

Hold EUR 1.04 (EUR 1.80) Price EUR 0.83 Upside 25.3 %	Value Indicators: EUR DCF: 1.04	Warburg ESG Risk Score: 1.8 ESG Score (MSCI based): 3.0 Balance Sheet Score: 2.5 Market Liquidity Score: 0.0	Description: Producer of implants to mend broken bones and innovative infection protection solutions
	Market Snapshot: EUR m Market cap: 7.4 No. of shares (m): 9.0 EV: 13.7 Freefloat MC: 2.4 Ø Trad. Vol. (30d): 6.94 th	Shareholders: Freefloat 32.65 % Youshi Medical, China 15.20 % Mervel AG 10.25 % Axxion S.A. 10.00 % ShapeQ GmbH 9.99 %	Key Figures (WRe): 2023e Beta: 1.4 Price / Book: 0.7 x Equity Ratio: 52 %

Q1 report shows sales growth; Silver-coating study to be resumed

Stated Figures Q1/2023:

aap Implantate - Q1 2023

in EUR m	Q1/23	Q1/23e	Q1/22	yoy	2023e	2022	yoy
Sales	3.0	3.0	2.9	3.4%	12.8	11.5	11.1%
EBITDA	-0.47	-0.30	-0.4	12.9%	-0.9	-3.4	-74.7%
margin	-16.0%	-10.0%	-14.7%		-6.7%	-29.4%	

Comment on Figures:

- Sales increased slightly by 3.4% yoy to EUR 3.0m (WRe: EUR 3.0m), driven mainly by the Americas.
- EBITDA came in at EUR -0.5m (WRe: -0.3m) owing to a lack of operating leverage and high cost inflation.
- FY 2023 guidance confirmed: aap Implantate is expecting a sales range of EUR 12.0-14.0m and an EBITDA range of EUR -2.5m to -1.7m

aap Implantate reported Q3 results and confirmed its FY 23 guidance. Sales rose slightly by 3% yoy in Q1, supported by a strong performance especially in North America (+15% yoy) and Latin America (+55% yoy). Demand in EMEA (-9% yoy) fell behind expectations especially in big core big markets like Germany, Egypt and South Africa. The company still faces lower demand from hospitals due to economic uncertainties, staffing shortages in hospital and lower mobility behaviour, which is still below the pre-Covid level, and leads to a lower willingness to invest in new projects/technologies. FX-adjusted sales showed a slight increase of 2% yoy in Q1. EBITDA came in at EUR -0.5m (WRe: -0.3m) burdened mainly by elevated cost increases with regards to energy and raw materials. A notable positive aspect, aap's operating cash flow improved by 74% yoy to EUR -0.2m in Q1 thanks to better working capital management. A first partial cash inflow of EUR 1.2m from the latest capital increase secures aap's cash position.

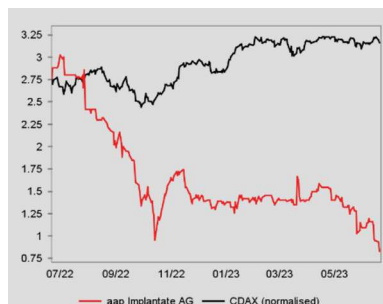
The clinical human study for the innovative antibacterial silver-coating technology, which began in 2021, will continue in the second quarter with a modified study protocol. The company expects a significant acceleration in patient recruitment with the new study protocol, which should result in an acceleration of the study, so that the necessary number of patients can be recruited within 12 to 18 months. Since 2021, several complex compassionate use cases have been successfully executed. In our view, aap still has good growth prospects, which should result from increasing mobility and its innovative technology. Nevertheless, profitability should remain negative due to cost inflation and the development of the promising silver coating technology. We confirm our Hold rating with a new PT of EUR 1.04.

Changes in Estimates:

FY End: 31.12. in EUR m	2023e (old)	+ / -	2024e (old)	+ / -	2025e (old)	+ / -
Sales	12.8	1.6 %	14.8	1.4 %	n.a.	n.m.
EBITDA	-0.9	n.m.	0.9	n.m.	n.a.	n.m.
EPS	-0.32	n.m.	-0.08	n.m.	n.a.	n.m.

