

<b>Buy</b> <b>EUR 25.00</b>  Price <b>EUR 17.80</b> Upside <b>40.4 %</b>	<b>Value Indicators:</b> EUR DCF: 25.00 FCF-Value Potential 2022: 21.50	<b>Share data:</b> Bloomberg: V3S GR Reuters: V3SG ISIN: DE000A0KEXC7	<b>Description:</b> Leading point-of-sale systems with a focus on the gastronomy and bakery sector
	<b>Market Snapshot:</b> EUR m Market cap: 129.2 No. of shares (m): 7.3 EV: 129.2 Freefloat MC: 56.6 Ø Trad. Vol. (30d): 657.76 th	<b>Shareholders:</b> Freefloat 43.8 % Thomas Stümmler 24.9 % Jens Reckendorf 21.1 % Primepulse SE 10.3 % TBF Global Asset Management 5.6 %	<b>Risk Profile (WRe):</b> 2019e Beta: 1.3 Price / Book: 11.1 x Equity Ratio: 43 %

## Peer Lightspeed acquires Gastrofix for USD 100m

The Canadian peer Lightspeed last week announced the acquisition of **Gastrofix for USD 100m**.

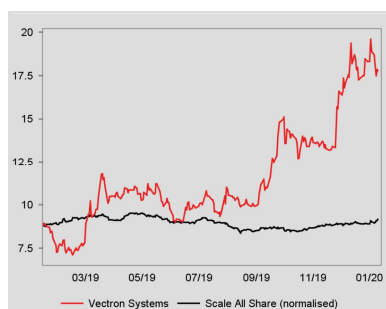
### Who are Lightspeed / Gastrofix?

- **Lightspeed** (Montreal, Canada; successful IPO in March 2019) is a supplier of POS software (iPad-based) mainly for retail or restaurant customers. Lightspeed has about 57,000 customers mainly in North America. In Europe the company has a stronger presence in the Netherlands and Belgium. Like Vectron, Lightspeed is increasingly integrating payment processing in its own software. With overall revenue of USD 160m, the average revenue per customer is ca. USD 200 per month. The payment opportunity should double this value. Breakeven is expected to be reached in two years. The valuation is currently ca. 17x revenue.
- **Gastrofix** also offers POS software (iPad-based) for the European region. In 2019, the company achieved revenues of about EUR 11m with ca. 8,000 customers mainly in Germany, Austria, Switzerland and Norway. Gastrofix should already be generating about 80-90% of its revenue with recurring revenue (monthly fees for use of cash-register software). With about 140 employees (for comparison: Vectron has ca. 180 employees) Gastrofix should still have been clearly loss-making in 2019.

**Lightspeed acquires Gastrofix for USD 100m** (USD 61m cash + ca. USD 40m in shares) plus earn-out components of up to USD 26m if targets are surpassed. The **revenue multiple of ~8x** (based on 2019) clearly shows not only the strategic price paid to take over Gastrofix, one of the leading POS software suppliers, but also the growth potential offered by the transformation of the German and the European cash register market towards cash registers as an SaaS platform. **Applying this to Vectron's revenues results in a comparable valuation of EUR 26 (2019) – EUR 57 (2020) per share.**

In the area of iPad-based POS software (such as e.g. Orderbird) Lightspeed should, with the acquisition, become the leading player in Europe. In the market for proprietary cash register systems (advantage is a higher robustness and stable operation in unfavourable environments like restaurants or bakeries), Vectron with a market share of 25-30% in the core regions of Germany, Austria, Switzerland and BeNeLux (and with ~80,000 customers, a far higher share than Gastrofix) is still in an outstanding position to establish an SaaS model. In particular, the roll-out of the Duratec cash registers without hardware costs for the hospitality customers and refinancing via integrated digital services, like e.g. payment in the context of the upcoming fiscal upgrades, should lead to market share gains in 2020/21 and an increase in recurring sales. The introduction of digital services like Datev/Cloud connection to the existing Vectron customer base should also become increasingly visible in 2020.

With the takeover of Gastrofix, **consolidation continues in the fragmented market for tablet-based POS software**. The dominant European player of the future could crystallise out of Lightspeed. As **differences in the pitches to customers** (proprietary hardware vs. simple iPad cash registers) should ensure that this does not have a negative impact on the roll-out of the Duratec cash registers, the positive valuation signal prevails. Vectron should already have started the roll-out of Duratec cash registers. **Towards the end of Q1, first reliable information regarding customer figures etc. could provide for further impetus here.** The price target and rating remain unchanged.

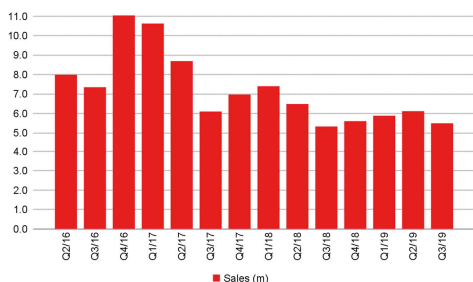


Rel. Performance vs Scale All	
1 month:	-5.2 %
6 months:	69.0 %
Year to date:	-5.6 %
Trailing 12 months:	99.4 %

Company events:	

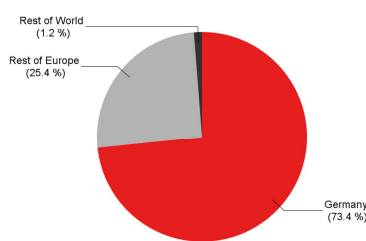
FY End: 31.12. in EUR m	CAGR (18-21e)	2015	2016	2017	2018	2019e	2020e	2021e
<b>Sales</b>	35.2 %	25.2	33.7	32.4	24.8	23.8	52.2	61.3
Change Sales yoy		12.5 %	33.7 %	-4.0 %	-23.3 %	-4.1 %	119.2 %	17.4 %
Gross profit margin		58.5 %	54.4 %	56.7 %	53.7 %	56.0 %	56.0 %	57.0 %
<b>EBITDA</b>	-	2.6	3.6	2.3	-3.8	-2.3	6.6	10.5
Margin		10.5 %	10.7 %	7.0 %	-15.2 %	-9.5 %	12.7 %	17.2 %
<b>EBIT</b>	-	2.1	3.1	1.8	-5.4	-2.9	6.0	9.9
Margin		8.2 %	9.1 %	5.4 %	-22.0 %	-12.1 %	11.5 %	16.2 %
<b>Net income</b>	-	1.2	2.0	1.1	-3.9	-3.1	4.0	6.5
<b>EPS</b>	-	0.79	1.23	0.16	-0.59	-0.43	0.55	0.89
<b>EPS adj.</b>	-	0.79	1.23	0.16	-0.59	-0.43	0.55	0.89
<b>DPS</b>	44.2 %	0.30	1.00	0.05	0.05	0.05	0.10	0.15
Dividend Yield		6.6 %	9.0 %	0.2 %	0.3 %	0.3 %	0.6 %	0.8 %
<b>FCFPS</b>		0.72	0.23	-0.46	-0.40	-0.54	0.13	0.93
<b>FCF / Market cap</b>		16.0 %	2.1 %	-1.8 %	-2.3 %	-3.0 %	0.7 %	5.2 %
<b>EV / Sales</b>		n.a.	0.3 x	5.0 x	5.2 x	5.5 x	2.5 x	2.0 x
<b>EV / EBITDA</b>		n.a.	2.9 x	71.4 x	n.a.	n.a.	19.5 x	11.7 x
<b>EV / EBIT</b>		n.a.	3.4 x	92.2 x	n.a.	n.a.	21.5 x	12.4 x
<b>P / E</b>		5.7 x	9.1 x	154.5 x	n.a.	n.a.	32.4 x	20.0 x
<b>P / E adj.</b>		5.7 x	9.1 x	154.5 x	n.a.	n.a.	32.4 x	20.0 x
<b>FCF Potential Yield</b>		n.a.	21.8 %	0.9 %	-1.8 %	-2.0 %	3.5 %	5.9 %
<b>Net Debt</b>		-1.7	-7.2	-1.7	1.2	0.5	-0.1	-6.1
<b>ROCE (NOPAT)</b>		23.2 %	29.8 %	11.2 %	n.a.	n.a.	30.8 %	46.5 %
<b>Guidance:</b>		2020: Sales > EUR 50m; EBIT margin low double digit						

