### Noratis (NUVA GY) | Real Estate

### Backed by the major shareholder - model update

Noratis executed two capital hikes: 1st, a rights issue, raising EUR 8 m gross. 2nd, issuance of new shares equivalent to ~7% of shares outstanding after the afore-mentioned capital increase, raising EUR 2 m. Major shareholder Merz Real Estate paid in the vast amount of new capital in the 1st measure and subscribed the 2nd one exclusively, now holding a stake of >60%. The capital injection shall be used to refinance the repayment of a promissory note and to boost liquidity. In our view, the capital injection was consequent, maybe even needed, given Noratis's high indebtedness and muted disposals in '23e. Nonetheless, we expect an LTV of ~75% at YE '23e. We deem the commitment of Merz to be positive for the debt situation, although one might argue about the dilution and limited influence of minority shareholders. On strategy, Noratis now aims to focus on letting rather than on re-selling property after modernization. Here, we wait for details on target portfolio size, debt structure and financial ambitions. We keep our HOLD-recommendation, new price target EUR 7.2 (7.4).

The CEO informed to sell part of his Noratis-stake (old: 6%) to Merz.

**Changes in estimates:** Due to pending details, our model is still based on the old strategy. We have altered the number of shares, net debt, interest expenses and we have cut disposal volume. Our EPS forecast alters by -6% ('23e; shown different in table "changes in estimates" for technical reasons), -26% ('24e) & -30% ('25e). In the DCF-model, dilution is virtually offset by recently declined 10y German Bund yield.

**Valuation:** Currently, Noratis-shares trade at P/BV '23e of approx. 0.6 (before taking into account hidden reserves on inventory properties)

(before taking into acc	ount nide	uen rese	erves on	invento	ny prop	erties).
Fundamentals (in EUR m) <sup>1</sup>	2020	2021	2022	2023e	2024e	2025e
Sales	29	74	86	52	81	99
EBITDA	9	20	13	3	15	19
EPS adj. (EUR)	0.69	1.97	1.71	-2.12	-0.25	0.42
Gross profit	15.8	24.5	25.1	20.4	25.6	29.7
DPS (EUR)	0.50	0.55	0.00	0.00	0.00	0.10
Operating Cash Flow (EUR)	4	7	4	-3	1	4
Dividend paid (EUR)	3	2	3	0	0	0
Capital expenditures (EUR)	0	0	0	0	0	0
Ratios <sup>1</sup>	2020	2021	2022	2023e	2024e	2025e
EV/EBITDA	38.1	21.8	34.2	123.7	26.9	21.6
PCFR	20.7	13.6	12.9	-16.7	41.1	12.0
P/E adj.	26.0	9.9	6.8	-3.5	-29.3	17.6
Dividend yield (%)	2.8	2.8	0.0	0.0	0.0	1.4
EBIT margin (%)	28.6	26.3	14.6	5.6	17.9	18.4
Gearing (%)	345.3	414.5	446.6	425.4	416.2	402.6
PBV	1.0	1.2	0.6	0.6	0.6	0.6
1						

<sup>1</sup>Sources: Bloomberg, Metzler Research

Information for professional clients and eligible counterparties - not to be passed on to private clients

December 15, 2023

Performance (in %) <sup>1</sup>	1m	3m	12m
Share	30.4	-7.0	-35.4
Rel. to SDAX	27.8	-9.9	-43.3
Changes in estimates (in %) <sup>1</sup>	2023e	2024e	2025e
Sales	-14.2	-10.9	-3.3
EBIT	-33.7	-10.7	-3.2
EPS	27.1	-25.7	-29.5

#### **Sponsored Research**



Author: Jochen Schmitt

**Financial Analyst Equities** 

+49 69 2104-4359 JSchmitt@metzler.com



Price\*

Price target

Hold

### EUR 7.30

#### EUR 7.20 (7.40)

\* XETRA trading price at the close of the previous day unless stated otherwise in the Disclosures

