

EBIT-margin of 7.9% meet estimates

First Sensor in FY 2018, according to first preliminary numbers again was able to increase the EBIT-margin to now 7.9%, what was exactly our forecast. The Mobility segment, with a sales decline of 10% came out short of our estimates, while Industrials and Medical performed better than expected. We continue to estimate a further sales growth and margin improvement in the current year and confirm our Buy rating with a slightly adjusted TP of EUR 27.80 from EUR 27.70 per share.

First Sensor's five pillar strategy

The profitable growth strategy is based on five pillars: 1) Target markets Industrial, Medical and Mobility where First Sensor will benefit from several megatrends. Therefore more customized products and solutions will be developed. 2) Key customers and products: The benefit will come from better economies of scale. 3) Forward integration: Selling more systems and solutions which offer a higher margin potential. 4) Internationalization: Entrance and penetration of new markets in North America and Asia. 5) Operational excellence: Cross sectional function for better margins.

Group sales 2018 up 5.2% yoy

Group sales increased by 5.2% yoy compared to -1.7% for FY 2017. That would result in a moderate growth of 1.9% for Q4 '18 and in absolute terms again the level of EUR 40m per quarter were surpassed. Some declining sales momentum was visible in Mobility: Q1: +6.9%; Q2: -0.1%; Q3: -14.6%; Q4: -27.6% (all yoy).

EBIT-margin improvement to 7.9%

EBIT-margin increased from 7.2% in 2017 to 7.9% (2018). A "normal" quarterly trend can be observed during the year with a peak margin in Q3 (11.3%) followed by a decline to ~8.8% in Q4.

EURm	2016	2017	2018e	2019e	2020e
Revenues	150	148	155	166	177
EBITDA	19	20	22	23	25
EBIT	11	9	12	13	15
EPS	0.56	0.40	0.66	0.74	0.86
EPS adj	0.72	0.40	0.66	0.74	0.86
DPS	-	0.16	0.18	0.20	0.20
EV/EBITDA	8.9	12.5	10.8	9.6	8.7
EV/EBIT	16.5	27.3	19.8	16.7	14.3
P/E adj	20.2	53.8	32.3	26.9	23.2
P/B	1.93	2.75	2.53	2.21	2.06
ROE (%)	7.8	5.3	8.1	8.5	9.2
Div yield (%)	-	0.7	0.8	1.0	1.0
Net debt	24	23	22	18	12

Source: Pareto

Target price (EUR)	28
Share price (EUR)	20

Forecast changes

%	2018e	2019e	2020e
Revenues	(1)	(1)	(2)
EBITDA	(1)	(1)	(2)
EBIT adj	(2)	(1)	(3)
EPS reported	(2)	(1)	(4)
EPS adj	(2)	(1)	(4)

Source: Pareto

Ticker	SISG.DE, SIS GR
Sector	Hardware & Equipment
Shares fully diluted (m)	10.2
Market cap (EURm)	203
Net debt (EURm)	22
Minority interests (EURm)	1
Enterprise value 18e (EURm)	241
Free float (%)	46

Performance



Source: Factset

Analysts

Winfried Becker
+496 95 8997 416, winfried.becker@paretosec.com

*Successful niche player in sensors**DPE: Consideration of sale of its 40.1% stake***Investment case**

The First Sensor group currently holds leading market positions in its defined strategic end-markets. These markets have high entry barriers for other medium-sized companies and volumes most likely are too small for the larger players in our view.

The company covers the entire value chain for sensors and related systems. Looking forward, First Sensor is well positioned to benefit from some megatrends like for example autonomous driving or Industry 4.0. Benefitting from these trends the current strategy is directed to a higher margin level and in 2016 and 2017 the group could harvest the first fruits of this program. Nevertheless, the margin level is still behind to some of its listed peer group companies.

Further triggers for the share price in our view are any signs for a further sustainable margin improvement. The first preliminary key financials for FY 2018 are again a good example that the company is on the right track. In general these signs can be for example the winning of new high volume OEM customers, new product innovations, internal cost savings measures or entering new markets. Last July the company signed an extension of an existing contract with a Chinese process automation company. The strengthening of the collaboration with a Canadian technology leader for machine vision technology for an additional contract for sensor boards until 2019 is another good example. A possible escalation of the global trade war will not directly affect the business of First Sensor, according to the company. An extension of duties for European carmakers could have a negative impact on First Sensor's Mobility segment (2017 share of sales of 30.1%) in our view.

After a poor share price performance in the course of 2018 the announcement from Deutsche Private Equity end of October to consider a sale of its 40.1% holding immediately lifted the share price to a level of EUR 18 – 19. The management of First Sensor stated to take an active role and has hired Goldman Sachs to attend this process. There no real new news at this point in time.

