

MOWI®

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Summary

In this report we have prepared an accounting analysis and valuation of MOWI group. The report is based on historical numbers from 2018 to 2021, with some exceptions. We have prepared analyzes of macroeconomic factors, reformulation of balance sheet and income statement, analysis of accounting information, and forecast of future years. Through this information, we have aimed to say something about the valuation of MOWI, and thus provide a recommendation based on valuation models on whether MOWI is overvalued or undervalued. In our opinion, MOWI is overvalued, so we recommend shareholders consider selling all or part of their stocks.

Presentation of MOWI and the industry

Mowi is a Norwegian seafood company established in 1964 with headquarters in Bergen. Controlled by John Fredriksen, Mowi is the world's largest fish farming company and the leading producer of Atlantic Salmon. Around half of the company's total production is produced in Norway. Mowi is traded on the Oslo Stock Exchange and is included in the OBX index.

With over 11.800 employees operating in 25 countries, Mowi sells seafood to more than 70 countries. Despite challenges related to the Covid-19 pandemic and tough market conditions, Mowi achieved the highest ever revenues and harvest volumes last year at respectively EUR 4.2 billion and 466 000 tonnes, acquiring a market share of 20%.

The sales are distributed mainly to Europe (67%), the Americas (22%), and Asia (9%). In 2021, the global fish farming market size was valued at USD 268.9 billion and is expected to grow at a CAGR of over 5% in the coming years. Revenues in Europe and the Americas increased last year due to higher sales prices and increased volumes. However, the operational EBIT margin decreased as a result of increased prices on raw materials.

Mowi possesses a fully integrated value chain, including a feed division established in 2012, and is, as of 2021, recognized as the world's most sustainable animal protein producer for the last three years by the Collier FAIRR Protein Producer Index. The company's vertical integration is a prerequisite for stabilizing costs, controlling product quality, and improving efficiency. In 2021, Mowi entered retail in the UK, Spain, Belgium, Italy, and the US.

Strategic analysis

In our strategic analysis, we will utilize a PEST analysis to identify the company's terrain in regard to external factors on a macroeconomic level and a SWOT analysis in order to illuminate Mowi's internal and external advantages and disadvantages.

PEST analysis

A PEST analysis describes the environment in terms of macro-environmental factors and is a part of an external analysis of the terrain in which the company is operating. The different factors to consider are divided into four categories; political, economic, socio-cultural, and technological

Political factors

Mowi is headquartered in Bergen, Norway, and is therefore dependent on the Norwegian government as well as local governments in the other countries their operations take place. Political interference or involvement is for Mowi most fundamentally related to tax related policies and environmental policies. Historically, the Americas and Europe, especially Norway, have been characterized by stability and predictability as well as a friendly relation to business. The Norwegian government tends to meet frequently with participants in big-scale industries and takes careful consideration.

Economic factors

Due to Norway's dependence on salmon export, the government is likely to tread carefully in regard to disrupting the aquaculture industry. The EEA and other European trade agreements are enabling extensive trade and these are considered to sustain in the foreseeable future. The market has been impacted negatively due to inflation and high energy and commodity prices. Mowi's establishment across country borders involves exchange rates fluctuation between the different currencies in the countries they are operating. These effects depend on the strength of the various currencies and the connections are complex to take into account when trying to identify the advantages and disadvantages of this factor. The diversity of currency and their stability, by recent historical standards, is somewhat reassuring.

Socio-cultural factors

The paramount socio-cultural factors Mowi is affiliated with are in regard to global environmental sustainability. The aquaculture industry has a considerable responsibility to attend to, relating to the breeding, feeding, sales, and distribution. These perspectives are significant to all stakeholders at hand due to reputation and interference from NGOs and governments and Mowi is dependent on strategic decisions in order to minimize the relative greenhouse emissions along their supply chain. Mowi is recognized as the world's most sustainable animal protein producer by the Collier FAIRR Protein Producer Index for three consecutive years as of 2021.

Technological factors

In order to sustain a competitive opportunity in global markets today, companies must develop technology in accordance to demands from customers and competitors. Technological factors are of high importance for Mowi, due to the technical complexity of modern aquaculture. Mowi aims to digitalize and automate its already complex integrated value chain, especially in processing operations. In this regard, Mowi makes investments in technology and infrastructure to secure efficiency.

SWOT analysis

The SWOT analysis covers the company's internal strengths and weaknesses internally and identifies opportunities and threats that can influence development on an external level.

Strengths

Being one of the most experienced aquaculture companies, Mowi is the industry's largest competitor and has an impeccable reputation worldwide. Their value chain is fully integrated, giving Mowi complete control over breeding, feeding, sales, and distribution. Their products are considered a highly sustainable source of protein and are highly demanded around the world.

Weaknesses

Mowi is significantly affected by commodity prices and has a rather high absolute cost. Salmon escape is a common issue in the fish farming industry and can lead to negative

biological effects in the wild and bred salmon population in the North Atlantic. Another weakness in relation to Mowi's operation is the limitation of the operating area.

Opportunities

The demand for Mowi's products is expected to rise in the next few years and the company possesses advanced technology and the potential to develop in this area in order to meet the future's demands. Mowi has the potential to expand further in the global market and develop and expand product supply. There is also significant potential in Mowi's own feed production and possibly cooperation toward sustainable aquaculture.

Threats

Mowi is dependent on society's attitude towards aquaculture and the relatively high prices of salmon. These factors are common for the industry in its entirety, as well as illness within the salmon population, for instance in the form of salmon louse. Mowi would also face considerable adversity if the international policy would interfere with their operations, in terms of trade agreements and tax/fee policy.