**Sales development**  
in EUR m



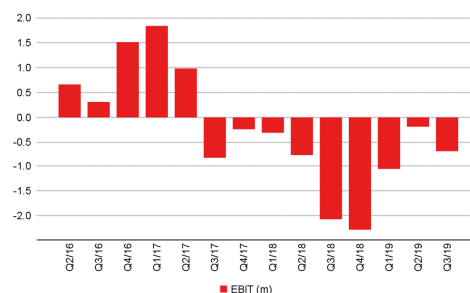
Source: Warburg Research

**Sales by regions**  
2017; in %



Source: Warburg Research

**EBIT development**  
in EUR m



Source: Warburg Research

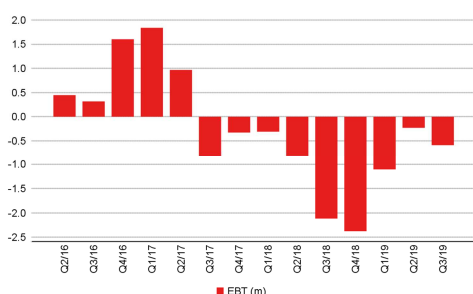
## Company Background

- Vectron is a leading provider of POS systems. The products are positioned in the medium to premium segment. With its high degree of functionality, Vectron is one of the technology and innovation leaders.
- Vectron focuses on the market for proprietary POS systems (30% of the overall market). PC-based systems (bulk of the market) usually require higher maintenance and are primarily used by large chain stores.
- Vectron's market share is particularly high in the food service and bakery industries, where the company is market leader for proprietary systems in the German-speaking area with a market share of ca. 25%.
- Vectron has some 180 employees. About one-third are employed in development and product management as the company aims to maintain its position as technology leader.
- Since end of 2013, Vectron addresses non-premium market segments and new markets abroad with a second trademark (Duratec) and simpler systems

## Competitive Quality

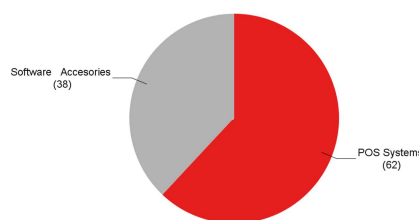
- Factors such as high reliability, ease of operation and low follow-up costs (maintenance/support) are required in the food service and bakery target sectors which are characterised by an atomistic customer structure.
- This explains the high penetration rate of the proprietary POS systems. Given that the large producers of POS systems mainly offer PC-based systems Vectron mainly has to face smaller competitors.
- Vectron differentiates itself from the mainly smaller competitors by rigorously pursuing the further development of the POS systems and thanks to the high additional use offered by wide functionality.
- By focusing on the premium segment, Vectron avoids the typical problems in the lower segment: solely differentiating on price. This is underpinned by gross margins of ca. 55% and ROCEs of well above 10%.
- Growth opportunities presently arise from the establishment of the cooperation with DeutschlandCard and potentially further partners.

**EBT development**  
in EUR m



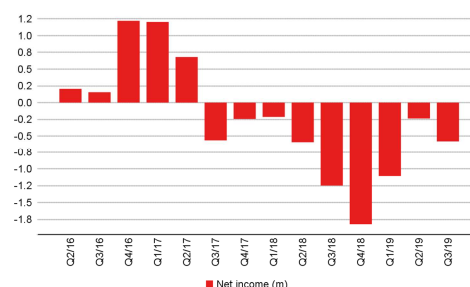
Source: Warburg Research

**Sales by segments**  
2017; in %



Source: Warburg Research

**Net income development**  
in EUR m



Source: Warburg Research

## DCF model

Figures in EUR m	Detailed forecast period			Transitional period										Term. Value
	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	
Sales	23.8	52.2	61.3	71.1	61.2	70.9	77.3	82.7	88.5	93.0	97.6	102.5	104.3	
Sales change	-4.1 %	119.2 %	17.4 %	16.0 %	-14.0 %	16.0 %	9.0 %	7.0 %	7.0 %	5.0 %	5.0 %	5.0 %	1.8 %	1.8 %
EBIT	-2.9	6.0	9.9	15.6	12.8	15.6	17.0	18.2	19.5	20.4	21.5	22.5	22.9	
EBIT-margin	-12.1 %	11.5 %	16.2 %	22.0 %	21.0 %	22.0 %	22.0 %	22.0 %	22.0 %	22.0 %	22.0 %	22.0 %	22.0 %	
Tax rate (EBT)	0.0 %	31.0 %	31.0 %	30.5 %	30.5 %	30.5 %	30.5 %	30.5 %	30.5 %	30.5 %	30.5 %	30.5 %	30.5 %	
NOPAT	-2.9	4.1	6.8	10.9	8.9	10.8	11.8	12.7	13.5	14.2	14.9	15.7	15.9	
Depreciation	0.6	0.6	0.6	1.1	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	
in % of Sales	2.6 %	1.2 %	1.0 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	
Changes in provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Change in Liquidity from														
- Working Capital	0.8	4.3	-0.2	1.3	-2.6	0.8	0.0	0.0	0.9	0.7	0.7	0.7	0.3	
- Capex	0.6	0.6	0.6	1.1	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	
Capex in % of Sales	2.4 %	1.1 %	0.9 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	1.6 %	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Free Cash Flow (WACC Model)	-3.7	-0.1	7.1	9.6	11.5	10.1	11.9	12.6	12.7	13.5	14.2	14.9	15.7	16
PV of FCF	-3.8	-0.1	6.3	7.8	8.8	7.1	7.7	7.6	7.1	7.0	6.8	6.6	6.4	105
share of PVs	1.31 %			40.44 %										58.24 %

### Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	7.00 %	Financial Strength	1.10
Cost of debt (after tax)	2.8 %	Liquidity (share)	1.50
Market return	7.00 %	Cyclicality	1.00
Risk free rate	1.50 %	Transparency	1.35
		Others	1.30
<b>WACC</b>	<b>7.98 %</b>	<b>Beta</b>	<b>1.25</b>

