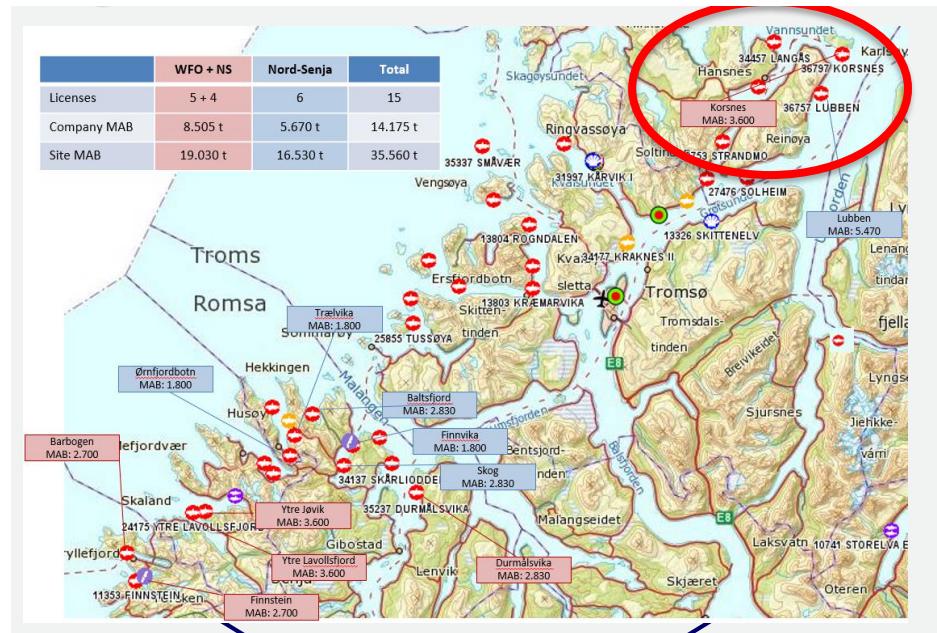


Appendix 1:

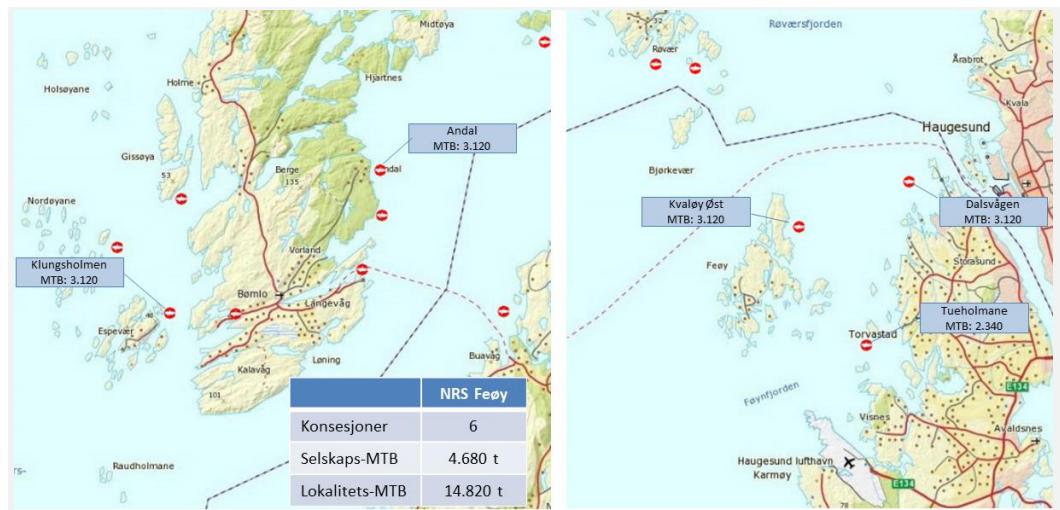
Firm & Industry Data

Appendix 1.1: Diverse Information

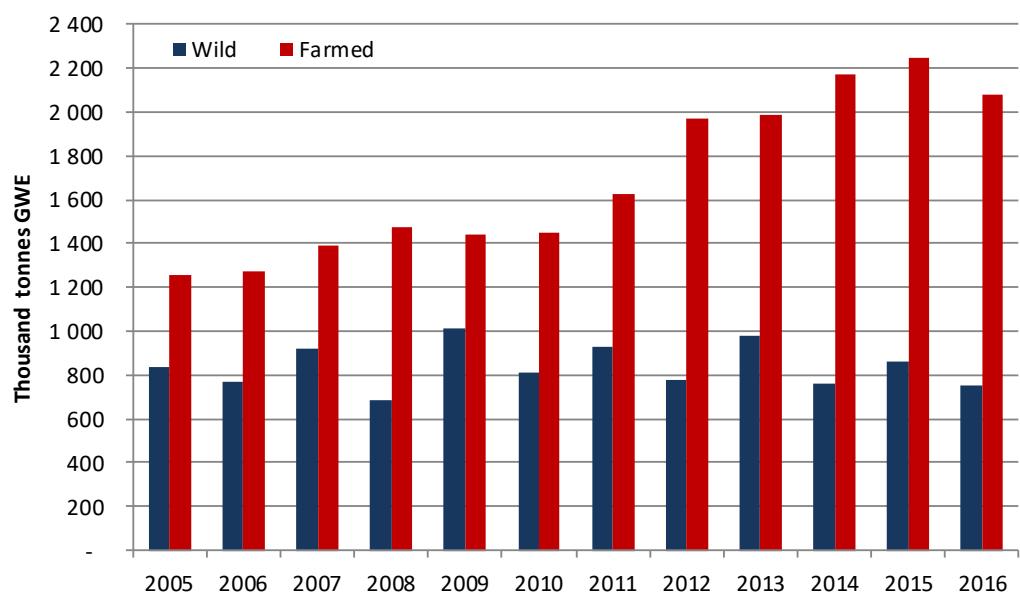
Region North (NRS Q4 2016 Report)



Region South (NRS Q4 2016 Report)



Wild & Farmed Salmon, historical annual supply (Marine Harvest, 2017)



Global salmon farming locations (Marine Harvest, 2017)



Appendix 2:

Financial Statement Analysis

Appendix 2.1: Competitors

Marine Harvest ASA:

Marine Harvest (MHG) is a seafood company that offers farmed salmon and other seafood product to the worldwide market. It was founded in 1992 and is headquartered in Bergen. MHG operates in three different business areas: feed, farming, and sales & marketing. The farming operations takes place in Norway, Canada, Chile, Scotland, Ireland, and the Faroe Islands. Today, it is the largest aquaculture company in the world. MHG has approx. 12 700 employees worldwide and reported earnings of 32.54 billion NOK in 2016.