Market Cap (EUR m)1 53 Enterprise Value (EUR m)<sup>1</sup> 419 Free Float (%)<sup>1</sup> 33.6 Price (in EUR)<sup>1</sup> 12.5 10 7.5 5 2.5 Jan-23 Jul-23 Apr-23 Oct-23

# **METZLER**

#### Noratis: Our new estimates based on the co.'s P&L structure - pressure on disposal result, mark-downs on interest rate derivatives & risen cost of debt to eat into EBT

Capital Markets

#### in EUR m 2019 2020 2021 2022 20236 2024e 2025e Total revenue 76.0 28.7 73.6 85.6 51.9 81.1 99.1 Revenue from the sales of inventory properties 63.0 12.0 50.6 55.9 21.1 49.5 66.7 Cost of sales of inventory properties 48.6 70 39.2 45.7 16.9 40.8 547 Gross profit from sales of inventory properties 14 4 50 114 10.2 42 87 12.0 Letting revenues 12.9 16.7 23.0 29.7 30.8 31.6 32.4 Letting costs 5.8 6.7 10.4 15.3 15.2 15.4 15.6 Gross profit from letting 7.1 10.0 12.6 14.4 15.6 16.2 16.9 Other operating income 10 08 04 05 06 07 08 Gross profit 22.5 15.8 24.5 25.6 25.1 20.4 29.7 Personnel costs 4.1 5.9 6.3 7.1 5.0 5.3 6.7 0.4 Depreciation and amortization 0.4 0.5 0.5 0.5 0.5 0.5 Fair-value adjustments on investment properties 0.0 0.0 3.5 -0.4 -0.8 0.0 0.2 Impairment charge on inventory properties 2.1 6.0 0.0 0.0 na na na Other operating expenses 2.3 2.2 2.8 3.8 3.9 3.9 4.0 EBIT 15.8 8.2 14.5 19.4 12.5 2.9 18.2 At-equity result 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Financial income (incl. fair-value changes of derivatives) 0.2 0.2 0.5 8.7 -35 -35 -1.3 Financial costs (net of interest income 4.4 4.3 6.5 9.3 13.0 13.4 12.7 by derivatives as from 2023e)\* -4.3 -0.5 -13.9 -4.1 -5.9 -16.5 -16.9 Financial result Financial result excl. fair-value changes of derivatives -6.4 -8.9 -13.0 -13.4 -12.7 11.5 4.2 EBT 13.4 4.3 12.0 -13.7 -2.4 Income taxes 3.3 1.4 3.9 3.7 -3.2 -0.7 1.2 Tax rate 28.3% 32.7% 29.0% 31.0% 23.4% 28.0% 28.0% Proft for the period 8.3 2.8 9.5 8.3 -10.5 -1.7 3.1 Non-controlling interest 0.0 0.0 0.1 0.0 0.0 0.1 0.1 -1.8 Net income attributable to shareholders 8.3 2.8 9.5 8.2 -10.5 3.0

Sources: Noratis, Metzler Research / \* For purpose of analysis, derivatives interest income captured in this line

#### Noratis: We expect operating cash flow to be negative in 2023e (disposal result included by us) but to recover in 2024e and 2025e

#### Cash flow development

Metzler Research P&L forecast

in EUR m 2019 2020 2021 2022 2023e 2024e 2025e Operating cash flow (Metzler Research definition) 7.0 3.5 6.9 4.3 -3.2 4.4 1.3 Change in working capital 34.1 100.5 76.4 46.7 -13.6 -14.4 4.6 Operating cash flow after change in working capital -27.2 -96.9 -69.4 42.3 10.4 15.7 0.2 - CAPEX 0.1 0.1 0.1 0.2 0.5 0.5 0.5 Free cash flow -27.3 -97.0 -69.6 -42.5 9.9 15.2 -0.7 - Dividend payment for previous business year 4.7 2.9 2.4 2.7 0.0 0.0 0.0 Free cash flow after dividend -32.0 -99.9 -72.0 45.2 9.9 15.2 -0.7 Operating cash flow per share (MR calculation; in EUR) 1.93 0.87 1.44 0.90 -0.64 0.18 0.61

Sources: Noratis, Metzler Research

Change in working capital adjusted for reclassification of some inventory into investment properties in 2021