### Valuation (m)

Present values 2031e	75		
Terminal Value	105		
Financial liabilities	13		
Pension liabilities	0		
Hybrid capital	0		
Minority interest	0		
Market val. of investments	2		
Liquidity	12	No. of shares (m)	7.3
<b>Equity Value</b>	<b>181</b>	<b>Value per share (EUR)</b>	<b>24.98</b>

### Sensitivity Value per Share (EUR)

Beta	WACC	Terminal Growth							Beta	WACC	Delta EBIT-margin						
		1.00 %	1.25 %	1.50 %	1.75 %	2.00 %	2.25 %	2.50 %			-1.5 pp	-1.0 pp	-0.5 pp	+0.0 pp	+0.5 pp	+1.0 pp	+1.5 pp
1.45	9.0 %	20.03	20.36	20.71	21.09	21.49	21.92	22.38	1.45	9.0 %	19.45	20.00	20.54	21.09	21.63	22.17	22.72
1.35	8.5 %	21.61	22.01	22.43	22.88	23.37	23.90	24.47	1.35	8.5 %	21.13	21.71	22.30	22.88	23.47	24.05	24.64
1.30	8.2 %	22.48	22.92	23.39	23.89	24.43	25.02	25.66	1.30	8.2 %	22.06	22.67	23.28	23.89	24.50	25.11	25.72
1.25	8.0 %	23.42	23.90	24.42	24.98	25.58	26.24	26.95	1.25	8.0 %	23.07	23.71	24.34	24.98	25.61	26.24	26.88
1.20	7.7 %	24.43	24.96	25.53	26.16	26.83	27.57	28.37	1.20	7.7 %	24.17	24.83	25.49	26.16	26.82	27.48	28.14
1.15	7.5 %	25.52	26.11	26.75	27.44	28.20	29.03	29.94	1.15	7.5 %	25.37	26.06	26.75	27.44	28.13	28.82	29.51
1.05	7.0 %	27.98	28.71	29.51	30.38	31.35	32.41	33.59	1.05	7.0 %	28.10	28.86	29.62	30.38	31.14	31.90	32.66

- Model reflects fiscal regulation
- Increasing digitalization drives mid term sales and profitability increase
- Model is not yet reflecting the company target of > EUR 100m in sales by 2022

### Free Cash Flow Value Potential

Warburg Research's valuation tool "FCF Value Potential" reflects the ability of the company to generate sustainable free cash flows. It is based on the "FCF potential" - a FCF "ex growth" figure - which assumes unchanged working capital and pure maintenance capex. A value indication is derived via the perpetuity of a given year's "FCF potential" with consideration of the weighted costs of capital. The fluctuating value indications over time add a timing element to the DCF model (our preferred valuation tool).

in EUR m	2015	2016	2017	2018	2019e	2020e	2021e	
Net Income before minorities	n.a.	2.0	1.1	-3.9	-3.1	4.0	6.7	
+ Depreciation + Amortisation	n.a.	0.5	0.5	1.7	0.6	0.6	0.6	
- Net Interest Income	n.a.	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
- Maintenance Capex	n.a.	0.3	0.3	0.3	0.3	0.3	0.3	
+ Other	n.a.	0.0	0.0	0.0	0.0	0.0	0.0	
<b>= Free Cash Flow Potential</b>	<b>n.a.</b>	<b>2.3</b>	<b>1.4</b>	<b>-2.3</b>	<b>-2.6</b>	<b>4.5</b>	<b>7.2</b>	
FCF Potential Yield (on market EV)	n/a	21.8 %	0.9 %	-1.8 %	-2.0 %	3.5 %	5.9 %	
WACC	7.98 %	7.98 %	7.98 %	7.98 %	7.98 %	7.98 %	7.98 %	
<b>= Enterprise Value (EV)</b>	<b>n.a.</b>	<b>10.6</b>	<b>161.4</b>	<b>128.5</b>	<b>129.8</b>	<b>129.2</b>	<b>123.2</b>	
<b>= Fair Enterprise Value</b>	<b>n.a.</b>	<b>29.0</b>	<b>17.2</b>	<b>n.a.</b>	<b>n.a.</b>	<b>56.7</b>	<b>90.5</b>	
- Net Debt (Cash)	n.a.	0.5	0.5	0.5	0.5	-0.1	-6.1	
- Pension Liabilities	n.a.	0.0	0.0	0.0	0.0	0.0	0.0	
- Other	n.a.	0.0	0.0	0.0	0.0	0.0	0.0	
- Market value of minorities	n.a.	0.0	0.0	0.0	0.0	0.0	0.0	
+ Market value of investments	n.a.	0.0	0.0	0.0	0.0	0.0	0.0	
<b>= Fair Market Capitalisation</b>	<b>n.a.</b>	<b>28.4</b>	<b>16.7</b>	<b>n.a.</b>	<b>n.a.</b>	<b>56.8</b>	<b>96.6</b>	
Number of shares, average	1.5	1.6	6.6	6.6	7.2	7.3	7.3	
<b>= Fair value per share (EUR)</b>	<b>n.a.</b>	<b>17.77</b>	<b>2.53</b>	<b>n.a.</b>	<b>n.a.</b>	<b>7.82</b>	<b>13.30</b>	
premium (-) / discount (+) in %						-56.0 %	-25.3 %	
<b>Sensitivity Fair value per Share (EUR)</b>								
	10.98 %	n.a.	2.83	1.65	n.a.	n.a.	5.69	9.90
	9.98 %	n.a.	3.12	1.82	n.a.	n.a.	6.26	10.80
	8.98 %	n.a.	3.47	2.03	n.a.	n.a.	6.95	11.91
WACC	<b>7.98 %</b>	<b>n.a.</b>	<b>3.92</b>	<b>2.30</b>	<b>n.a.</b>	<b>n.a.</b>	<b>7.82</b>	<b>13.30</b>
	6.98 %	n.a.	4.49	2.64	n.a.	n.a.	8.94	15.09
	5.98 %	n.a.	5.25	3.09	n.a.	n.a.	10.44	17.47
	4.98 %	n.a.	6.32	3.72	n.a.	n.a.	12.53	20.80

- Rising value indication with higher business volume...
- ...this is due to a high operating leverage given gross margins of >50%

Valuation	2015	2016	2017	2018	2019e	2020e	2021e
Price / Book	0.9 x	1.2 x	11.4 x	12.6 x	11.1 x	8.7 x	6.2 x
Book value per share ex intangibles	4.84	8.75	1.94	1.51	1.57	2.02	2.82
EV / Sales	n.a.	0.3 x	5.0 x	5.2 x	5.5 x	2.5 x	2.0 x
EV / EBITDA	n.a.	2.9 x	71.4 x	n.a.	n.a.	19.5 x	11.7 x
EV / EBIT	n.a.	3.4 x	92.2 x	n.a.	n.a.	21.5 x	12.4 x
EV / EBIT adj.*	n.a.	3.4 x	92.2 x	n.a.	n.a.	21.5 x	12.4 x
P / FCF	6.3 x	48.7 x	n.a.	n.a.	n.a.	135.3 x	19.2 x
P / E	5.7 x	9.1 x	154.5 x	n.a.	n.a.	32.4 x	20.0 x
P / E adj.*	5.7 x	9.1 x	154.5 x	n.a.	n.a.	32.4 x	20.0 x
Dividend Yield	6.6 %	9.0 %	0.2 %	0.3 %	0.3 %	0.6 %	0.8 %
FCF Potential Yield (on market EV)	n.a.	21.8 %	0.9 %	-1.8 %	-2.0 %	3.5 %	5.9 %

