2017). Further, the Company complies with the current code of practice, drawn up by The Norwegian Corporate Governance Board (NUES). Some of the strengths of SalMar's corporate governance can be seen in the following areas:

- **Committees:** Established Audit, Compensation, and Governance Committees to oversee and direct company operations
- **Code of ethics:** Created guidelines covering ethics for the entire company and for senior financial officers.
- **Shareholder Rights:** Each share carries one vote policy; through the rights to call special meetings, minority shareholder interests are protected.

The Industry

The fish farming industry holds the sole purpose of raising fish commercially as a substitute for the stagnating wild catch. Commercial fish farming came to Norway in the 1960s to raise salmon to marketable size. This later led to countries such as Chile, Scotland, and Canada with more, to develop salmon fish farming culture. What makes the Atlantic fish farming special is that only a few areas in the world are available for traditional salmon farming, which is explained by the limitations of areas with suitable conditions. The main coastal areas suitable for salmon farming is illustrated on the map above, and the coastlines are within certain latitude bands on the Northern and Southern Hemisphere (Marine Harvest, Industry Handbook, 2018).

Graph 7: Production Cycle



Source: Marine Harvest, Industry Handbook, 2018

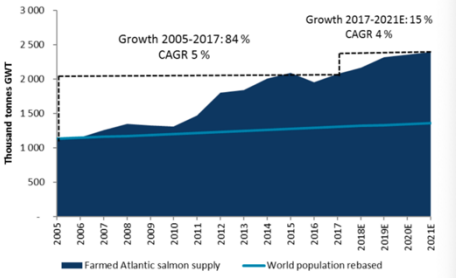
The salmon farming production cycle is an extensive and thorough process, which takes about 3 years **(Graph 7)**. When the salmon has grown to the desired size of around 4.5-5.5 kilograms they are slained and gutted. The salmon is then referred to as head-off-gutted (HOG). The salmon is sold fresh or frozen, but it is getting more common for the producers to process the salmon into filets, steaks, etc. This is referred to as value-adding processing (VAP). Including the long production cycle, salmon farmers also have to align with regulations set by authorities. The industry is highly regulated by licensing systems and relevant authorities in all salmon producing regions have licensing rules in place. These licenses set a production limit for each salmon farming company and how much the industry as a whole can produce. In Norway, the production limitations are regulated as “maximum allowed biomass” (MAB). The Norwegian coast is divided into 13 geographical areas of production, and the level of sea lice in these areas will decide if the MAB can increase from year to year (Marine Harvest, Industry Handbook, 2018).

Graph 8:SalMar VAP processing development (Thousand tons)

Source: SalMar annual reports

For salmon farmers that only process the salmon as HOG, it is almost impossible to differentiate from competitors as the product is homogeneous and the prices are set by the equilibrium of demand and supply. Thus, SalMar has been

Graph 9: Global supply growth 2005-2021E

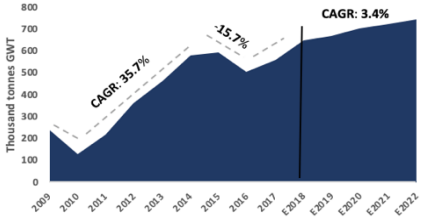


Source: Marine Harvest, Industry Handbook, 2018

Graph 10: Harvest by country/region 2015-E2018

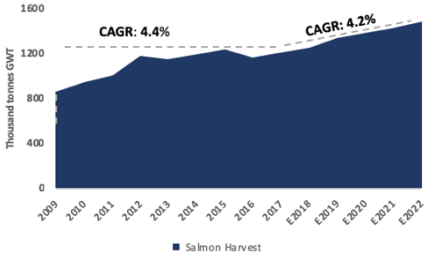
Source: Kontali

Graph 11: Supply from Chile 2009-E2022



Source: Kontali

Graph 12: Supply from Norway 2009-E2022



Source: Kontali

increasing their efforts on participating in secondary processing in a larger scale, as it is easier to differentiate from competitors by producing VAP products. From the opening of InnovaMar in 2010, SalMar has increased VAP production by 4x **(Graph 8)**. But, even though producers can achieve competitive advantages by developing different VAP products that stands out, most of the strategies can be copied. Hence, most of the strategies often only provide a temporary market advantage.

Supply

The global Atlantic salmon supply has increased with 417% since 1995 (annual CAGR of 8%). But in recent years the growth has slowly declined, showing an annual growth of 5% in the period 2005-2017 **(Graph 9)**. Kontali Analyse (salmon market analysis services) believes that global growth will continue to diminish, projecting a 4% annual growth from 2017 to 2021 (Marine Harvest, Industry Handbook, 2018). As production is reaching a level where biological boundaries are being pushed to the limit, it is expected that future growth no longer will be solely driven by the industry and regulators. Instead, future growth requires progress in technology, the development of improved pharmaceutical products, and improved industry regulations and intercompany cooperation.

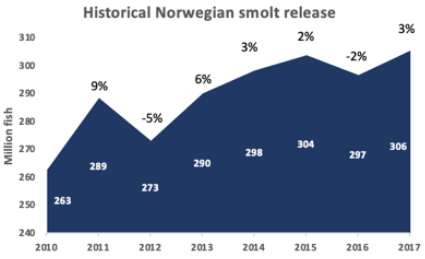
The main drivers are still Norway and Chile **(Graph 10)**, but volumes from new areas such as Iceland and Canada are affecting the total global production growth with some increasing volumes. It is also expected that the salmon industry will be less cyclicality regarding the long-term outlook. Previously, a strong variation in supply from Chile has driven up the cyclicality **(Graph 11)**, but with better regulations in major farming regions like Chile, the yearly supply growth is expected to be more predictable.

Norwegian supply

Representing the biggest salmon supplying country, Norwegian farmers have shown a harvest volume CAGR of 4.4% since 2009 **(Graph 12)**. This is in line with the MAB regime previously set by the Norwegian government, as the government decided to increase the MAB by 6% every second year for every area defined as “green”. Including the 6% every second year, 2% is offered each year for growth on existing licenses. Though this implies growth of approximately 5% in average for salmon farmers, only 8 of the 13 areas were defined as green in 2017. Historically, SalMar has achieved higher harvest volume growth than the average in Norway as the company is demonstrating a CAGR of 5.7% from 2012 to 2018E. However, SalMar is only expecting to slightly increase harvest by 1.4% year-on-year in 2019, predicting 145,000 tons, up from this year’s expected

143,000 tons total. This can though be explained by the company's plan of investments in 2019 to optimize MAB utilization in Northern Norway.

Graph 13: Norwegian smolt release 2010-2017

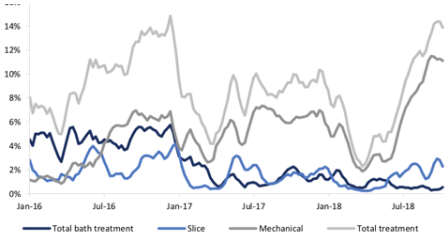


Source: Akvafakta

Smolt release indicate Norwegian growth in 2019/20120. The smolt release can be used as a good indicator of medium-term supply and **Graph 13** illustrates the historical smolt release in Norway. Considering the last 12 months, the smolt release is up 4.7% in Norway. Further, the smolt release in the early months of 2019 are expected to be higher than last two-year releases and are expected to be closer in line with the 4.7% from Oct. 2017 to Oct. 2018.

Biology challenges in 2018 due to increased numbers of sea lice treatments (**Graph 14**), which resulted in farmers not being able to fully utilize the MAB in 2018. The warm weather and summer are pointed as one of the reasons for the challenging summer, especially for farmers in Norway, as the water temperatures have been higher than the last year's average. Because of these challenges, biology costs for Norwegian farmers are expected to increase slightly in 2018.

Graph 14: Sea lice treatments in Norway 2016-2018



Source: Kontali

Production on land is moving forward and development licenses provide some growth. Considering land-based farming, due to challenges regarding redundancy systems and water quality, cost levels are highly uncertain. Further, the risk increases significantly in the last part of the production cycle, due to the greater risk of biological problems. These challenges have made it difficult for producers to succeed with salmon farming on land as mortality rates have been very high. However, in recent years, we've seen an improvement and it is expected that land-based salmon farmers will contribute with volumes in the coming years. R&D projects/licenses are also believed to deliver volumes in the coming years. One of the projects, SalMar's Ocean Farming, which makes it possible to farm in less sheltered areas, has been reported successful as the Atlantic salmon has experienced low deathliness and no sea lice treatments are done on them. In 2018, 4k tons will be harvested in the 4th quarter, with a potential of 10k tons from 2020 and onwards (SalMar, Q, 2018). Other companies are also developing projects that will deliver volumes in the coming years. Like, Marine Harvest (potential of 8k tons) and Norway Royal Salmon (potential of 10k tons), which both have their R&D licenses approved.

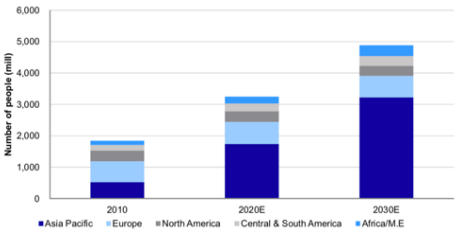
As a conclusion, I expect the global supply outlook to be between CAGR 4% and 4.6% until 2023, which is in line with Kontali Analyse's (4%) future supply expectations.