Risks to the investment case

- ▶ First Sensor might not keep the speed with regard to new, innovative products and as a result could lose market share over time
- ▶ The company will not meet timely all defined milestones of their overall strategy plan what can result in a lower than expected profitability
- ▶ Hiring of new and skilled employees could become more challenging

Valuation update

- ▶ Buy recommendation confirmed
- ▶ TP marginally up to EUR 27.80 from EUR 27.70 per share
- ▶ Base parameters for our DCF have not changed: Beta at 1.1; perpetual growth rate at 2.5% and sustainable margin at 9.5%
- ▶ Current upside potential of 40%

Exhibit 1: First Sensor – DCF-valuation with significant upside potential

EUR m	Phase I					Phase II					Phase III
	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	
Revenues	155.1	165.5	177.0	191.0	207.0	222.3	236.6	249.4	260.6	269.6	
growth rate	5.2%	6.7%	6.9%	7.9%	8.4%	7.4%	6.4%	5.4%	4.5%	3.5%	
EBIT	12.2	13.3	15.1	17.0	19.2	20.7	22.1	23.5	24.6	25.6	
EBIT margin	7.8%	8.1%	8.5%	8.9%	9.3%	9.3%	9.4%	9.4%	9.5%	9.5%	
Tax	-3.6	-4.0	-4.5	-5.1	-5.8	-6.2	-6.6	-7.0	-7.4	-7.7	
Tax rate	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	
Depr. & Amort.	10.2	9.8	9.9	10.2	10.3	11.2	12.0	12.7	13.3	13.8	
% of sales	6.6%	5.9%	5.6%	5.3%	5.0%	5.0%	5.1%	5.1%	5.1%	5.1%	
Capex	-9.5	-10.0	-10.2	-11.0	-11.1	-11.9	-12.7	-13.4	-14.0	-14.5	
% of sales	6.1%	6.0%	5.8%	5.8%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	
Change in WC & P	-3.5	-1.5	-0.8	-0.7	0.2	0.2	0.2	0.2	0.2	0.1	
% of sales	2.2%	0.9%	0.4%	0.4%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%	
Free Cash Flow	5.7	7.6	9.5	10.4	12.9	14.0	15.0	15.9	16.7	17.4	401.1
growth rate	nm	32.4%	24.9%	9.7%	23.5%	8.9%	7.3%	6.0%	4.9%	3.9%	2.5%
Present Value FCF	5.7	7.2	8.4	8.6	9.9	10.1	10.1	10.0	9.8	9.6	220.6
PV Phase I	39.7					Risk free rate	3.5%	Targ. equity ratio		60%	
PV Phase II	49.6					Premium Equity	5.0%	Beta		1.1	
PV Phase III	220.6					Premium Debt	2.0%	WACC		6.9%	
Enterprise value	309.9					Sensitivity	Growth in phase III				
- Net Debt (Cash)	22.8						1.5%	2.0%	2.5%	3.0%	3.5%
- Pension Provisions	0.3					6.25%	27.7	30.3	33.6	37.9	43.8
- Minorities & Peripherals	1.2					6.59%	25.5	27.7	30.5	33.9	38.6
+ MV of financial assets						WACC 6.94%	23.7	25.5	27.8	30.7	34.4
- Paid-out dividends for last FY	1.6					7.29%	22.0	23.6	25.5	27.9	30.9
+/- Other EV items						7.63%	20.6	21.9	23.6	25.6	28.0
Equity value	284.0										
Number of shares	10.2										
Value per share (€)	27.8										
Current Price (€)	19.9										
Upside	40%										

Source: FactSet (closing price as of 04 February 2019), Pareto

Preliminary key financials 2018e meet expectations

2018e EBIT-margin at 7.9% -
fully in line

First published preliminary key financial figures are in line with our estimates. The key message from the company's statement in our view is that the EBIT-margin of 7.9% improves as expected (FY 2015: 0.9% only!). It is helpful that First Sensor is not engaged in the consumer electronics sector like for e.g. the Austrian ams.

The company's mid-term target is to reach a sustainable level of 10% until FY 2020e compared to our estimate of 8.5% based on purely organic growth. By division, Mobility with a ~10% sales decline in FY 2018 (share of group sales of ~30%) ranks behind the other two divisions Industrial with sales up 7% yoy and Medical with an increase of 23% yoy. The set of results will have a positive sentiment in our view.

