



Trends and themes on the metals markets

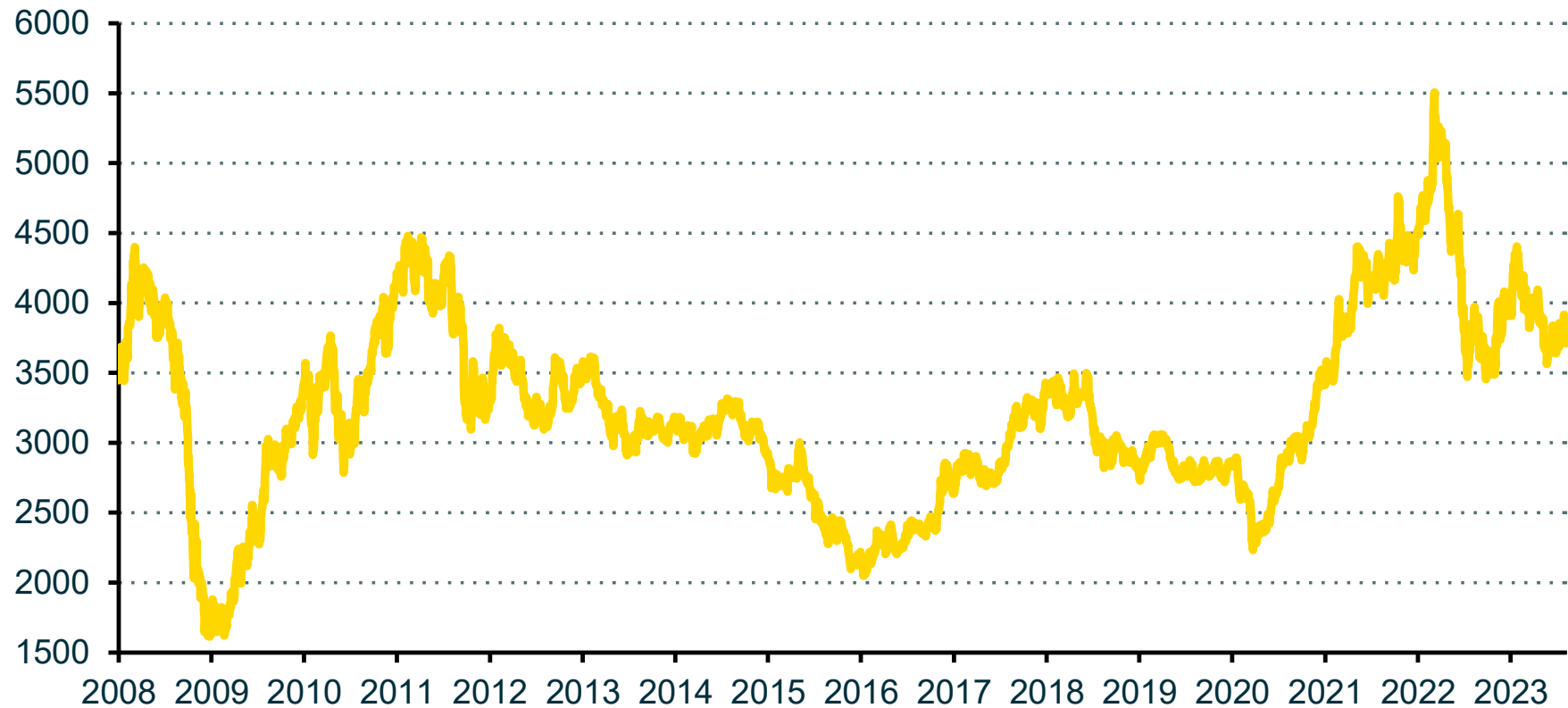
Carsten Fritsch | GM Commodity Research | Commerzbank AG | August 2023

Andreas Innetsberger | FMS Commodities Advisory & Execution | Commerzbank AG | August 2023