\*Adjustments made for: -

## Consolidated profit & loss

In EUR m	2015	2016	2017	2018	2019e	2020e	2021e
<b>Sales</b>	<b>25.2</b>	<b>33.7</b>	<b>32.4</b>	<b>24.8</b>	<b>23.8</b>	<b>52.2</b>	<b>61.3</b>
Change Sales yoy	12.5 %	33.7 %	-4.0 %	-23.3 %	-4.1 %	119.2 %	17.4 %
Increase / decrease in inventory	0.1	0.0	0.6	0.2	0.0	0.0	0.0
Own work capitalised	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Sales</b>	<b>25.3</b>	<b>33.7</b>	<b>33.0</b>	<b>25.0</b>	<b>23.8</b>	<b>52.2</b>	<b>61.3</b>
Material expenses	10.5	15.4	14.6	11.7	10.5	23.0	26.4
<b>Gross profit</b>	<b>14.7</b>	<b>18.4</b>	<b>18.4</b>	<b>13.3</b>	<b>13.3</b>	<b>29.2</b>	<b>34.9</b>
<i>Gross profit margin</i>	<i>58.5 %</i>	<i>54.4 %</i>	<i>56.7 %</i>	<i>53.7 %</i>	<i>56.0 %</i>	<i>56.0 %</i>	<i>57.0 %</i>
Personnel expenses	7.0	8.6	9.7	10.2	9.2	10.9	11.6
Other operating income	1.7	0.4	0.6	0.5	0.5	0.6	0.7
Other operating expenses	6.8	6.6	7.0	7.4	6.9	12.3	13.5
Unfrequent items	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>EBITDA</b>	<b>2.6</b>	<b>3.6</b>	<b>2.3</b>	<b>-3.8</b>	<b>-2.3</b>	<b>6.6</b>	<b>10.5</b>
<i>Margin</i>	<i>10.5 %</i>	<i>10.7 %</i>	<i>7.0 %</i>	<i>-15.2 %</i>	<i>-9.5 %</i>	<i>12.7 %</i>	<i>17.2 %</i>
Depreciation of fixed assets	0.3	0.3	0.3	0.4	0.4	0.4	0.4
<b>EBITA</b>	<b>2.3</b>	<b>3.3</b>	<b>1.9</b>	<b>-4.2</b>	<b>-2.7</b>	<b>6.2</b>	<b>10.1</b>
Amortisation of intangible assets	0.2	0.2	0.2	1.3	0.2	0.2	0.2
Goodwill amortisation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>EBIT</b>	<b>2.1</b>	<b>3.1</b>	<b>1.8</b>	<b>-5.4</b>	<b>-2.9</b>	<b>6.0</b>	<b>9.9</b>
<i>Margin</i>	<i>8.2 %</i>	<i>9.1 %</i>	<i>5.4 %</i>	<i>-22.0 %</i>	<i>-12.1 %</i>	<i>11.5 %</i>	<i>16.2 %</i>
<b>EBIT adj.</b>	<b>2.1</b>	<b>3.1</b>	<b>1.8</b>	<b>-5.4</b>	<b>-2.9</b>	<b>6.0</b>	<b>9.9</b>
Interest income	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Interest expenses	0.0	0.1	0.2	0.2	0.2	0.2	0.2
Other financial income (loss)	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
<b>EBT</b>	<b>2.1</b>	<b>3.0</b>	<b>1.7</b>	<b>-5.6</b>	<b>-3.1</b>	<b>5.8</b>	<b>9.7</b>
<i>Margin</i>	<i>8.2 %</i>	<i>8.8 %</i>	<i>5.1 %</i>	<i>-22.6 %</i>	<i>-13.0 %</i>	<i>11.1 %</i>	<i>15.9 %</i>
Total taxes	0.7	1.0	0.6	-1.7	0.0	1.8	3.0
<b>Net income from continuing operations</b>	<b>1.4</b>	<b>2.0</b>	<b>1.1</b>	<b>-3.9</b>	<b>-3.1</b>	<b>4.0</b>	<b>6.7</b>
Income from discontinued operations (net of tax)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net income before minorities</b>	<b>1.4</b>	<b>2.0</b>	<b>1.1</b>	<b>-3.9</b>	<b>-3.1</b>	<b>4.0</b>	<b>6.7</b>
Minority interest	0.2	0.0	0.0	0.0	0.0	0.0	0.2
<b>Net income</b>	<b>1.2</b>	<b>2.0</b>	<b>1.1</b>	<b>-3.9</b>	<b>-3.1</b>	<b>4.0</b>	<b>6.5</b>
<i>Margin</i>	<i>4.7 %</i>	<i>5.8 %</i>	<i>3.3 %</i>	<i>-15.6 %</i>	<i>-13.0 %</i>	<i>7.7 %</i>	<i>10.6 %</i>
Number of shares, average	1.5	1.6	6.6	6.6	7.2	7.3	7.3
<b>EPS</b>	<b>0.79</b>	<b>1.23</b>	<b>0.16</b>	<b>-0.59</b>	<b>-0.43</b>	<b>0.55</b>	<b>0.89</b>
EPS adj.	0.79	1.23	0.16	-0.59	-0.43	0.55	0.89

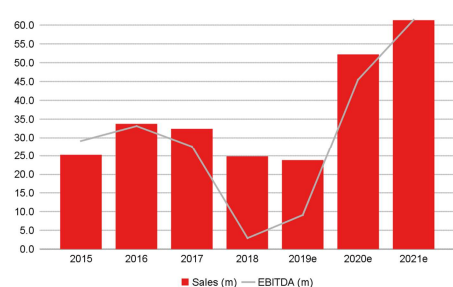
\*Adjustments made for:

**Guidance: 2020: Sales > EUR 50m; EBIT margin low double digit**

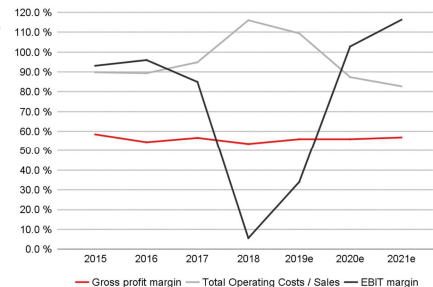
## Financial Ratios

	2015	2016	2017	2018	2019e	2020e	2021e
Total Operating Costs / Sales	89.8 %	89.4 %	95.0 %	116.1 %	109.5 %	87.3 %	82.8 %
Operating Leverage	8.2 x	1.5 x	10.9 x	n.a.	11.5 x	n.a.	3.7 x
EBITDA / Interest expenses	62.9 x	37.2 x	14.9 x	n.m.	n.m.	33.2 x	52.7 x
Tax rate (EBT)	31.5 %	33.8 %	35.3 %	31.0 %	0.0 %	31.0 %	31.0 %
Dividend Payout Ratio	31.6 %	81.5 %	30.7 %	n.m.	n.m.	18.1 %	16.2 %
Sales per Employee	201,688	235,783	203,667	190,962	183,146	401,538	471,538