Demand Outlook

The global population is growing, resulting in an increased global demand for food. Further, the growth of the middle class has been significant the past 20

years, especially in China. The World Bank predicts that this growth will continue in the coming years **(Graph 15)**. Furthermore, in 2010, the biggest part of the global middle class was located in Europe (54%). But by 2030, the World Bank expects this to change as 20% of the middle class will be living in the western world and around 65% living in Asia-Pacific. Regarding seafood, global consumption in the world has more than doubled in the past 50 years, and as the demand increases, sustainability of the fish stock becomes an even more important challenge to handle. Salmon fish farming is a sustainable solution in that way that it can help ease the pressure on the fish-stock in the world. Further, as the middle class is growing in large emerging markets, the industry expects the consumption of high-quality proteins to increase. Salmon is rich in omega-3, vitamins, and minerals, and in addition to representing an important part of a varied and healthy diet, farmed fish is also a climate-friendly protein source compared to its substitutes. Comparing to traditional meat production, the carbon footprint of farmed salmon is 2.9/kg edible meat and freshwater consumption is 2000 liter/kg edible meat, whilst 2.7kg and 5.9kg, and 4300 liters/kg and 6000 liters/kg for chicken and pork, respectively (Marine Harvest, Industry Handbook, 2018). Even though the health and sustainability benefits of salmon are far greater compared to its substitutes, the very volatile price and potential significant higher prices, can result in a high threat from its substitutes.

Graph 15: Global middle-class development

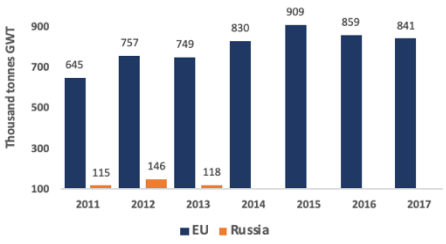


Source: World Bank

Europe

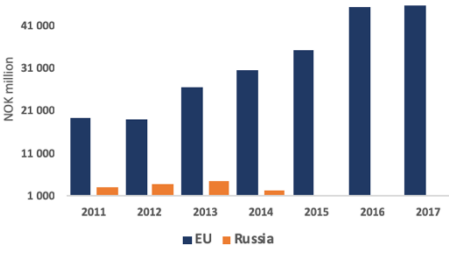
As the **most mature and developed** salmon market, **Europe** is the largest salmon market in the world. In total, more than 50% of all globally produced salmon is consumed in Europe. In 2017, the average salmon consumption was around 2 KG per capita (Norwegian Seafood Coulcil, 2017). The development regarding export to Europe has been near flat over the last four years. However, the salmon prices in 2018 are around 50% higher than in 2015. This clearly highlights the solid demand and proves that there is an increased willingness to pay for the product. Norwegian salmon have historically had, and still have, a very strong position in the EU market. If looking at the historical export numbers from Norway, one can see that the EU is by far the most important market for Norwegian farmers, with 73% of all exported salmon from Norway consumed in the EU. In addition, the Norwegian salmon market share is close to 100% in several countries in the EU (Norwegian Seafood Council, C, 2018).

Graph 16: Norwegian export in thousand tons



Source: Akvafakta

Graph 17: Norwegian export in NOK million



Source: Akvafakta

As presented in **Graph 16**, the historical exports to the EU are up CAGR 4.5% from 2011, but more impressing, the value of the exported salmon is up staggering 15.5% since 2011 **(Graph 17)**. Of course, this is a result of higher salmon prices, but also proves that there is a high willingness to pay for the product, and it highlights the increase in focus from salmon farmers to produce

more value-added products, as the VAP historically has been valued 20-40% (depending on the product) higher than HOG. From **Graph 18**, the export Jan-Oct 2017 and Jan-Oct 2018 by country is presented. Though prices have been relatively flat YoY, the increase in export to Poland and France is up with 16% and 11% respectively, which is quite remarkable. Also, there are still potentially large, but undeveloped markets for salmon in the EU, like Italy, where the growth has been 23% YoY. Considering the tremendous growth in GB (25% YoY), it can be explained by lower domestic production in 2018.

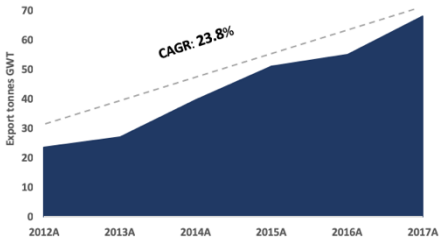
Graph 18: Norwegian export by country

Source: Akvafakta

Historically, the EU- and the Norwegian market has been very important markets for **SalMar**. Even though Norway is one of the worlds top consumers per capita of seafood and salmon, the market is rather small. So, as the value and volume of the salmon that SalMar is producing have increased, we've seen a decrease from 35% in 2012 to now representing 19% of their sales revenues in 2017. In 2017, 39% of SalMar's sales revenues came from the EU, which is up with 5% from 2013. However, revenues from EU as a part of total sales revenues for the company has fluctuated between 34% and 51% in the period between 2013-2017.

The US

Graph 19: Norwegian export to the US



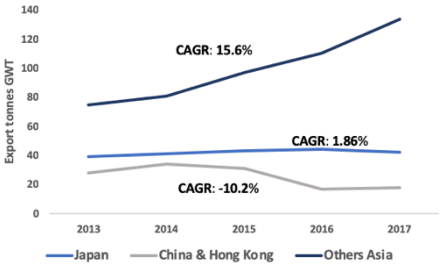
Source: Akvafakta

The US is becoming a more important market for Norwegian Atlantic salmon farmers. The US is the second largest market in the world, consuming almost 20% of all globally produced salmon. However, the average American person consumes only 1 KG salmon, and 75% of the population eats seafood less than once every month (Norwegian Seafood Council, 2017). As for now, Canada and Chile are dominating the whole North-American market, but we've seen in recent years that the US is exporting more salmon from Norway as the consumption in the country is increasing. From exporting 23,460 tons in 2012, Norwegian farmers exported 68,000 tons in 2017 **(Graph 19)**, which represent a CAGR of 23.5% in the period. In the long-term, the Norwegian salmon farmers are expected to grab more of the North-American market, and especially in the US.

For **SalMar**, the US market is becoming an increasingly more important part of their sales as the market is growing. Especially, after the Norwegian trade ban with Russia, which traditionally has amounted around 5% of SalMar's sale. In the years after the trade ban with Russia in 2014, SalMar's export to the US has increased rapidly as the sales in the US has gone from representing 7% to 19% of their total. This is a market that SalMar is expecting to continue increasing sales to as the population is looking towards this healthier protein to a greater extent.

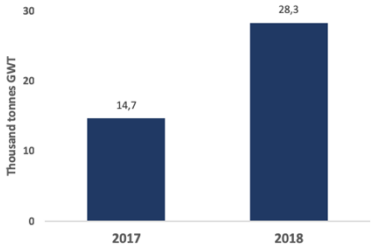
Asia-Pacific

Graph 20: Norwegian export to Asia



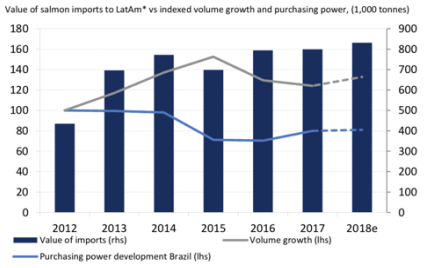
Source: Akvafakta

Graph 21: Norwegian export to China



Source: Akvafakta

Graph 22: Global export to Latin-America



Source: Kontali

Demand in Asian countries has been on an upwards trend considering Atlantic salmon exported from Norway, with a CAGR of 8.2% from 2013 (141,000 tons) to 2017 (193,000) (**Graph 20**). We've seen that Asian consumers are becoming more interested in sustainability, and value salmon in a higher degree in that sense. Though salmon is still regarded as a high-end product, the growing middle class is very likely to be demanding more salmon. There is still a lack in variety regarding eating and cooking of salmon in Asia-Pacific, but as the big producers are pushing towards the market, the knowledge will increase. As an example, The biggest Atlantic salmon producer in the world, Marine Harvest, is planning to open 2,000 purely salmon restaurants in China and Taiwan in the coming years, which clearly highlights this increased focus from salmon farmers. The Asian market has also experienced demand growth in 2018. Especially in China, where the market is the fastest-growing salmon market. However, the growth in China for the past years has been driven mainly by Chilean exports due to the Chinese ban on salmon import from Norway in 2014. But, China has now lifted these bans in 2018 and opened up for imports from all Norwegian counties. This has resulted in a growth of Norwegian salmon exports to China in 2018 of almost 100% YoY **(Graph 21)**. Though, volumes from Norway to China are still low (28,500 tons), it is expected that demand of Norwegian salmon will experience growth both long-term and short-term and that the Norwegian share of the Chinese and Asia-Pacific markets will keep expanding.

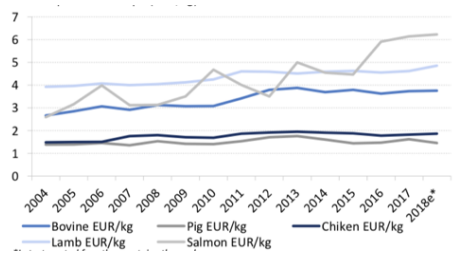
Asia-Pacific has for a long time been an important market for **SalMar**. Actually, the only SalMar sales offices that are not located in Norway are located in Asia-Pacific, namely Japan, South-Korea and Vietnam. Though the demand in Asia-Pacific is increasing, SalMar's sales to Asian countries have constantly represented between 21% and 25% of the company's total sales in the period between 2012 (24%) and 2017 (23%). Considering the growing middle class in the Asian market, and especially in the Asia-Pacific market, where SalMar already have bested themselves, the market is expected to continue representing both an important and a large part of their future sales revenues.

Even though there has been a close to flat development in Europe from 2015 in terms of exported tons, demand in emerging **Latin-American** countries has shown a positive development in recent years. The value of imports has doubled during the last six years, especially helped by a large growth from 2012 to 2013. If we also look at the purchasing power (annual Brazilian GDP per capita), the figures are even stronger, as the consumers have around 20% less of the purchasing power compared to 2012 (**Graph 22**). Though this market is

demonstrating strong potential, **SalMar** is not likely to focus on sales in this market as they aren't yet able to compete with on Chile.