Exhibit 2: Preliminary financials 2018 meet our expectations

First Sensor EUR m	FY 2017	FY 2018 Prelim. figs.	FY 2018e		Deviation		Pareto estimates		
			Cons. *	Pareto	Cons. *	Pareto	2018e	2019e	2020e
Group sales	147.5	155.1	n.m.	155.1	n.m.	0.0%	155.1	165.5	177.0
EBIT	10.6	12.2	n.m.	12.2	n.m.	0.3%	12.2	13.3	15.1
EBIT-margin, %	7.2%	7.9%	n.m.	7.8%	n.m.	0.3%	7.8%	8.1%	8.5%

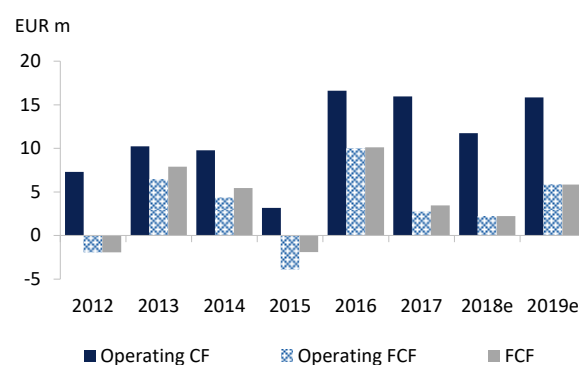
Source: * FactSet, Company data, Pareto

Exhibit 3: EBIT-margin improvement continues



Source: Company data, Pareto

Exhibit 4: First Sensor a strong cash flow generator



Source: Company data, Pareto

Exhibit 5: First Sensor: Group key figures outlook

EUR m	2013	2014	2015	2016	2017	2018e	2019e	2020e	2021e	2022e	CAGR 13-17
Order intake	121.4	139.3	142.3	132.9	163.7	174.3	185.1	195.3	203.5	217.0	7.8%
Sales	108.5	124.0	137.7	150.1	147.5	155.1	165.5	177.0	191.0	207.0	8.0%
EBIT reported	2.7	4.1	1.2	10.0	10.6	12.2	13.3	15.1	17.0	19.2	40.6%
Operating Cash Flow	10.2	9.8	3.2	16.6	16.0	11.7	15.9	18.0	19.0	21.4	11.7%
Analysis											
Book-to-bill-ratio (x)	1.12	1.12	1.03	0.89	1.11	1.12	1.12	1.10	1.07	1.05	
EBIT-margin, %	2.5%	3.3%	0.9%	6.6%	7.2%	7.9%	8.1%	8.5%	8.9%	9.3%	
Oper. CF-margin, %	9.4%	7.9%	2.3%	11.1%	10.8%	7.6%	9.6%	10.2%	10.0%	10.4%	
Cash conversion (x) *	3.8	2.4	2.7	1.7	1.5	1.0	1.2	1.2	1.1	1.1	

* Operating Cash Flow / EBIT reported

Source: Company data, Pareto

Complete FY 2018 annual report publication: **21 March 2019**

First Sensor AG

Update

PROFIT & LOSS (fiscal year) (EURm)	2013	2014	2015	2016	2017	2018e	2019e	2020e
Revenues	109	124	138	150	148	155	166	177
EBITDA	11	13	12	19	20	22	23	25
Depreciation & amortisation	(8)	(9)	(10)	(9)	(9)	(10)	(10)	(10)
EBIT	3	4	1	11	9	12	13	15
Net interest	(4)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Other financial items	-	-	-	-	-	-	-	-
Profit before taxes	(1)	2	(1)	9	7	10	11	13
Taxes	1	(1)	(0)	(3)	(3)	(3)	(3)	(4)
Minority interest	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Net profit	(1)	0	(2)	6	4	7	8	9
EPS reported	(0.05)	0.02	(0.17)	0.56	0.40	0.66	0.74	0.86
EPS adjusted	0.27	0.02	(0.17)	0.72	0.40	0.66	0.74	0.86
DPS	-	-	-	-	0.16	0.18	0.20	0.20
BALANCE SHEET (EURm)	2013	2014	2015	2016	2017	2018e	2019e	2020e
Tangible non current assets	38	36	35	33	36	37	36	36
Other non-current assets	55	52	50	49	49	48	48	49
Other current assets	43	43	49	48	49	53	55	56
Cash & equivalents	11	15	22	24	26	27	31	36
Total assets	147	146	155	154	160	165	171	177
Total equity	70	72	71	77	82	87	93	100
Interest-bearing non-current debt	47	44	55	48	48	49	50	49
Interest-bearing current debt	-	-	-	-	-	-	-	-
Other Debt	29	30	29	28	29	28	28	29
Total liabilities & equity	147	146	155	154	160	165	171	177
CASH FLOW (EURm)	2013	2014	2015	2016	2017	2018e	2019e	2020e
Cash earnings	4	11	9	16	18	15	17	19
Change in working capital	6	(2)	(6)	1	(2)	(3)	(2)	(1)
Cash flow from investments	(2)	(4)	(5)	(7)	(13)	(10)	(10)	(10)
Cash flow from financing	(4)	(3)	10	(8)	(2)	(1)	(2)	(3)
Net cash flow	(1)	3	7	2	2	2	4	5
CAPITALIZATION & VALUATION (EURm)	2013	2014	2015	2016	2017	2018e	2019e	2020e
Share price (EUR end)	8.3	9.8	12.4	14.5	21.8	21.3	19.9	19.9
Number of shares end period	10	10	10	10	10	10	10	10
Net interest bearing debt	36	30	33	24	23	22	18	12
Enterprise value	118	128	160	173	246	241	222	216
EV/Sales	1.1	1.0	1.2	1.2	1.7	1.6	1.3	1.2
EV/EBITDA	10.7	9.8	13.9	8.9	12.5	10.8	9.6	8.7
EV/EBIT	43.8	31.2	-	16.5	27.3	19.8	16.7	14.3
P/E reported	-	-	-	25.7	53.8	32.3	26.9	23.2
P/E adjusted	30.5	-	-	20.2	53.8	32.3	26.9	23.2
P/B	1.2	1.4	1.8	1.9	2.8	2.5	2.2	2.1
FINANCIAL ANALYSIS & CREDIT METRICS	2013	2014	2015	2016	2017	2018e	2019e	2020e
ROE adjusted (%)	3.9	0.2	-	9.8	5.2	8.0	8.4	9.1
Dividend yield (%)	-	-	-	-	0.7	0.8	1.0	1.0
EBITDA margin (%)	10.2	10.6	8.4	12.9	13.3	14.4	14.0	14.1
EBIT margin (%)	2.5	3.3	0.9	7.0	6.1	7.8	8.1	8.5
NIBD/EBITDA	3.23	2.27	2.86	1.26	1.16	0.99	0.79	0.50
EBITDA/Net interest	2.92	5.41	4.86	10.84	10.55	10.54	10.86	11.67