## Company note Capital Markets

#### Noratis: From our DCF-model, we derive a price target of EUR 7.2

	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	Terminal
in EUR m									Value
Sales	51.9	81.1	99.1	109.0	117.7	124.8	131.0	135.6	138.0
Sales growth (%)	-39.3	56.2	22.1	10.0	8.0	6.0	5.0	3.5	1.75
EBIT margin (%)	5.6	17.9	18.4	19.0	19.5	19.5	19.5	19.5	17.0
EBIT	2.9	14.5	18.2	20.7	23.0	24.3	25.6	26.4	23.5
- Revaluation of properties	-6.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
adjusted (cash-effective) EBIT	9.7	14.5	18.1	20.7	23.0	24.3	25.6	26.4	23.5
adjusted (cash-effective) EBIT-margin	18.7	17.9	18.2	19.0	19.5	19.5	19.5	19.5	17.0
- Cash taxes	2.6	3.8	4.8	5.5	6.1	6.4	6.8	7.0	6.2
Cash tax rate (%)	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
Depreciation	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6
Pension provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross Cash Flow	7.6	11.2	13.8	15.7	17.4	18.4	19.3	20.0	17.9
- CAPEX	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
- Change in working capital (2023e adjusted)	4.3	-14.4	4.6	4.8	5.1	5.3	5.6	5.9	2.0
Free Cash Flow	2.8	25.1	8.7	10.4	11.8	12.5	13.1	13.5	15.2
Discounted Free Cash Flow	2.8	23.8	7.9	9.0	9.7	9.8	9.8	9.6	
Discounted Terminal Value									337
Sum DCF	82								
Terminal Value	337			WACC	(%)				4.97
Enterprise Value	419		Cost of Debt after taxes (%)						3.09
				COE (%)	)				9.35
- Net Debt ex pensions	367								
- Minorities	1			Debt/To	tal Capit	al (%)			70.0
+ Adjustment for financial participations	0			Equity/T	otal Cap	oital (%)			30.0
= Equity Value	52								
Estimated Fair Value per share (in EUR)	7.2								

METZLER

Source: Metzler Research

Change in working capital of current year may be adjusted to prevent double-counting of net debt change in case of larger disposals or acquisitions of inventory properties (we refer to net debt as at YE 2023e).

WACC reduced in our DCF-model We have lowered our WACC estimate to 4.97% (before: 5.17%) in our DCF-model. The recent decline in the 10y German Bund yield is a key reason for the WACC reduction, even though other components in our WACC assumption have to be considered as well. For example, our COE estimate continues to include to some extent a component for risks which we recognize for property development in the current market environment; in addition, given that we expect an LTV of around 75% at YE '23e, our COE assumption also considers the theoretical risk that further equity measures to reduce indebtedness in the future can, in our view, not be excluded. Our cost of debt estimate (4.2% pre-tax) continues to be based on a blend of Noratis's current in-place cost of debt (net of hedging) as well as our assumptions for cost in case of debt prolongation in the medium-term. Regarding the capital structure, as previously we have applied our assumption for a target capital structure (lower leverage than currently, but still at the high end of what we would deem to be appropriate for Noratis).

Given that we have reduced our expectations for the disposal volume and disposal result in '23e-'25e, our DCF-assumptions regarding sales and EBIT for '26e-'30e have been lowered slightly, too. Overall, despite the higher number of shares outstanding following the capital measures, the reduced WACC estimate leads to an almost unchanged fair value estimate per share in our DCF-model.