Salmar ASA:

Salmar is engaged in seafood farming, processing, and trading of all kinds of fish and seafood. Salmar operates in the fish farming and sales & processing segments. The farming takes place in different locations in Norway. The company was founded in 1991 and is headquartered in Kværvær. The company has approx. 1300 employees and reported earnings of 8.96 billion NOK in 2016.

Lerøy Seafood ASA:

Lerøy Seafood operates in the following areas: farming, value-added processing, and sales and distribution. The farming segment refers to the production, harvesting, and filleting of salmon and trout. The value-added segment refers to the processing of salmon and other species. Lerøy was founded in 1995, is headquartered in Bergen, has approx. 3800 employees and posted earnings of 17.22 billion NOK in 2016.

Grieg Seafood ASA:

Grieg Seafood is engaged in farming of salmon and trout in different locations in Norway, Canada, and the United Kingdom. Grieg was founded in 1992 and is headquartered in Bergen. The company has approx. 660 employees and reported earnings of 6.55 billion NOK in 2016.

P/F Bakkafrost:

Bakkafrost is the largest salmon-farming company on the Faroe Islands, but is listed on the Oslo Stock Exchange. The company is providing salmon to the fresh market, smokehouses, and processors of ready meals. Bakkafrost is engaged in the following segments: salmon farming, sales & marketing, and production of fish oil & feed. The company was founded in 1968, and is headquartered on the Faroe Islands. Bakkafrost has 800 employees and reported earnings of 3.86 billion NOK in 2016.

Scottish Salmon Company PLC:

The Scottish Salmon Company is a small fish-farming company, mainly engaged in farming of salmon. The company exports Scottish salmon to the local and international market. It was founded in 2009 and is headquartered in Scotland, although it is listed on Oslo Stock Exchange. In 2016, the company reported earnings of 1.25 billion NOK.

Austevoll Seafood ASA:

Austevoll as an integrated pelagic seafood company and operates through subsidiaries and associated companies. The operations takes place mainly in Norway, Chile, Faroe Islands, and Peru. The company is operating in the following areas: fishmeal/oil/feed, human consumption, production, and sales and distribution. The human consumption segment refers to canned products like sardines, mussels, salmon, and tuna fish. Austevoll was founded in 1981 and is headquartered in Storebø. The company has approx. 4700 employees and reported earnings of 18.91 billion NOK in 2016.

Appendix 2.2: Historical Key Figures

Key Figure:	ROA				
Year	2012	2013	2014	2015	2016
NRS	1,79%	16,23%	10,94%	8,40%	30,01%
Marine Harvest ASA	1,90%	8,82%	2,65%	3,67%	12,00%
Salmar ASA	6,70%	20,39%	11,89%	10,47%	21,65%
Lerøy Seafood ASA	4,14%	13,50%	7,34%	7,65%	15,70%
Grieg Seafood ASA	-3,57%	9,95%	2,79%	-0,12%	18,62%
P/F Bakkafrost	11,55%	20,74%	19,68%	21,95%	28,67%
Scottish Salmon Company PLC	-2,48%	2,06%	7,59%	0,26%	5,09%
Austevoll Seafood ASA	2,29%	3,50%	2,48%	2,92%	5,41%
Industry Benchmark:	2,93%	11,28%	7,77%	6,69%	15,31%

Key Figure:	ROE				
Year	2012	2013	2014	2015	2016
NRS	5,81%	48,80%	28,84%	22,26%	63,18%
Marine Harvest ASA	3,91%	18,00%	6,03%	8,62%	27,27%
Salmar ASA	18,98%	47,39%	24,34%	21,58%	44,90%
Lerøy Seafood ASA	9,09%	28,72%	15,07%	15,58%	31,57%
Grieg Seafood ASA	-9,19%	24,62%	6,59%	-0,30%	44,15%
P/F Bakkafrost	24,58%	40,24%	34,71%	34,89%	43,69%
Scottish Salmon Company PLC	-4,74%	4,38%	16,12%	0,50%	9,42%
Austevoll Seafood ASA	6,34%	9,93%	7,10%	8,32%	17,99%
Industry Benchmark:	7,00%	24,75%	15,71%	12,74%	31,28%

Key Figure:	ROIC				
Year	2012	2013	2014	2015	2016
NRS	1,28%	13,83%	9,06%	9,76%	21,82%
Marine Harvest ASA	3,76%	14,85%	6,06%	5,99%	19,25%
Salmar ASA	4,43%	13,64%	16,40%	12,98%	26,20%
Lerøy Seafood ASA	5,28%	16,12%	9,06%	9,56%	20,54%
Grieg Seafood ASA	-3,80%	12,34%	4,21%	1,51%	24,19%
P/F Bakkafrost	12,86%	21,46%	22,00%	25,01%	32,78%
Scottish Salmon Company PLC	0,00%	2,61%	7,51%	2,04%	0,43%
Austevoll Seafood ASA	2,80%	7,45%	6,38%	5,55%	8,39%
Industry Benchmark:	3,62%	12,64%	10,23%	8,95%	18,83%

Key Figure:	Current Ratio				
Year	2012	2013	2014	2015	2016
NRS	1,54	1,94	1,94	2,34	2,19
Marine Harvest ASA	2,92	3,23	3,22	3,35	3,03
Salmar ASA	2,08	4,24	3,05	2,89	2,29
Lerøy Seafood ASA	2,51	2,74	3,12	2,54	2,90
Grieg Seafood ASA	1,81	2,24	2,04	2,34	2,49
P/F Bakkafrost	0,32	4,75	5,51	4,74	7,22
Scottish Salmon Company PLC	2,71	3,05	2,76	3,78	3,43
Austevoll Seafood ASA	2,79	2,90	2,57	2,58	2,64
Industry Benchmark:	2,16	3,31	3,18	3,17	3,43

Key Figure:	Quick Ratio				
Year	2012	2013	2014	2015	2016
NRS	0,52	0,75	0,62	0,98	0,83
Marine Harvest ASA	0,64	0,68	0,80	0,81	0,83
Salmar ASA	0,46	1,41	0,69	0,63	0,31
Lerøy Seafood ASA	0,98	0,95	1,19	0,90	1,18
Grieg Seafood ASA	0,37	0,34	0,52	0,73	0,81
P/F Bakkafrost	0,75	1,22	1,59	0,73	1,33
Scottish Salmon Company PLC	0,55	0,40	0,54	0,78	0,53
Austevoll Seafood ASA	1,12	0,90	1,07	1,04	1,10
Industry Benchmark:	0,70	0,84	0,91	0,80	0,87