Metals prices with high fluctuation in the last 15 years

LMEX base metal index



Source: LME, Bloomberg, Commerzbank Research



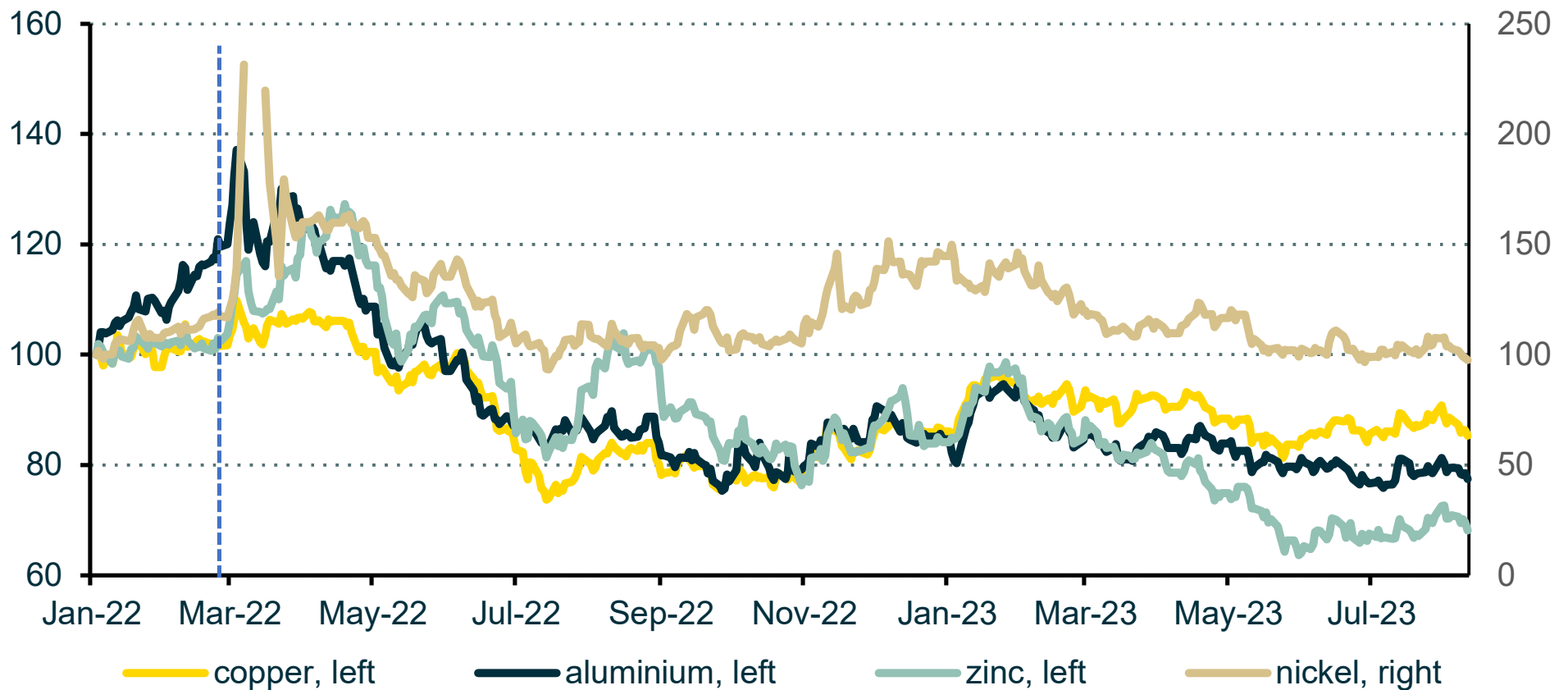
1

Current market situation and the most important influencing factors for metal prices