long-term growth WACC fair value estimate in EUR per share 1.60%

4.72%

4.77%

4.82%

4.87%

4.92%

4.97%

5.02%

5.07%

1.65%

10.4

9.4

8.4

7.5

6.6

5.7

4.9

4.1

3.3

9.5

8.6

7.7

6.8

5.9

5.0

4.2

3.4

27

#### Noratis: Our DCF-model reacts very sensitively to minor changes in WACC and long-term growth assumptions

1.75%

12.1

11.1

10.1

9.1

8.1

7.2

6.3

5.5

4.6

1.80%

13.0

11.9

10.9

9.9

8.9

8.0

7.1

6.2

5.3

1.85%

14.0

12.9

11.8

10.7

9.7

8.8

7.8

6.9

6.0

1.90%

14.9

13.8

12.7

11.6

10.6

9.6

8.6

7.7

6.8

1.95%

16.0

14.8

13.6

12.5

11.5

10.4

9.4

8.5

7.5

2.00%

17.0

15.8

14.6

13.5

12.4

11.3

10.3

9.3

8.3

1.70%

11.2

10.2

9.2

8.3

7.4

6.5

5.6

4.8

3.9

METZLER

Capital Markets

Sensitivity analysis

5.12% Source: Metzler Research

Interest rate sensitivity maybe a bit overstated

Due to the relatively high financial leverage of Noratis, any minor change in the enterprise value estimate takes an over-proportionally high influence on the change in the estimated fair value of equity. Moreover, the relatively high share of the terminal value within our enterprise value estimate makes our model also react sensitively on any changes in WACC or long-term growth. However, there may be a connection of rising interest rates triggered by inflationary pressure and the nominal long-term growth assumption. Therefore, in practical terms the sensitivity to rising cost of debt in our DCF-model is probably less pronounced than the sensitivity analysis suggests: rising WACC might be accompanied by a simultaneous increase in (nominal) long-term growth and vice versa in case of declining WACC.

Annotations: In the standardized excerpt of our P&L in table following, "gross profit" in Noratis's case includes gross result from sales of properties and gross result from letting. The other result (included in Noratis's own gross profit definition) is included in our model below the gross profit line. This explains the minor difference to gross profit according to the company definition as shown on the front page of our research report.

Our model and our research note are based on the number of shares after the two capital measures (Bloomberg as at 12/14/23 has not included the second capital measure in the number of shares, yet. We have already added the additional number of shares of the second capital hike as stated in the ad-hoc release from 12/11/23).

## Key Data

#### Company profile

CEO: Igor C. Bugarski CFO: André Speth Eschborn, Germany Noratis invests into small- or mid-size residential real estate portfolios in Germany. The company aims to refurbish the acquired units and to resell them. A proprietary portfolio for longer-term letting purposes is currently being set up, too. While Noratis has no regional focus within Germany, the company usually strives for purchasing properties either in cities of minor size close to major agglomerations or in major cities. In the future, Noratis aims to focus more on the letting business rather than on reselling property after modernization (any corresponding details have not been published, yet).

#### Major shareholders

Merz Real Estate (ahead of further purchase from CEO's stake) (62.5%), Igor C. Bugarski (ahead of capital hikes and his disposals) (5.9%)