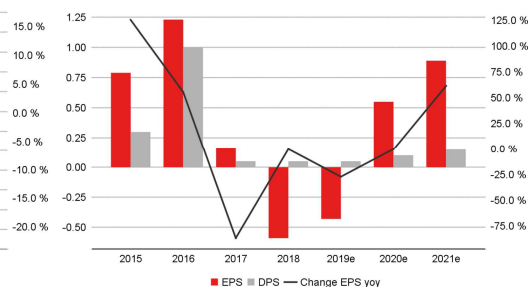
**Sales, EBITDA**  
in EUR m



**Operating Performance**  
in %



**Performance per Share**



Source: Warburg Research

Source: Warburg Research

Source: Warburg Research

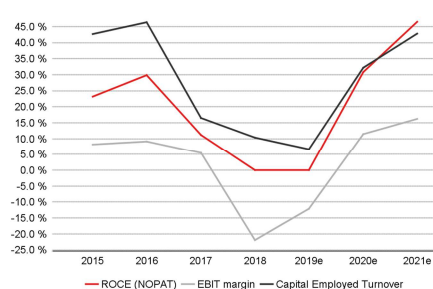
## Consolidated balance sheet

In EUR m	2015	2016	2017	2018	2019e	2020e	2021e
<b>Assets</b>							
Goodwill and other intangible assets	0.5	0.4	1.5	0.2	0.2	0.2	0.2
thereof other intangible assets	0.5	0.4	1.5	0.2	0.2	0.2	0.2
thereof Goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Property, plant and equipment	0.8	0.7	0.6	0.6	0.5	0.5	0.4
Financial assets	0.9	0.9	1.8	1.8	1.8	1.8	1.8
Other long-term assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Fixed assets</b>	<b>2.2</b>	<b>2.1</b>	<b>4.0</b>	<b>2.6</b>	<b>2.5</b>	<b>2.5</b>	<b>2.4</b>
Inventories	3.8	4.8	7.6	5.8	6.0	7.5	6.5
Accounts receivable	3.4	4.9	3.3	2.3	3.3	7.2	8.4
Liquid assets	9.5	11.7	5.5	11.6	12.2	12.8	18.8
Other short-term assets	0.6	1.2	1.1	2.7	2.7	1.1	1.1
<b>Current assets</b>	<b>17.2</b>	<b>22.5</b>	<b>17.5</b>	<b>22.3</b>	<b>24.2</b>	<b>28.6</b>	<b>34.8</b>
<b>Total Assets</b>	<b>19.4</b>	<b>24.6</b>	<b>21.5</b>	<b>24.9</b>	<b>26.7</b>	<b>31.1</b>	<b>37.3</b>
<b>Liabilities and shareholders' equity</b>							
Subscribed capital	1.5	1.6	6.6	6.6	7.3	7.3	7.3
Capital reserve	4.5	10.3	5.4	5.4	9.7	9.7	9.7
Retained earnings	0.0	0.0	0.0	0.0	-3.4	0.2	6.0
Other equity components	1.7	2.9	2.3	-1.9	-2.0	-2.4	-2.3
Shareholders' equity	7.7	14.9	14.3	10.1	11.6	14.9	20.7
Minority interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total equity</b>	<b>7.7</b>	<b>14.9</b>	<b>14.3</b>	<b>10.1</b>	<b>11.6</b>	<b>14.9</b>	<b>20.7</b>
Provisions	2.0	3.2	1.7	1.0	1.0	1.0	1.0
thereof provisions for pensions and similar obligations	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial liabilities (total)	7.8	4.4	3.8	12.8	12.8	12.8	12.8
thereof short-term financial liabilities	0.0	0.8	1.1	0.8	0.8	0.8	0.8
Accounts payable	1.5	1.5	1.4	0.6	1.0	2.1	2.5
Other liabilities	0.5	0.6	0.2	0.4	0.4	0.4	0.4
<b>Liabilities</b>	<b>11.7</b>	<b>9.7</b>	<b>7.2</b>	<b>14.7</b>	<b>15.1</b>	<b>16.2</b>	<b>16.6</b>
<b>Total liabilities and shareholders' equity</b>	<b>19.4</b>	<b>24.6</b>	<b>21.5</b>	<b>24.9</b>	<b>26.7</b>	<b>31.1</b>	<b>37.3</b>

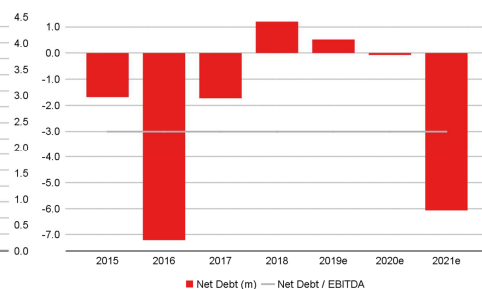
## Financial Ratios

	2015	2016	2017	2018	2019e	2020e	2021e
<b>Efficiency of Capital Employment</b>							
Operating Assets Turnover	3.9 x	3.8 x	3.2 x	3.1 x	2.7 x	4.0 x	4.8 x
Capital Employed Turnover	4.2 x	4.4 x	2.6 x	2.2 x	2.0 x	3.5 x	4.2 x
ROA	55.0 %	95.4 %	27.2 %	-151.1 %	-122.3 %	161.4 %	265.1 %
<b>Return on Capital</b>							
ROCE (NOPAT)	23.2 %	29.8 %	11.2 %	n.a.	n.a.	30.8 %	46.5 %
ROE	16.1 %	17.4 %	7.4 %	-31.7 %	-28.4 %	30.3 %	36.4 %
Adj. ROE	16.1 %	17.4 %	7.4 %	-31.7 %	-28.4 %	30.3 %	36.4 %
<b>Balance sheet quality</b>							
Net Debt	-1.7	-7.2	-1.7	1.2	0.5	-0.1	-6.1
Net Financial Debt	-1.7	-7.2	-1.7	1.2	0.5	-0.1	-6.1
Net Gearing	-21.9 %	-48.5 %	-12.1 %	11.9 %	4.4 %	-0.5 %	-29.3 %
Net Fin. Debt / EBITDA	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Book Value / Share	5.2	9.0	2.2	1.5	1.6	2.0	2.9
Book value per share ex intangibles	4.8	8.8	1.9	1.5	1.6	2.0	2.8