Key Figure:	Equity Ratio				
Year	2012	2013	2014	2015	2016
NRS	33,79	39,71	36,51	38,80	54,24
Marine Harvest ASA	49,83	48,38	39,76	45,15	43,00
Salmar ASA	37,12	47,56	50,14	47,04	49,16
Lerøy Seafood ASA	45,14	48,59	48,88	49,34	50,00
Grieg Seafood ASA	37,18	43,32	41,52	37,18	46,54
P/F Bakkafrost	49,12	53,51	53,59	65,82	65,50
Scottish Salmon Company PLC	49,29	44,93	49,05	53,26	54,65
Austevoll Seafood ASA	36,20	34,50	35,26	35,03	26,42
Industry Benchmark:	43,41	45,83	45,46	47,55	47,90

Key Figure:	D/E Ratio				
Year	2012	2013	2014	2015	2016
NRS	1,88	1,14	1,13	1,12	0,84
Marine Harvest ASA	1,70	1,17	1,19	1,17	1,32
Salmar ASA	1,98	1,15	1,07	1,07	1,03
Lerøy Seafood ASA	1,21	1,05	1,09	1,09	0,99
Grieg Seafood ASA	1,69	1,31	1,40	1,68	1,15
P/F Bakkafrost	1,04	0,87	0,68	0,52	0,53
Scottish Salmon Company PLC	1,03	1,23	1,04	0,88	0,84
Austevoll Seafood ASA	1,37	1,47	1,32	1,35	0,92
Industry Benchmark:	1,43	1,18	1,11	1,11	0,97

Key Figure:	Interest Coverage Ratio				
Year	2012	2013	2014	2015	2016
NRS	0,83	8,05	8,65	9,38	40,40
Marine Harvest ASA	2,42	6,93	6,40	6,92	19,19
Salmar ASA	2,02	7,52	15,15	14,36	20,95
Lerøy Seafood ASA	5,79	19,87	11,76	12,42	21,70
Grieg Seafood ASA	-2,02	6,21	2,27	0,59	15,19
P/F Bakkafrost	16,73	23,42	27,60	37,45	63,84
Scottish Salmon Company PLC	0,33	2,02	5,55	2,05	0,42
Austevoll Seafood ASA	2,56	6,86	7,02	5,80	11,00
Industry Benchmark:	3,98	10,40	10,82	11,37	21,76

Raw data collected from Bloomberg Terminal

Appendix 2.3: Key Figures – Formulas

$$ROA = \frac{Net\ income + interest\ expenses\ (1 - tax\ rate)}{Total\ assets}$$

$$ROE = \frac{Net\ income}{Book\ value\ of\ common\ equity}$$

$$ROIC = \frac{Net\ income - dividends}{Total\ capital}$$

$$Current\ Ratio = \frac{Current\ assets}{Current\ liabilities}$$

$$Quick\ Ratio = \frac{Cash + securities + receivables}{Current\ liabilities}$$

$$Equity\ Ratio = \frac{Total\ equity}{Total\ assets}$$

$$\frac{D}{E}Ratio = \frac{Debt}{Equity}$$

$$Interest\ Coverage\ Ratio = \frac{Operating\ profit\ (EBIT)}{Net\ financial\ expenses}$$

Appendix 3:

Discounted Cash Flow Model

Appendix 3.1: Complete Discounted Cash Flow Model

Appendix 3.1.1: Cost of Capital Components

Input cells	
Output cells	

Industry:	Consumer Goods
Sub Sector:	Food Producers
Tax Rate	24%
No. Of Firms:	8

Company Name	Levered Beta	D/E Ratio	Unlevered Beta
Salmar ASA	0,45	1,0341	0,25
Marine Harvest ASA	0,70	1,3259	0,35
Lerøy Seafood ASA	0,71	0,9999	0,40
Scottish Salmon Company PLC	0,93	0,8352	0,57
P/F Bakkafrost	0,02	0,5266	0,02
Grieg Seafood ASA	0,87	1,1487	0,47
Austevoll Seafood ASA	0,44	0,9218	0,26
Orkla	0,57	0,6611	0,38
Industry	0,59	0,96085	0,34

Cost of equity:	4,71%
Cost of debt:	4,67%
Book value of debt:	351 416 000
Shares outstanding:	43 572 191
Current share price (NOK):	166,50
Market value of equity:	7 254 769 802
Market value of firm:	7 606 185 802
Cost of capital:	4,66%

Company Name	Levered Beta	D/E Ratio	Unlevered Beta
Norway Royal Salmon ASA	0,56	0,8436	0,34

Raw data collected from Bloomberg Terminal

Appendix 3.1.2: Forecasting of Revenues and Expenses

Income from associates was on average 12.73% of operational EBIT between 2012-2016 and experienced very little fluctuations. In the model, I assume that this ratio will remain constant through the period.

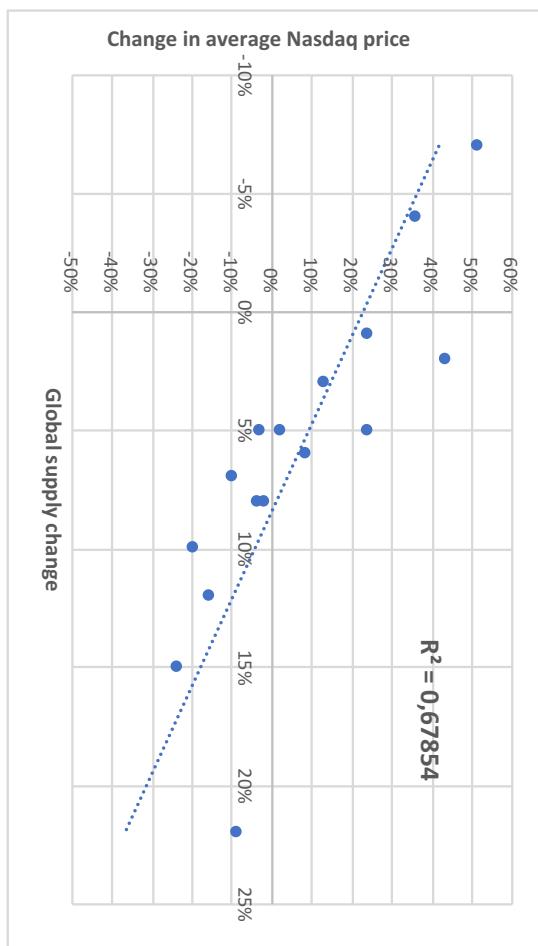
Appendix 3.1.3: Forecasting of Working Capital