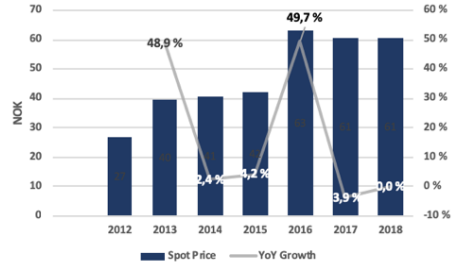
The global development in consumption and export relative to salmon prices, increased demand for protein as the population grows, and a growing focus on healthier diets, all indicate that global demand will increase in the future. Supported by a growing middle class and an increased interest in salmon around the world, I feel confident that the global market will be able to absorb around 6-7% more Atlantic salmon yearly at stable prices.

Graph 23: Salmon price vs other proteins



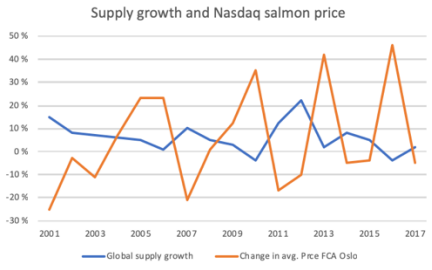
Source: IndexMundi

Graph 24: Salmon price development



Source: Fish Pool Index

Graph 25: Supply vs Price



Source: Marine Harvest, Industry Handbook, 2018

Salmon Price

The salmon price is considered the most important value driver of the industry, and as the growing attractiveness for this high-quality protein is seen around the world, the salmon price has increased substantially over the past decade. In 2017, we saw an average yearly price of NOK 60.7, and in 2018, a strong price of NOK 61. As most analysts predicted a salmon price under NOK 60 in 2018, the strong and high price has boosted the value of Atlantic salmon farming companies throughout this year.

In the most important salmon market, Europe, comparing salmon to other proteins, we can see that historically, salmon prices have surged and are more volatile compared to Bovine, Pig, Chicken, and Lamb (**Graph 23**). However, the salmon price has historically been extremely volatile as we can see from **Graph 24**, It is also noticeable from the **Graph 25** that the market seems to penalize too much supply versus rewarding less too little supply.

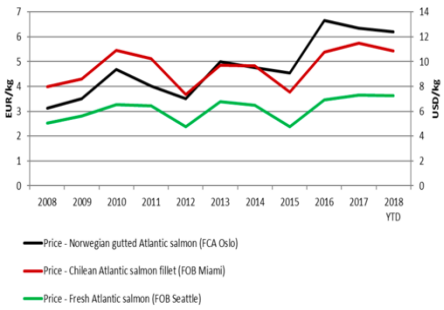
The salmon price is set in equilibrium between demand and supply, and prices have been historically highly correlated with the stock performances of the salmon companies. Additionally, the Norwegian supply doesn't solely determine the spot prices of salmon, as the global market; the FCA Oslo, FOB Miami, and FOB Seattle prices are highly correlated **(Graph 26)**. So, the global supply and demand are considered when forecasting future prices. However, forecasting future salmon prices by taking historical prices into account would be unsustainable in the long run as the price has increased from NOK 26 in 2012 to NOK 61 in 2018. From 2012 to 2013, the price increased by 49%, and the growth from 2015 to 2016 was close to 50%. The spot price of Atlantic salmon has also been highly volatile in 2017 as the spot price has fluctuated between NOK 43.90 and NOK 79.40 per kg, measured weekly. Looking at 2018, the price has fluctuated between NOK 50 and NOK 80.20 per kg. Still, the salmon prices seem to have stabilized at a yearly average level above NOK 60/EUR 6.2. per kg since 2016. The seasonal fluctuations will likely continue to be significant within the

year, as the historical prices have demonstrated. But, as described in the previous section, the supply growth will be fairly modest and stable for the next coming years, meaning that we most likely won't see extreme changes in the salmon price as we've seen in recent years **(Graph 24)**. Therefore, the expected salmon prices will stay strong as the expected demand keeps strong.

Due to the high volatility of the historical prices, I've decided to use the forward prices for 2019 from the Fish Pool Index, which predict the salmon prices to increase, as forward prices are estimated at NOK 64,82 and NOK 62,75 for the first six months of 2019 and full year respectively. Additionally, the positively growing demand for salmon and a growing but growth-regulated salmon farming industry has had a positive effect on the salmon price in recent years and is expected to remain positive in the future. Though, I'm hesitant in expecting high growth in salmon prices from 2020, as predicting too high prices could show itself to be too risky in terms of giving too optimistic revenues, which in turn will affect the valuation significantly, resulting in a misleading high company value as a consequence. Additionally, it is considered that a higher salmon price than NOK 67-70 per kg could be a major challenge to the market (Nordea Markets). Thus, I decided to predict the salmon price in line with predictions gathered from professional analysts (Nordea Markets, Handelsbanken Capital, DNB Markets, and Pareto Securities), which results in the total growth of 2% from 2020 to 2023. This gives a salmon price of NOK 62.75 in 2020, NOK 63.25 in 2021, and NOK 64 per kg in 2022 and 2023, which is a strong and reasonable estimate.

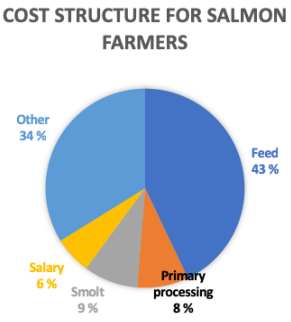
Though the costs are higher for producing VAP, the price achievement of VAP is considered to be between 20%-40% higher than the spot price, which has made it more popular among the salmon producers in recent years. However, VAP products are often sold on longer contracts (around 1 year), which can result in lower or higher revenues depending on the volatility from year to year.

Graph 26: Salmon prices correlation



Source: Marine Harvest, Industry Handbook, 2018

Graph 27: Norwegian cost structure



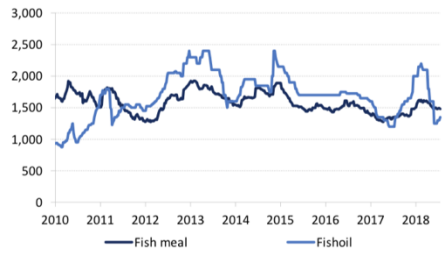
Source: Marine Harvest, Industry report, 2018

Norwegian Industry Cost Structure

The Norwegian farming industry is now at a point where the MAB is almost fully utilized, and therefore, costs are becoming very important in order for the companies to remain as profitable as possible. **Graph 27** displays the average cost structure for salmon farming companies in Norway. As displayed, the fish feed is by far the largest production cost for the farming companies (43%), and the feed cost is mainly driven by the underlying commodities like fishmeal and fish oil, but also wheat, soybean meal, and rapeseed oil. Prices of some these commodities have remained fairly stable in the last few years, and in 2018, fishmeal is slightly down, and fish oil prices have nearly halved for salmon farmers as seen from **Graph 28**. Soybean meal and rapeseed oil are also down,

(- 1.6%) and (- 45%) respectively, from 2011. Some salmon farmers in Norway is self-sufficient in the feed production, like Marine Harvest, which holds a Norwegian feed production market share of 17%. However, SalMar is dependent on outside producers regarding fish feed. In Norway, the main producers of salmon feed are Skretting (29% market share), Biomar (30% market share), and Ewos (23%) market share, but as mentioned, the prices of raw materials have been rather favorable the last few years. Hence, the expected prices are not likely to increase significantly in the coming years.

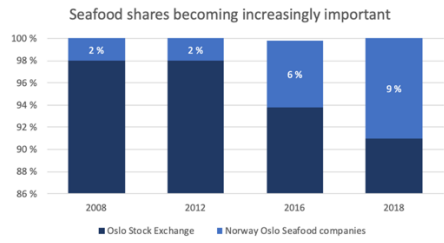
Graph 28: Fishmeal and Fishoil prices



Source: Bloomberg

Salary expenses (6 %) are higher in Norway than in Chile, the UK, and Canada, though expected as the salary levels in general are high in Norway, even though the levels of automation in the Norwegian industry is the highest among those countries. Smolt production represents 9% of costs for salmon farmers, and approximately 4-5% of these costs are related to energy needs in the production of smolt. As we've seen a growing trend of farmers increase the size of the smolt before releasing them in the net-pens at sea, the smolt costs have in general increased in recent years. However, this is done to shorten the time at sea. Other costs (34%) includes direct costs and indirect costs, administration, insurance, biological costs, etc. Historically, an honest part of R&D investments has been towards improving efficiency and reduced costs related to biology. Though, in 2018, salmon farmers in Norway have experienced higher biological costs, which can be explained by environmental conditions like high seawater temperatures this year. Nevertheless, the future looks rather stable and positive considering costs in general and feed costs.

Graph 29: Seafood shares market cap vs OSE



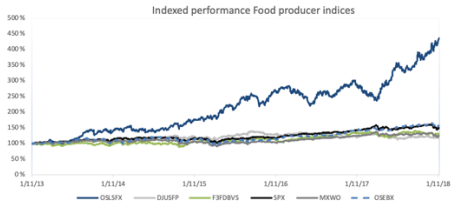
Source: Bloomberg

Competitive Positioning

SalMar vs other sectors

The seafood index on the Oslo Stock Exchange consists mostly of Atlantic salmon farming companies and has grown considerably over the last 10 years. The combined market cap for the twelve listed seafood companies has grown from 2% in 2008 to 9% divided by the 12 seafood companies in 2018, which is included in the Oslo Stock Exchange Seafood Index **(Graph 29)**. Furthermore, while no seafood company was among the top 20 largest companies on the OSE back in 2008, five of the 12 listed seafood companies are now amongst the top 20 largest companies on the exchange.