Accounting Quality

Accounting quality according to Plenborg and Kinserdal is found by asking two fundamental questions. Those being whether the financial reporting is a faithful representation and its relevance for its users. "...more complete, neutral and free from error and provides more useful predictive or confirmatory information about the firm's underlying economic position and performance." (Gaynor, cited by Thomas Plenborg & Finn Kinserdal, 2021, p.468.) There are several issues that cause noise in accounting numbers, we, therefore, analyze the potential causes to secure key accounting numbers.

Good accounting quality is imperative for both transparency and accountability for shareholders, lenders, and other interested parties. Accounting quality is also important for management to make the most informed decisions about the company. Good accounting quality helps confidence in the financial markets and supports the efficient allocation of capital within a company.

MOWI has in place an audit committee whose main objective is to "monitor the company's financial reporting process and the effectiveness of its systems for internal

control and risk management.” (ann. Rep. 2021 p. 165) The audit committee is in place to make sure the financial reporting is in accordance with both the IFRS and the Norwegian Accounting Act. (NASB)

When reviewing MOWI we did not find any type of number manipulation and moved forward in the report assuming the annual report was credible, ref. p. 233 MOWI annual report. The accounting quality determines whether the empiricism is both reliable and valid.

Assesment of the following statement	True					False
Analysis of acc. quality	1	2	3	4	5	
Few motives for accounting manipulation	x					
A high degree of quality in accounting policies	x					
A high degree of recurring accounting items		x				
A high level of information in the annual report	x					
Few "red flags" in the financial statements	x					
Tot. Appraisal	1,2					

The total appraisal regarding the accounting quality is highly satisfactory. The reasoning behind a slightly lower degree of recurring accounting items is due to a safety measure seeing as some numbers are value adjusted to adjust for things like surrounding biomass implications. We set the assessment of the recurring accounting items slightly lower, but it will still be classified as satisfactory.

Reformulation of the financial statements

A reformulation of a company's financial statements is ultimately a restructuring of the financial information during a particular period to help more accurately depict the numbers behind different parts of the business (bizfluent, 2017). We divide accounting items into "operations" and "finance" where the purpose is to find different sets of value creation in the business. The general consensus is that operational items are value creators and financial items describe how activities are funded.

Reformulation of the Income Statement

Reformulating the income statement distinguishes between operations, finance, and nonoperating items. The reformulating is done to find key numbers such as EBIT, NOPAT, and consolidated profit. Reformulating the income statement requires an allocation of income taxes on differing activities. Below we see a picture of reformulated key numbers.

Reformulated Income statement key numbers (EURm)				
Key figures income statement	2018	2019	2020	2021
EBIT	925	617	184	602
EBIT Growth %		-33 %	-236 %	70 %
NOPAT	716	484	168	495
NOPAT Growth %		-48 %	-188 %	66 %
Consolidated profit	567	476	119	488
Consolidated profit Growth %		-19 %	-300 %	76 %

Earnings before interest and taxes (EBIT) is a profit term that shows a company's income before taxes and interest. Net operating profit after tax (NOPAT) is the result of EBIT taxed. Consolidated profit is a company's result after considering financial activities and taxes.

The key takeaways from the reformulated income statement are the steep falloff in EBIT from 2018-2019, and the fall in 2020 can be explained by macroeconomic factors, mainly covid-19 (raw cost prices rising). MOWI has then been able to stabilize in 2021. Both the NOPAT and the consolidated profit have had the same trend, a falloff from 2018-2019 and a steeper falloff from 2019 to 2020, before it begins normalizing from 2020-2021. MOWI's worst year in our horizon is 2020, largely due to the macroeconomic situation, where NOPAT fell by -236%. MOWI's best year was 2021, with NOPAT growing 76% and normalizing to a similar level to what it was before covid.

Reformulation of the Balance Sheet

When reformulating the balance sheet, we distinguish between operating and financial items with the same principles as in the reformulation of the income statement. We reformulate with the TA format, and the NTA/CE format to end up with a reformulated balance sheet with the NOA format. The classification regarding whether an item was operating or financial was relatively straightforward when following the general rule of thumb; "financing item if interest bearing or requires a return." (pptx. 4 its.)

NOA FORMAT				
Years	2018	2019	2020	2021
NONCA	2133,1	2762	2918,3	3079,1
NOWC	1859,1	1879,1	1794,4	1799,9
Total NOA	3992,2	4641,1	4712,7	4879,0
Total equity	2878,9	2892,6	2764,1	3131,4
NIBD	1113,4	1748,5	1948,5	1747,6
Total E + NIBD	3992,3	4641,1	4712,6	4879,0

(Numbers in EURm, for full reformulation of Balance Sheet refer to *Balance Sheet* in attached excel file)

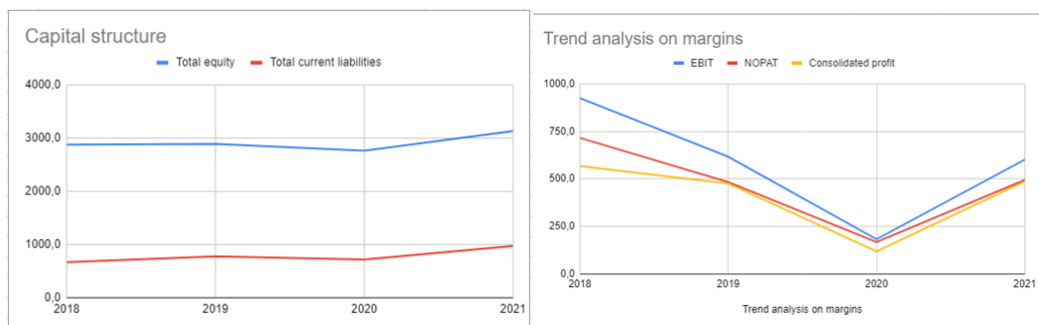
Reformulated Income statement key numbers (EURm)				
Key figures balance sheet	2018	2019	2020	2021
NOA	3992,2	4641,1	4712,7	4879
NOA Growth %		14,0 %	1,5 %	3,4 %
Total equity	2878,9	2892,6	2764,1	3131,4
Total equity Growth %		0,5 %	-4,6 %	11,7 %
NIBD	1113,4	1748,5	1948,5	1747,6
NIBD Growth %		36,3 %	10,3 %	-11,5 %

Net operating assets (NOA) can also be classified as invested capital. In the T-formatted balance sheet, NOA will be located on the left side, and total equity and net interest-bearing debt (NIBD), which is the difference between financial assets and loans, are located on the right side of the T-formatted balance sheet.