Year	(NOK 1000)				As % of Revenues
	Revenues	Noncash current assets	Current liabilities	Noncash current assets	
2012	1 744 266	865 019	568 444	50%	33%
2013	2 603 712	1 033 525	617 580	40%	24%
2014	2 599 799	1 445 248	775 293	56%	30%
2015	3 210 548	1 471 685	714 400	46%	22%
2016	4 224 430	2 029 844	956 416	48%	23%
Average				48%	26%
(NOK 1000)					
Year	Revenues	Noncash current assets	Current liabilities	Noncash WC	
2016	4 224 340	2 029 844	956 416	1 073 428	
2017	4 869 301	2 325 251	1 275 967	1 049 284	
2018	4 855 146	2 318 491	1 272 258	1 046 234	
2019	4 852 372	2 317 167	1 271 531	1 045 636	
2020	5 554 995	2 652 692	1 455 648	1 197 044	
2021	6 359 359	3 036 802	1 666 426	1 370 376	
2022	6 936 788	3 312 544	1 817 737	1 494 806	
2023	6 725 910	3 211 842	1 762 478	1 449 364	
2024	6 521 442	3 114 202	1 708 899	1 405 303	
2025	7 113 589	3 396 972	1 864 067	1 532 905	
2026	7 759 503	3 705 417	2 033 324	1 672 093	
2027	8 228 953	3 929 595	2 156 340	1 773 254	

Appendix 3.1.4: DCF Model and Output

Appendix 3.2: Regression Global Supply & Change in Price

	Global supply growth YOY	Change in average price FCA Oslo
2001	15%	-25%
2002	8%	-3%
2003	7%	-11%
2004	6%	7%
2005	5%	23%
2006	1%	23%
2007	10%	-21%
2008	5%	1%
2009	3%	12%
2010	-4%	35%
2011	12%	-17%
2012	22%	-10%
2013	2%	42%
2014	8%	-5%
2015	5%	-4%
2016	-7%	50%



Appendix 3.3: Cost of Capital

Beta

In the capital asset pricing model, the beta of an investment is the risk that the investment adds to the portfolio. In this valuation, the bottom-up beta-approach is used. The approach breaks down betas into their business risk and financial leverage.

The bottom-up beta can be estimated in four steps:

1. We need to identify the business, or businesses that the firm operates in. In this valuation, the firm is operating in the salmon-farming industry only.
2. We estimate the average unlevered betas of other publicly traded firms that are in the same industry as the one we are valuing. In order to do so we need to calculate, or collect, levered betas of each firm. In this valuation, the levered betas of comparable firms were collected from the Bloomberg Terminal. In the terminal, you can choose the period and frequency that your beta should be estimated in.
When deciding which firms that should be used as comparable firms, it is important to not be too narrow in the definition. The more firms in the sample, the less risk for errors in the estimation. We should therefore define comparable firms more broadly, both in terms of what business they are in and in which country they are operating in. The basic recommendation is to use 6-12 firms in the sample. Given this recommendation, Orkla was included in the sample in this valuation since it is operating in a similar industry.
3. If the firm operates in several businesses, we take the weighted average of the unlevered betas by using the proportion of firm value derived from each business as the weights. The weighted average is called the bottom-up unlevered beta. Since NRS only is operating in one business, we can skip this step and instead use the average unlevered beta from the firms in the sample.
4. Finally, we put the average unlevered beta into the formula for the levered beta together with the corporate tax rate and the firm's D/E ratio. The estimated levered beta is the bottom-up beta.

Three reasons why bottom-up betas are better than regression betas:

- Bottom-up betas are more precise. Since we are using an average of several regression betas, the standard errors are more precise.
- Bottom-up betas reflect current business mix. If a firm changes its business mix, that is, if it enters a new business, it is better reflected in the bottom-up betas since we are weighting the different businesses. A regression beta is focused on the history and is thus reflecting past business mixes.
- Bottom-up betas consider changes in D/E ratios. If a firm changes its D/E ratio, it is easy to adjust the bottom-up beta to reflect the new ratio. In contrast, a regression beta is reflecting historical debt to equity choices.

In summary, bottom-up betas seem to reflect the current risk of the firm better than what historical regression betas do.

Unlevered beta:

$$\beta_U = \left(\frac{\beta_L}{1 + (1 - t)(\frac{D}{E})} \right)$$

Levered beta:

$$\beta_L = \beta_U \left(1 + (1 - t) \left(\frac{D}{E} \right) \right)$$

This summary of the estimation of bottom-up betas is based on several works by professor Damodaran at NYU Stern School of Business (2001, 2010, & 2016), and course material from Nanyang Technological University (2016).

Appendix 4:

Relative Valuation

Appendix 4.1: P/E

May 23rd 2017			
Price/Earnings (TTM)	P/E	Price	EPS
Firm			
NRS	7,34	166,50	22,68
Marine Harvest ASA	11,65		
Salmar ASA	10,38		
Lerøy Seafood ASA	9,44		
Grieg Seafood ASA	7,89		
P/F Balkafrost	9,89		
Scottish Salmon Company PLC	24,63		
Austevoll Seafood ASA	10,16		
Orkla	20		
Median	10,27		

P/E (TTM)	
Multiple	10,27
Net profit	1 004 713 000
Value of equity	10 318 402 510
Shares outstanding	43 572 191
Value per share NOK	236,81

Multiples collected from the Bloomberg Terminal

NRS calculated based on annual report

EPS = Earnings per share = Net income/Shares outstanding

Appendix 4.2: P/B

May 23rd 2017			
Price/Book (TTM)			
Firm	P/B	Price	Book value per share
NRS	3,54	166,50	46,98
Marine Harvest ASA	3,38		
Salmar ASA	3,69		
Lerøy Seafood ASA	2,20		
Grieg Seafood ASA	2,39		
P/F Balkafrost	3,29		
Scottish Salmon Company PLC	2,24		
Austevoll Seafood ASA	1,83		
Orkla	2,47		
Median	2,43		

P/B TTM	
Multiple	2,43
Book value of equity	2 047 017 000
Value of equity	4 974 251 310
Shares outstanding	43 572 191
Value per share NOK	114,16

Multiples collected from the Bloomberg Terminal
NRS calculated based on annual report

Book value per share = Shareholders equity - preferred stock/Shares outstanding

Appendix 4.3: EV/EBITDA

		May 23rd 2017				
Enterprise Value/EBITDA (TTM)		EV/EBITDA		EV		EBITDA
Firm		EV/EBITDA	TTM	EV		EBITDA
NRS		6,07	7 581 345	802	1 249	753 000
Marine Harvest ASA	Multiple				7,82	
Salmar ASA	EBITDA				1 249 753 000	
Lerøy Seafood ASA	Debt				716 070 000	
Grieg Seafood ASA	Minority interests				16 706 000	
P/F Balkafrost	Non-operating assets				547 898 000	
Scottish Salmon Company PLC	Value of equity				9 588 190 460	
Austevoll Seafood ASA	Shares outstanding				43 572 191	
Orkla	Value per share NOK				220,05	
Median			7,82			

Multiples collected from the Bloomberg Terminal

NRS calculated based on annual report

[EBITDA = Net profit + interest + taxes + depreciation + amortization]

EV/EBITDA TTM
Multiple
EBITDA
Debt
Minority interests
Non-operating assets
Value of equity
Shares outstanding
Value per share NOK