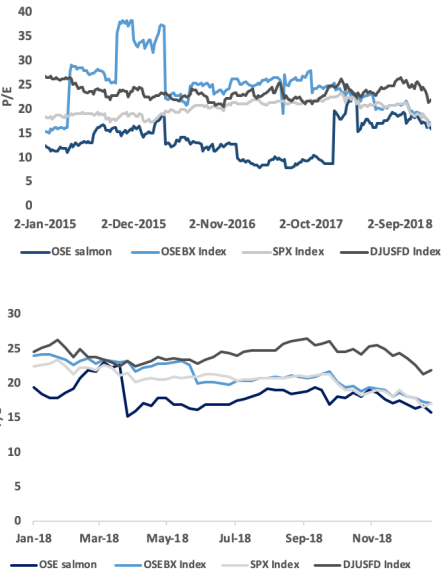
Graph 30: Seafood vs market



Source: Bloomberg

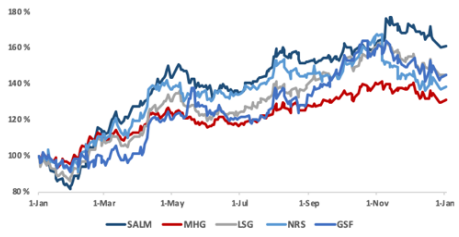
This growth can be further explained by looking at the performance of the seafood index (OSLSFX) in recent years. Compared to the Dow Jones US Food Producers Index, the UK Food index, S&P 500 Index, MSCI World Index, and Oslo Benchmark Index (OSEBX), the seafood index has outperformed the other

Graph 31 and 32: P/E salmon vs P/E indexes



Source: Bloomberg

Graph 33 and 34: SalMar vs market



Source: Bloomberg

food indices by far. Since 2013, the Oslo Benchmark Index has doubled, while the value of the NOS Index is almost 5x times higher than in January 2013. As seen from **Graph 30**, if looking outside Norway, other large protein producers and suppliers can't show a performance close to the one shown by the Oslo listed seafood companies.

Another interesting finding is that despite the solid fundamentals of the salmon companies. They have historically traded at a significant discount compared to the previously mentioned relevant benchmarks. Displayed in **Graph 31**, one can see that the salmon companies have been lagging behind for a while, though the companies' discount is getting smaller, they are still lagging slightly behind the OSEBX and S&P500, which is reflected by looking at the current pricing in 2018 **(Graph 32)**. We also observe that the Dow Jones Food Retailers Index is priced significantly higher, even though the index has shown low returns compared to the salmon farming companies.

Salmar vs the industry

The salmon farming industry is mainly controlled by a few large companies that profit through economies of scale. The front-runner by far is Marine Harvest Group (NOK 99b market cap and 370,000 tons in 2017), with harvest volumes over two times higher than the next ones, which are Lerøy Seafood Group (NOK 41b market cap), Cermaq (bought by Mitsubishi in Sept. 2014 and taken off OSE) and SalMar (NOK 50b market cap). All of them produce (including associates) around 150,000 tons each. Behind, worth mentioning, is three Norwegian companies; Norway Royal Salmon (NOK 8b market cap), Grieg Seafood (NOK 12b market cap), and Bakkafrost (NOK 22b market cap), which all harvest considerable volumes between 55,000 and 80,000 tons each.

As mentioned, the seafood shares have in general performed very well in recent years and are up around 2x-3x. For SalMar, the company has in 2018 outperformed OSEBX by far. As OSEBX is ending the year close to the starting position (-1.9%), SalMar is ending it by almost doubling their stock return in 2018 (+75%). The company also have a strong position in the peer group **(Graph 33)** and is performing very well compared to the competitors in 2018. Compared to MHG, LSG, and the seafood index as a whole, one can see that SALM has outperformed the sector significantly and as mentioned, has almost doubled in value just in 2018 **(Graph 34)**. Still, now in end-December, when the world's stock exchanges, with the heavily oil-skewed Oslo Stock Exchange included, have experienced turbulent times the last months, SalMar is demonstrating the salmon farmers strong position. Even though SalMar is down from its top (NOK 510) in mid-November, the company is up 4.5% the last three months, and the

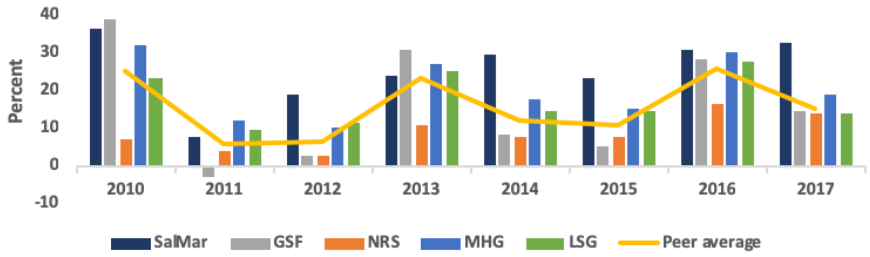
Seafood Index is down -2% for the last three months, against OSE's -15.1% decrease.

Historical Profitability vs peers

To get an understanding of SalMar's exceptional performance in 2018, a comparison to companies similar to SalMar in terms of financials and operations is done, and by looking at the historical profitability, it is possible to get a picture of future expectations. The comparable companies are; Marine Harvest (MHG), Lerøy Seafood (LSG), Norway Royal Salmon (NRS), and Grieg Seafood (GSF).

SalMar is well recognized in Norway for being a future forward-looking company with a high level of cost efficiency. We can see in **Graph 35** below, the EBITDA margin for the company and its peer. The margin is a good measure for analyzing companies by profitability as it gives a good view of a company's core operations, and it's clear that historically, SalMar has been the most efficient salmon producer. Since 2012, the company has performed better than all its peers. The only years SalMar hasn't shown the best EBITDA margins was in 2010 and 2011, and 2013. Both MHG and LSG managed in 2011 to generate more operating cash for each NOK earned, though only by 4% and 1% respectively. An interesting observation is the performance of NRS, the only company focusing on sales from partners. With a different organizational structure than the others, we can see that it appears to be a significantly less effective strategy for salmon farmers.

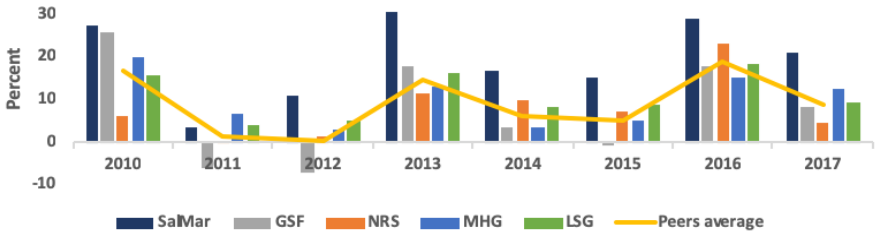
Graph 35: Historical EBITDA margin for SalMar and its peers



Source: Bloomberg and annual reports

Examining the profit margin in **Graph 36** below, one can see that historically, SalMar yet again outperforms its peers. Other than through VAP products, salmon farming is very homogenous with limited ways to diversify products, and we can see that the profit margin again highlights that SalMar has been the front-runner in terms of profitability.

Graph 36: Historical profit margin for SalMar and its peers



Source: Bloomberg and company reports

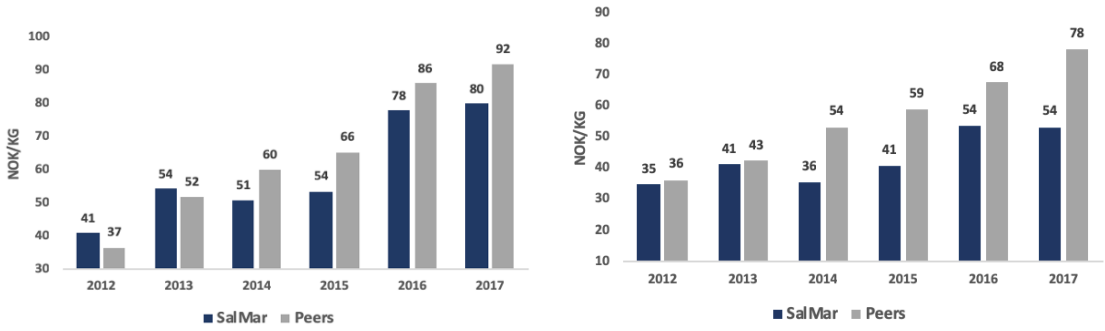
Graph 37: Dividend yields in 2017

Company name	Dividend Yield
SALMAR ASA	7,70 %
GRIEG SEAFOOD ASA	2,77 %
NORWAY ROYAL SALMON ASA	3,87 %
MARINE HARVEST	8,92 %
SCOTTISH SALMON CO LTD	0,00 %
BAKKAFROST P/F	3,99 %
LEROY SEAFOOD GROUP ASA	3,41 %
SALMONES CAMANCHACA SA	-
AUSTEVOLL SEAFOOD ASA	4,10 %
AKVA GROUP ASA	1,80 %
Median	**3,9 %**
Average	**4,1 %**

Source: Bloomberg

Considering the historical dividend yields, SalMar has delivered amongst the highest dividend yields compared to its peers and the seafood sector in general. Though the company is the best performer considering profit margins etc. the company have historically had a lower dividend yield than Marine Harvest Group. In 2017, SalMar paid out dividends of NOK 12 per share, representing a dividend yield of 7.7%, against Marine Harvest's dividend yield of 8.9% (**Graph 37**). However, the high dividend yields from MHG can partly be explained by the company's major stakeholder, John Fredriksen, who is known for being a fan of high-dividends rather than reinvesting in the company.