Comment on Changes:

- Sales estimates are raised slightly on the back of a slow recovery
- Cut in EBITDA estimates is explained by negative operating leverage and high cost inflation as well as costs related to the silver-coating technology



Rel. Performance vs CDAX:

1 month:	-34.1 %
6 months:	-48.4 %
Year to date:	-50.2 %
Trailing 12 months:	-83.4 %

Company events:

11.08.23 Q2

FY End: 31.12. in EUR m	CAGR (22-25e)	2019	2020	2021	2022	2023e	2024e	2025e
Sales	13.9 %	11.7	9.3	12.2	11.5	13.0	15.0	17.0
Change Sales yoy		8.9 %	-20.6 %	30.5 %	-5.3 %	12.9 %	15.4 %	13.3 %
EBITDA	-	-5.1	-4.8	-0.8	-1.7	-2.2	-0.1	1.1
Margin		-43.8 %	-51.1 %	-6.2 %	-14.9 %	-16.7 %	-0.9 %	6.5 %
EBITDA adj.		-5.1	-3.4	-1.3	-1.7	-2.2	-0.1	1.1
Margin		-43.8 %	-36.3 %	-10.3 %	-14.9 %	-16.7 %	-0.9 %	6.5 %
EBIT	-	-19.8	-7.9	-2.6	-3.4	-3.1	-1.2	-0.1
Margin		-168.4 %	-84.6 %	-21.4 %	-29.4 %	-24.0 %	-8.0 %	-0.7 %
Net income	-	-19.5	-8.8	-2.5	-2.7	-3.4	-1.5	-0.5
EPS	-	-0.61	-2.74	-0.50	-0.41	-0.38	-0.17	-0.06
DPS	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dividend Yield		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FCFPS		-0.23	-1.28	-0.60	-0.36	-0.46	-0.28	-0.13
FCF / Market cap		-2.7 %	-31.9 %	-18.0 %	-14.7 %	-55.2 %	-34.0 %	-14.2 %
EV / Sales		23.1 x	1.8 x	1.7 x	1.7 x	1.1 x	1.1 x	1.1 x
EV / EBITDA		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16.7 x
EV / EBIT		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
P / E		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FCF Potential Yield		-7.1 %	-46.5 %	-4.5 %	-6.5 %	-17.5 %	-3.1 %	3.4 %
Net Debt		-0.6	4.1	4.1	3.3	6.2	8.7	9.9
ROCE (NOPAT)		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Guidance:		Lower end of EUR 12-14m revenue and EUR -2.5m to EUR -1.7m EBITDA						

Analyst

Cansu Tatar

ctatar@warburg-research.com

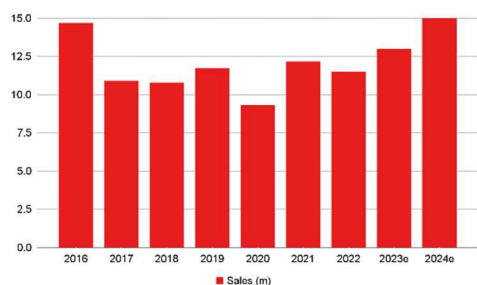
+49 40 309537-248

COMMENT

Published 21.06.2023 08:15

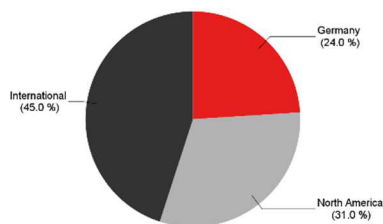
1

Sales development
in EUR m



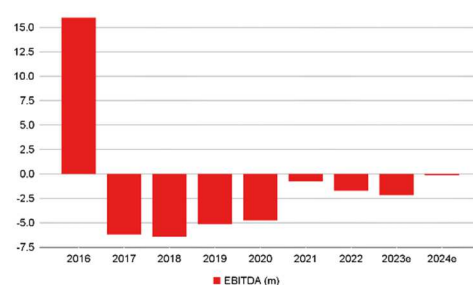
Source: Warburg Research

Sales by regions
2022; in %



Source: Warburg Research

EBITDA development
in EUR m



Source: Warburg Research

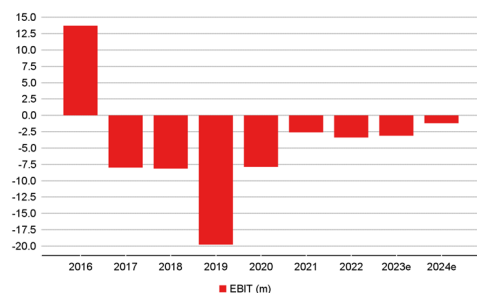
Company Background

- aap Implantate AG develops, produces and sells medical implants, which are primarily used in orthopaedics to mend fractures.
- aap Implantate AG was founded in 1990 as an MBO from the Johnson & Johnson Group and is headquartered in Berlin.
- The company covers the entire value chain and sells the products worldwide with a focus on established markets such as Germany, North America as well as further European countries.
- The products are sold by direct sale, by international sales partners or OEM partnerships.
- Also addressed are so-called "Global Partners", larger companies interested in an agreement to distribute aap's current products (and, if approved, the silver coating technology) via their sales channels.