The huge growth in net operating assets from 2018 to 2019 is due to brand establishment in Poland and a cost-saving program saving an annual 41 million EUR. The growth has since slowed down but is still gradually increasing. MOWI is slowly and steadily implementing retail in France and e-commerce in the USA. We see NIBD growing especially high in 2019, with a decrease in growth in 2020 and then negative growth in 2021. This is due to an increase in the non-current interest-bearing bank debt, “ann. Rep. 2019 p. 205”

The small difference in numbers in the reformulation are down to small differing rounding.

Analysis of historical key accounting figures



The historical data is a key part when forecasting so we examine both MOWI's capital structure and different margins. The total equity is larger than its current liabilities, this puts MOWI in a positive situation as it suggests MOWI has the financial recourses to cover its current obligations. It does however not guarantee financial success, factors such as profitability, cash flow, and liquidity all matter when reviewing a company's financial health. From the trend analysis on margins, we see that the key margins all

follow the same pathing, a slight downturn from 2018-2019 most likely cause due to the expansion in Poland. A downfall in 2019-2020 due to covid-19 and we see an upturn to a relative median in 2021.

Profitability analysis

“Measuring a firm’s profitability is one of the key areas of financial analysis. Obtaining an adequate level of profitability is important for a firm’s future survival and to ensure a satisfactory return to shareholders.” (Plenborg & Kinserdal, 2021, p. 141). To fully gauge MOWI’s profitability we look at the development of ROIC and WACC and make a trend analysis of the income and invested capital. The underlying key figures used in the profitability analysis are explained hereunder. ROE – Return on equity is a measurement of equity’s return for the owners. It measures the profitability of a company by looking at the rate of return owners get on invested capital.

$$ROE = (Net\ earnings\ after\ tax) / (Book\ value\ of\ equity) * 100$$

	2018	2019	2020	2021
ROE ((NI/BVE(t)+BVE(t-1)/2))		16,50 %	4,21 %	16,55 %

Required ROE – Is the owner’s expected risk-free return on compensated equity. We get the following numbers for the years 2018-2021, 6.39%, 6.10%, 5.40%, and 6.15%.

Re	2018	2019	2020	2021
R(f)	1,7706	1,5758	0,9673	1,7184
Beta E	0,9236	0,9236	0,9236	0,9236
Risk premium	5	4,9	4,8	4,8
R(e)	6,3886	6,10144	5,40058	6,15168
R(e) percent	6,39 %	6,10 %	5,40 %	6,15 %

ROIC – Return on invested capital is a measurement of the profitability of the operations. “The ratio expresses the return on capital invested in a firm’s net operating assets as a percentage.” (Plenborg & Kinserdal, 2021, p. 144.) We measure ROIC before and after tax.

$$ROIC\ (after\ tax) = NOPAT / (Invested\ capital) * 100$$

$$ROIC\ (before\ tax) = EBIT / (Invested\ capital) * 100$$

	2018	2019	2020	2021
ROIC after tax	N/A	11,21 %	3,60 %	10,32 %
ROIC before tax	N/A	14,29 %	3,92 %	12,56 %

RI – Residual income, looks at the difference between required ROE and actual ROE.

$$\text{Residual income} = (ROE - re) * BVE$$

	2018	2019	2020	2021
RI	N/A	300,8	-32,9	325,8

WACC

The weighted average cost of capital (WACC) is a financial metric used to represent the overall cost of capital for a company. It is calculated by taking the weighted average of the costs of each type of capital that the company uses, including equity and debt. The WACC is an important financial metric because it represents the overall cost of capital for a company, and it can be used to evaluate the feasibility of investment projects and to compare the cost of capital for different companies. We found the WACC by calculating MOWI's 5 yr monthly beta and beta from Yahoo finance, where we used the mean value of them. Our calculation of MOWI's beta is based on our calculations of the company's and the stock exchange's monthly return in the period 1.1.17 to 1.12.21. We used a ten-year government bond (Trading economics, 2022) and used the market risk premium provided by PWC (PWC, 2021). The cost of debt was calculated by dividing NIBD with the interest expense. Later in this report, we applied the WACC in our valuation models, where we have been using the WACC percentage of 2021.

$$WACC = NIBD / (NIBD + MVE) * r_d * (1 - t) + MVE / (NIBD + MVE) * r_e$$

where

NIBD = Net interest-bearing debt, market value

MVE = Equity, market value

r_d = Interest rate NIBD

r_e = Req. return for shareholders

t = Marginal tax rate

	2018	2019	2020	2021
WACC	6,08 %	5,72 %	4,91 %	5,66 %

EVA – Economic value added is a company’s “true” profit, which shows that the real return is in the difference between the expected return and requirements for the return.