Graph 38 and 39: Sales revenue/KG and total operating costs/KG for SalMar vs its peers

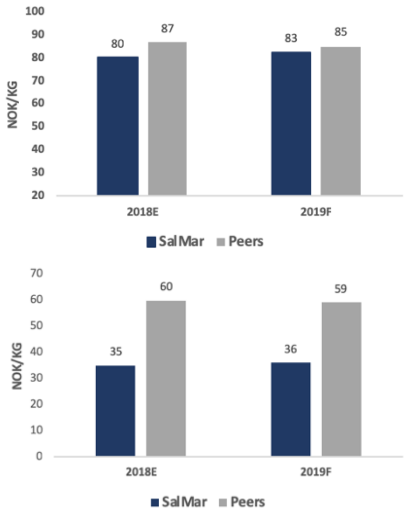


Source: Bloomberg and company reports

Exanimating the profitability margins of SalMar compared to its peers, we get a clear picture that the company has either achieved better sales revenues/KG or costs/KG. As demonstrated in **Graph 38**, we can see that historically, SalMar has achieved lower sales revenue/KG, indicating that they have troubled with realizing their VAP potential at the InnovMar processing plant. However, we observe that the gap has become smaller. Looking at the total operating costs/KG in **Graph 39**, SalMar has been by far the most cost efficient.

Considering costs of goods sold per kg harvested, they were around NOK 26/KG from 2013-2015, before making a jump from 2015 together with the salmon price

Graph 40 and 41: SalMar's Sales/KG and cost per goods sold/KG



Source: Bloomberg and company reports

to 2016 until around NOK 35/KG. In terms of costs per goods sold/KG, the gap between SalMar and its peers are much larger than the gap in sales income for 2018 and 2019. We can see that SalMar is expected to achieve a lower revenue than its peers in both years (**Graph 40**). However, in line with historical results, their cost of sales structure is by far superior for the respective years (**Graph 41**). As a conclusion, the cost efficiency of SalMar has shown itself to be a key success factor in the industry.

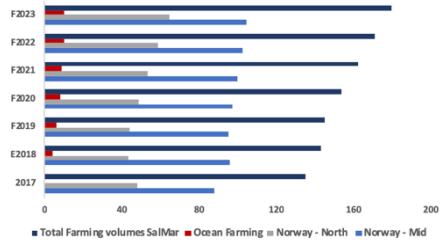
Valuation

For SalMar, 2017 was a very good year with record high Operational EBIT and record high level of price achievement. Revenues were up 20% from NOK 9,030m in 2016 to NOK 10,817m in 2017, resulting in an exceptional growth of CAGR 14.6% from 2013-2017. Operational EBIT was up 30% to NOK 3,162 million in 2017, up from NOK 2,432 in 2016. From a financial point of view, 2017 gave impressive results. This was mainly driven by salmon price achievement and improved biological performance, which contributed to a high level of fish harvested in 2017. I have considered two standard approaches to value SalMar. The most common present value approach, namely, the Discounted Cash Flow (DCF) model, and comparable company multiple pricing. However, I will first go through the financial projection of the company.

Financial Projection

Harvest volumes

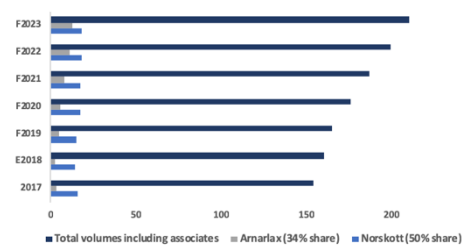
Graph 42: Forecasted Harvest Volumes for SalMar



Source: Company reports and own calculations

As mentioned earlier, SalMar is self-sufficient regarding the Atlantic salmon farming value chain, which gives them the ability to increase production of smolt as they want in order to grow their harvest. But as long as the regulations and lice challenges hinder a considerably strong growth in harvest volumes, steady growth in line with recent years are expected. However, SalMar experienced some improvements in the biological situation and expects to increase their production with 5.5%, from 135,000 tons in 2017 to 143,000 tons in 2018. Further, the company only expects an increase of 1.4% from 2018 to 145,000 tons in 2019, due to investments to optimize MAD utilization in Northern Norway (SalMar, Q3, 2018). After 2019, the harvest volumes are expected to get back on track, and harvest volumes are expected to increase with 5.46% CAGR from 2019 until 2023, which is higher than the Norwegian average expected by Kontali Analyse. But, SalMar is focusing more heavily on innovating ways to farm Atlantic salmon R&D projects like Ocean Farming and other ocean-based projects like SalMar's acquisition of 51% of the shares MariCulture AS. I believe that the company's innovating strategy makes them better equipped to handle larger harvest volumes, thus it will be an important part of SalMar's capabilities to perform better than the industry from 2019 and onwards.

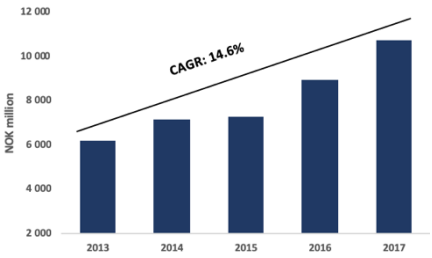
Graph 43: Forecasted Harvest Volumes for SalMar, with share from associated included



Source: Company reports and own calculations

Revenues

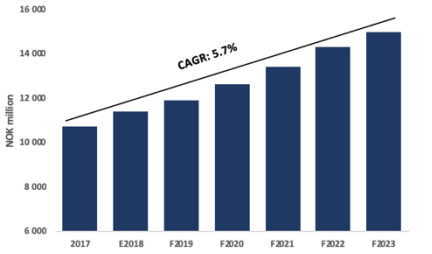
Graph 44: Forecasted Harvest Volumes for SalMar



Source: Company reports

In order to forecast sales numbers as accurately as possible, SalMar's historical harvest volumes, the Norwegian salmon company's growth estimates, and the salmon prices are taken into consideration**.** As mentioned, they have performed very well in recent years as revenues are up CAGR 14.6% since 2013 to record high revenues of NOK 10.817bn in 2017 (**Graph 44**). To forecast future sales numbers as accurately as possible, I have used an approach where the historical sales revenues are divided by SalMar's harvest volume for each year in order to obtain a price achieved per kg Atlantic salmon sold. Further, I assume that all harvested salmon is sold in the historical period, and by subtracting the spot price from the achieved sales price, I get a premium on top of the spot price. The average of this premium over the five years (2013-2017) is 28.5%. However, I decided to use the premium from 2017 (31%) to forecast the sales revenues for 2018-2023, by adding the premium on top of the expected future spot price. I believe that 2017 gives a better picture of VAP product sales as I assume that the company sells most of their VAP products on forward contracts. SalMar only managed to achieve a 23% premium over the spot price in 2016 vs 31% in 2017. Considering the 50% increase in the salmon price from 2015-2016, I assume that parts of the low premium can be explained by contracts signed before the increase in salmon price.

Graph 45: Forecasted Harvest Volumes for SalMar



Source: Company reports and own calculations

The salmon price is expected to stay above NOK 60 per kg in the coming years, which is also backed by forward prices. As mentioned, I believe that we will see a salmon price between NOK 61 – NOK 64 per kg in the coming years. This results in significantly lower future sales revenue growth of CAGR 5.65% from 2018 to 2023 (**Graph 45**), compared to the mentioned CAGR 14.6% from 2013 to 2017. However, one has to consider that the salmon prices have increased from NOK 39.5 per kg in 2013 to NOK 61 per kg in 2017. To expect growth in the same line would be too optimistic and not sustainable in the long run, as prices above NOK 67-70 most likely would become a major challenge for the market (Nordea Markets, 2018). Additionally, the expected future supply growth implies a salmon price which is more stable as the supply is expected to be less volatile, and with lower growth.

SalMar's sales revenues by the geographic market has changed in recent years. Norway, being the most important market for the company in 2012, generating 35% of total sales revenue. Today, the EU (39%), Asia-Pacific (23%), and the US (19%) have become bigger markets than Norway (19%) for the company. However, it has been expected as Norway is a rather small market, and SalMar have increased harvesting volumes. I expect that the increased demand in Asia-Pacific will result in the market representing the company's total sales to a

greater extent in the future. But I also believe that the increasing sales to the US will continue for SalMar. However, as the global demand is higher than the global supply, I expect that the company will have no problem getting all their harvested salmon out to the consumers in the future.

Other operating revenues represent only a small share of the net revenue and I assume that they are also only involved in the production of salmon. Therefore, these revenues are calculated using the same growth pace as sales revenue, which is CAGR at 5.65%.

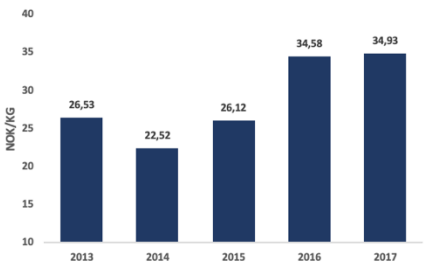
Foreign Exchange

The operations of SalMar expose the firm to fluctuations in foreign currencies. However, the currency exchange fluctuations imply a limited risk for SalMar, as the sales in foreign currencies are hedged on the transaction date and contract sales are hedged when contracts are entered. Further, foreign exchange exposure to costs is more limited as the input factors and salaries are paid in NOK. Considering that the company borrows and invest in NOK, the exchange risk related are almost non-existing. Around 60% of the company's sales are either generated in EUR (28%) or USD (35,6%), while 28,5% is generated in NOK. The remaining sales which represent a small part (8 %), are generated in either JPY (4,4 %), GBR (2,7 %) or SEK (1%). As described, due to the hedging that SalMar has set in place, currency movement would not be too striking in form of revenue disturbance.