Competitive Quality

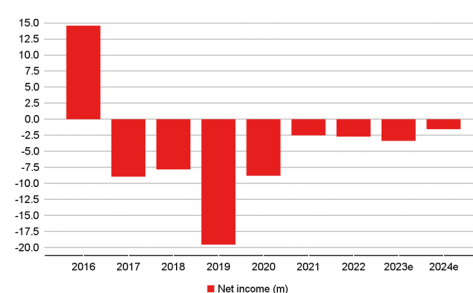
- aap Implantate AG has developed a patent protected anatomical plating system (LOQTEQ), which provides significant improvements for surgeons, hospitals and clinics as well as patients.
- Additionally, aap Implantate AG has a promising development pipeline with an antibacterial silver coating for the implants as well as coated magnesium implants.

EBIT development
in EUR m



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
	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	2033e	2034e	2035e	
Sales	13.0	15.0	17.0	19.0	21.1	23.2	25.3	27.4	29.3	31.0	32.6	33.9	34.9	2.0 %
Sales change	12.9 %	15.4 %	13.3 %	12.0 %	11.0 %	10.0 %	9.0 %	8.0 %	7.0 %	6.0 %	5.0 %	4.0 %	3.0 %	
EBIT	-3.1	-1.2	-0.1	0.2	0.4	0.7	1.0	1.4	1.8	2.2	2.6	3.1	3.5	10.0 %
EBIT-margin	-24.0 %	-8.0 %	-0.7 %	1.0 %	2.0 %	3.0 %	4.0 %	5.0 %	6.0 %	7.0 %	8.0 %	9.0 %	10.0 %	
Tax rate (EBT)	5.0 %	5.0 %	5.0 %	10.0 %	15.0 %	20.0 %	27.0 %	27.0 %	27.0 %	27.0 %	27.0 %	27.0 %	27.0 %	2.5
NOPAT	-3.0	-1.1	-0.1	0.2	0.4	0.6	0.7	1.0	1.3	1.6	1.9	2.2	2.5	
Depreciation	0.9	1.1	1.2	1.3	1.3	1.4	1.4	1.4	0.9	0.9	1.0	1.0	1.0	3.0 %
in % of Sales	7.3 %	7.1 %	7.2 %	6.8 %	6.4 %	6.0 %	5.6 %	5.2 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	
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	3.0 %
Change in Liquidity from														
- Working Capital	1.3	1.6	1.4	0.2	0.8	0.7	0.5	0.4	0.2	-0.3	-0.6	-0.8	-1.0	3.0 %
- Capex	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.0	
Capex in % of Sales	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	3.0 %	0.0
- 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	-2.1	-0.8	0.7	0.3	0.6	0.9	1.2	1.1	1.9	2.5	3.0	3.5	10
PV of FCF	-3.4	-1.8	-0.6	0.5	0.2	0.3	0.5	0.6	0.5	0.8	0.9	1.0	1.1	
share of PVs	-52.55 %			57.20 %										95.35 %

Model parameter

Derivation of WACC:		Derivation of Beta:	
Debt ratio	15.00 %	Financial Strength	1.70
Cost of debt (after tax)	5.8 %	Liquidity (share)	1.70
Market return	8.25 %	Cyclicality	1.00
Risk free rate	2.75 %	Transparency	1.20
		Others	1.40
WACC	9.75 %	Beta	1.40

Valuation (m)

Present values 2035e	1		
Terminal Value	10		
Financial liabilities	5		
Pension liabilities	0		
Hybrid capital	0		
Minority interest	0		
Market val. of investments	0		
Liquidity	1	No. of shares (m)	6.6
Equity Value	7	Value per share (EUR)	1.04

Sensitivity Value per Share (EUR)