Disclaimer and legal disclosures

Origin of the publication or report

This publication or report originates from Pareto Securities AS ("Pareto Securities"), reg. no. 956 632 374 (Norway), Pareto Securities AB, reg. no. 556206-8956 (Sweden) or Pareto Securities Limited, reg. no. 3994976, (United Kingdom) (together the Group Companies or the "Pareto Securities Group") acting through their common unit Pareto Securities Research. The Group Companies are supervised by the Financial Supervisory Authority of their respective home countries.

Content of the publication or report

This publication or report has been prepared solely by Pareto Securities Research.

Opinions or suggestions from Pareto Securities Research may deviate from recommendations or opinions presented by other departments or companies in the Pareto Securities Group. The reason may typically be the result of differing time horizons, methodologies, contexts or other factors.

Sponsored research

Please note that if this report is labelled as "sponsored research" on the front page, Pareto Securities has entered into an agreement with the company about the preparation of research reports and receives compensation from the company for this service. Sponsored research is prepared by the Research Department of Pareto Securities without any instruction rights by the company. Sponsored research is however commissioned for and paid by the company and such material is considered by Pareto Securities to qualify as an acceptable minor non-monetary benefit according to the EU MiFID II Directive.

Basic and methods for assessment

Opinions and price targets are based on one or more methods of valuation, for instance cash flow analysis, use of multiples, behavioral technical analyses of underlying market movements in combination with considerations of the market situation and the time horizon. Key assumptions of forecasts, price targets and projections in research cited or reproduced appear in the research material from the named sources. The date of publication appears from the research material cited or reproduced. Opinions and estimates may be updated in subsequent versions of the publication or report, provided that the relevant company/issuer is treated anew in such later versions of the publication or report.

Pareto Securities Research may provide credit research with more specific price targets based on different valuation methods, including the analysis of key credit ratios and other factors describing the securities creditworthiness, peer group analysis of securities with similar creditworthiness and different DCF-valuations. All descriptions of loan agreement structures and loan agreement features are obtained from sources which Pareto Securities Research believes to be reliable, but Pareto Securities Research does not represent or warrant their accuracy. Be aware that investors should go through the specific complete loan agreement before investing in any bonds and not base an investment decision based solely on information contained in this publication or report.

Pareto Securities Research has no fixed schedule for updating publications or reports.

Unless otherwise stated on the first page, the publication or report has not been reviewed by the issuer before dissemination. In instances where all or part of a report is presented to the issuer prior to publication, the purpose is to ensure that facts are correct.

Validity of the publication or report

All opinions and estimates in this publication or report are, regardless of source, given in good faith and may only be valid as of the stated date of this publication or report and are subject to change without notice.

No individual investment or tax advice

The publication or report is intended only to provide general and preliminary information to investors and shall not be construed as the basis for any investment decision. This publication or report has been prepared by Pareto Securities Research as general information for private use of investors to whom the publication or report has been distributed, but it is not intended as a personal recommendation of particular financial instruments or strategies and thus it does not provide individually tailored investment advice, and does not take into account the individual investor's particular financial situation, existing holdings or liabilities, investment knowledge and experience, investment objective and horizon or risk profile and preferences. The investor must particularly ensure the suitability of an investment as regards his/her financial and fiscal situation and investment objectives. The investor bears the risk of losses in connection with an investment.

Before acting on any information in this publication or report, we recommend consulting your financial advisor.

The information contained in this publication or report does not constitute advice on the tax consequences of making any particular investment decision. Each investor shall make his/her own appraisal of the tax and other financial merits of his/her investment.