Metals prices in search for direction

indexed 1.1.2022 = 100, dotted line: start of the war in Ukraine

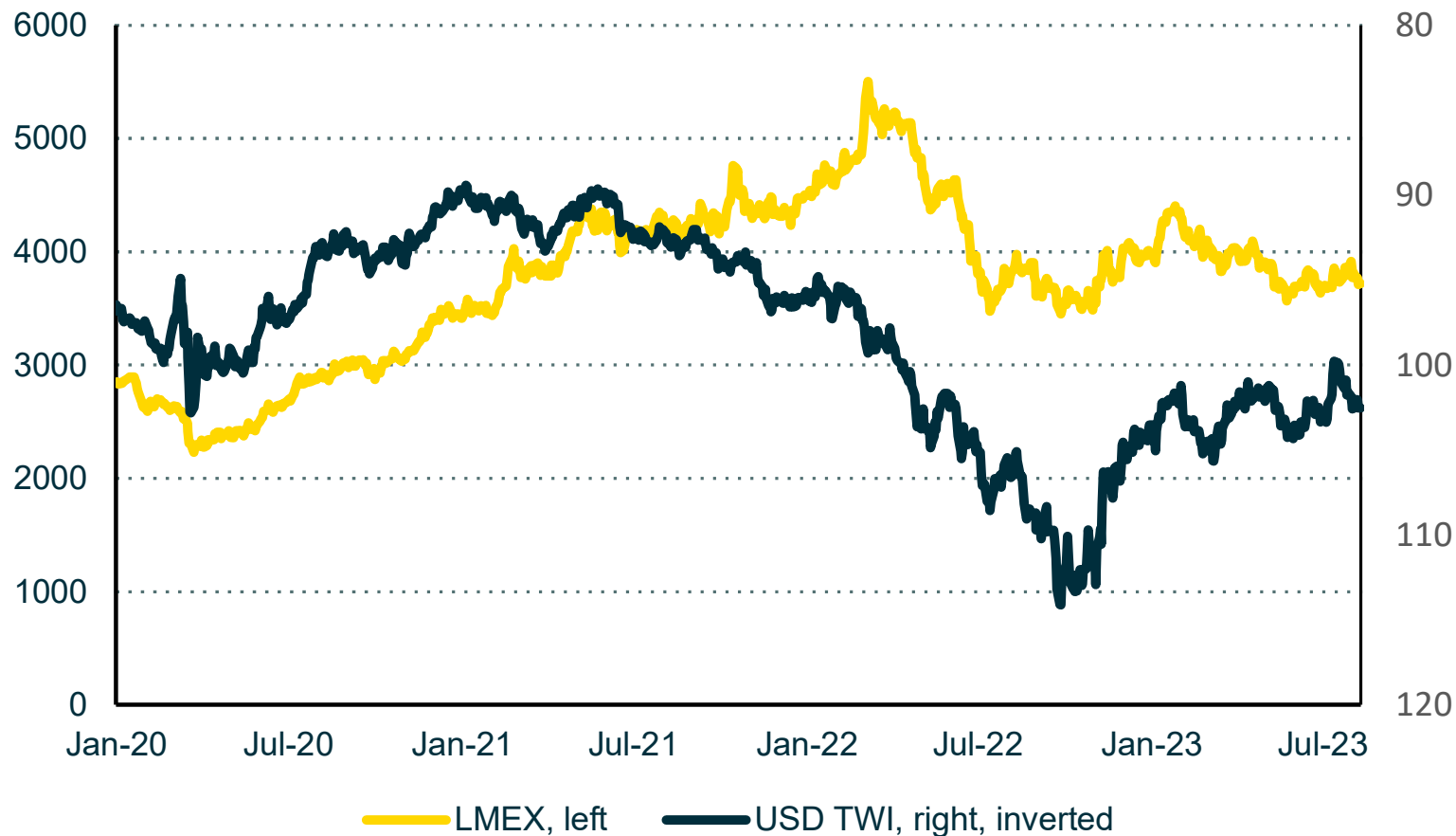


Source: LME, Bloomberg, Commerzbank Research



Influencing factor monetary policy

LMEX base metal index, trade-weighted USD index

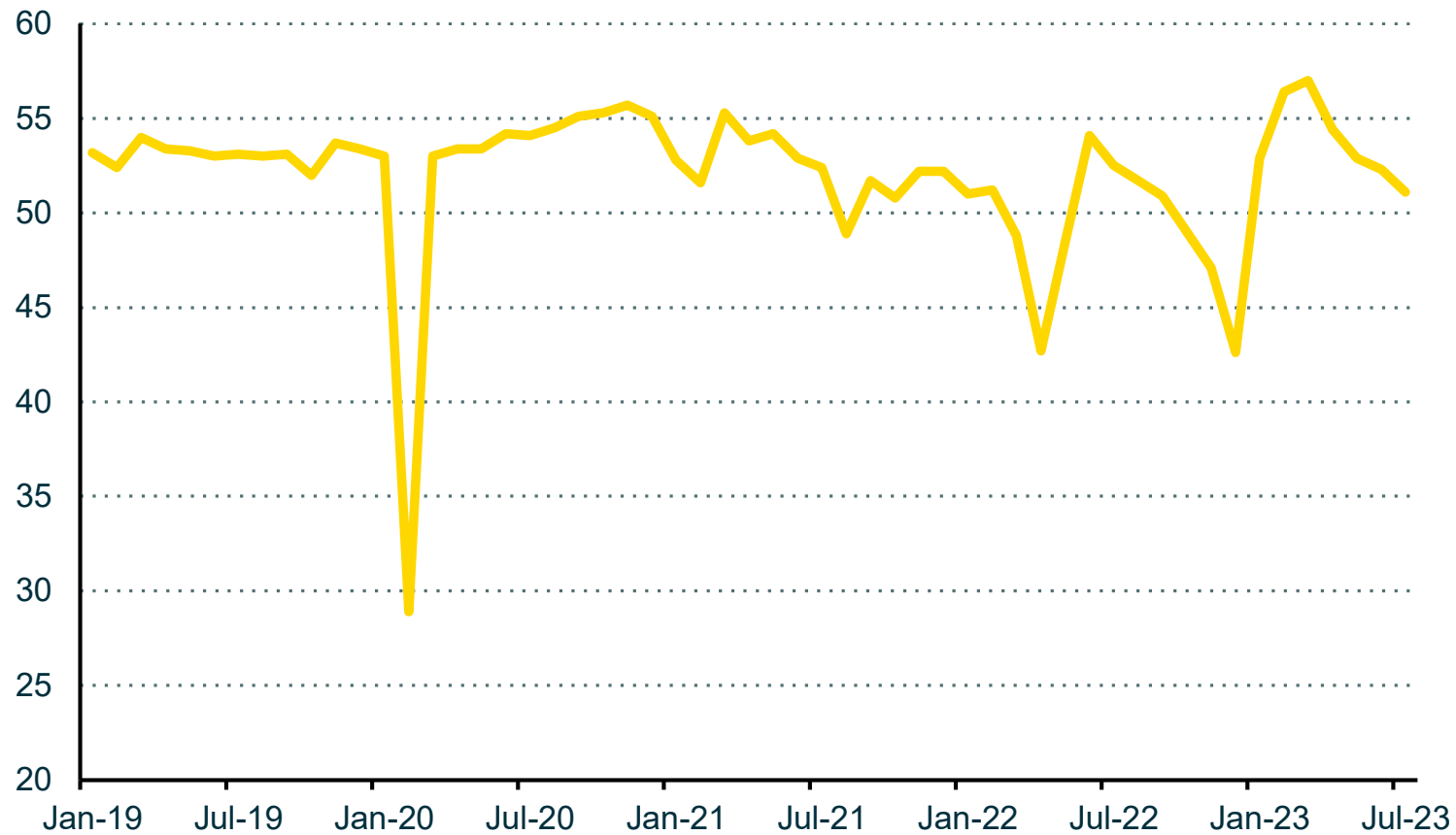