		Terminal Growth									Delta EBIT-margin						
Beta	WACC	1.25 %	1.50 %	1.75 %	2.00 %	2.25 %	2.50 %	2.75 %	Beta	WACC	-1.5 pp	-1.0 pp	-0.5 pp	+0.0 pp	+0.5 pp	+1.0 pp	+1.5 pp
1.61	10.7 %	0.54	0.57	0.60	0.64	0.68	0.71	0.76	1.61	10.7 %	0.18	0.33	0.49	0.64	0.79	0.95	1.10
1.51	10.2 %	0.71	0.75	0.79	0.83	0.87	0.92	0.97	1.51	10.2 %	0.34	0.50	0.66	0.83	0.99	1.16	1.32
1.45	10.0 %	0.80	0.84	0.89	0.93	0.98	1.03	1.09	1.45	10.0 %	0.42	0.59	0.76	0.93	1.10	1.27	1.44
1.40	9.7 %	0.90	0.95	0.99	1.04	1.10	1.15	1.21	1.40	9.7 %	0.52	0.69	0.87	1.04	1.22	1.39	1.57
1.35	9.5 %	1.01	1.06	1.11	1.16	1.22	1.28	1.35	1.35	9.5 %	0.62	0.80	0.98	1.16	1.35	1.53	1.71
1.29	9.2 %	1.12	1.18	1.23	1.29	1.36	1.43	1.50	1.29	9.2 %	0.73	0.92	1.10	1.29	1.48	1.67	1.86
1.19	8.7 %	1.38	1.44	1.51	1.58	1.66	1.75	1.84	1.19	8.7 %	0.97	1.18	1.38	1.58	1.79	1.99	2.20

- Strong double-digit mid-term growth reflects vast growth potential of patent-protected plating system (LOQTEQ)
- EBITDA margin is expected to reach mid-term target of 20% in 2026e, translating into an EBIT margin of 14%
- Elevated working capital is expected to normalise to 35% in the long-term

Valuation	2019	2020	2021	2022	2023e	2024e	2025e
Price / Book	14.4 x	1.2 x	1.3 x	1.3 x	0.7 x	0.7 x	0.8 x
Book value per share ex intangibles	0.46	2.28	1.72	1.42	0.86	0.75	0.78
EV / Sales	23.1 x	1.8 x	1.7 x	1.7 x	1.1 x	1.1 x	1.1 x
EV / EBITDA	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16.7 x
EV / EBIT	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EV / EBIT adj.*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
P / FCF	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
P / E	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
P / E adj.*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Dividend Yield	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FCF Potential Yield (on market EV)	-7.1 %	-46.5 %	-4.5 %	-6.5 %	-17.5 %	-3.1 %	3.4 %
*Adjustments made for: -							

Consolidated profit & loss

In EUR m	2019	2020	2021	2022	2023e	2024e	2025e
Sales	11.7	9.3	12.2	11.5	13.0	15.0	17.0
Change Sales yoy	8.9 %	-20.6 %	30.5 %	-5.3 %	12.9 %	15.4 %	13.3 %
Increase / decrease in inventory	0.0	-0.5	0.4	0.5	0.0	0.0	0.0
Own work capitalised	1.2	0.1	0.1	0.1	0.0	0.0	0.0
Total Sales	13.0	9.0	12.7	12.2	13.0	15.0	17.0
Material expenses	2.4	1.0	1.8	1.6	1.8	1.9	2.3
Gross profit	10.6	8.0	10.9	10.6	11.2	13.1	14.7
Gross profit margin	90.3 %	85.3 %	89.6 %	91.8 %	86.3 %	87.1 %	86.5 %
Personnel expenses	8.2	6.5	6.7	6.9	7.3	7.5	7.7
Other operating income	1.2	1.0	1.6	1.2	1.3	1.4	1.5
Other operating expenses	8.8	7.2	6.6	6.6	7.4	7.1	7.5
Unfrequent items	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBITDA	-5.1	-4.8	-0.8	-1.7	-2.2	-0.1	1.1
Margin	-43.8 %	-51.1 %	-6.2 %	-14.9 %	-16.7 %	-0.9 %	6.5 %
Depreciation of fixed assets	13.1	3.1	1.8	1.7	0.6	0.8	0.9
EBITA	-18.2	-7.8	-2.6	-3.4	-2.8	-0.9	0.2
Amortisation of intangible assets	1.5	0.0	0.0	0.0	0.3	0.3	0.3
Goodwill amortisation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT	-19.8	-7.9	-2.6	-3.4	-3.1	-1.2	-0.1
Margin	-168.4 %	-84.6 %	-21.4 %	-29.4 %	-24.0 %	-8.0 %	-0.7 %
EBIT adj.	-19.8	-7.9	-2.6	-3.4	-3.1	-1.2	-0.1
Interest income	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenses	0.5	0.3	0.3	0.2	0.4	0.4	0.4
Other financial income (loss)	0.2	-0.6	0.0	0.0	0.0	0.0	0.0
EBT	-20.0	-8.8	-2.9	-3.6	-3.5	-1.6	-0.5
Margin	-170.7 %	-94.5 %	-23.5 %	-31.5 %	-27.2 %	-10.8 %	-3.2 %
Total taxes	-0.6	0.1	-0.3	-1.0	-0.2	-0.1	0.0
Net income from continuing operations	-19.4	-8.9	-2.5	-2.6	-3.4	-1.5	-0.5
Income from discontinued operations (net of tax)	-0.1	0.1	0.0	0.0	0.0	0.0	0.0
Net income before minorities	-19.5	-8.8	-2.5	-2.7	-3.4	-1.5	-0.5
Minority interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income	-19.5	-8.8	-2.5	-2.7	-3.4	-1.5	-0.5
Margin	-166.3 %	-94.3 %	-20.6 %	-23.4 %	-25.8 %	-10.3 %	-3.0 %
Number of shares, average	32.1	3.2	5.0	6.6	9.0	9.0	9.0
EPS	-0.61	-2.74	-0.50	-0.41	-0.38	-0.17	-0.06
EPS adj.	-0.61	-2.74	-0.50	-0.41	-0.38	-0.17	-0.06