$$EVA = NOPAT - \text{Cost of capital}$$

	2018	2019	2020	2021
EVA		237	-61	223

NBC – Net borrowing cost

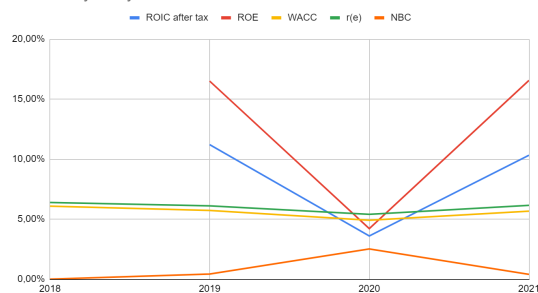
$$NBC = (\text{Net financial expenses after tax}) / (\text{Net interest bearing debt}) * 100$$

	2018	2019	2020	2021
NBC	13,36 %	0,43 %	2,52 %	40,00 %

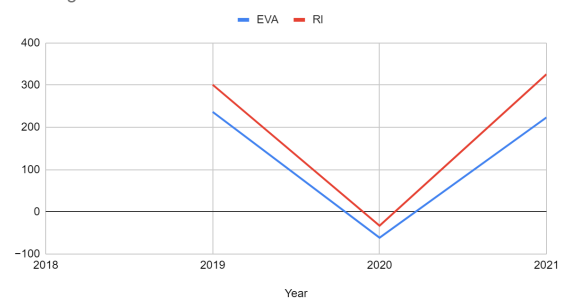
(All formulas and definition from *Financial Statement Analysis* - Plenborg & Kinserdal, ch. “Profitability analysis 5”)

The number shown above gives a clear indication of what kind of trends affect MOWI’s profitability. Below we see a graphical illustration of the key figure’s movement over the accounting periods.

Profitability analysis



EVA og RI



A company creates positive economic value added (EVA) when the ROIC is greater than WACC. The only instance where the WACC exceeds ROIC is found in the year 2020, meaning that the cost of funding projects is greater than the return on investments. Residual income is income that exceeds the minimum rate of return. During the period we can interpret that the ROE is higher than the return rate giving MOWI a positive result in the periods except for 2020, where we see a fall in ROE.

The reason for the fall is, according to the annual report 2020, due to covid 19. If a company's residual income is greater than its economic value added, which it is, it means that the company is earning more profit than the required rate of return on its capital. This can be seen as a positive indicator of the company's financial performance, as it suggests that the company is generating a return on its capital that is above the required rate of return. This may be due to the company's efficient use of its resources and its ability to generate revenue from its operations.

However, it is important to note that a company's residual income and economic value added are only two of many factors that can be used to evaluate a company's financial performance. It is always advisable to consider a range of financial metrics and to consider the company's broader financial and operational context before making any investment decisions.

Growth analysis

The growth analysis is based on a comparison of the growth trend in the period 2018 to 2021. The negative growth in revenue and other income in 2020 is reflected in the table in almost all key figures. Sales growth is considered to be a key factor in a company's future progress (Plenborg & Kinserdal, 2021, p.185).

“This supports that sales growth is associated with cash consumption” (Plenborg & Kinserdal, 2021, p.186). During these years, MOWI has improved its cash flow, as shown in the table below. Growth is desirable for the shareholders because it creates value for them, but also for the employees because it makes the company more attractive. Below is the table with key figures and their growth.

Key figures	2018	2019	2020	2021
NOA	3992,2	4641,1	4712,7	4879,0
NOA growth %	N/A	16,25%	1,54%	3,53%
Total equity	2878,9	2892,6	2764,1	3131,4
Total equity growth %	N/A	0,48%	-4,44%	13,29%
NIBD	1113,4	1748,5	1948,5	1747,6
NIBD growth	N/A	57,04%	11,44%	-10,31%
EBIT	925,5	617,0	183,4	602,4
EBIT growth %	N/A	-33,33%	-70,28%	228,46%
NOPAT	716,1	483,7	168,2	494,9
NOPAT growth %	N/A	-32,45%	-65,23%	194,32%
Net profit	567,3	476,2	119,1	488,0
Net profit growth %	N/A	-16,06%	-74,99%	309,74%
EVA	N/A	236,7	-61,3	223,5
EVA growth %	N/A	N/A	-125,92%	464,29%
Equity	2879,0	2892,6	2764,1	3131,4
Equity growth		0,47%	-4,65%	11,73%
RI	N/A	300,8	-32,9	325,8
RI growth	N/A	N/A	-110,94%	1090,69%
FCFF	N/A	-165,2	96,6	328,7
FCFF growth	N/A	N/A	-110,63%	240,27%

Key figures for MOWI between 2018 and 2021, numbers in million euros

Sustainable growth

We have used ROE that we found in the profitability analysis and calculated the payout ratio. Sustainable growth or “SGR” shows how fast a company can grow its revenues while maintaining the same financial risk(debt to equity ratio at the same level) (Plenborg & Kinserdal, 2021, p.189). Throughout the period 2019 to 2021, we see an increase in SGR for MOWI. The background for the rise in SGR is a reduction in PO, which means that MOWI can increase growth without exposing itself to a higher debt-to-equity ratio. Based on the trend in SGR, the company is in a position for further growth.

Sustainable growth	2018	2019	2020	2021
ROE		16,50%	4,21%	16,55%
PO		114,48%	107,81%	47,21%
Sustainable growth		-2%	0%	9%

Liquidity risk analysis

Short-term liquidity risk

Short-term financial risk	2018	2019	2020	2021	Average
Current ratio	3,87	3,39	3,40	2,79	3,36
CFO to short-term debt ratio		-0,21	0,13	0,34	0,086
Liquidity cycle(365 days)	178,01	165,85	174,18	156,34	168,59
Quick ratio	1,11	1,00	0,95	0,79	0,96
Turnover rate NWC	2,05	2,20	2,10	2,33	2,17

Short-term liquidity refers to the company's ability to meet its immediate obligations (Plenborg & Kinserdal, 2021, p.231). A low short-term liquidity risk means that the company has the ability to pay off short-term debt and vice versa.