Sources

This publication or report may be based on or contain information, such as opinions, recommendations, estimates, price targets and valuations which emanate from Pareto Securities Research' analysts or representatives, publicly available information, information from other units or companies in the Group Companies, or other named sources.

To the extent this publication or report is based on or contains information emanating from other sources ("Other Sources") than Pareto Securities Research ("External Information"), Pareto Securities Research has deemed the Other Sources to be reliable but neither the companies in the Pareto Securities Group, others associated or affiliated with said companies nor any other person, guarantee the accuracy, adequacy or completeness of the External Information.

Ratings

Equity ratings:	"Buy"	Pareto Securities Research expects this financial instrument's total return to exceed 10% over the next 12 months
	"Hold"	Pareto Securities Research expects this financial instrument's total return to be between -10% and 10% over the next 12 months
	"Sell"	Pareto Securities Research expects this financial instrument's total return to be negative by more than 10% over the next 12 months

Analysts Certification

The research analyst(s) whose name(s) appear on research reports prepared by Pareto Securities Research certify that: (i) all of the views expressed in the research report accurately reflect their personal views about the subject security or issuer, and (ii) no part of the research analysts' compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analysts in research reports that are prepared by Pareto Securities Research.

The research analysts whose names appears on research reports prepared by Pareto Securities Research received compensation that is based upon various factors including Pareto Securities' total revenues, a portion of which are generated by Pareto Securities' investment banking activities.

Limitation of liability

Pareto Securities Group or other associated and affiliated companies assume no liability as regards to any investment, divestment or retention decision taken by the investor on the basis of this publication or report. In no event will entities of the Pareto Securities Group or other associated and affiliated companies be liable for direct, indirect or incidental, special or consequential damages resulting from the

Risk information

The risk of investing in certain financial instruments, including those mentioned in this document, is generally high, as their market value is exposed to a lot of different factors such as the operational and financial conditions of the relevant company, growth prospects, change in interest rates, the economic and political environment, foreign exchange rates, shifts in market sentiments etc. Where an investment or security is denominated in a different currency to the investor's currency of reference, changes in rates of exchange may have an adverse effect on the value, price or income of or from that investment to the investor. Past performance is not a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. When investing in individual shares, the investor may lose all or part of the investments.

Conflicts of interest

Companies in the Pareto Securities Group, affiliates or staff of companies in the Pareto Securities Group, may perform services for, solidify business from, make a market in, hold long or short positions in, or otherwise be interested in the investments (including derivatives) of any company mentioned in the publication or report. In addition Pareto Securities Group, or affiliates, may from time to time have a broking, advisory or other relationship with a company which is the subject of or referred to in the relevant Research, including acting as that company's official or sponsoring broker and providing investment banking or other financial services. It is the policy of Pareto to seek to act as corporate adviser or broker to some of the companies which are covered by Pareto Securities Research. Accordingly companies covered in any Research may be the subject of marketing initiatives by the Investment Banking Department.

To limit possible conflicts of interest and counter the abuse of inside knowledge, the analysts of Pareto Securities Research are subject to internal rules on sound ethical conduct, the management of inside information, handling of unpublished research material, contact with other units of the Group Companies and personal account dealing. The internal rules have been prepared in accordance with applicable legislation and relevant industry standards. The object of the internal rules is for example to ensure that no analyst will abuse or cause others to abuse confidential information. It is the policy of Pareto Securities Research that no link exists between revenues from capital markets activities and individual analyst remuneration. The Group Companies are members of national stockbrokers' associations in each of the countries in which the Group Companies have their head offices. Internal rules have been developed in accordance with recommendations issued by the stockbrokers associations. This material has been prepared following the Pareto Securities Conflict of Interest Policy.

The guidelines in the policy include rules and measures aimed at achieving a sufficient degree of independence between various departments, business areas and sub-business areas within the Pareto Securities Group in order to, as far as possible, avoid conflicts of interest from arising between such departments, business areas and sub-business areas as well as their customers. One purpose of such measures is to restrict the flow of information between certain business areas and sub-business areas within the Pareto Securities Group, where conflicts of interest may arise and to safeguard the impartialness of the employees. For example, the Investment Banking departments and certain other departments included in the Pareto Securities Group are surrounded by arrangements, so-called Chinese Walls, to restrict the flows of sensitive information from such departments. The internal guidelines also include, without limitation, rules aimed at securing the impartialness of, e.g., analysts working in the Pareto Securities Research departments, restrictions with regard to the remuneration paid to such analysts, requirements with respect to the independence of analysts from other departments within the Pareto Securities Group rules concerning contacts with covered companies and rules concerning personal account trading carried out by analysts.

Distribution restriction

The securities referred to in this publication or report may not be eligible for sale in some jurisdictions and persons into whose possession this document comes should inform themselves about and observe any such restrictions. This publication or report is not intended for and must not be distributed to private customers in the US, or retail clients in the United Kingdom, as defined by the Financial Conduct Authority (FCA).