*Adjustments made for:

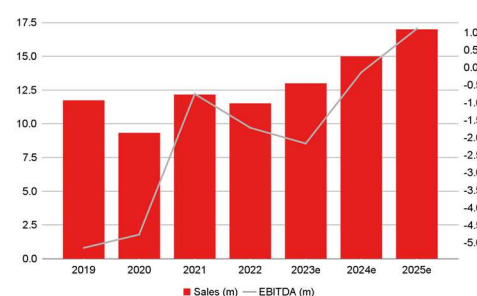
Guidance: Lower end of EUR 12-14m revenue and EUR -2.5m to EUR -1.7m EBITDA

Financial Ratios

	2019	2020	2021	2022	2023e	2024e	2025e
Total Operating Costs / Sales	154.6 %	147.1 %	110.8 %	120.4 %	116.7 %	100.9 %	93.5 %
Operating Leverage	16.1 x	2.9 x	-2.2 x	-5.7 x	-0.6 x	-4.0 x	-6.8 x
EBITDA / Interest expenses	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	2.6 x
Tax rate (EBT)	3.0 %	-1.4 %	12.0 %	28.9 %	5.0 %	5.0 %	5.0 %
Dividend Payout Ratio	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Sales per Employee	80,959	91,882	119,862	113,458	128,079	147,783	167,488