Key figures												
P&L (in EUR m)	2020	%	2021	%	2022	%	2023e	%	2024e	%	2025e	%
Sales	29	-62.2	74	156.4	86	16.3	52	-39.3	81	56.2	99	22.1
Gross profit on sales	15	-30.6	24	60.6	25	2.5	20	-19.6	25	25.9	29	15.9
Gross margin (%)	52.1	83.6	32.6	-37.4	28.7	-11.9	38.1	32.5	30.7	-19.4	29.1	-5.1
EBITDA	9	-46.7	20	129.6	13	-34.5	3	-73.9	15	342.8	19	24.7
EBITDA margin (%)	30.1	41.0	26.9	-10.5	15.2	-43.7	6.5	-57.0	18.5	183.5	18.9	2.1
EBIT	8	-48.1	19	135.9	12	-35.5	3	-76.9	15	402.1	18	25.6
EBIT margin (%)	28.6	37.4	26.3	-8.0	14.6	-44.5	5.6	-61.9	17.9	221.4	18.4	2.8
Financial result	-4	5.0	-6	-46.4	-1	91.4	-17	n.m.	-17	-2.3	-14	17.7
EBT	4	-64.0	13	223.2	12	-10.7	-14	-213.9	-2	82.3	4	277.6
Taxes	1	-58.4	4	186.6	4	-4.6	-3	-186.2	-1	78.8	1	277.6
Tax rate (%)	32.7	n.a.	29.0	n.a.	31.0	n.a.	23.4	n.a.	28.0	n.a.	28.0	n.a.
Net income	3	-66.2	10	240.9	8	-13.2	-10	-226.3	-2	83.3	3	277.6
Minority interests	0	-38.1	0	392.3	0	-31.3	0	-54.5	0	150.0	0	100.0
Net Income after minorities	3	-66.3	9	240.2	8	-13.1	-10	-227.2	-2	82.9	3	267.0
Number of shares outstanding (m)	5	33.8	5	0.0	5	0.0	7	49.4	7	0.0	7	0.0
EPS adj. (EUR)	0.69	-69.8	1.97	184.4	1.71	-13.1	-2.12	-223.8	-0.25	88.2	0.42	267.0
DPS (EUR)	0.50	-37.5	0.55	10.0	0.00	-100.0	0.00	n.a.	0.00	n.a.	0.10	n.a.
Dividend yield (%)	2.8	n.a.	2.8	n.a.	0.0	n.a.	0.0	n.a.	0.0	n.a.	1.4	n.a.
Cash Flow (in EUR m)	2020	%	2021	%	2022	%	2023e	%	2024e	%	2025e	%
Operating Cash Flow	4	-49.6	7	97.4	4	-37.3	-3	-172.6	1	140.6	4	243.0
Increase in working capital	100	194.3	76	-24.0	47	-38.9	-14	-129.1	-14	-6.2	5	131.9
Capital expenditures	0	-34.9	0	59.4	0	67.3	0	171.7	0	0.0	0	0.0
Dividend paid	3	-38.3	2	-16.3	3	9.1	0	-100.0	0	n.a.	0	n.a.
Free cash flow (post dividend)	-100	-212.4	-72	28.0	-45	37.3	10	121.9	15	53.2	-1	-104.7
Balance sheet (in EUR m)	2020	%	2021	%	2022	%	2023e	%	2024e	%	2025e	%
Assets	368	41.0	447	21.5	494	10.6	473	-4.3	457	-3.2	462	1.0
			•		0	n.a.	0	n.a.	0	n.a.	0	n.a.
Goodwill	0	n.a.	0	n.a.	0	a.						
Goodwill Shareholders' equity	0 74	n.a. 41.2	81	9.5	87	6.8	86	-0.7	84	-2.1	87	3.5
	-		-		-		86 367	-0.7 -5.4	84 352		87 352	3.5 0.2
Shareholders' equity	74	41.2	81	9.5	87	6.8				-2.1		

#### Structure

#### Gross result by sources 2022

Rental income			57%
Disposal result		41%	
Other result 2%			

Sources: Bloomberg, Metzler Research

#### ESG discussion

Key ESG-related topics for Noratis are the energy-efficiency level of buildings and the health of tenants, employees and contractors. Noratis published its first sustainability report in 2022 including an indicative scenario how to virtually reach net zero for its housing stock by 2045. As at year-end 2022, about 17% of its apartments were oil-heated. Several of Norati's oil heating systems have to be interchanged short-term and these measures shall be executed in due course. Approx. 14% of the company's apartments are part of social housing programs with price links. Integrating ESG into the risk management process is under way. A compliance codex for employees exists. The supervisory board is chaired by a leading employee of the major shareholder Merz Group.

## Disclosures

#### **Recommendation history**

Recommendations for each financial instrument or issuer - mentioned in this document - published by Metzler in the past twelve months

METZLER

Capital Markets

Date of dissemi- nation	Metzler reco Previous	mmendation * Current	Current price **	Price target * Author ***
Issuer/Financial I	nstrument (IS	SIN): Noratis (DE000	DA2E4MK4)	
13.10.2023	Hold	Hold	6.00 EUR	7.40 EUR Schmitt, Jochen
18.09.2023	Hold	Hold	7.85 EUR	9.00 EUR Schmitt, Jochen
06.06.2023	Hold	Hold	9.55 EUR	10.80 EUR Schmitt, Jochen
06.04.2023	Buy	Hold	9.70 EUR	11.20 EUR Schmitt, Jochen
		* Effectiv	o until the price targe	at and/or investment recommendation is undated