Current ratio measures a company's ability to pay off short term obligations and is calculated by the company's current assets divided by its current liabilities. One considers a current ratio of 2 and above as an indication of low risk (Plenborg & Kinserdal, 2021, p. 231). We observe a decline, but Mowi's ratio exceeds the widely preferred minimum of 2 which indicates good liquidity in this unit, with an average of 3,36 and 2021 ratio of 2,79.

CFO to short term debt ratio measures the firm's ability to pay off short term debt with operating cash flows by examining the cash flows from operations in relation to current liabilities by dividing the former by the latter. A ratio higher than 1 is preferable and is an indicator of good short term liquidity. Mowi has a ratio less than this guideline suggests, which argues against the strength of liquidity somewhat.

The liquidity cycle explains how many days MOWI uses to convert working capital into cash, which is 168,59 days on average. This is a relatively high number and indicates that too much of Mowi's cash is tied up in working capital, arguing for improvement potential in regard to liquidity.

Quick ratio measures a firm's ability to utilize its quick assets to pay off current liabilities. The ratio is calculated by adding the firm's cash, securities, and receivables and dividing it by current liabilities. If the quick ratio exceeds 1 it is considered an indicator of healthy liquidity and we observe that Mowi does not meet this requirement on average with a tight margin. Furthermore, the development in this ratio is negative.

The turnover rate NWC measures the revenues in relation to net working capital, where the latter constitutes operating liquidity. Turnover rate NWC is preferred at a level above 1 and less than 1 can indicate potential liquidity problems in the future. Mowi has an NWC turnover rate at a rather stable level exceeding 1 every year and is on average 2,17, which indicates good liquidity in this domain.

Long term liquidity risk

Long term liquidity risk	2018	2019	2020	2021	Average
Financial leverage (book value)	0,78	1,02	1,12	1,00	0,98
Financial leverage (market value)	0,24	0,25	0,33	0,29	0,27
Solvency ratio (book value)	0,56	0,50	0,47	0,50	0,51
Solvency ratio (market value)	0,81	0,80	0,75	0,78	0,79
Interest coverage ratio	4,79	64,27	2,92	67,69	34,92
Interest coverage ratio based on cash		-17,21	1,54	36,93	7,09
CFO to debt ratio		-0,06	0,03	0,11	0,03
Capital expenditure ratio		-0,38	0,26	0,68	0,19
Capital expenditure ratio (reinvest)		-0,58	0,29	0,88	0,20

Long term liquidity risk measures the firm's ability to continue as a going concern over time by paying all debt as it matures as part of the ordinary course of business (Plenborg & Kinserdal, 2021, p. 214). A low long term liquidity risk indicates that the company is able to pay off its long-term debt and conversely.

The financial leverage ratio explains briefly the fundamental capital structure regarding the relationship between equity and liabilities because debt financed investments are associated with risk. We found this to satisfy the paramount guideline of less than 1 in both book value and market value.

Solvency ratio measures the degree to which a company is able to survive losses and examines whether it is capable of meeting its long term liabilities. It explains how much

of the company is financed by equity. With a high share of equity, the company is well-situated to withstand losses. The general guidepost is a minimum 10% and we find Mowi's solvency ratio satisfactory, as it is stable and high in both book value and market value with an average of respectively 0,51 and 0,79.

The interest coverage ratio tells us how well a company is situated to cover interest expenses for long-term debt. For this unit of measurement, we divide the company's EBIT by its net financial expenses. Mowi has had very good figures in this and has all years been above the comfortable level of 3, with an average of 34,92. The interest coverage ratio based on cash is calculated by cash flow instead of EBIT and has been mostly very satisfactory as well with an average of 7,09.

CFO to debt ratio is the ratio of a company's operational cash flows to its total liabilities. This gives an estimation of how long it would take for the company to pay off all liabilities with operational cash flows. Mowi's CFO to debt ratio has varied in the previous years but there has been a positive development. CFO to debt ratio is preferably above 1 and we can see that Mowi does not meet this demand.

Capital expenditure ratio measures a company's ability to cover capital expenditure with cash flows from operations, i.e. cash flows from operations divided by CAPEX. An excess of 1 is considered a good capital expenditure ratio and we found that Mowi possesses a lower ratio than the preferred, although there is a positive development in both units of measurement, where "reinvest" measures the cash flows from operations to depreciation expense.

The short-term liquidity is by our measures not satisfactory. The long-term liquidity is better and is by our chosen units satisfactory overall, i.e. high short-term liquidity risk and low long-term liquidity risk.

Future perspectives and prognosis

In this part of the report, we will try to say something about the future of MOWI by estimating how we think the company will perform in the future. Our estimates are based on public historical information released by the company, strategic analysis, and assumptions. The strategic analysis is partially decisive for what we have laid as a basis

for future growth in the company, especially the macroeconomic analysis. Forecasting assumptions are divided into an explicit and terminal periods. For the explicit period, a five-year horizon was chosen as a longer period means greater uncertainty, although one could argue that a longer period would lead to more realistic numbers. It is difficult to predict how the opportunities and threats from the strategic analysis will affect the company in the long term, which is also a background for a horizon of five years in the explicit period. The explicit period is based on historical growth. We have chosen a two-year period for the terminal period, the growth for the terminal period is based on Norges Bank's inflation target which is 2 percent. (Norges Bank, 2020)