Source: LME, Bloomberg, Commerzbank Research



Influencing factor China

Purchasing manager index for manufacturing and services



Source: CFLP, Bloomberg, Commerzbank Research



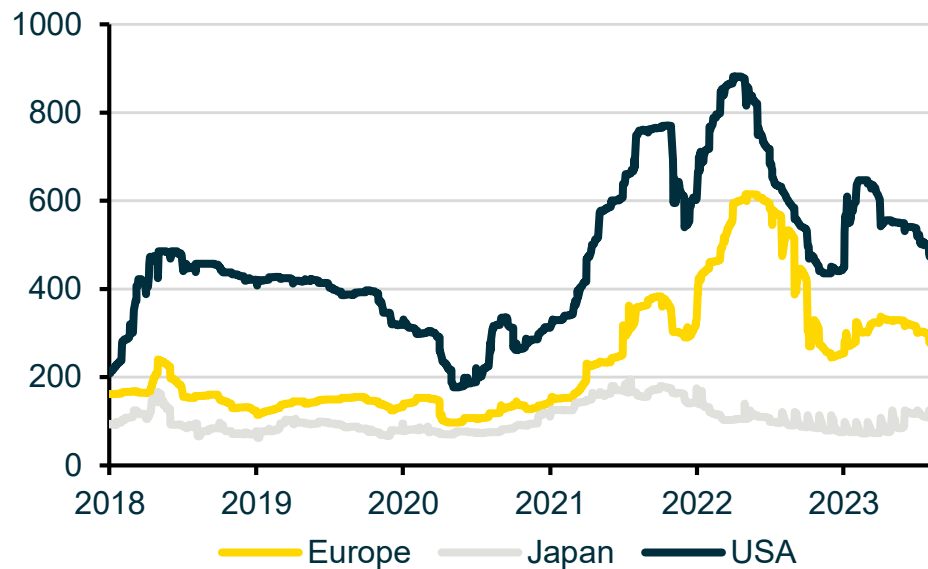
2

Implications of the war in Ukraine and the significant increase in energy costs for metals markets