 Effective until the price target and/or investment recommendation is updated (FI/FX recommendations are valid solely at the time of publication)

- \*\* XETRA trading price at the close of the previous day unless stated otherwise herein
- \*\*\* All authors are financial analysts

#### Noratis

- 6. Metzler, a company affiliated with Metzler and/or a person that has worked on compiling this report has reached an agreement with the issuer in the past twelve months about the provision of investment services according to Appendix I section A and B of guideline 2014/65/EU by the European Parliament and the Council or there was an obligation to pay or receive compensation within the same timeframe based on the same guideline.
- 13. Metzler, a company affiliated with Metzler and/or a person that has worked on compiling this report has reached an agreement with the issuer relating to the production of investment recommendations.

Compiled: December 15, 2023 07:55 AM CET Initial release: December 15, 2023 07:55 AM CET

## Disclaimer

This document has been prepared by B. Metzler seel. Sohn & Co. AG (Metzler) and is addressed exclusively to eligible counterparties and professional clients. It is thus not suitable for retail clients.

This document is based on information which is generally available and which Metzler believes to be fundamentally reliable. Metzler has not verified the accuracy or completeness of the information, however, and thus provides no warranty or representation in respect of the accuracy or completeness of the information, opinions, estimates, recommendations and forecasts contained in this document. Neither Metzler nor any of its shareholders or employees are liable for damage or any other disadvantage suffered due to inaccurate or incomplete information, opinions, estimates, recommendations or forecasts as a result of the distribution or use of or in connection to this document.

This document does not constitute or form part of any offer to buy or solicitation of any offer to buy securities, other financial instruments or other investment instruments. Neither does it take account of the particular investment objectives, financial situation or needs of individual recipients nor does it constitute personal investment advice. Metzler does not act as investment advisor or portfolio manager in preparing and publishing this document. Recipients must make their own investment decisions in accordance with their specific financial situation and investment objectives, based on independent processes and analyses, taking sales or other prospectuses, information memoranda and other investor information into account, and consult with an independent financial advisor where necessary. Recipients should note that any information regarding past performance should not be relied upon as an indication of future performance and should therefore not form the basis of any decision whether or not to invest in any financial instruments.

The information, opinions, estimates, recommendations and forecasts contained in this document reflect the personal views of the author at the time of publication on the financial instruments or issuers that form the subject of this document and do not necessarily reflect the opinions of Metzler, the issuer or third parties. They may also be subject to change on account of future events and developments. Metzler has no obligation to amend, supplement or update this document or to otherwise notify recipients in the event that any information, opinions, estimates, recommendations or forecasts stated herein should change or subsequently become inaccurate, incomplete or misleading. The model calculations contained in this document, if any, are examples showing the possible performance and are based on various assumptions (e.g. regarding earnings and volatility). The actual performance may be higher or lower, depending on market trends and on the correctness of assumptions underlying the model calculations. Accordingly, actual performance cannot be guaranteed, warranted or assured.

Recipients should assume that (a) Metzler is entitled to acquire orders for investment banking, securities or other services from or with companies which form the subject of research publications and that (b) analysts who were involved in preparing research publications may, within the scope of regulatory laws, be indirectly involved in the acquisition of such orders.

Metzler and its employees may hold positions in securities of the companies analysed or in other investment objects or may conduct transactions with such securities or investment objects.

This document is provided for information purposes only and may not be copied, duplicated, forwarded to third parties or otherwise published, in whole or in part, without Metzler's written consent. Metzler reserves all copyrights and rights of use, including those relating to electronic media. Insofar as Metzler provides hyperlinks to websites of the companies cited in research publications, this does not mean that Metzler confirms, recommends or warrants any data contained on the linked sites or data which can be accessed from such sites. Metzler accepts no liability for links or data, nor for any consequences which may arise as a result of following the links and/or using the data.

This document is subject to the laws of the Federal Republic of Germany. Venue of jurisdiction for any disputes shall be Frankfurt am Main, Germany.