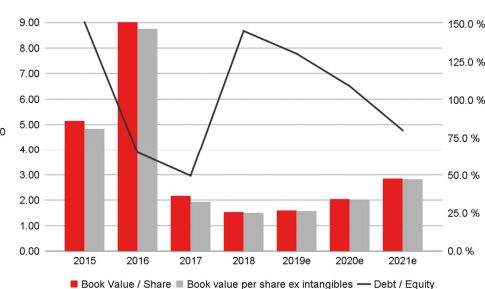
### ROCE Development



### Net debt in EUR m



### Book Value per Share in EUR



Source: Warburg Research

Source: Warburg Research

Source: Warburg Research



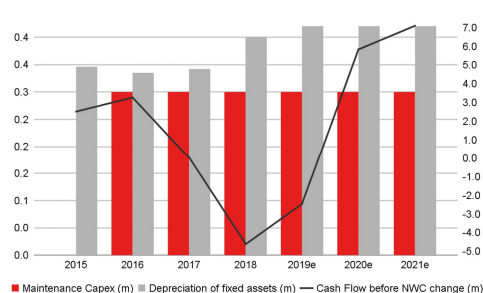
**Consolidated cash flow statement**

In EUR m	2015	2016	2017	2018	2019e	2020e	2021e
Net income	1.2	2.0	1.1	-3.9	-3.1	4.0	6.5
Depreciation of fixed assets	0.3	0.3	0.3	0.4	0.4	0.4	0.4
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	0.2	0.2	0.2	1.3	0.2	0.2	0.2
Increase/decrease in long-term provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other non-cash income and expenses	0.8	0.8	-1.6	-2.4	0.0	1.2	0.0
<b>Cash Flow before NWC change</b>	<b>2.5</b>	<b>3.3</b>	<b>0.0</b>	<b>-4.6</b>	<b>-2.5</b>	<b>5.8</b>	<b>7.1</b>
Increase / decrease in inventory	-0.9	-1.0	-2.9	1.8	-0.2	-1.5	1.0
Increase / decrease in accounts receivable	-0.5	-1.5	1.6	1.0	-1.0	-3.9	-1.2
Increase / decrease in accounts payable	0.6	0.0	0.0	-0.8	0.4	1.1	0.4
Increase / decrease in other working capital positions	-0.2	0.0	-0.3	0.3	0.0	0.0	0.0
Increase / decrease in working capital (total)	-1.0	-2.5	-1.5	2.3	-0.8	-4.3	0.2
<b>Net cash provided by operating activities [1]</b>	<b>1.5</b>	<b>0.8</b>	<b>-1.5</b>	<b>-2.3</b>	<b>-3.3</b>	<b>1.5</b>	<b>7.3</b>
Investments in intangible assets	-0.1	-0.2	-1.3	-0.2	-0.2	-0.2	-0.2
Investments in property, plant and equipment	-0.4	-0.3	-0.2	-0.4	-0.4	-0.4	-0.4
Payments for acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial investments	0.0	0.0	-0.9	0.0	0.0	0.0	0.0
Income from asset disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash provided by investing activities [2]</b>	<b>-0.4</b>	<b>-0.4</b>	<b>-2.4</b>	<b>-0.3</b>	<b>-0.6</b>	<b>-0.6</b>	<b>-0.6</b>
Change in financial liabilities	3.7	-3.3	-0.6	8.9	0.0	0.0	0.0
Dividends paid	-0.5	-0.7	-1.6	-0.3	-0.4	-0.4	-0.7
Purchase of own shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital measures	0.0	5.9	0.0	0.0	4.9	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash provided by financing activities [3]</b>	<b>3.2</b>	<b>1.9</b>	<b>-2.2</b>	<b>8.6</b>	<b>4.6</b>	<b>-0.4</b>	<b>-0.7</b>
<b>Change in liquid funds [1]+[2]+[3]</b>	<b>4.3</b>	<b>2.2</b>	<b>-6.1</b>	<b>6.0</b>	<b>0.7</b>	<b>0.6</b>	<b>6.0</b>
Effects of exchange-rate changes on cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Cash and cash equivalent at end of period</b>	<b>9.5</b>	<b>11.7</b>	<b>5.5</b>	<b>11.6</b>	<b>12.2</b>	<b>12.8</b>	<b>18.8</b>

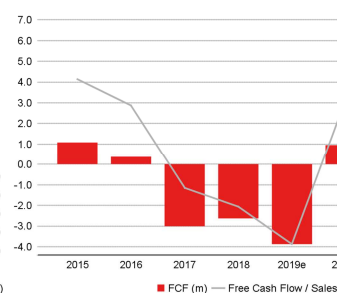
**Financial Ratios**

	2015	2016	2017	2018	2019e	2020e	2021e
<b>Cash Flow</b>							
FCF	1.1	0.4	-3.0	-2.6	-3.9	1.0	6.7
Free Cash Flow / Sales	4.3 %	1.1 %	-9.3 %	-11.6 %	-16.3 %	1.8 %	11.0 %
Free Cash Flow Potential	n.a.	2.3	1.4	-2.3	-2.6	4.5	7.2
Free Cash Flow / Net Profit	91.7 %	18.6 %	-279.6 %	74.4 %	125.6 %	23.8 %	103.7 %
Interest Received / Avg. Cash	0.7 %	0.7 %	0.7 %	0.5 %	0.0 %	0.0 %	0.0 %
Interest Paid / Avg. Debt	0.7 %	1.6 %	3.7 %	2.5 %	1.6 %	1.6 %	1.6 %
<b>Management of Funds</b>							
Investment ratio	1.7 %	1.2 %	4.7 %	2.3 %	2.4 %	1.1 %	0.9 %
Maint. Capex / Sales	n.a.	0.9 %	0.9 %	1.2 %	1.3 %	0.6 %	0.5 %
Capex / Dep	72.8 %	78.6 %	300.2 %	34.5 %	93.5 %	93.5 %	93.5 %
Avg. Working Capital / Sales	21.1 %	20.7 %	27.3 %	34.1 %	33.1 %	20.0 %	20.4 %
Trade Debtors / Trade Creditors	228.4 %	336.9 %	228.8 %	375.5 %	330.0 %	342.9 %	336.0 %
Inventory Turnover	2.8 x	3.2 x	1.9 x	2.0 x	1.7 x	3.1 x	4.1 x
Receivables collection period (days)	49	53	37	33	51	50	50
Payables payment period (days)	52	34	36	19	35	33	35
Cash conversion cycle (Days)	130	131	191	196	225	136	105