Cost of Sales

SalMar's cost of goods sold per kg harvested has gone up from NOK 26.5 in 2013 to NOK 34.9 in 2017 **(Graph 46)**, an increase of CAGR 7.1%. However, the salmon price has been favorable in the same period, resulting in a gross margin 5.1% higher in total for the same period. Seeing that SalMar has been focusing more heavily on producing VAP products since 2010, which is costlier, one would assume that their gross margin would decrease. However, their InnovaMar producing plant has shown itself to be cost-efficient in addition to producing large-scale VAP products, which has generated a high price premium over the spot price. Among the salmon farmers, none of their competitors can compete with their margins. And as the most cost-efficient salmon producing company, SalMar has pushed towards integrating a strong cost leadership culture within the company, which is reflected in their high gross margin (56.3%) in 2017, confirming that they have been working towards safeguarding their position as the most cost-efficient salmon producer. Additionally, as mentioned, for 2018, SalMar's cost of goods sold/KG ratio is expected as NOK 35/KG, which is far lower than its peers of NOK 58.8/KG.

Graph 46: Cost of goods sold/KG, 2013-2017



Source: Company reports

For the future forecast, I decided to base the cost of goods expenses on 2017 as I believe that historical average does not reflect the company's increased focus on VAP in recent years. I expect the same cost per kg in 2018 as costs for the volume sold have been on a par with 2017, then a slight increase in the cost of NOK 1 per kg in 2019 is expected because of marginally higher feed prices. From 2019 and onwards I assume that the cost of sales per kg harvested will level out and remain stable as the company already have made the necessary investments to deal with larger harvest volumes. The InnovaMar production plant has the capacity to harvest 75,000 tons of salmon per year in one shift, which resulted in an excess capacity of more than 28,000 tons in 2017. Additionally, in 2017, the company produced 28.3 million smolt, and after recent investments, the company has the capacity to produce around 30% more (40 million) smolts (SalMar, A, 2017).

Operating margin and Operating expenses

Though SalMar is demonstrating higher gross margins than its competitors it doesn't automatically have to result in higher operating margins than its peers. But as mentioned, SalMar has in three of the four last years demonstrated an impressive advantage (2x) over their peers, if looking from the EBITDA to EBIT margin. The company has increased its operating margin (EBIT) over the last five years and comparing to 2013, SalMar has more than doubled their EBIT income per kg harvested, from NOK 11 per kg to NOK 23 per kg in 2017. Although the high EBIT margin (29.2%) in 2017 is in large degree reflected by higher salmon prices, the company has also shown satisfying operating cost levels. In addition, the EBIT margin is expected to be fairly stable in the coming years.

Payroll, R&D and other operating expenses are all based on a percentage of harvest volumes. Though the level of automation in SalMar is very high, payroll costs per kg harvested have been higher in 2016 (+1.65%) and 2017 (0.3%) than the last five years average. This can though be explained by lower harvest volumes. Of the three mentioned costs, Research and Development costs have the smallest effect on SalMar's operating margin. As costs related to R&D are capitalized when certain specific criteria related to future revenues are met, it is more of a company's own choice. However, we've seen an increase of R&D spending in recent years, from NOK 0.2/kg in 2013 to NOK 0.7/kg in 2017, though the costs still have a low effect on the operating margin.

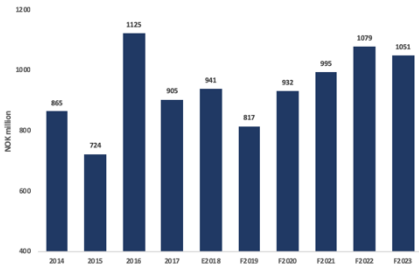
Other operating expenses are the biggest post of the three. Due to biology issues regarding the 2018 generation of salmon, which can be partly explained by warmer seawater temperatures in 2018, and increased delivery costs, I estimate that costs will increase with NOK1/KG in 2019 and NOK 0.5/KG in 2021. From

2021 onwards, I expect that costs per KG will level out, as SalMar is already well equipped to take on larger harvest volumes. Nevertheless, except the increase in other operating expenses, I expect all the expenses per kg harvested to remain on 2017 levels. This results in an EBIT per kg harvested in 2018 in line with 2017 (NOK 23.4/KG), and an increase towards 2023, eventually reaching NOK 24.7 per kg harvested.

CAPEX

Historically, SalMar's capital expenditures (CAPEX) attributed to PP&E, Goodwill and Other Intangible Assets have been rather stable. However, the company is not afraid of pursuing acquisitions in order to expand. The recent acquisition of NOK 47m increasing their share in Arnarlax to a total of 34% (+11%) in 2016 as an example. Further, due to their Ocean Farming strategy, we've seen a small increase in spending in recent years. So far, SalMar has invested around **NOK 700m** in its Ocean Farm concept, and as mentioned, the project has been a success and is now in the final stages of pilot testing. With good biological results, low mortality, and no need for lice treatments, SalMar will harvest 4,000 tons from the plant in 2018. In order to further develop their offshore farming strategy, the company acquired 51% of the shares in MariCulture AS on 11 April 2018, and at the same time, they entered into a collaboration with today's owner of MariCulture to develop offshore farms that are capable to operate in open sea. The company has applied for 16 development licenses in order to develop this project, called "Smart Fish Farms". The concept has an estimated potential investment cost of **NOK 1.5bn** and would represent a big step towards realizing their offshore strategy if SalMar together with MariCulture, would be awarded these 16 development licenses. Additionally, a total of NOK 169m was invested towards increasing smolt production. Nevertheless, as the operations demand upgrades and maintenance as well as acquisitions, the company's capital expenditure is expected to remain on a high and stable level (NOK 800m – 1100m) in the future **(Graph 47)**.

Graph 47: CAPEX 2014-F2023



Source: Company reports and own calculations

DCF Valuation

The model is forecasted five years, mainly because of the revenues, which is heavily dependent on the future salmon prices. The DCF model chosen is driven by SalMar's cash flow projections. According to the DCF analysis, I expect the target price of SalMar as **NOK 436**.

Cost of Equity

The cost of equity is calculated using the CAPM model. Considering that SalMar uses NOK as their currency, and in addition to representing a big part of their sales, Norwegian salmon is traded with NOK as the reference price. Thus, I have

decided to use Norwegian government bonds. For the risk-free rate, I used a 10-year Norwegian Government Bond as a proxy. The rates on the Norwegian 10-year bonds have dropped significantly from 4.5% in 2008 to currently 1.82% in 2018, giving an average over a period of 2.86% (Norges Bank, 2018). However, I use 1.82%, as I see the historical average to be a weak indication of future development due to the falling trend in recent years. Further, I consider the Norwegian Bond to be risk-free as Norway receives top credit ratings from Moody's, Fitch and S&P.

In order to calculate the Beta, I have used the Oslo Stock Exchange Indexes as the benchmark. I have decided to use OSEBX because it is the index used by the analysts covering SalMar, that I contacted. Further, the index is heavily skewed towards oil, which has a rather low influence on the performance of SalMar. I used weekly returns over a five-year period in order to get an accurate sense of the company's Beta. This also helped minimizing the standard error, and in order to get satisfying insurance to the Beta, a 95% confidence interval was implemented. By using the geometric mean of the last 5 years return of OSEBX, the market risk premium was calculated as 8.73%, which is quite high, but as the exchange has performed well in recent years, I also expected a rather strong market risk premium. The cost of equity was then calculated using the CAPM model, resulting in **8.61%.**

Cost of Debt

As the company doesn't have any listed bonds, I decided to calculate the cost of debt from interest payments on SalMar's long-term debt. The cost of debt calculated using interest payment on net interest-bearing debt varies between 3.8% and 9.8% for the last five years, resulting in an implied cost of debt of **6.38%**, which I have used.

Terminal Growth Rate

For caution, I decided not to put in any gear elements into the terminal rate. Firstly, Norway has reached close to maximum production on existing licenses. Secondly, further growth has to happen through R&D, like new investments in land-based, offshore-based or purchases of new licenses, and licenses are rarely offered on auction. Thus, it is difficult to grow on existing infrastructure. Therefore, for the terminal growth rate, I decided to use is 2%, which is also backed by professional analysts I contacted, covering SalMar. This is though slightly higher than the historical 5-year average CPI inflation level, which is close to 2% in the main markets for SalMar; European Union, Norway, North-America, and East-Asia & Pacific.

Graph 48: WACC

WACC components	
Marginal tax rate	23 %
Risk free rate	1,82 %
Market risk premium	8,73 %
Levered beta	0,7776
Cost of equity	8,61 %
Cost of Debt	6,38 %
Weight of Debt	31,43 %
Weight of Equity	68,57 %
WACC	7,44 %

Source: Bloomberg and company reports (own calculations)

Graph 49: Sensitivity analysis

Sensitivity Analysis	Weighted Average cost of Capital						
436	6,3 %	6,8 %	7,2 %	7,4 %	7,8 %	8,2 %	8,6 %
Terminal Growth Rate 1,4 %	497	449	417	400	377	354	333
1,6 %	515	464	429	411	386	362	341
1,8 %	534	479	443	423	397	371	349
2,0 %	556	496	457	436	408	381	357
2,2 %	579	515	473	450	421	392	366
2,5 %	620	546	498	473	440	409	381
2,8 %	667	582	528	500	463	428	397

Source: Bloomberg and company reports (own calculations)

Graph 50: Multiple calculation outcome

Current DCF price	436
Current Multiple price	378
Premium	13,3 %

Source: Bloomberg and company reports (own calculations)

WACC

The tax rate in Norway is 23%, which is also assumed to keep constant in the future. SalMar has a capital structure of 68.6% equity and 31.4% debt, which is in line with the target capital structure of the company. By multiplying the cost of equity and cost of debt on the weight of equity and debt (subtracting tax), I ultimately arrive at a **WACC of 7.44% (Graph 48).**

In order to then value SalMar, the DCF analysis was conducted. I used a five-year horizon, from 2019-2023 for the necessary input factors included in the analysis. Then, by discounting both the cash flows and the terminal value with the calculated WACC of 7.44%, I ended up with an Enterprise Value of NOK 49.6bn. By adding the non-core business value and subtracting the net debt, I end up with a Market Capitalization of NOK 49.1bn for SalMar ASA. With 112.69m shares outstanding, the corresponding share price is **NOK 436.**

Sensitivity

Looking at the sensitivity analysis in **Graph 49**, we can see that a change in the terminal growth rate and a change in WACC significantly affects my stock price estimations. Though, this is expected, as a higher growth rate gives a higher enterprise value. It also implies that the company is sensitive to changes in WACC and the terminal growth rate, with a spread from NOK 667 to NOK 333 in the range.