By accepting this document the recipient declares his/her agreement with the above provisions.

### Information in accordance with Regulation (EU) No. 596/2014, Delegated Regulation (EU) No. 2016/958 and section 85 (1) of the German Securities Trading Act (Wertpapier-handelsgesetz)

#### Persons responsible for this document

The company responsible for preparing this document is B. Metzler seel. Sohn & Co. AG, Untermainanlage 1, 60329 Frankfurt am Main, Germany, which is subject to supervision by the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht;* BaFin), Marie-Curie-Straße 24–28, 60439 Frankfurt/Main, Germany, and by the European Central Bank (ECB), Sonnemannstraße 20, 60314 Frankfurt/Main, Germany.

#### Key information sources

The sources of information referred to when preparing research publications include publications by national and international media, the European Central Bank and other public authorities, information services (such as Reuters and Bloomberg), the financial press, published statistics, information published by rating agencies, annual reports and other information provided by the issuers.

#### Valuation criteria and methods

Valuations are based on standard and acknowledged methods of fundamental and technical analysis (e.g. DCF model, peer-group analysis, sum-of-the-parts model, relativevalue analysis). The valuation models are affected by macro-economic values such as interest rates, exchange rates, commodities prices and economic performance, as well as by market sentiments. Detailed information on the valuation principles and methods used by Metzler and the assumptions on which they are based is available at: www.metzler.com/disclaimer-capital-markets-en.

#### Sensitivity of valuation parameters; risks

The figures on which the company valuations are based are date-specific estimates and thus carry inherent risks. They may be adjusted at any time without prior notice.

# METZLER

Irrespective of the valuation principles and methods used and the assumptions on which they are based, there is always a risk that a particular price target is not achieved or that the assumptions and forecasts prove inaccurate. This can, for instance, be the result of unexpected changes in demand, management, technology, economic or political developments, interest rates, costs, the competitive situation, the legal situation and other factors. Investments in foreign markets and instruments are subject to additional risks, as a result of changes in exchange rates or in the economic, political or social situation, for instance. This outline of risks makes no claim to be exhaustive.

#### Definition of categories for investment recommendations

The categories for investment recommendations in research publications by Metzler have the following meanings:

#### Shares:

BUY	The price of the analysed financial instrument is expected to rise in the next 12 months.
HOLD	The price of the analysed financial instrument is expected to largely remain stable in the next 12 months.
SELL	The price of the analysed financial instrument is expected to fall in the next 12 months.
Bonds:	
BUY	The analysed financial instrument is expected to perform better than similar financial instruments.
HOLD	The analysed financial instrument is not expected to perform significantly better or worse than similar financial instruments.
SELL	The analysed financial instrument is expected to perform worse than similar financial instruments.

#### Summary of investment recommendations

A list of all investment recommendations for each financial instrument or issuer published by Metzler in the past twelve months can be found at www.metzler.com/disclaimercapital-markets-en.

The quarterly quotation of the number of all investment recommendations given as "buy", "hold", "sell" or similar for the past 12 months as a proportion of the total number of investment recommendations made by Metzler and the quotation of the proportion of these categories relating to issuers to whom Metzler has provided services within the meaning of Annex I sections A and B of Regulation 2014/65/EU within the past 12 months can be accessed and downloaded at www.metzler.com/disclaimer-capital-marketsen

#### Planned updates of this document

This document reflects the opinion of the respective author at the time of its preparation. Any changes of factors can cause information, opinions, estimates, recommendations and forecasts contained in this document to cease to be accurate. No decision has as yet been taken as to whether, and if so when, this document will be updated. If an investment recommendation is updated, the updated investment recommendation replaces the previous investment recommendation upon publication.