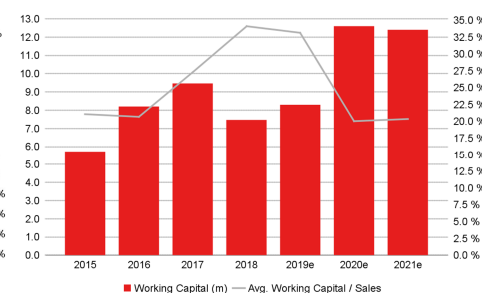
**CAPEX and Cash Flow**  
in EUR m



**Free Cash Flow Generation**



**Working Capital**



Source: Warburg Research

Source: Warburg Research

Source: Warburg Research



**LEGAL DISCLAIMER**

This research report ("investment recommendation") was prepared by the Warburg Research GmbH, a fully owned subsidiary of the M.M.Warburg & CO (AG & Co.) KGaA and is passed on by the M.M.Warburg & CO (AG & Co.) KGaA. It is intended solely for the recipient and may not be passed on to another company without their prior consent, regardless of whether the company is part of the same corporation or not. It contains selected information and does not purport to be complete. The investment recommendation is based on publicly available information and data ("information") believed to be accurate and complete. Warburg Research GmbH neither examines the information for accuracy and completeness, nor guarantees its accuracy and completeness. Possible errors or incompleteness of the information do not constitute grounds for liability of M.M.Warburg & CO (AG & Co.) KGaA or Warburg Research GmbH for damages of any kind whatsoever, and M.M.Warburg & CO (AG & Co.) KGaA and Warburg Research GmbH are not liable for indirect and/or direct and/or consequential damages. In particular, neither M.M.Warburg & CO (AG & Co.) KGaA nor Warburg Research GmbH are liable for the statements, plans or other details contained in these investment recommendations concerning the examined companies, their affiliated companies, strategies, economic situations, market and competitive situations, regulatory environment, etc. Although due care has been taken in compiling this investment recommendation, it cannot be excluded that it is incomplete or contains errors. M.M.Warburg & CO (AG & Co.) KGaA and Warburg Research GmbH, their shareholders and employees are not liable for the accuracy and completeness of the statements, estimations and the conclusions derived from the information contained in this investment recommendation. Provided a investment recommendation is being transmitted in connection with an existing contractual relationship, i.e. financial advisory or similar services, the liability of M.M.Warburg & CO (AG & Co.) KGaA and Warburg Research GmbH shall be restricted to gross negligence and wilful misconduct. In case of failure in essential tasks, M.M.Warburg & CO (AG & Co.) KGaA and Warburg Research GmbH are liable for normal negligence. In any case, the liability of M.M.Warburg & CO (AG & Co.) KGaA and Warburg Research GmbH is limited to typical, expectable damages. This investment recommendation does not constitute an offer or a solicitation of an offer for the purchase or sale of any security. Partners, directors or employees of M.M.Warburg & CO (AG & Co.) KGaA, Warburg Research GmbH or affiliated companies may serve in a position of responsibility, i.e. on the board of directors of companies mentioned in the report. Opinions expressed in this investment recommendation are subject to change without notice. All rights reserved.

**COPYRIGHT NOTICE**

This work including all its parts is protected by copyright. Any use beyond the limits provided by copyright law without permission is prohibited and punishable. This applies, in particular, to reproductions, translations, microfilming, and storage and processing on electronic media of the entire content or parts thereof.

**DISCLOSURE ACCORDING TO §85 OF THE GERMAN SECURITIES TRADING ACT (WPHG), MAR AND MIFID II INCL. COMMISSION DELEGATED REGULATION (EU) 2016/958 AND (EU) 2017/565**

The valuation underlying the investment recommendation for the company analysed here is based on generally accepted and widely used methods of fundamental analysis, such as e.g. DCF Model, Free Cash Flow Value Potential, NAV, Peer Group Comparison or Sum of the Parts Model (see also <http://www.mmwarburg.de/disclaimer/disclaimer.htm#Valuation>). The result of this fundamental valuation is modified to take into consideration the analyst's assessment as regards the expected development of investor sentiment and its impact on the share price.

Independent of the applied valuation methods, there is the risk that the price target will not be met, for instance because of unforeseen changes in demand for the company's products, changes in management, technology, economic development, interest rate development, operating and/or material costs, competitive pressure, supervisory law, exchange rate, tax rate etc. For investments in foreign markets and instruments there are further risks, generally based on exchange rate changes or changes in political and social conditions.

This commentary reflects the opinion of the relevant author at the point in time of its compilation. A change in the fundamental factors underlying the valuation can mean that the valuation is subsequently no longer accurate. Whether, or in what time frame, an update of this commentary follows is not determined in advance.

Additional internal and organisational arrangements to prevent or to deal with conflicts of interest have been implemented. Among these are the spatial separation of Warburg Research GmbH from M.M.Warburg & CO (AG & Co.) KGaA and the creation of areas of confidentiality. This prevents the exchange of information, which could form the basis of conflicts of interest for Warburg Research GmbH in terms of the analysed issuers or their financial instruments.

The analysts of Warburg Research GmbH do not receive a gratuity – directly or indirectly – from the investment banking activities of M.M.Warburg & CO (AG & Co.) KGaA or of any company within the Warburg-Group.

All prices of financial instruments given in this investment recommendation are the closing prices on the last stock-market trading day before the publication date stated, unless another point in time is explicitly stated.

M.M.Warburg & CO (AG & Co.) KGaA and Warburg Research GmbH are subject to the supervision of the Federal Financial Supervisory Authority, BaFin. M.M.Warburg & CO (AG & Co.) KGaA is additionally subject to the supervision of the European Central Bank (ECB).

**SOURCES**

All data and consensus estimates have been obtained from FactSet except where stated otherwise.

**Additional information for clients in the United States**

1. This research report (the "Report") is a product of Warburg Research GmbH, Germany, a fully owned subsidiary of M.M.Warburg & CO (AG & Co.) KGaA, Germany (in the following collectively "Warburg"). Warburg is the employer of the research analyst(s), who have prepared the Report. The research analyst(s) reside outside the United States and are not associated persons of any U.S. regulated broker-dealer and therefore are not subject to the supervision of any U.S. regulated broker-dealer.
2. The Report is provided in the United States for distribution solely to "major U.S. institutional investors" under Rule 15a-6 of the U.S. Securities Exchange Act of 1934.
3. Any recipient of the Report should effect transactions in the securities discussed in the Report only through J.P.P. Euro-Securities, Inc., Delaware.
4. J.P.P. Euro-Securities, Inc. does not accept or receive any compensation of any kind for the dissemination of the research reports from Warburg.

**Reference in accordance with section 85 of the German Securities Trading Act (WpHG) and Art. 20 MAR regarding possible conflicts of interest with companies analysed:**

- 1- Warburg Research, or an affiliated company, or an employee of one of these companies responsible for the compilation of the research, hold a **share of more than 5%** of the equity capital of the analysed company.
- 2- Warburg Research, or an affiliated company, within the last twelve months participated in the **management of a consortium** for an issue in the course of a public offering of such financial instruments, which are, or the issuer of which is, the subject of the investment recommendation.
- 3- Companies affiliated with Warburg Research **manage financial instruments**, which are, or the issuers of which are, subject of the investment recommendation, in a market based on the provision of buy or sell contracts.
- 4- MMWB, Warburg Research, or an affiliated company, reached an agreement with the issuer to provide **investment banking and/or investment services** and the relevant agreement was in force in the last 12 months or there arose for this period, based on the relevant agreement, the obligation to provide or to receive a service or compensation - provided that this disclosure does not result in the disclosure of confidential business information.
- 5- The company compiling the analysis or an affiliated company had reached an **agreement on the compilation of the investment recommendation** with the analysed company.
- 6a- Warburg Research, or an affiliated company, holds a **net long position of more than 0.5%** of the total issued share capital of the analysed company.
- 6b- Warburg Research, or an affiliated company, holds a **net short position of more than 0.5%** of the total issued share capital of the analysed company.
- 6c- The issuer holds shares of more than 5% of the total issued capital of Warburg Research or an affiliated company.
- 7- The company preparing the analysis as well as its affiliated companies and employees have **other important interests** in relation to the analysed company, such as, for example, the exercising of mandates at analysed companies.