This research is only intended for and may only be distributed to institutional investors in the United States and U.S. entities seeking more information about any of the issuers or securities discussed in this report should contact Pareto Securities Inc. at 150 East 52nd Street, New York, NY 10022, Tel. 212 829 4200.

Pareto Securities Inc. is a broker-dealer registered with the U.S. Securities and Exchange Commission and is a member of FINRA & SIPC. U.S. To the extent required by applicable U.S. laws and regulations, Pareto Securities Inc. accepts responsibility for the contents of this publication. Investment products provided by or through Pareto Securities Inc. or Pareto Securities Research are not FDIC insured, may lose value and are not guaranteed by Pareto Securities Inc. or Pareto Securities Research. Investing in non-U.S. securities may entail certain risks. This document does not constitute or form part of any offer for sale or subscription, nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever. The securities of non-U.S. issuers may not be registered with or subject to SEC reporting and other requirements. The information available about non-U.S. companies may be limited, and non-U.S. companies are generally not subject to the same uniform auditing and reporting standards as U.S. companies. Market rules, conventions and practices may differ from U.S. markets, adding to transaction costs or causing delays in the purchase or sale of securities. Securities of some non-U.S. companies may not be as liquid as securities of comparable U.S. companies. Fluctuations in the values of national currencies, as well as the potential for governmental restrictions on currency movements, can significantly erode principal and investment returns.

Pareto Securities Research may have material conflicts of interest related to the production or distribution of this research report which, with regard to Pareto Securities Research, are disclosed herein.

Distribution in Singapore

Pareto Securities Pte Ltd holds a Capital Markets Services License is an exempt financial adviser under Financial Advisers Act, Chapter 110 ("FAA") of Singapore and a subsidiary of Pareto Securities AS.

This report is directed solely to persons who qualify as "accredited investors", "expert investors" and "institutional investors" as defined in section 4A(1) Securities and Futures Act, Chapter 289 ("SFA") of Singapore. This report is intended for general circulation amongst such investors and does not take into account the specific investment objectives, financial situation or particular needs of any particular person. You should seek advice from a financial adviser regarding the suitability of any product referred to in this report, taking into account your specific financial objectives, financial situation or particular needs before making a commitment to purchase any such product. Please contact Pareto Securities Pte Ltd, 16 Collyer Quay, # 27-02 Income at Raffles, Singapore 049318, at +65 6408 9800 in matters arising from, or in connection with this report.

Additional provisions on Recommendations distributed in the Canada

Canadian recipients of this research report are advised that this research report is not, and under no circumstances is it to be construed as an offer to sell or a solicitation of or an offer to buy any securities that may be described herein. This research report is not, and under no circumstances is it to be construed as, a prospectus, offering memorandum, advertisement or a public offering in Canada of such securities. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon this research report or the merits of any securities described or discussed herein and any representation to the contrary is an offence. Any securities described or discussed within this research report may only be distributed in Canada in accordance with applicable provincial and territorial securities laws. Any offer or sale in Canada of the securities described or discussed herein will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. Under no circumstances is the information contained herein to be construed as investment advice in any province or territory of Canada nor should it be construed as being tailored to the needs of the recipient. Canadian recipients are advised that Pareto Securities AS, its affiliates and its authorized agents are not responsible for, nor do they accept, any liability whatsoever for any direct or consequential loss arising from any use of this research report or the information contained herein.

Distribution in United Kingdom

This publication is produced in accordance with COBS 12.3 as Non-Independent Research and approved under part IV article 19 of The Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "FPO") by Pareto Securities limited for communication in the United Kingdom only to investment professionals as that term is defined in article 19(5) of the FPO. This publication is issued for the benefit of persons who qualify as eligible counterparties or professional clients and should be made available only to such persons and is exempt from the restriction on financial promotion in s21 of the Financial Services and Markets Act 2000 in reliance on provision in the FPO.

Copyright

This publication or report may not be mechanically duplicated, photocopied or otherwise reproduced, in full or in part, under applicable copyright laws. Any infringement of Pareto Securities Research's copyright can be pursued legally whereby the infringer will be held liable for any and all losses and expenses incurred by the infringement.

Appendix A

Disclosure requirements pursuant to the Norwegian Securities Trading Regulations section 3-10 (2) and section 3-11 (1), letters a-b

The below list shows companies where Pareto Securities AS - together with affiliated companies and/or persons – own a portion of the shares exceeding 5 % of the total share capital in any company where a recommendation has been produced or distributed by Pareto Securities AS.