Forecast of income statement

MOWI income statement - forecast	Forecasting period					Terminal period	
	2022	2023	2024	2025	2026	2027	2028
Revenue and other income (O)	4366,1	4536,4	4713,3	4897,1	5088,1	5189,8	5293,6
Cost of materials (O)	-2183,0	-2268,2	-2356,6	-2448,5	-2544,0	-2594,9	-2646,8
Net fair value of adjustment biomass (O)	-11,4	-11,8	-12,3	-12,7	-13,2	-13,5	-13,8
Salary and personell expenses (O)	-602,5	-626,0	-650,4	-675,8	-702,2	-716,2	-730,5
Other operating expenses (O)	-621,3	-645,5	-670,7	-696,9	-724,0	-738,5	-753,3
Onerous contracts provision (O)	-2,2	-2,3	-2,4	-2,4	-2,5	-2,6	-2,6
Restructuring costs and other provisions (O)	-15,3	-15,9	-16,5	-17,1	-17,8	-18,2	-18,5
License/production fees (O)	-5,2	-5,4	-5,7	-5,9	-6,1	-6,2	-6,4
Other non-operational items (O)	-11,4	-11,8	-12,3	-12,7	-13,2	-13,5	-13,8
Income/loss from associated companies and joint ventures	57,6	59,9	62,2	64,6	67,2	68,5	69,9
Impairment losses & write-downs (O)	-29,3	-30,4	-31,6	-32,8	-34,1	-34,8	-35,5
EBITDA	942,2	978,9	1017,1	1056,8	1098,0	1120,0	1142,4
Depreciation and amortisation (O)	-253,3	-263,1	-273,4	-284,1	-295,2	-301,1	-307,1
EBIT	688,9	715,8	743,7	772,7	802,9	818,9	835,3
Income taxes							
+/-Tax-shield from NFE							
-Operating tax expense	-151,6	-157,5	-163,6	-170,0	-176,6	-180,2	-183,8
NOPAT	537,4	558,3	580,1	602,7	626,2	638,8	651,5
Interest expenses (F)							
Net currency effects (F)							
Other financial items (F)							
Net financial expenses	-75,2	-77,8	-80,4	-83,2	-86,0	-87,5	-89,1
+/-Tax-shield from NFE	16,5	17,1	17,7	18,3	18,9	19,3	19,6
Consolidated profit	478,7	497,6	517,4	537,9	559,1	570,5	582,1

Growth in revenue and other income is the source for change in all parts of the forecast, also for the cash flow and balance. As a basis for forecasting, we have applied historical growth between 2017 and 2021, the average growth in that period was 3,9 percent. We decided to find the revenue in 2017 to get a more realistic percentage due to covid-19 in 2020. MOWI has economies of scale and a dominant position in the market. What makes the result difficult to estimate is the change in prices for salmon. There has been a decrease in the salmon price between 2017 and 2021, while in the same period there has been a significant increase in harvest volume which has contributed to the growth. What we find a bit challenging when forecasting was interest expenses, net currency effects, and other financial items. We, therefore, decided to collect them in net financial expenses, as there were different outcomes in the previous years. We used the average net financial expenses as a % of NIBD for the previous years, which were negative. When forecasting the net financial expenses we multiplied NIBD in the terminal and explicit period by 4 percent, which is slightly lower than the average due to the very high

percentage in 2018. The various operational costs are linked to the growth in income, and EBITDA in explicit forecasting is also based on the growth in revenue. When finding the depreciation and amortization we divided the previous depreciation and amortization with PPE and used the historical average. Furthermore, we assume a tax rate of 22 percent which has been included when forecasting operating tax expenses and tax shield.

Forecast of balance sheet

MOWI balance sheet forecasting	Forecast period					Terminal period	
	2022	2023	2024	2025	2026	2027	2028
Licenses, goodwill and other intangible assets (O)							
Goodwill (O)							
Deferred tax assets (O)							
Other intangible assets (O) - Total intangible assets from 2022	1344,3	1396,7	1451,2	1507,8	1566,6	1597,9	1629,9
Property, plant and equipment (O)	1503,1	1561,7	1622,6	1685,9	1751,7	1786,7	1822,4
Right-of-use assets (O)	513,2	513,2	513,2	513,2	513,2	513,2	513,2
Investments in associated companies and joint ventures (O)	218,3	226,8	235,7	244,9	254,4	259,5	264,7
Other non-current assets(O)	0,05	0,05	0,05	0,05	0,05	0,1	0,1
Deferred tax liabilities(O)	-458,4	-476,3	-494,9	-514,2	-534,2	-544,9	-555,8
Other non-current liabilities (O)	-21,8	-22,7	-23,6	-24,5	-25,4	-25,9	-26,5
NONCA	3098,7	3199,5	3304,3	3413,1	3526,2	3586,5	3647,9
Inventory (O)							
Biological assets (O)	2008,4	2086,7	2168,1	2252,7	2340,5	2387,3	2435,1
Trade receivables (O)							
Other receivables (O)	698,6	725,8	754,1	783,5	814,1	830,4	847,0
Current tax liabilities (O)							
Trade payables (O)							
Provisions (O)							
Other current liabilities (O)	-702,9	-725,8	-754,1	-783,5	-814,1	-830,4	-847,0
NOWC	2707,0	2812,5	2922,2	3036,2	3154,6	3217,7	3282,1
NOA (NONCA+NOWC)	5102,7	5286,2	5472,4	5665,8	5866,7	5973,8	6083,0