This report has been made accessible to the company analysed.

Company	Disclosure	Link to the historical price targets and rating changes (last 12 months)
Vectron Systems AG	3, 4, 5	<a href="http://www.mmwarburg.com/disclaimer/disclaimer_en/DE000A0KEXC7.htm">http://www.mmwarburg.com/disclaimer/disclaimer_en/DE000A0KEXC7.htm</a>

## INVESTMENT RECOMMENDATION

Investment recommendation: expected direction of the share price development of the financial instrument up to the given price target in the opinion of the analyst who covers this financial instrument.

-B-	<b>Buy:</b>	The price of the analysed financial instrument is expected to rise over the next 12 months.
-H-	<b>Hold:</b>	The price of the analysed financial instrument is expected to remain mostly flat over the next 12 months.
-S-	<b>Sell:</b>	The price of the analysed financial instrument is expected to fall over the next 12 months.
“-“	<b>Rating suspended:</b>	The available information currently does not permit an evaluation of the company.

## WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING

Rating	Number of stocks	% of Universe
Buy	115	57
Hold	75	37
Sell	6	3
Rating suspended	5	2
<b>Total</b>	<b>201</b>	<b>100</b>

## WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING ...

... taking into account only those companies which were provided with major investment services in the last twelve months.

Rating	Number of stocks	% of Universe
Buy	32	80
Hold	6	15
Sell	0	0
Rating suspended	2	5
<b>Total</b>	<b>40</b>	<b>100</b>

## PRICE AND RATING HISTORY VECTRON SYSTEMS AG AS OF 13.01.2020



Markings in the chart show rating changes by Warburg Research GmbH in the last 12 months. Every marking details the date and closing price on the day of the rating change.

**EQUITIES**

**Matthias Rode** +49 40 3282-2678  
Head of Equities mrode@mmwarburg.com

**RESEARCH**

**Michael Heider** +49 40 309537-280  
Head of Research mheider@warburg-research.com

**Henner Rüschemeyer** +49 40 309537-270  
Head of Research hrueschmeier@warburg-research.com

**Jan Bauer** +49 40 309537-155  
Renewables jbauer@warburg-research.com

**Jonas Blum** +49 40 309537-240  
Telco, Construction jblum@warburg-research.com

**Christian Cohrs** +49 40 309537-175  
Industrials & Transportation ccohrs@warburg-research.com

**Felix Ellmann** +49 40 309537-120  
Software, IT fellmann@warburg-research.com

**Jörg Philipp Frey** +49 40 309537-258  
Retail, Consumer Goods jfrey@warburg-research.com

**Marius Fuhrberg** +49 40 309537-185  
Financial Services mfuhrberg@warburg-research.com

**Ulrich Huwald** +49 40 309537-255  
Health Care, Pharma uhuwald@warburg-research.com

**Philipp Kaiser** +49 40 309537-260  
Real Estate pkaiser@warburg-research.com

**Thilo Kleibauer** +49 40 309537-257  
Retail, Consumer Goods tkleibauer@warburg-research.com

**Eggert Kuls** +49 40 309537-256  
Engineering ekuls@warburg-research.com

**Andreas Pläsier** +49 40 309537-246  
Banks, Financial Services aplaesier@warburg-research.com

**Franz Schall** +49 40 309537-230  
Automobiles, Car Suppliers fschall@warburg-research.com

**Malte Schaumann** +49 40 309537-170  
Technology mschaumann@warburg-research.com

**Patrick Schmidt** +49 40 309537-125  
Leisure, Internet pschmidt@warburg-research.com

**Oliver Schwarz** +49 40 309537-250  
Chemicals, Agriculture oschwarz@warburg-research.com

**Cansu Tatar** +49 40 309537-248  
Cap. Goods, Engineering ctatar@warburg-research.com

**Marc-René Tonn** +49 40 309537-259  
Automobiles, Car Suppliers mtonn@warburg-research.com

**Robert-Jan van der Horst** +49 40 309537-290  
Technology rvanderhorst@warburg-research.com

**Andreas Wolf** +49 40 309537-140  
Software, IT awolf@warburg-research.com

**INSTITUTIONAL EQUITY SALES**

**Marc Niemann** +49 40 3282-2660  
Head of Equity Sales, Germany mniemann@mmwarburg.com

**Klaus Schilling** +49 40 3282-2664  
Head of Equity Sales, Germany kschilling@mmwarburg.com

**Tim Beckmann** +49 40 3282-2665  
United Kingdom tbeckmann@mmwarburg.com

**Lyubka Bogdanova** +49 69 5050-7411  
Ireland, Poland, Australia lbogdanova@mmwarburg.com

**Jens Buchmüller** +49 69 5050-7415  
Scandinavia, Austria jbuchmueller@mmwarburg.com

**Alexander Eschweiler** +49 40 3282-2669  
Germany aeschweiler@mmwarburg.com

**Matthias Fritsch** +49 40 3282-2696  
United Kingdom mfritsch@mmwarburg.com

**Tobias Hald** +49 40 3282-2695  
United Kingdom thald@mmwarburg.com

**Christopher Seedorf** +49 69 5050-7414  
Switzerland cseedorf@mmwarburg.com

**Sophie Hauer** +49 69 5050-7417  
Roadshow/Marketing shauer@mmwarburg.com

**Juliane Niemann** +49 40 3282-2694  
Roadshow/Marketing jniemann@mmwarburg.com

**SALES TRADING**

**Oliver Merckel** +49 40 3282-2634  
Head of Sales Trading omerckel@mmwarburg.com

**Elyaz Dust** +49 40 3282-2702  
Sales Trading edust@mmwarburg.com

**Michael Ilgenstein** +49 40 3282-2700  
Sales Trading milgenstein@mmwarburg.com

**Marcel Magiera** +49 40 3282-2662  
Sales Trading mmagiera@mmwarburg.com

**Bastian Quast** +49 40 3282-2701  
Sales Trading bquast@mmwarburg.com

**Jörg Treptow** +49 40 3282-2658  
Sales Trading jtreptow@mmwarburg.com

**MACRO RESEARCH**

**Carsten Klude** +49 40 3282-2572  
Macro Research cklude@mmwarburg.com

**Dr. Christian Jasperneite** +49 40 3282-2439  
Investment Strategy cjasperneite@mmwarburg.com

**Our research can be found under:**

Warburg Research [research.mmwarburg.com/en/index.html](http://research.mmwarburg.com/en/index.html)  
Bloomberg MMWA GO  
FactSet [www.factset.com](http://www.factset.com)

Thomson Reuters [www.thomsonreuters.com](http://www.thomsonreuters.com)  
Capital IQ [www.capitaliq.com](http://www.capitaliq.com)

**For access please contact:**

**Andrea Schaper** +49 40 3282-2632  
Sales Assistance aschaper@mmwarburg.com

**Kerstin Muthig** +49 40 3282-2703  
Sales Assistance kmuthig@mmwarburg.com