#### Compliance arrangements; conflicts of interest

All analysts are bound by Metzler's internal compliance regulations which ensure that the research publications are prepared in accordance with statutory and regulatory provisions. The analysts are classified as working in a confidential sector and are thus required to observe the resulting statutory and regulatory provisions. This is monitored on a regular basis by the Compliance department and external auditors. The Compliance department ensures that potential conflicts of interest do not affect the original result of the analysis. Metzler has a binding Conflicts of Interest Policy in place which ensures that relevant conflicts of interest within Metzler, the Metzler Group, the analysts and staff of Metzler's Capital Markets division and persons associated with them are avoided or, if they cannot be avoided, are appropriately identified, managed, disclosed and monitored. A detailed description of Metzler's policy for avoiding conflicts of interest is available at www.metzler.com/disclaimer-capital-markets-en.

Details of the conflicts of interests to be disclosed under regulatory requirements are published at www.metzler.com/disclosures-en.

#### **Remuneration**

The remuneration of the Metzler staff members and other persons involved in preparing this document is in no way, either in whole or in any variable part, directly or materially linked to transactions in securities services or other transactions processed by Metzler.

#### Prices

All prices for financial instruments stated in this document are, unless otherwise stated, closing prices for the trading day preceding the respective stated publication date on the market which we regard as the most liquid market for the respective financial instrument.

#### Scope of application

This document was prepared in the Federal Republic of Germany in line with the legal provisions valid there. It may therefore be possible that this document does not comply with all provisions relating to the preparation of such documents in other countries.

Capital Markets

Metzler Capital Markets B. Metzler seel. Sohn & Co. AG Untermainanlage 1 60329 Frankfurt/Main, Germany Phone +49 69 2104-extension Fax +49 69 2104-679 www.metzler.com		Mario Mattera	Head of Capital Mark	ets
Research Fax +49 69 283159	Pascal Spano	Head of Research		4365
	Guido Hoymann	Head of Equity Resear	ch	398
		Transport, Utilities/Rer	newables	
	Stephan Bauer	Industrial Technology		4363
	Felix Dennl	E-Commerce, Retail		239
	Oliver Frey	Software, Technology,	Telecommunications	4360
	Alexander Neuberger	Industrial Technology,	Small/Mid Caps	4366
	Jochen Schmitt	Financials, Real Estate		4359
	Thomas Schulte-Vor- wick	Basic Resources	234	
	Pál Skirta	Mobility		525
	Uwe Hohmann	Equity Strategy		366
	Eugen Keller	Head of FI/FX Researc	h	329
	Juliane Rack	FI/FX Strategy		1748
	Sebastian Sachs	FI/FX Strategy		526
	Stoyan Toshev	FI/FX Strategy		528
Equities	Mustafa Ansary	Head of Equities		351
		Head of Equity Sales		
Sales	Eugenia Buchmüller			238
	Hugues Jaouen			4173
	Alexander Kravkov			4172
	Gerard O'Doherty			4189
	Jasmina Schul			1766
	Markus Tozman			4174
Trading	Sven Knauer	Head of Equity Trading	1	245
	Elyaz Dust			248
	Kirsten Fleer			246
	Stephan Schmelzle			247
	Thomas Seibert			228
				220
Corporate Solutions	Dr. Karsten Iltgen	Head of Corporate Sol	utions	510
	Stephan Averdung	•		514
	Thomas Burkart			511

	Christoph Hirth Adrian Takacs		513 512
Fixed Income (FI)	Sebastian Luther	Head of Fixed Income	688
FI Sales	Minush Nori Silke Amelung Claudia Ruiu Simon Tabath	Head of Fixed Income Sales	689 289 683 280
FI Trading/ALM	Burkhard Brod Bettina Koch Susanne Kraus Christian Bernhard Dirk Lagler	Head of ALM Head of Fixed Income Trading	659 291 658 266 685
Foreign Exchange (FX)	Özgur Atasever	Head of Foreign Exchange	281
FX Sales	Tobias Martin Steffen Völker	Head of FX Sales & Trading	614 293
FX Trading	Rainer Jäger Andreas Zellmann		276 610
Currency Management	Dominik Müller	Head of Currency Management	274
CM Advisory	Achim Walde Jens Rotterdam	Head of Advisory	275 282
CM Operations	Simon Wesch Tessa Feller Florian Konz	Head of Operations	350 1696 1773
	Sergii Piskun	Senior Quantitative Analyst	237