Price Multiples

	Share Price					
	25th	Median	75th	Max	Middle	Mid Premium
EV/EBITDA	406	414	433	482	**434**	**-1 %**
EV/EBIT	354	361	377	420	**378**	**-13 %**
EV/SALES	181	211	254	297	**236**	**-46 %**
P/E	367	374	393	448	**395**	**-9 %**
EV/KG	286	301	321	354	**315**	**-28 %**

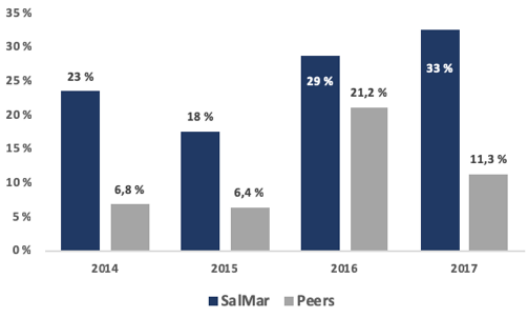
The DCF method was the main valuation approach, but I also analyzed trailing price relatives of comparable firms. The multiples valuation takes the market and book values into account. Hence, it can therefore often be a good supplement to the DCF method. The comparable companies chosen are; Grieg Seafood, Norway Royal Salmon, Marine Harvest, and Lerøy Seafood. The multiples used was three EV-based multiples (Ev/Ebitda, Ev/Ebit, and Ev/Sales), one Equity value-based multiple (P/E) and one industry multiple (EV/kg), and all ratios are based on 2018 numbers. However, using the multiples valuation approach for SalMar gives a share price of NOK 378, which is considerably lower than the price calculated when using DCF approach, implying that the company is operating with a premium of 13,3% over its peers **(Graph 50)**. Though we can see that the EV/EBITDA multiple gives a share price of NOK 434, which is only 1% lower than the DCF calculated share price. SalMar generates less revenue

per kg than its peers, but as the industry's cost leader they still have a high enterprise value, which is boosting the EV multiples. Nevertheless, as previously mentioned and presented, SalMar is operating with impressive margins and is by far the most efficient and profitable company among its peers. So, I argue that the share price calculated from the multiple approach doesn't represent the value of SalMar in a satisfying degree, and I acknowledge the premium of 13.3% the company has over its peers. Thus, I discard the price calculated from the multiple approach and rely solely on the share price of NOK 436 calculated from the discount cash flow valuation.

ROIC

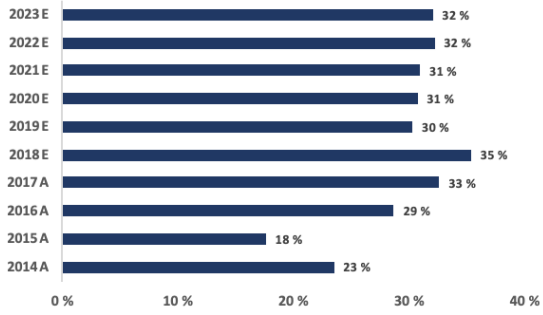
Salmar has achieved impressive value creation over the past few years as observed through the high levels of Return on Invested Capital (graph). Looking at the recent years, we observe that SalMar is using their capital more effectively than its peers (**Graph 51**). As for the future, I expect the company's ROIC value to increase to 35% in 2018, which is significantly higher than the calculated WACC (7.44%), implying that the company is creating high value as well as effectively using the invested capital. Further, I forecast that the ROIC will slightly decrease to 30% in 2019 before slightly increase towards 32% in 2023 (**Graph 52**).

Graph 51: SalMar ROIC vs Peers



Source: Bloomberg and company reports (own calculations)

Graph 52: SalMar historical and forecasted ROIC



Source: Bloomberg and company reports (own calculations)

Financial Statements

Income Statement

Reformulated IS				FORECAST			
in NOK 1000	A2017	E2018	F2019	F2020	F2021	F2022	F2023
+ Sales & Services Revenue	10 755	11 431	11 923	12 645	13 433	14 334	15 043
+ Other Revenue	62	65	69	73	77	81	86
Net Revenue	**10 817**	**11 496**	**11 992**	**12 718**	**13 510**	**14 415**	**15 129**
Change in stock of goods in progress	0	0	0	0	0	0	0
Cost of goods sold	4 722	5 005	5 148	5 459	5 754	6 068	6 368
COGS ratio	*43,91 %*	*43,79 %*	*43,17 %*	*43,17 %*	*42,83 %*	*42,33 %*	*42,33 %*
Gross Profit	**6 095**	**6 491**	**6 844**	**7 259**	**7 756**	**8 348**	**8 761**
+ Payroll costs	929	983	996	1 057	1 114	1 175	1 233
in % of harvest volumes	*5,08 %*	*4,81 %*	*4,74 %*	*4,47 %*	*4,24 %*	*4,02 %*	*3,83 %*
+ Research & Development	94	99	100	107	112	118	124
in % of harvest volumes	*0,51 %*	*0,48 %*	*0,48 %*	*0,45 %*	*0,43 %*	*0,41 %*	*0,39 %*
+ Other operating expences	1 491	1 720	1 744	1 850	1 950	2 056	2 158
in % of harvest volumes	*8,16 %*	*8,41 %*	*8,30 %*	*7,82 %*	*7,42 %*	*7,04 %*	*6,71 %*
EBITDA	**3 581**	**3 689**	**4 003**	**4 245**	**4 581**	**4 999**	**5 247**
+ Write-downs of PP&E	4	11	12	12	13	14	15
in % of non-current assets	*0,06 %*	*0,16 %*	*0,16 %*	*0,17 %*	*0,17 %*	*0,17 %*	*0,17 %*
+ Depreciation & Amortization	415	474	494	524	557	594	623
in % of PPE	*11,50 %*	*12,24 %*	*12,24 %*	*12,24 %*	*12,24 %*	*12,24 %*	*12,24 %*
EBIT (core operating income before ta:	**3 162**	**3 204**	**3 497**	**3 709**	**4 011**	**4 391**	**4 608**
in % of revenue	*29,23 %*						
- Operating taxes	-629	-662	-723	-766	-828	-907	-951
in % of EBIT	*-19,88 %*	*-20,66 %*	*-20,67 %*	*-20,64 %*	*-20,64 %*	*-20,66 %*	*-20,63 %*
NOPAT	**2 533**	**2 542**	**2 775**	**2 943**	**3 183**	**3 483**	**3 658**
+ Other interest income	11	9	9	9	9	9	10
in % of NIBD	*0,91 %*	*0,44 %*	*0,44 %*	*0,44 %*	*0,44 %*	*0,44 %*	*0,44 %*
+ Other financial income	0	95	96	98	101	104	107
in % NIBD	*0,00 %*	*4,91 %*	*4,91 %*	*4,91 %*	*4,91 %*	*4,91 %*	*4,91 %*
+ Interest expenses	-107	-124	-124	-127	-131	-136	-139
in % of NIBD	*-8,75 %*	*-6,38 %*	*-6,38 %*	*-6,38 %*	*-6,38 %*	*-6,38 %*	*-6,38 %*
+ Other financial Expenses	-49	-18	-18	-19	-19	-20	-20
in % NIBD	*-4,02 %*	*-0,93 %*	*-0,93 %*	*-0,93 %*	*-0,93 %*	*-0,93 %*	*-0,93 %*
Net financial profit/loss	**-145**	**-38**	**-38**	**-39**	**-40**	**-42**	**-43**
Tax shield	33	9	9	9	9	10	10
Non Core Operations							
Income from investments in associates	209	224	240	258	276	296	318
in % of revenue	*1,93 %*	*1,95 %*	*2,00 %*	*2,03 %*	*2,05 %*	*2,06 %*	*2,10 %*
Fair value adjustment of the biomass	-370	0	0	0	0	0	0
in % of revenue	*-3,42 %*						
Non-reccuring gains on acquisitions	0	0	0	0	0	0	0
in % of revenue	*0,00 %*						
Net non Core operations	-161	224	240	258	276	296	318
Tax non-core operating items	37	-52	-55	-59	-64	-68	-73
Net profit	**2 298**	**2 685**	**2 930**	**3 112**	**3 365**	**3 679**	**3 870**
	TRUE						7,58 %
Net profit attributable to shareholders c	**2 274**	**2 685**	**2 930**	**3 112**	**3 365**	**3 679**	**3 870**
	TRUE						
OCI	34	28	28	28	28	28	28
Total comprehensive Income	**2 332**	**2 713**	**2 958**	**3 139**	**3 392**	**3 707**	**3 897**

	2017	E2018	F2019	F2020	F2021	F2022	F2023
Tax Overview				Forecast			
Corporate tax rate Norway	23,0%	23,0%	23,0%	23,0%	23,0%	23,0%	23,0%
Effective tax Rate	-19,55 %	-20,41 %	-20,41 %	-20,41 %	-20,41 %	-20,41 %	-20,41 %
Reported Taxes	-558	-705	-769	-816	-882	-966	-1 014
in % of EBT	*-17,66 %*	*-22,00 %*	*-22,00 %*	*-22,00 %*	*-22,00 %*	*-22,00 %*	*-22,00 %*
Tax shield	33	9	9	9	9	10	10
Non-Core taxes	37	-52	-55	-59	-64	-68	-73
Operating Taxes	-629	-662	-723	-766	-828	-907	-951
Operational Result before Taxes	3 162	3 204	3 497	3 709	4 011	4 391	4 608
Tax rate on operations / effective tax	-19,88 %	-20,66 %	-20,67 %	-20,64 %	-20,64 %	-20,66 %	-20,63 %