Equity and net interest-bearing debt	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Share capital and reserves attributable to owners of Mowi ASA	2877,2	2892,2	2762	3129							
Equity, shareholders in MOWI	2877,2	2892,2	2762	3129							
Non-controlling interests	1,7	0,4	2,1	2,4							
Total equity	2878,9	2892,6	2764,1	3131,4	3223,5	3341,5	3461,8	3586,8	3716,7	3785,9	3856,4
Non-current interest-bearing debt (F)	1142,5	1465,8	1565,5	1358,9							
Non-current leasing liabilities (F)	0	258,9	379,9	335,7							
Current interest-bearing debt (F)	0,1	0	0	0							
Current leasing liabilities (F)	0	127,1	153,2	182,7							
Other current financial liabilities(F)	77,3	34,1	30,1	7							
Other non-current financial assets (F)	-0,4	-1,9	-1,9	-2							
Other current financial assets (F)	-0,8	-6,9	-11,1	-33							
NIBD without cash	1218,7	1877,1	2115,7	1849,3	1980,9	2046,5	2112,3	2180,7	2251,8	2289,7	2328,3
Restricted cash (F)	-11,4	-11,1	-6,9	-6,8	-6,8	-6,8	-6,8	-6,8	-6,8	-6,8	-6,8
Cash in bank (F)	-93,9	-117,5	-100,3	-94,9	-94,9	-94,9	-94,9	-94,9	-94,9	-94,9	-94,9
Assets held for sale (F)	0	0	-60	0	0	0	0	0	0	0	0
NIBD	1113,4	1748,5	1948,5	1747,6	1879,2	1944,8	2010,6	2079,0	2150,1	2188,0	2226,6
Total E+NIBD	3992,3	4641,1	4712,6	4879	5102,7	5286,2	5472,4	5665,8	5866,7	5973,8	6083,0

The balance is based on the t-balance, which means that E+NIBD is equal to NOA(invested capital). The development in balance-sheet items comes from the assumed revenues. As we can see, the balance sheet, therefore, has the same trend as the income statement. We have forecasted total intangible assets by dividing previous total intangible assets with previous revenues. Property, plant, and equipment also depend on revenues. Deferred tax liabilities are predicted to be 10,5%, investments in associated companies to be 5%, and other non-current liabilities to 0,5%, while rights of use assets and other-non current assets are set to the numbers for 2021. Total inventories are forecasted to be 50% based on the average of previous years, and total trade receivables to 16%. We collected current tax liabilities, trade payables, provisions, and other current liabilities into one item, where we calculated the previous percent of revenues and used this percent for our assumptions. We also collected debt, liabilities,

and other financial items into one item based on NIBD. NIBD forecasting was calculated by NIBD as a percent of NOA excluding intangibles. The growth in NONCA will have roots in future investments, which will be financed by equity and debt, where we assume steady growth.

Forecast of cash flow

Cash flow	Forecasting periods					Terminal period	
	2022	2023	2024	2025	2026	2027	2028
NOPAT	537,4	558,3	580,1	602,7	626,2	638,8	651,5
+ Depreciation and amortization	253,3	263,1	273,4	284,1	295,2	301,1	307,1
+/- Changes in NOWC	-204,1	-82,7	-81,4	-84,6	-87,9	-46,8	-47,7
+/- Changes in NONCA including depreciation	-272,9	-364,0	-378,2	-392,9	-408,2	-361,3	-368,5
FCF to the Firm (FCFF)	313,6	374,8	394,0	409,3	425,3	531,7	542,3
+/- Changes in NIBD (excluding cash)	131,6	65,5	65,8	68,4	71,1	37,9	38,6
Net currency effects (F)							
Net interest expenses (F)							
Net other financial expenses (F)							
Net financial expenses	-75,2	-77,8	-80,4	-83,2	-86,0	-87,5	-89,1
+/- Tax shield from NFE	16,5	17,1	17,7	18,3	18,9	19,3	19,6
Free CF to the equity holders (FCFE)	386,6	379,7	397,1	412,9	429,3	501,3	511,5
-(super) Dividends	-386,6	-379,7	-397,1	-412,9	-429,3	-501,3	-511,5
Cash surplus	0	0	0	0	0	0	0
Cash at the beginning of the period	101,7	101,7	101,7	101,7	101,7	101,7	101,7
+ Cash surplus	0	0	0	0	0	0	0
= Cash at the end of the period	101,7	101,7	101,7	101,7	101,7	101,7	101,7
NOPAT	537,4	558,3	580,1	602,7	626,2	638,8	651,5
+/- changes in NOA	-223,8	-183,5	-186,1	-193,4	-200,9	-107,1	-109,2
FCFF	313,6	374,8	394,0	409,3	425,3	531,7	542,3

Based on the estimates for the income statement and balance sheet in the forecast horizon and for the terminal period, we have prepared future cash flow for MOWI. Based on the cash flow, we found that cash at the end of the period is the same as what we found under cash and restricted cash in the balance sheet. The reason why FCFE is lower in 2022 is due to the change in NOWC and lower depreciation and amortization.

Valuation of the firm

In our valuation of MOWI, we have used fundamental and relative valuation to determine what may be the correct market value and price per stock. In the fundamental valuation, we have tried to estimate the market value through our own calculations and forecasts based on cash flow, balance sheet, and income statement. In the relative valuation, we have found companies that operate within the same industry. We have based the market value on the average of their multiples.

Fundamental valuation

The fundamental valuation also known as the present value approach can be done in several different ways. What they have in common, is that they are based on analyst projections of the cash flows of a firm and the discount factor. (Plenborg & Kinserdal, 2021, p.336).

Dividend discount model

DDM	0	1	2	3	4	5	6	7
Payout ratio 91,15%								
Re		6,15%						
Dividends		386,6	379,7	397,1	412,9	429,3	501,3	511,5
Discount factor		0,9	0,9	0,8	0,8	0,7	0,7	
PV of terminal as of 31.12.6							12324,6	
PV of terminal as of 31.12.0							8615,0	
PV of dividends in forecast horizon		364,2	336,9	332,0	325,2	318,5	350,4	
MVE as of 31.12.0		10642,2						
NNV	10642169540							
Outstanding shares	517100000							
Estimated share price EUR	20,58048644							
Estimated share price NOK	206							

DDM is based on future dividends. The dividend discount model states that the market value of equity is equal to the present value of all future dividends including a liquidation dividend (Plenborg & Kinserdal, 2021, p.338). This means that only future dividends and the required return on equity are decisive for future MVE. We used a constant Re and FCFE from the forecasted cash flow. The model gave us an estimated share price of 206 NOK. MOWI has stated in the annual report that they shall under normal circumstances pay at least 50 % of earnings per share as a part of their dividend policy.