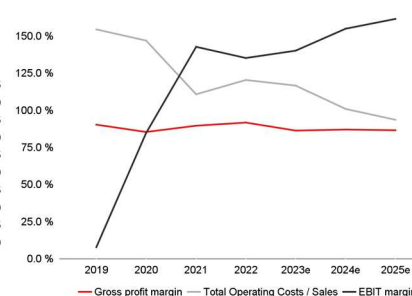
Sales, EBITDA

in EUR m

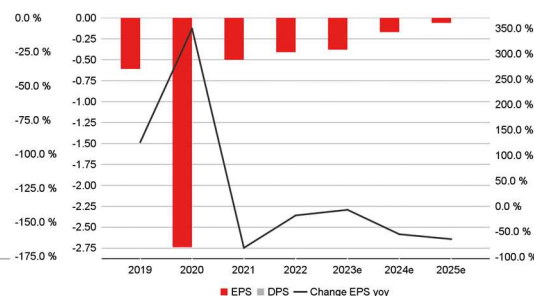


Operating Performance

in %



Performance per Share



Source: Warburg Research

Source: Warburg Research

Source: Warburg Research

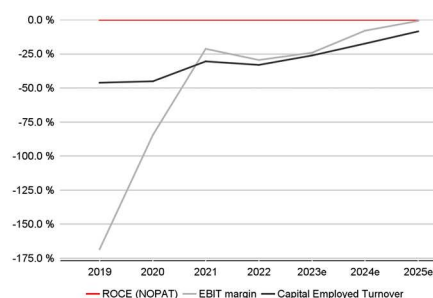
Consolidated balance sheet

In EUR m	2019	2020	2021	2022	2023e	2024e	2025e
Assets							
Goodwill and other intangible assets	4.1	3.0	4.2	3.6	3.6	3.6	3.6
thereof other intangible assets	0.1	0.0	0.1	0.1	0.0	0.0	0.0
thereof Goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Property, plant and equipment	6.2	4.3	3.4	2.9	2.9	2.9	2.9
Financial assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other long-term assets	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Fixed assets	10.7	7.7	8.0	6.9	6.9	6.9	6.9
Inventories	7.7	7.0	7.3	7.8	8.8	10.2	11.5
Accounts receivable	1.9	1.8	3.1	2.6	3.2	3.7	4.2
Liquid assets	2.9	0.9	2.1	0.2	0.3	0.3	0.6
Other short-term assets	3.1	2.4	2.5	2.8	2.8	2.8	2.8
Current assets	15.6	12.0	15.0	13.4	15.1	16.9	19.0
Total Assets	26.3	19.7	23.0	20.3	21.9	23.8	25.9
Liabilities and shareholders' equity							
Subscribed capital	32.1	3.2	5.0	6.6	6.6	6.6	6.6
Capital reserve	20.1	21.6	25.0	26.1	26.1	26.1	26.1
Retained earnings	11.8	11.7	11.7	11.7	8.4	6.8	6.3
Other equity components	-45.1	-26.2	-28.9	-31.4	-29.7	-29.1	-28.4
Shareholders' equity	18.9	10.3	12.8	12.9	11.3	10.3	10.5
Minority interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total equity	18.9	10.3	12.8	12.9	11.3	10.3	10.5
Provisions	0.4	0.6	0.3	0.3	0.3	0.3	0.3
thereof provisions for pensions and similar obligations	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial liabilities (total)	2.3	5.0	6.2	3.6	6.5	9.0	10.5
Short-term financial liabilities	0.5	0.4	0.4	0.5	1.0	1.5	2.0
Accounts payable	1.3	1.9	2.3	2.1	2.4	2.7	3.1
Other liabilities	3.4	1.9	1.5	1.4	1.4	1.4	1.4
Liabilities	7.4	9.4	10.3	7.4	10.6	13.4	15.3
Total liabilities and shareholders' equity	26.3	19.7	23.0	20.3	21.9	23.8	25.9

Financial Ratios

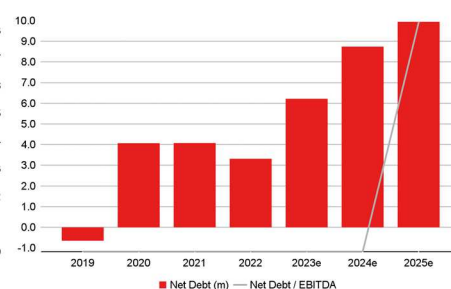
	2019	2020	2021	2022	2023e	2024e	2025e
Efficiency of Capital Employment							
Operating Assets Turnover	0.8 x	0.8 x	1.1 x	1.0 x	1.0 x	1.1 x	1.1 x
Capital Employed Turnover	0.6 x	0.6 x	0.7 x	0.7 x	0.7 x	0.8 x	0.8 x
ROA	-181.8 %	-114.6 %	-31.5 %	-39.3 %	-48.9 %	-22.5 %	-7.4 %
Return on Capital							
ROCE (NOPAT)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ROE	-72.6 %	-60.3 %	-21.8 %	-21.0 %	-27.7 %	-14.3 %	-4.9 %
Adj. ROE	-72.6 %	-60.3 %	-21.8 %	-21.0 %	-27.7 %	-14.3 %	-4.9 %
Balance sheet quality							
Net Debt	-0.6	4.1	4.1	3.3	6.2	8.7	9.9
Net Financial Debt	-0.6	4.1	4.1	3.3	6.2	8.7	9.9
Net Gearing	-3.4 %	39.5 %	31.9 %	25.6 %	55.1 %	84.6 %	94.4 %
Net Fin. Debt / EBITDA	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	899.5 %
Book Value / Share	0.6	3.2	2.6	2.0	1.3	1.2	1.2
Book value per share ex intangibles	0.5	2.3	1.7	1.4	0.9	0.8	0.8