Balance Sheet

Reformulated Balance Sheet			FORECAST				
in NOK 1000	2017	E2018	F2019	F2020	F2021	F2022	F2023
Net Operating Assets (NOA) Core							
+ Licences, patents, etc	2 479	2 605	2 657	2 710	2 765	2 820	2 876
in % of revenue	*22,9%*	*22,7%*	*22,2%*	*21,3%*	*20,5%*	*19,6%*	*19,0%*
+ Goodwill	446	450	453	457	460	463	467
in % of revenue	*4,1%*	*3,9%*	*3,8%*	*3,6%*	*3,4%*	*3,2%*	*3,1%*
+ Property, plant and equipment	3 605	3 870	4 037	4 281	4 548	4 853	5 093
in % of revenue	*33,3%*	*33,7%*	*33,7%*	*33,7%*	*33,7%*	*33,7%*	*33,7%*
+ Other non-current receivables	55	33	34	36	39	41	43
in % of revenue	*0,5%*	*0,3%*	*0,3%*	*0,3%*	*0,3%*	*0,3%*	*0,3%*
Total Non-Current Assets	**6 585**	**6 958**	**7 182**	**7 485**	**7 811**	**8 177**	**8 479**
+ Biological assets	4 136	4 361	4 599	4 851	5 115	5 395	5 689
	38,2%	*37,9%*	*38,4%*	*38,1%*	*37,9%*	*37,4%*	*37,6%*
+ Other inventory	259	280	292	310	326	344	361
DIO	*16*	*20*	*20*	*20*	*20*	*20*	*20*
+ Pension fund assets	1	1	1	1	1	1	1
+ Trade receivables	501	1 042	1 087	1 153	1 225	1 307	1 371
DSO	*17*	*33*	*33*	*33*	*33*	*33*	*33*
+ Other current receivables	243	383	400	424	450	481	504
DSO	*8*	*12*	*12*	*12*	*12*	*12*	*12*
Total Current Assets	**5 140**	**6 068**	**6 380**	**6 738**	**7 118**	**7 528**	**7 928**
Operating Liabilities							
- Deferred tax liabilites	1 362	1 406	1 452	1 499	1 547	1 597	1 648
in % of revenue	*12,6%*	*12,2%*	*12,1%*	*11,8%*	*11,5%*	*11,1%*	*10,9%*
- Trade payable	1 249	1 011	1 055	1 119	1 179	1 243	1 305
DPO	*97*						
- Tax payable	672	455	475	503	535	570	599
in % of revenue	*6,2%*	*4,0%*	*4,0%*	*4,0%*	*4,0%*	*4,0%*	*4,0%*
- Public charges payable	171	213	222	236	250	267	280
in % of revenue	*1,6%*	*1,9%*	*1,9%*	*1,9%*	*1,9%*	*1,9%*	*1,9%*
- Other current liabilities	404	630	657	697	740	790	829
in % of revenue	*3,7%*	*5,5%*	*5,5%*	*5,5%*	*5,5%*	*5,5%*	*5,5%*
- Leasing liabilities and other non-current liabilities	345	319	295	273	252	233	216
Total Operating Liabilities	**4 203**	**4 034**	**4 155**	**4 325**	**4 503**	**4 700**	**4 876**
Operating working capital	**936**	**2 034**	**2 225**	**2 413**	**2 615**	**2 827**	**3 051**
Net Operating Assets (NOA) / Invested capital	**7 522**	**8 992**	**9 406**	**9 898**	**10 426**	**11 004**	**11 530**
Financial							
Bank deposit, cash & cash equivalents	177	348	364	386	410	437	459
in % of revenue	*1,6%*						
Long-term debt to credit institutions	811	1 754	1 830	1 941	2 062	2 200	2 309
in % of revenue	*7,5%*						
Short-term debt to credit institutions	244	216	191	169	149	132	117
in % of revenue							
Net Financial assets	**-878**	**-1 621**	**-1 657**	**-1 724**	**-1 802**	**-1 895**	**-1 967**
Non-Core invested capital							
+ Investments in accociates	1 024	1 080	1 139	1 201	1 266	1 336	1 408
in % of revenue	*9,5%*	*9,4%*	*9,5%*	*9,4%*	*9,4%*	*9,3%*	*9,3%*
Investments in shares & other securities	0,4	0,6	0,6	0,6	0,7	0,7	0,7
in % of revenue	*0,0%*						
Invested capital in Non-Core	**1 024**	**1 080**	**1 139**	**1 201**	**1 267**	**1 336**	**1 409**
Equity	**7 668**	**8 450**	**8 888**	**9 375**	**9 892**	**10 445**	**10 972**
Total Assets	**12 926**	**14 454**	**15 064**	**15 810**	**16 606**	**17 478**	**18 275**
Total Equity+Debt	**12 926**	**14 454**	**15 064**	**15 810**	**16 606**	**17 478**	**18 275**
Check	**TRUE**	**TRUE**	**TRUE**	**TRUE**	**TRUE**	**TRUE**	**TRUE**

Reformulated Cash-flow

Reformulated Cash Flow		FORECAST					
in NOK million	2017	E2018	F2019	F2020	F2021	F2022	F2023
NOPLAT	2 533	2 657	2 721	2 887	3 060	3 354	3 522
Depreciation	-419	-572	-596	-632	-672	-717	-752
in %ofPPE	*-13,3%*						
Operational Cash Flow	**2 952**	**3 228**	**3 318**	**3 519**	**3 732**	**4 071**	**4 274**
Invested Capital - Fixed Assets	6 139	6 508	6 728	7 028	7 351	7 714	8 012
Exp CAPEX Investment	-487	-369	-221	-300	-323	-363	-299
Gross CAPEX	-905	-941	-817	-932	-995	-1 079	-1 051
Goodwill	446	450	453	457	460	463	467
Delta Goodwill	0	-3	-3	-3	-3	-3	-3
Invested Capital - NWC and Others	936	2 034	2 225	2 413	2 615	2 827	3 051
Delta NWC and Others	741	-1 097	-191	-188	-202	-212	-224
Investment cash flow	-164	-2 042	-1 011	-1 124	-1 200	-1 295	-1 278
FCF Core Business / (Unlevered)	**2 788**	**1 187**	**2 307**	**2 396**	**2 531**	**2 776**	**2 996**
Non-Core CF							
Non - operational Cash Flow	**-161**	**224**	**240**	**258**	**276**	**296**	**318**
Tax shield	37	-52	-55	-59	-64	-68	-73
Invested capital	1 024	1 080	1 139	1 201	1 267	1 336	1 409
Investment cash flow	**-116**	**-56**	**-59**	**-62**	**-66**	**-69**	**-73**
Free Cash Flow Non Core Business	**-240**	**116**	**126**	**136**	**147**	**159**	**172**
FREE CASH FLOW	**2 548**	**1 303**	**2 433**	**2 532**	**2 679**	**2 935**	**3 168**

References:

Akvafakta FHL. (2011-2018). Månedsrapport (monthly reports). (all in Norwegian)
Retrieved from: http://akvafakta.no

Directorate of Fisheries. (2017-2018). *Statistics.*
Retrieved from: https://www.fiskeridir.no/English/Aquaculture/Statistics

European Commission. (2018). *The EU Fish Market.*
Retrieved from: https://www.eumofa.eu/documents/20178/132648/EN_The+EU+fish+market+2018.pdf

Fishpool. (2018). *Price history (weekly and monthly + annual averages)*
Retrieved from: http://fishpool.eu

All salmon prices are gathered from the Fish Pool Index, which is mainly based on the Nasdaq Salmon Index (85%), but also SSB Custom Statistics (10%), and Fish Pool European Buyers Index (5%). In Addition, the Fish Pool Index bases its calculation on the following size distribution; 3-4kg (30%), 4-5kg (40%), and 5-6kg (30%).

Marine Harvest, A. (2018). *Industry Handbook*. Retrieved from Marine Harvest:
http://hugin.info/209/R/2200061/853178.pdf

Index Mundi. (2018). *Commodity prices.*
Retrieved from: https://www.indexmundi.com/commodities

Norges Bank. (2018). *Government bonds*
Retrieved from: https://www.norges-bank.no/en/Statistics/Interest-rates/

Oslo Stock Exchange. (2018). *SALM*
Retrieved from: https://www.oslobors.no/ob_eng/markedsaktivitet/#/details/SALM.OSE/overview

SalMar, A. (2017). *SalMar Annual report* 2013, 2015, and 2017.
Retrieved from: https://www.salmar.no/en/annual-reports/

SalMar, B. (2018). *SalMar Quarterly report*, Q1, Q2, and Q3.
Retrieved from: https://www.salmar.no/en/quarterly-reports/

Salmon Business. (19. Dec.2018). *DNB Markets, salmon price*.
Retrieved from: https://salmonbusiness.com/dnb-markets-if-we-look-at-the-history-all-the-biological-problems-and-challenges-the-industry-has-had-have-been-positive-for-stock-price-development/

Salmon Business. (16. Aug.2018). *Nordea upgrade salmon price estimates*.
Retrieved from: https://salmonbusiness.com/nordea-raises-price-target-for-marine-harvest-to-nok-200/

Salmon Business. (13. Dec.2018). Salmon price estimate.
Retrieved from: https://salmonbusiness.com/handelsbanken-believes-high-salmon-prices-may-curb-demand/

Norwegian Seafood Council. (2018). *Statistics.*
Retrieved from: https://seafood.no

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Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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