Appendix 5: Scenarios & Simulations

Appendix 5.1: Monte Carlo Simulation – Results

Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
1	202,53	43	187,94	85	239,23
2	196,68	44	193,58	86	168,92
3	192,69	45	162,27	87	221,81
4	195,84	46	182,12	88	221,58
5	193,51	47	351,34	89	301,56
6	254,13	48	171,76	90	195,57
7	107,96	49	219,48	91	212,21
8	75,57	50	262,60	92	327,76
9	147,39	51	229,04	93	189,67
10	198,25	52	220,16	94	374,23
11	197,94	53	279,73	95	171,86
12	337,64	54	212,28	96	170,60
13	147,96	55	284,69	97	285,35
14	203,94	56	216,00	98	66,53
15	351,51	57	193,79	99	340,95
16	368,50	58	225,53	100	295,12
17	304,47	59	152,64	101	119,37
18	264,97	60	178,14	102	117,75
19	248,04	61	122,30	103	286,71
20	238,04	62	366,88	104	206,49
21	190,75	63	286,23	105	137,99
22	130,33	64	195,99	106	264,24
23	189,57	65	129,09	107	311,58
24	201,43	66	281,60	108	256,43
25	176,75	67	233,66	109	208,08
26	243,64	68	298,20	110	198,98
27	441,04	69	189,14	111	195,14
28	63,13	70	149,91	112	186,23
29	109,42	71	103,60	113	249,29
30	360,26	72	117,15	114	360,66
31	273,66	73	183,13	115	482,45
32	144,66	74	187,05	116	157,40
33	337,82	75	211,69	117	291,40
34	301,17	76	461,47	118	148,01
35	547,14	77	236,91	119	136,66
36	171,25	78	136,11	120	275,84
37	353,96	79	218,32	121	197,51
38	157,61	80	138,36	122	187,82
39	228,89	81	150,13	123	187,38
40	192,23	82	186,20	124	36,04
41	129,61	83	299,76	125	194,09
42	174,85	84	138,98	126	106,00

Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
127	216,04	170	80,59	213	197,98
128	267,63	171	312,02	214	86,82
129	225,39	172	213,48	215	216,98
130	175,04	173	240,95	216	107,33
131	197,54	174	191,25	217	183,31
132	116,23	175	267,34	218	216,47
		176	306,45	219	203,00
133	177,52			220	206,48
134	355,97	177	235,68		
135	361,10	178	103,73	221	193,07
136	118,95	179	164,25	222	166,19
137	160,40	180	175,65	223	219,57
138	208,24	181	176,67	224	153,16
139	108,43	182	160,49	225	178,13
140	129,26	183	150,50	226	425,80
141	183,04	184	309,09	227	248,50
142	108,71	185	178,59	228	255,68
143	234,32	186	217,30	229	109,82
144	241,93	187	274,43	230	378,41
145	147,65	188	211,97	231	335,10
146	170,69	189	147,57	232	229,60
147	262,37	190	193,12	233	291,69
148	208,57	191	150,91	234	222,58
149	210,95	192	160,88	235	192,35
150	154,39	193	283,22	236	150,86
151	285,57	194	201,01	237	112,98
152	159,58	195	159,50	238	207,99
153	183,49	196	144,46	239	161,15
154	370,28	197	185,17	240	217,67
155	350,35	198	307,71	241	377,52
156	172,40	199	225,35	242	263,92
157	209,33	200	140,17	243	495,90
158	175,65	201	225,20	244	171,46
159	210,39	202	157,11	245	193,16
160	234,43	203	219,23	246	232,57
161	321,10	204	177,56	247	210,66
162	203,16	205	121,03	248	224,65
163	566,79	206	210,67	249	224,25
164	152,76	207	179,31	250	274,77
165	133,90	208	277,31	251	163,48
166	172,03	209	147,69	252	189,22
167	156,45	210	250,19	253	91,77
168	162,88	211	161,67	254	180,85
169	204,09	212	235,80	255	276,51

Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
256	229,43	300	328,72	344	163,27
257	314,40	301	144,76	345	191,68
258	224,38	302	241,73	346	165,26
259	212,20	303	134,01	347	289,27
260	300,30	304	252,72	348	180,93
261	136,32	305	332,38	349	215,62
262	252,42	306	99,38	350	290,80
263	188,49	307	186,17	351	231,23
264	259,57	308	98,54	352	269,48
265	139,10	309	129,39	353	143,88
266	104,44	310	177,01	354	152,67
267	327,83	311	109,03	355	344,99
268	149,46	312	282,43	356	171,91
269	111,51	313	193,09	357	205,36
270	195,45	314	147,32	358	228,53
271	204,02	315	278,23	359	244,74
272	465,42	316	281,26	360	420,34
273	202,00	317	147,21	361	195,25
274	182,52	318	135,37	362	263,98
275	270,09	319	204,12	363	209,14
276	167,62	320	208,10	364	189,99
277	212,05	321	357,47	365	217,46
278	276,48	322	256,46	366	128,23
279	154,04	323	241,57	367	171,16
280	143,87	324	195,40	368	222,33
281	141,21	325	93,27	369	194,05
282	268,94	326	294,03	370	189,61
283	172,30	327	167,95	371	241,89
284	163,29	328	140,14	372	233,56
285	275,44	329	114,06	373	409,69
286	237,58	330	209,12	374	202,54
287	185,99	331	145,99	375	134,49
288	298,82	332	190,81	376	187,51
289	196,51	333	209,07	377	211,39
290	245,65	334	169,60	378	149,43
291	177,46	335	193,66	379	112,20
292	303,69	336	181,40	380	282,58
293	100,45	337	77,92	381	262,57
294	159,33	338	158,90	382	229,33
295	189,75	339	139,97	383	262,46
296	176,40	340	160,17	384	222,58
297	174,70	341	287,96	385	161,11
298	165,45	342	152,88	386	216,99
299	242,25	343	195,49	387	193,68