ROCE Development



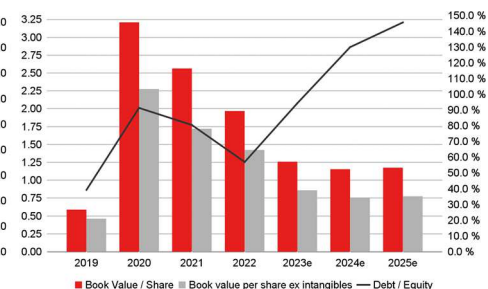
Source: Warburg Research

Net debt in EUR m



Source: Warburg Research

Book Value per Share in EUR



Source: Warburg Research

Consolidated cash flow statement

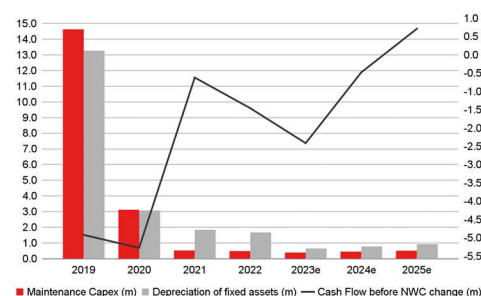
In EUR m	2019	2020	2021	2022	2023e	2024e	2025e
Net income	-19.9	-8.5	-2.5	-2.5	-3.4	-1.5	-0.5
Depreciation of fixed assets	13.3	3.1	1.8	1.7	0.6	0.8	0.9
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	1.5	0.0	0.0	0.0	0.3	0.3	0.3
Increase/decrease in long-term provisions	0.1	0.2	-0.3	0.0	0.0	0.0	0.0
Other non-cash income and expenses	0.1	-0.1	0.3	-0.6	0.0	0.0	0.0
Cash Flow before NWC change	-4.9	-5.3	-0.6	-1.5	-2.4	-0.5	0.7
Increase / decrease in inventory	0.4	1.4	-1.3	-0.2	-1.0	-1.4	-1.3
Increase / decrease in accounts receivable	-0.8	0.9	-0.1	0.0	-0.6	-0.5	-0.5
Increase / decrease in accounts payable	-0.4	-0.7	-0.5	-0.3	0.3	0.3	0.4
Increase / decrease in other working capital positions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Increase / decrease in working capital (total)	-0.8	1.6	-1.8	-0.4	-1.3	-1.6	-1.4
Net cash provided by operating activities [1]	-5.8	-3.7	-2.5	-1.9	-3.7	-2.1	-0.7
Investments in intangible assets	-1.0	-0.1	-0.2	-0.1	0.0	0.0	0.0
Investments in property, plant and equipment	-0.7	-0.3	-0.3	-0.3	-0.4	-0.5	-0.5
Payments for acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial investments	-2.0	0.0	0.0	0.0	0.0	0.0	0.0
Income from asset disposals	0.0	0.3	0.6	0.0	0.0	0.0	0.0
Net cash provided by investing activities [2]	0.3	-0.1	0.2	-0.5	-0.4	-0.5	-0.5
Change in financial liabilities	-0.5	-0.3	0.2	-0.5	2.9	2.5	1.5
Dividends paid	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Purchase of own shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital measures	3.4	0.0	0.0	0.0	1.2	0.0	0.0
Other	1.3	2.0	3.3	1.0	0.0	0.0	0.0
Net cash provided by financing activities [3]	4.1	1.8	3.5	0.5	4.1	2.5	1.5
Change in liquid funds [1]+[2]+[3]	-1.3	-2.0	1.2	-1.9	0.0	0.0	0.3
Effects of exchange-rate changes on cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash and cash equivalent at end of period	2.9	0.9	2.1	0.2	0.3	0.3	0.6

Financial Ratios

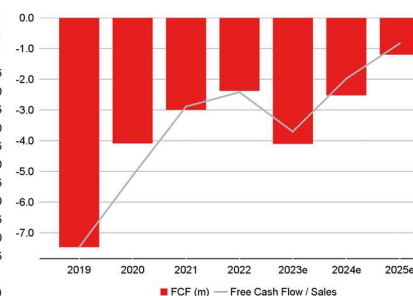
	2019	2020	2021	2022	2023e	2024e	2025e
Cash Flow							
FCF	-7.5	-4.1	-3.0	-2.4	-4.1	-2.5	-1.2
Free Cash Flow / Sales	-63.6 %	-43.8 %	-24.6 %	-20.6 %	-31.6 %	-16.8 %	-7.0 %
Free Cash Flow Potential	-19.3	-7.9	-0.9	-1.3	-2.4	-0.5	0.6
Free Cash Flow / Net Profit	38.2 %	46.5 %	119.1 %	88.1 %	122.1 %	163.5 %	235.0 %
Interest Received / Avg. Cash	0.0 %	0.5 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Interest Paid / Avg. Debt	38.5 %	9.4 %	5.1 %	4.9 %	8.4 %	5.4 %	4.3 %
Management of Funds							
Investment ratio	14.8 %	4.4 %	4.3 %	4.2 %	3.0 %	3.0 %	3.0 %
Maint. Capex / Sales	124.6 %	33.5 %	4.3 %	4.2 %	3.0 %	3.0 %	3.0 %
Capex / Dep	11.8 %	13.3 %	28.4 %	29.0 %	41.3 %	42.1 %	41.7 %
Avg. Working Capital / Sales	78.2 %	80.9 %	61.5 %	71.3 %	68.9 %	69.3 %	70.0 %
Trade Debtors / Trade Creditors	141.8 %	94.5 %	135.4 %	123.2 %	133.3 %	137.0 %	135.5 %
Inventory Turnover	0.3 x	0.1 x	0.2 x	0.2 x	0.2 x	0.2 x	0.2 x
Receivables collection period (days)	58	71	93	81	90	90	90
Payables payment period (days)	202	707	460	483	492	509	493
Cash conversion cycle (Days)	1,027	1,918	1,104	1,410	1,401	1,505	1,426