Companies	No. of shares	Holdings in %	Companies	No. of shares	Holdings in %
Helgeland Sparebank	1,988,203	9.53%	SpareBank 1Østfold Akersl	1,129,560	9.12%
Pareto Bank ASA	10,842,964	18.50%	Sparebanken Vest	4,506,060	7.63%

Pareto Securities AS or its affiliates own as determined in accordance with Section 13(d) of the US Exchange Act, 1 % or more of the equity securities of:

Companies	No. of shares	Holdings in %	Companies	No. of shares	Holdings in %
Helgeland Sparebank	1,988,203	9.53%	SpareBank 1Østfold Akersl	1,129,560	9.12%
NHST Media Group AS	21,475	1.85%	Sparebanken Møre	311,739	3.15%
Pareto Bank ASA	10,842,964	18.50%	Sparebanken Sør	460,589	2.94%
Selvaag Bolig ASA	2,174,147	2.32%	Sparebanken Vest	4,506,060	7.63%
SpareBank 1BV	1,549,440	2.46%	Totens Sparebank	78,246	1.28%
SpareBank 1SMN	1,879,292	1.45%			

Pareto Securities AS may hold financial instruments in companies where a recommendation has been produced or distributed by Pareto Securities AS in connection with rendering investment services, including Market Making.

Please find below an overview of material interests in shares held by employees in Pareto Securities AS, in companies where a recommendation has been produced or distributed by Pareto Securities AS. "By material interest" means holdings exceeding a value of NOK 50 000.

Company	Analyst holdings*	Total holdings	Company	Analyst holdings*	Total holdings	Company	Analyst holdings*	Total holdings
AF Gruppen	0	1,675	Grieg Seafood	0	770	Prosafe	0	5,984
Aker	0	514	Helgeland Sparebank	0	1,700	Protector Forsikring	0	14,685
Aker BP	0	5,420	Høegh LNG	0	7,203	REC Silicon	0	159,249
Aker Solutions	0	1,825	Jæren Sparebank	0	500	SailMar	0	130
AKVA Group	0	1,500	Komplett Bank	0	99,934	Sandnes Sparebank	0	17,282
Archer	0	73,520	Kongsberg Gruppen	0	5,901	Scatec Solar	0	35,635
Atea	0	450	KWS Saat	15	15	Seadrill	0	7,384
Austevoll Seafood	0	5,780	Lerøy Seafood	0	33,795	Selvaag Bolig	0	5,000
Avance Gas	0	34,095	Magseis Fairfield	0	12,879	SpareBank 1BV	0	10,000
Axactor	0	15,933	Monobank	0	1,355,000	SpareBank 1Nord-Norge	0	30,000
Bonheur	0	45,209	Mowi	0	1,864	SpareBank 1SMN	0	16,590
Borr Drilling	0	4,415	NEXT Biometrics	0	2,621	SpareBank 1SR-Bank	0	39,187
BWLPG	0	5,569	Nordic Semiconductor	0	5,115	SpareBank 1Østlandet	0	4,041
DNB	0	35,072	Norsk Hydro	0	113,571	Sparebanken Møre	0	6,550
DNO	0	28,392	Northern Drilling	0	4,060	Sparebanken Sør	0	43,280
DOF	0	138,498	Norwegian Air Shuttle	0	3,264	Sparebanken Øst	0	3,000
Entra	0	14,362	Norwegian Property	0	150,000	Storebrand	0	5,005
Equinor	0	10,101	Ocean Yield	0	32,047	Subsea 7	0	9,001
Europris	0	14,510	Odffjell Drilling	0	8,731	Telenor	0	2,272
Faroe Petroleum	9,600	9,600	Orkla	0	23,746	TGS-NOPEC	0	2,050
Flex LNG	0	13,677	Panoro Energy	0	5,670	XXL	0	10,546
Frontline	0	14,043	Pareto Bank	0	967,091	Yara International	0	19,786
Gjensidige Forsikring	0	8,547	Petroleum Geo-Services	0	60,134	Zenterio	0	78,865
Golden Ocean Group	0	1,824						

This overview is updated monthly (last updated 17.01.2019).

*Analyst holdings refer to positions held by the Pareto Securities AS analyst covering the company.

Appendix B

Disclosure requirements pursuant to the Norwegian Securities Trading Regulation § 3-11, letters e-f, ref the Securities Trading Act Section 3-10

Overview over issuers of financial instruments where Pareto Securities AS have prepared or distributed investment recommendation, where Pareto Securities AS have been lead manager/co-lead manager or have rendered publicly known not immaterial investment banking services over the previous 12 months:

Africa Energy	Floatel	Panoro Energy
Akva Group	Fortum	Pareto Bank
APC Forsikringsmæglere A/S	Gfinity Plc	PetroMatad Limited
Arnarlax	Gulf Keystone Petroleum	Petroleum Geo-Services
Atlantic Sapphire AS	Hertha BSC GmbH	Pioneer Public Properties Finland Oy
Avida Holding AB	Hunter Group	Point Resources AS
Bank Norwegian	Instabank	Quant AB
Bluewater Holding	Jactel AS	Rødovre Port Holding A/S
Borealis Finance	Klaveness Ship Holding	Sakthi Global Auto Holdings
Borr Drilling Limited	Magseis	Sand Hill Petroleum
Brado AB	McDermott International	SAS
Camanchaca	Monobank ASA	Scatec Solar
DNO ASA	Nemaska Lithium	Scorpio Tankers
DOF ASA	Northern Drilling	Shamara
Dof Subsea AS	Northmill Group AB	Siccar Point Energy
Echo Energy	Norwegian Air Shuttle	SL Bidco
Eco Atlantic Oil and Gas	Ocean Yield	Sparebank 1 Østlandet
Eidesvik Offshore	Odfjell	SpareBank 1 Buskerud-Vestfold
Eland Oil & Gas	Odfjell Drilling	Sparebanken Vest
FFS Bidco	Okea AS	Union Maritime Limited
Filo Mining Corp	Okeanis Eco Tankers	Vantage Drilling
Flex LNG	Pandion Energy	

This overview is updated monthly (this overview is for the period 31.12.2017 – 31.12.2018).

Appendix C

Disclosure requirements pursuant to the Norwegian Securities Trading Regulation § 3-11(4)

Distribution of recommendations

Recommendation	% distribution
Buy	73%
Hold	23%
Sell	4%

Distribution of recommendations (transactions*)

Recommendation	% distribution
Buy	91%
Hold	9%
Sell	0%

* Companies under coverage with which Pareto Securities Group has on-going or completed public investment banking services in the previous 12 months

This overview is updated monthly (last updated 17.01.2019).

Appendix D

This section applies to research reports prepared by Pareto Securities AB.

Disclosure of positions in financial instruments

The beneficial holding of the Pareto Group is 1 % or more of the total share capital of the following companies included in Pareto Securities AB's research coverage universe: None

The Pareto Group has material holdings of other financial instruments than shares issued by the following companies included in Pareto Securities AB's research coverage universe: None

Disclosure of assignments and mandates

Overview over issuers of financial instruments where Pareto Securities AB has prepared or distributed investment recommendation, where Pareto Securities AB has been lead manager or co-lead manager or has rendered publicly known not immaterial investment banking services over the previous twelve months:

Aspire	Green Landscaping Holding	Powercell	Sedana Medical
Azelio	Jetpak Top Holding AB	Magnolia Bostad	Shamara Petroleum
Cibus Nordic Real Estate	Lehto Group	Scibase	Vostok New Ventures

Members of the Pareto Group provide market making or other liquidity providing services to the following companies included in Pareto Securities AB's research coverage universe:

Byggmästare Anders J Ahlström	Cibus Nordic Real Estate	Saltängen Property Invest	Shamara Petroleum
Byggpartner i Dalarna	Delarka Holding	SciBase Holding	Tethys Oil
Cavotec	Isofol Medical	Sedana Medical	Vostok Emerging Finance

Members of the Pareto Group have entered into agreements concerning the inclusion of the company in question in Pareto Securities AB's research coverage universe with the following companies: None
This overview is updated monthly (last updated 15.01.2019).

Appendix E

Disclosure requirements pursuant to the Norwegian Securities Trading Regulation § 3-11, letter d, ref the Securities Trading Act Section 3-10

Designated Sponsor

Pareto Securities acts as a designated sponsor for the following companies, including the provision of bid and ask offers. Therefore, we regularly possess shares of the company in our proprietary trading books. Pareto Securities receives a commission from the company for the provision of the designated sponsor services.

2G Energy *	Freenet	MLP *	Siemens Healthineers AG
Aixtron *	Gesco *	MOBOTIX AG	SMT Scharf AG *
Baywa	GFT Technologies *	MTU Aero Engines	Surteco Group *
Biotest *	Gigaset *	OVH Holding AG	Syzygy AG *
Brenntag	Heidelberg Pharma *	Procredit Holding *	TAKKT AG
CORESTATE Capital Holding S.A.	Hypoport AG	PSI SOFTWARE AG *	Vapiano
Daldrup & Soehne *	Intershop Communications AG	PWO *	va-Q-tec *
Demire	Logwin *	RIB Software *	Viscom *
Epigenomics AG *	Manz AG *	S&T AG *	windeln.de
Euromicron AG *	MAX Automation SE *	Schaltbau Holding AG	
Eyemaxx Real Estate	Merkur Bank	SCOUT24	

* The designated sponsor services include a contractually agreed provision of research services.

Appendix F

Disclosure requirements pursuant to the Norwegian Securities Trading Regulation § 3-11, letter g, ref the Securities Trading Act Section 3-10

Sponsored Research

Pareto Securities has entered into an agreement with these companies about the preparation of research reports and—in return—receives compensation.

Adler Modemaerkte	Hypoport AG	OHB SE	Vapiano
Baywa	Intershop Communications AG	OVH Holding AG	
BB Biotech	Merkur Bank	Schaltbau Holding AG	
Eyemaxx Real Estate	MOBOTIX AG	Siegfried Holding AG	

This overview is updated monthly (last updated 17.01.2018).