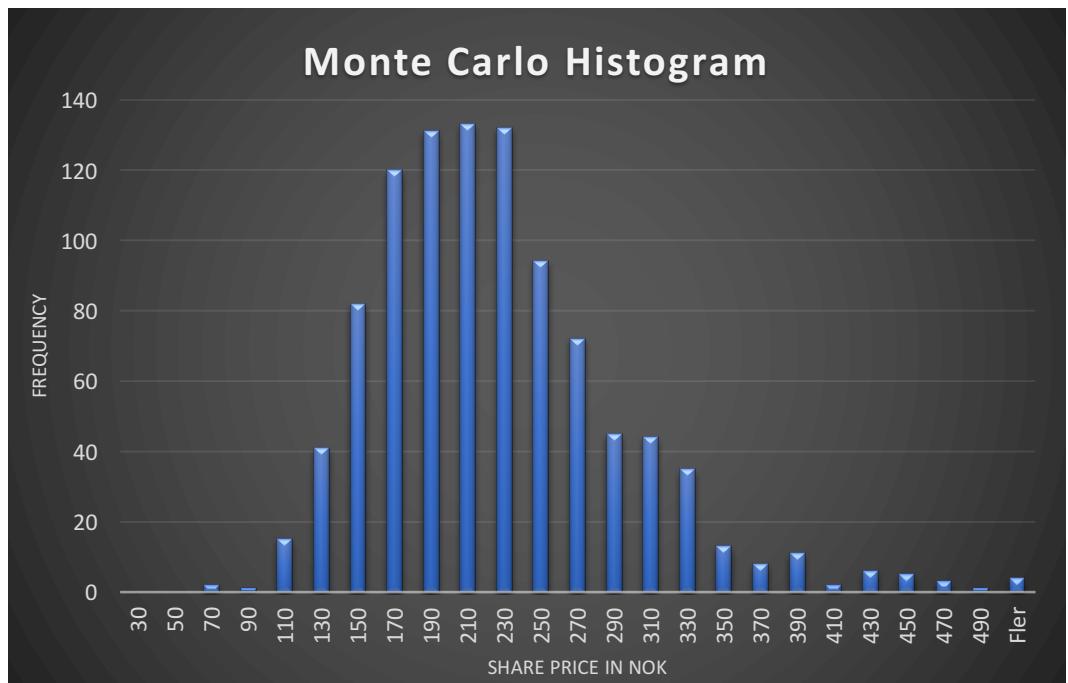
Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
388	211,65	432	167,39	476	265,70
389	269,85	433	143,68	477	181,94
390	154,59	434	248,83	478	231,91
391	223,22	435	220,85	479	326,35
392	202,21	436	254,99	480	170,11
393	65,24	437	196,22	481	196,89
394	209,99	438	207,16	482	257,03
395	252,77	439	128,07	483	259,76
396	215,36	440	256,21	484	348,45
397	132,32	441	243,74	485	224,92
398	196,18	442	137,19	486	198,16
399	300,06	443	414,19	487	245,61
400	190,44	444	248,23	488	224,65
401	219,75	445	184,86	489	257,28
402	153,68	446	646,93	490	224,74
403	243,76	447	145,40	491	182,78
404	173,28	448	204,44	492	174,18
405	187,25	449	217,14	493	184,75
406	234,76	450	65,61	494	270,97
407	211,77	451	325,63	495	106,42
408	416,79	452	168,52	496	143,72
409	304,54	453	325,45	497	72,34
410	174,30	454	277,25	498	280,31
411	176,42	455	257,77	499	193,40
412	230,23	456	184,25	500	144,02
413	219,43	457	225,61	501	285,23
414	221,82	458	240,41	502	119,42
415	162,20	459	286,89	503	174,59
416	240,86	460	227,59	504	271,38
417	311,19	461	174,22	505	216,64
418	242,04	462	224,23	506	125,34
419	251,87	463	230,88	507	311,66
420	138,31	464	158,43	508	243,03
421	156,10	465	266,33	509	66,21
422	183,01	466	185,46	510	133,28
423	246,10	467	507,90	511	130,77
424	284,66	468	205,37	512	320,57
425	175,32	469	367,97	513	236,24
426	323,91	470	149,35	514	156,93
427	116,10	471	111,36	515	195,07
428	267,45	472	182,18	516	218,31
429	220,29	473	231,19	517	97,55
430	158,01	474	89,78	518	96,08
431	138,31	475	261,87	519	155,23

Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
520	120,30	564	230,19	608	257,08
521	151,17	565	129,16	609	198,06
522	264,40	566	60,50	610	116,66
523	198,54	567	226,89	611	128,50
524	260,94	568	278,32	612	179,43
525	131,84	569	73,25	613	240,06
526	244,09	570	356,94	614	119,72
527	227,40	571	191,15	615	149,59
528	219,95	572	140,53	616	134,10
529	272,78	573	213,48	617	112,76
530	206,15	574	206,79	618	251,44
531	204,88	575	274,50	619	195,36
532	271,22	576	180,62	620	305,10
533	272,14	577	275,47	621	227,25
534	169,95	578	146,42	622	306,05
535	290,54	579	264,92	623	306,34
536	427,77	580	337,05	624	192,39
537	170,83	581	168,76	625	218,18
538	272,40	582	202,68	626	269,54
539	141,92	583	305,88	627	122,68
540	206,99	584	199,92	628	186,19
541	377,72	585	116,70	629	211,69
542	184,70	586	259,74	630	146,67
543	228,56	587	178,10	631	174,68
544	268,54	588	168,37	632	315,29
545	232,96	589	231,16	633	393,77
546	271,87	590	163,01	634	288,40
547	232,79	591	346,37	635	181,84
548	272,36	592	167,94	636	136,06
549	210,53	593	47,43	637	69,81
550	153,47	594	231,66	638	170,44
551	153,32	595	247,06	639	181,73
552	205,16	596	119,63	640	236,04
553	156,54	597	96,22	641	126,81
554	285,81	598	170,22	642	139,59
555	322,96	599	96,15	643	117,42
556	184,76	600	158,35	644	325,75
557	167,95	601	283,38	645	156,01
558	204,00	602	126,24	646	226,02
559	309,53	603	216,89	647	302,32
560	181,40	604	192,64	648	125,64
561	388,43	605	244,51	649	289,13
562	256,96	606	293,88	650	161,61
563	245,83	607	302,91	651	288,42

Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
652	190,68	696	172,96	740	144,58
653	193,02	697	382,00	741	181,61
654	249,92	698	196,59	742	306,71
655	197,11	699	266,59	743	187,81
656	253,25	700	168,51	744	154,81
657	305,66	701	202,67	745	139,99
658	188,83	702	184,93	746	246,46
659	138,88	703	282,01	747	190,25
660	129,63	704	200,59	748	229,55
661	264,43	705	426,02	749	278,34
662	266,13	706	382,13	750	86,77
663	170,50	707	198,69	751	259,40
664	179,40	708	338,67	752	156,82
665	172,69	709	281,55	753	181,28
666	251,00	710	133,37	754	137,76
667	192,09	711	248,99	755	286,38
668	223,06	712	295,40	756	297,99
669	180,97	713	184,94	757	209,60
670	207,57	714	158,24	758	235,41
671	223,28	715	198,52	759	275,91
672	220,31	716	297,36	760	128,32
673	239,77	717	224,47	761	236,46
674	233,99	718	267,13	762	141,42
675	226,82	719	283,40	763	202,54
676	266,77	720	273,09	764	184,31
677	92,27	721	183,02	765	317,07
678	149,36	722	195,34	766	155,45
679	175,47	723	177,39	767	153,84
680	259,55	724	279,49	768	187,44
681	220,87	725	249,66	769	168,02
682	176,94	726	281,82	770	365,85
683	219,82	727	145,26	771	359,49
684	231,01	728	90,90	772	360,49
685	225,02	729	197,62	773	216,28
686	292,39	730	183,13	774	164,84
687	178,17	731	314,68	775	210,83
688	268,02	732	163,93	776	155,26
689	114,10	733	222,88	777	160,99
690	282,73	734	282,75	778	349,15
691	186,48	735	219,39	779	291,19
692	104,06	736	144,92	780	192,57
693	128,02	737	252,18	781	193,67
694	200,56	738	150,45	782	227,80
695	331,29	739	268,62	783	132,24

Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
784	255,11	828	455,29	872	179,69
785	232,63	829	275,05	873	319,57
786	239,60	830	309,64	874	258,76
787	457,82	831	89,63	875	277,21
788	290,30	832	160,82	876	252,68
789	252,39	833	194,25	877	176,90
790	311,09	834	161,73	878	183,75
791	188,91	835	309,22	879	233,06
792	341,86	836	184,08	880	316,72
793	275,53	837	210,73	881	193,04
794	174,31	838	184,65	882	177,39
795	227,86	839	201,88	883	243,29
796	207,34	840	172,67	884	188,38
797	136,42	841	268,91	885	154,57
798	178,17	842	263,11	886	211,17
799	322,85	843	85,10	887	114,18
800	239,62	844	246,15	888	229,24
801	169,68	845	397,03	889	336,38
802	191,10	846	182,95	890	345,75
803	289,22	847	224,99	891	353,33
804	196,28	848	206,91	892	166,71
805	416,85	849	243,01	893	176,20
806	186,25	850	250,75	894	193,72
807	247,81	851	317,49	895	216,30
808	151,02	852	128,40	896	248,08
809	113,66	853	272,19	897	231,61
810	135,35	854	200,22	898	237,98
811	167,19	855	158,92	899	306,58
812	218,71	856	333,09	900	293,53
813	115,50	857	241,23	901	192,50
814	186,36	858	250,48	902	165,78
815	161,44	859	184,87	903	196,52
816	292,31	860	233,86	904	153,04
817	511,22	861	182,29	905	202,10
818	238,74	862	187,64	906	373,83
819	189,52	863	112,66	907	149,96
820	250,19	864	166,89	908	109,38
821	237,81	865	305,19	909	140,10
822	193,18	866	275,90	910	189,61
823	96,98	867	303,61	911	336,23
824	311,43	868	255,41	912	224,19
825	193,18	869	219,08	913	227,42
826	103,43	870	254,57	914	239,51
827	252,59	871	226,16	915	154,61

Simulation no.	Share Price	Simulation no.	Share Price	Simulation no.	Share Price
916	192,83	945	271,61	974	168,10
917	208,09	946	263,17	975	156,96
918	267,44	947	255,47	976	239,20
919	228,11	948	97,76	977	226,45
920	131,68	949	245,58	978	237,60
921	183,67	950	219,76	979	264,30
922	156,49	951	417,21	980	81,99
923	158,93	952	181,14	981	176,59
924	198,99	953	154,73	982	240,08
925	326,26	954	195,98	983	247,92
926	237,69	955	203,51	984	175,61
927	232,88	956	183,88	985	146,96
928	271,53	957	232,27	986	223,86
929	371,77	958	217,89	987	263,43
930	175,48	959	164,07	988	244,85
931	303,21	960	159,87	989	186,67
932	274,67	961	174,13	990	360,56
933	218,90	962	160,37	991	146,48
934	277,57	963	310,65	992	304,10
935	251,88	964	178,99	993	307,05
936	220,18	965	115,41	994	241,74
937	129,67	966	245,20	995	300,71
938	173,04	967	165,59	996	117,38
939	216,04	968	249,10	997	251,91
940	236,85	969	295,50	998	232,41
941	216,63	970	309,43	999	225,67
942	187,65	971	240,75	1000	219,94
943	391,78	972	124,19		
944	198,37	973	130,26		



Statistic Output	
Average Price	214,80
Median Price	209,15
Max Price	535,04
Min Price	46,81
Standard Deviation	73,23

Variable	Formula
WACC	NORM.INV(RAND();0,0466;0,005)
Reinvestment rate	NORM.INV(RAND();0,5743;0,1)
Growth rate stable period	NORM.INV(RAND();0,01;0,005)
CAGR Revenues	NORM.INV(RAND();0,069;0,005)
Expenses in % of revenues	NORM.INV(RAND();0,83;0,01)

This is the procedure of performing a Monte Carlo simulation in excel:

1. First you decide which variables of the model you would like to simulate. In this case I was interested in the variables presented in the table above. Then you apply the formula, also described in the table above, to each of the variable. When typing the formula RAND() in a cell, you will get a number equally likely to assume any value between 0 and 1. This means that in approx. 25% of the simulations, the value should be less than or equal to 0.25 etc. (Winston, 2016). I applied the base case value of each variable, and a discretionary standard deviation based on the sensitivity analysis. It can be argued whether the standard deviations are correct or not, but you have to make some simplifications when using excel.
2. You run the simulation as many time as you wish. I performed 1000 simulations, which means that in every simulation, a random value was drawn to each of the affected variables.
3. You will get a long table (1000 cells in excel) with possible outcomes. To simplify the interpretation of the results, I inserted them in a histogram where I put the share price on the x-axis and the frequency on the y-axis. The frequency illustrates how many times a specific value were simulated in the MC-simulation. You are free to choose the interval on the x-axis. In my simulation, I had the share price increasing by 20 NOK per step on the axis.

Appendix 5.2: Scenarios

Variables	Base Case	Alternative Scenario	Best Case	Worst Case
Awarded new licenses	Yes	No	Yes	No
Harvesting capacity	56 700	45 000	56 700	45 000
Capacity utilization 2027	95%	100%	100%	90%
Cost of capital 2017-2027	4,66%	4,66%	4,16%	7,66%
CAGR in revenues 2017-2027	6,90%	3,17%	9,40%	2,90%
Reinvestment rate	57,43%	57,43%	47,43%	67,43%
Cost of capital stable period	4,66%	4,66%	4,16%	7,66%
Growth in stable period	1%	1%	2%	-2%
Value per share NOK	209,84	178,07	595,31	52,59

Appendix 6:

Financial Data

All data in appendix 6 is obtained from NRS annual report 2016 and processed in excel.