CAPEX and Cash Flow

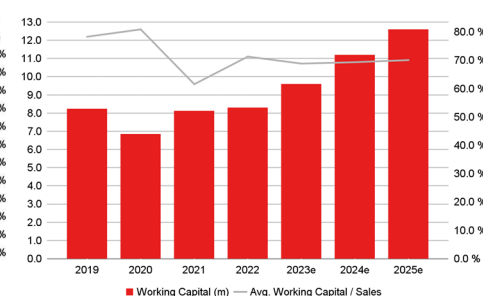
in EUR m



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. The views expressed in this research report accurately reflect the research analyst's personal views about the subject securities and issuers. Unless otherwise specified in the research report, no part of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in the research report. 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.

The **Warburg ESG Risk Score** is based on information © 2020 MSCI ESG Research LLC. Reproduced by permission. Although Warburg Research's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the "ESG Parties"), obtain information (the "Information") from sources they consider reliable, none of the ESG Parties warrants or guarantees the originality, accuracy and/or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose. The Information may only be used for your internal use, may not be reproduced or disseminated in any form and may not be used as a basis for, or a component, of any financial instruments or products indices. Further, none of the Information can in and of itself be used to determine which securities to buy or sell or when to buy or sell them. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data herein, or any liability for any direct, indirect, special, punitive, consequential or any other damage (including lost profits) even if notified of the possibility.

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 by CIC.
3. CIC (Crédit Industriel et Commercial) and M.M. Warburg & CO have concluded a Research Distribution Agreement that gives CIC Market Solutions exclusive distribution in France, the US and Canada of the Warburg Research GmbH research product.
4. The research reports are distributed in the United States of America by CIC ("CIC") pursuant to a SEC Rule 15a-6 agreement with CIC Market Solutions Inc ("CICI"), a U.S. registered broker-dealer and a related company of CIC, and are distributed solely to persons who qualify as "Major U.S. Institutional Investors" as defined in SEC Rule 15a-6 under the Securities Exchange Act of 1934.
5. Any person who is not a Major U.S. Institutional Investor must not rely on this communication. The delivery of this research report to any person in the United States of America is not a recommendation to effect any transactions in the securities discussed herein, or an endorsement of any opinion expressed herein.

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.

Company	Disclosure	Link to the historical price targets and rating changes (last 12 months)
aap Implantate	5	https://www.mmwarburg.com/disclaimer/disclaimer_en/DE000A3H2101.htm

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-	Buy:	The price of the analysed financial instrument is expected to rise over the next 12 months.
-H-	Hold:	The price of the analysed financial instrument is expected to remain mostly flat over the next 12 months.
-S-	Sell:	The price of the analysed financial instrument is expected to fall over the next 12 months.
"-"	Rating suspended:	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	158	75
Hold	43	20
Sell	7	3
Rating suspended	3	1
Total	211	100

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	44	88
Hold	5	10
Sell	0	0
Rating suspended	1	2
Total	50	100

PRICE AND RATING HISTORY AAP IMPLANTATE AS OF 21.06.2023



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

Stefan Augustin +49 40 309537-168
Cap. Goods, Engineering saugustin@warburg-research.com

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

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

Dr. Christian Ehmann +49 40 309537-167
BioTech, Life Science cehmann@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

Fabio Hölscher +49 40 309537-240
Automobiles, Car Suppliers fhoelscher@warburg-research.com

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

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

Hannes Müller +49 40 309537-255
Software, IT hmueller@warburg-research.com

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

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

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

Simon Stippig +49 40 309537-265
Real Estate, Telco sstippig@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 69 5050-7400
Head of Equity Sales, Germany kschilling@mmwarburg.com

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

Lea Bogdanova +49 69 5050-7411
United Kingdom, Ireland lbogdanova@mmwarburg.com

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

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

Maximilian Martin +49 69 5050-7413
Austria, Poland mmartin@mmwarburg.com

Rudolf Michaelis +49 40 3282-2649
Switzerland rmichaelis@mmwarburg.com

Christopher Seedorf +49 40 3282-2695
Switzerland cseedorf@mmwarburg.com

Charlotte Wernicke +49 40 3282-2669
Roadshow/Marketing cwernicke@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

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

Rico Müller +49 40 3282-2685
Sales Trading rmuller@mmwarburg.com

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

Jan-Philip Schmidt +49 40 3282-2682
Sales Trading jschmidt@mmwarburg.com

Sebastian Schulz +49 40 3282-2631
Sales Trading sschulz@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

Bloomberg RESP MMWA GO

FactSet www.factset.com

Refinitiv www.refinitiv.com

Capital IQ 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