The discounted cash flow approach

		Forecast horizon				Terminal period	
FCFF		1	2	3	4	5	6
FCFF		313,6	374,8	394,0	409,3	425,3	531,7
WACC		5,66%					542,3
Discount factors		0,9	0,9	0,8	0,8	0,7	0,7
PV(FCFF) forec. Hor. pe. 31.12.0		295,4	332,6	329,4	322,4	315,6	371,6
PV(FCFF) terminal per 31.12.6/1.1.7							14815,9
PV(FCFF) terminal per 31.12.0/1.1.1							10356,4
EV per 31.12.0/1.1.1		12323,4					
NIBD per 31.12.0/1.1.1		1747,6					
MVE per 31.12.0/1.1.1		10575,8					
NNV	10575783977						
Outstanding shares	517100000						
Estimated share price EUR	20,45210593						
Estimated share price NOK	204						

The method estimates the enterprise value (Plenborg & Kinserdal, 2021, p.341). The method is considered the most popular of the present value approaches. The approach estimates the enterprise value. The free cash flow and WACC are the only variables that affect the market value of a company. We used FCFF which was calculated in the forecasting of the cash flow and constant WACC. To find the correct market value, ones also have to deduct the NIBD. The model gave us an estimated share price of 204 NOK.

EVA model

	Forecast horizon					Terminal period		
EVA-model	0	1	2	3	4	5	6	7
NOA	4878,95	5102,7	5286,2	5472,4	5665,8	5866,7	5973,8	
NOPAT		537,4	558,3	580,1	602,7	626,2	638,8	651,5
WACC		5,66%						
WACC x NOA t-1		276,2	288,8	299,2	309,8	320,7	332,1	338,1
EVA		261,2	269,5	280,9	293,0	305,5	306,7	313,4
Discount factor		0,9	0,9	0,8	0,8	0,7	0,7	
PV(EVAs) in For. Hor per 31.12.0		246,1	239,2	234,8	230,7	226,7	214,4	
PV(EVAs) in Terminal per 31.12.6							8561,6	
PV(EVAs) in Terminal per 31.12.0							5984,6	
EV as of 31.12.0/1.1.1	12255,4							
NIBD		1747,6						
MVE as of 31.12.0/1.1.1		10507,8						
NPV	10507844505							
Outstanding shares	517100000							
Estimated share price	20,32072037							
Estimated share price NOK		203						

The EVA model states that the value of a company is determined by NOA and the present value of all future EVAs (Plenborg & Kinserdal, 2021, p.346). We also deducted the NIBD to find the correct market value. We used a constant WACC in our predictions, which gave us an estimated share price of 203 NOK.

Relative valuation

Valuation using multiples is a method that enables estimation of the company's rating regardless of capital structure, assuming identical accounting policies. We will utilize P/E and P/B.

P/E

This multiple shows the relationship between a company's market value and annual profit and is found by dividing the share price by earnings per share. We have calculated the peer groups ratios in order to get a mean to then multiply with the net earnings for 2021 to estimate the market value of equity.

Mowi net profit 2021 = 4.874,63

MVE (net profit * mean P/E) = 4.874,63 * 19,24 = 93.770,06 million NOK, which gave us a share price of 181 NOK.

P/E	Lerøy	Salmar	Grieg Seafood	Bakkafrost	Mean
Price	68,96	608	83,1	583,6	
EPS NOK	4,42	22,61	10,7	21,8688	
P/E NOK	15,60	26,89	7,77	26,69	19,24
	Net profit	4874,632			
	MVE NOK	93770,05688			

P/B

The multiple shows the relationship between a company's book value of equity and share price. P/B tells us how the market value of equity is valued in relation to the book

value of equity. We have calculated the peer groups ratios in order to get a mean to then multiply the book value of equity in NOK millions, which gave us a share price of 147 NOK.

P/B	Lerøy	Salmar	Grieg Seafood	Bakkafrost	Mean	MOWI	
Price	68,96	608	83,1	583,6		Price	208,7
BVE(NOK)	19323103000	15483176000	5563000000	12525710300		BVE	31279554600
Total stocks	181781544	117799999	113447042	59075165		total stocks	517100000
BVE pr stock	106,2984865	131,4361301	49,03609563	212,0300519		BVE pr stock	60,49033959
P/B	0,6	4,6	1,7	2,8	2,4	Price per stock	147,0167826

Conclusion and recommendation

There are no conclusions as to which valuation method is correct, and we have used our estimates which we believe are correct. What can be said, is that none of the valuation models is spot on. Our assessments show that the company is currently overvalued by the market. Based on the valuation methods, it appears that MOWI is overvalued in all the fundamental valuations and also in the relative valuation models. We have estimated the following share price, based on the relative and fundamental analysis:

	Price	Weight
DDM	206	0,25
EVA-model	203	0,25
FCFF-model	204	0,25
Multiples	164,1775625	0,25
Estimated value per share		194,26

There is thus a downside in MOWI based on our calculations which predicts a share price of 194,26 NOK. The fair market price should be lower, therefore, we recommend selling shares in MOWI.

Attachment

Reports

MOWI annual report 2021

https://mowi.com/wp-content/uploads/2022/03/Mowi_Annual_Report_2021.pdf

MOWI annual report 2020

https://corpsite.azureedge.net/corpsite/wp-content/uploads/2021/03/Mowi_Integrated_Annual_Report_2020.pdf

MOWI annual report 2019

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