Appendix 6.1:

Income Statement

(NOK 1000)	FY 2016	FY 2015
Operating revenues	4 224 340	3 210 548
Cost of goods sold	3 230 927	113 268
Salaries	155 468	113 268
Depreciation	61 063	53 697
Other operating costs	136 269	134 618
Operational EBIT	640 613	201 894
Fair value adjustments	164 151	24 416
Income from associates	71 865	22 754
EBIT	876 628	249 065
Gain/loss on financial assets	311 650	45 200
Other net financial items	-15 857	-24 184
EBT	1 172 421	270 081
Tax	-167 707	-32 498
Net profit	1 004 713	237 582
Earnings per share (NOK)	22,72	5,28
Earnings per share - diluted	22,72	5,28

Appendix 6.2:

Balance Sheet

(NOK 1000)	31.12.2016	31.12.2015
Assets		
Intangible assets		
Licenses	648 887	648 887
Total intangible assets	648 887	648 887
Property, plant, and equipment		
Land, buildings, and other real estate	19 579	12 866
Machinery and equipment	182 110	168 641
Boats and floating assets	197 285	163 698
Fixtures, office equipment, etc	18 521	12 724
Total property, plant, and equipment	417 496	357 948
Non current financial assets		
Investments in associates	531 504	169 991
Available-for-sale financial assets	395	395
Other long-term receivables	16 000	20 000
Total non-current financial assets	547 898	190 385
Total non-current assets	1 614 281	1 197 221
Current assets		
Inventories	101 635	40 630
Biological assets	1 205 399	829 928
Total inventory	1 307 035	870 559
Receivables		
Accounts receivables	478 214	500 689
Other short-term receivables	244 596	100 438
Total short-term receivables	722 810	601 126
Cash and cash equivalents	69 257	210 339
Total current assets	2 099 101	1 673 024
Total assets	3 713 382	2 870 245

Equity		
Share capital		
Treasury shares	43 572	43 572
Retained earnings	-98	-71
Total equity attributable to owners of the parent company	2 013 983	1 113 788
Non-controlling interests	33 034	72 730
Total equity	2 047 017	1 186 519
Non-current liabilities		
Pension liabilities	11 383	12 480
Deferred tax liabilities	394 786	303 485
Non-current interest bearing debt	303 781	653 361
Total non-current liabilities	709 950	969 326
Current liabilities		
Current interest bearing debt	47 635	46 519
Accounts payables	646 515	530 430
Tax payable	79 350	3 180
Other current liabilities	182 916	134 271
Total current liabilities	956 416	714 400
Total liabilities	1 666 366	1 683 726
Total equity and liabilities	3 713 382	2 870 245

Appendix 6.3:

Statement of Cash Flow

(NOK 1000)	2016	2015
Operational EBIT		
Adjusted for:		
Taxes paid	-3 180	-2 031
Depreciation	61 063	53 697
Gains (-) / Losses (+) on sale of fixed assets	10	-1
Sharebased payment	-10 703	-1 249
Pension costs with no cash effect	-2 887	78
Change in inventories/biological assets	-242 359	-24 423
Change in accounts receivables and accounts payables	138 560	25 101
Change in other current assets and other liabilities	47 185	87 130
Net cash flow from operating activities	628 302	340 196
Cash flow from investing activities		
Proceeds from sale of property, plant, and equipment	813	157
Payments for purchase of property, plan, and equipment	-121 423	-122 750
Payments for purchase of licenses	0	-90 000
Payments for aquisition of associated company	-269 487	0
Proceeds from realisation of current financial assets (TRS)	164 916	127 999
Proceeds from investments in no-current financial assets	8 871	0
Payments for investments in non-current financial assets	0	-4 641
Payments for aquisition of minority interest	-70 000	0
Change in loans to associates and others	4 000	-18 200
Net cash flow from investing activitites	-282 311	-107 435
Cash flow from financing activities		
Receipts from new non-current debt	52 212	185 259
Non-current debt repayment	-400 674	-43 681
Net change in bank overdraft	0	-142 576
Sale of treasury shares	-1 567	-2 589
Net interest payments	-16 270	-23 976
Dividend payments	-111 773	-65 353
Net cash flow from financing activities	-478 073	-92 916
Net increase (+) / reduction (-) in cash and cash equivalents	-132 082	139 845
Cash and cash equivalents as of 1 January	201 339	61 494
Cash and cash equivalents as of 31 December	69 257	201 339

Appendix 7:

Literature Matrix

Litteratur Bachelor NRS	Fokus	Typ av information	Länk
Title & författare Models			
Investopedia	Monte Carlo simulerings Metod	Egna beräkningar/modellerings, excel	http://www.investopedia.com/terms/m/montecarlosimulation.asp http://www.investopedia.com/articles/investing/093015/create-monte-carlo-simulation-using-excel.asp
Valuation Investment Valuation, Damodaran 2012	DCF, FCFE, DCF, Earnings multiples, estimating growth, risk premiums etc.	Teori	https://www-dawsonera-com.ezproxy.library.bi.no/readonline/9781118206577
Verdifuldering: teoretiske modeller og praktiske teknikker for å verdsette selskaper, Kaldestad & Møller		Teori	
Corporate Finance Theory & Practice, Damodaran	Estimating FCFF, FCFE, levered beta, unlevered beta	Teori	
Sverre Dyrnes, Moderne Forretningsjus II, 2011	Verdibegrep	Teori	
The Dark Side of Valuation, Damodaran		Teori	
International Valuation Standards Council			https://www.ivsc.org
Koller,			
Wayne Winston	Monte Carlo simulerings Metod		https://www-idunn-no.ezproxy.library.bi.no/file/pdf/49362347/art10.pdf

Forskningsmetode for økonomisk- administrativa Fag, Johannessen, Christoffer & Tufte			
Ulleberg, 2002	Induktiv/deduktiv		http://www.sv.ntnu.no/ped/hans.petter.ulleberg/Vitenskapsf99.htm
Saunders, Lewis, & Thornhill 2016	Primary/secondary data		
Nyeng, 2004	Induktiv/deduktiv		
Industry News Kontali Analyse			http://www.kontali.no/?div_id=76&pag_id=78
Fiskeridirektoratet	Ansökningar om utvecklingstillståeler		http://www.fiskeridir.no/Akkvakultur/Tilldeling-og-tillateler/Saettlateler/Utviklingsstillateler/Sokere-antall-og-biomasse
Fish Pool	Priser	Data	http://laks.no/urovelkende-hoy-dodelighet-pa-laks-i-oppdrett/
Veterinærinstituttet	Fiskhelserapporten 2016		http://fishpool.eu/PDF
WHO	Antibiotics		http://www.who.int/features/2015/antibiotics-norway/en/
Institute of Marine Research, 2016	Risikovurdering, norsk oppdrettlaks	Forskning	https://www.dn.no/hylteter/2017/02/27/1004/Fiske/norway-royal-salmon-prosjekt-henger-i-tynn-trad
Dagens Næringsliv, llaks	NRS + Aker license Sea lice		http://laks.no/alle-vett-lakselus-gir-tap-minst-en-halv-milliard-dollar-trofertellig-myre-mer-enn-det/
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