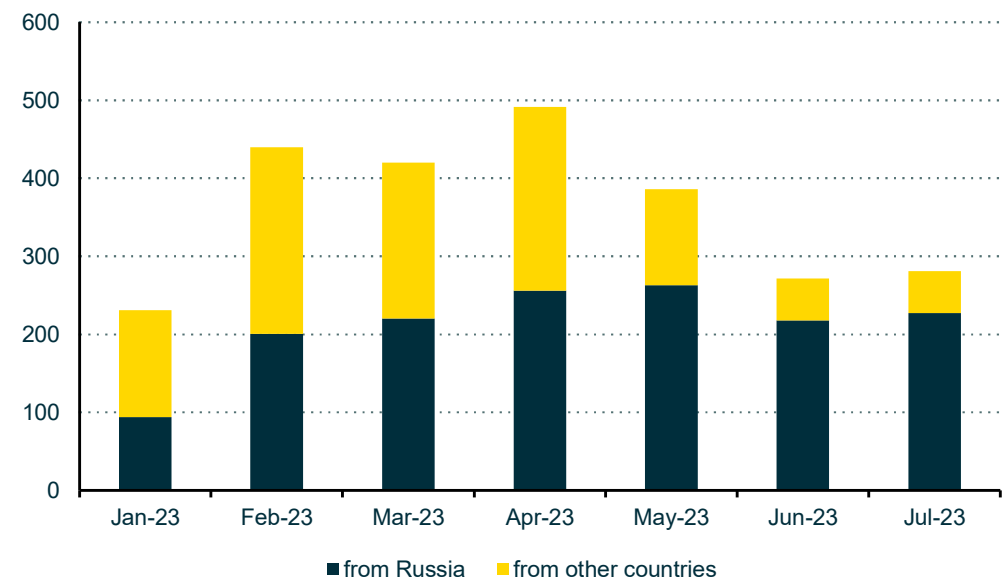


Rising physical premiums and buyers' strike for Russian aluminium

Physical aluminium premium in USD per ton



LME aluminium stocks in thousand tons

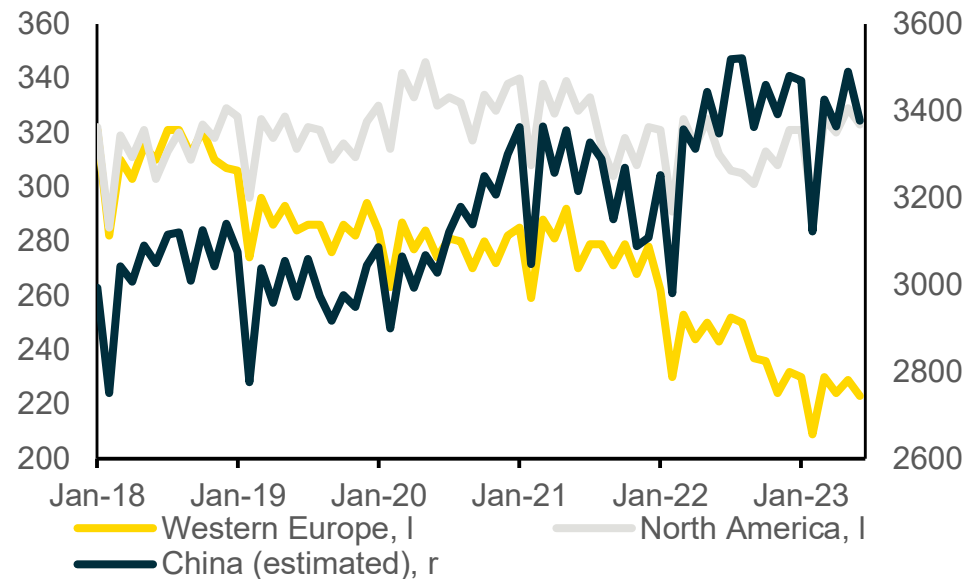


Source: LME, Bloomberg, Commerzbank Research

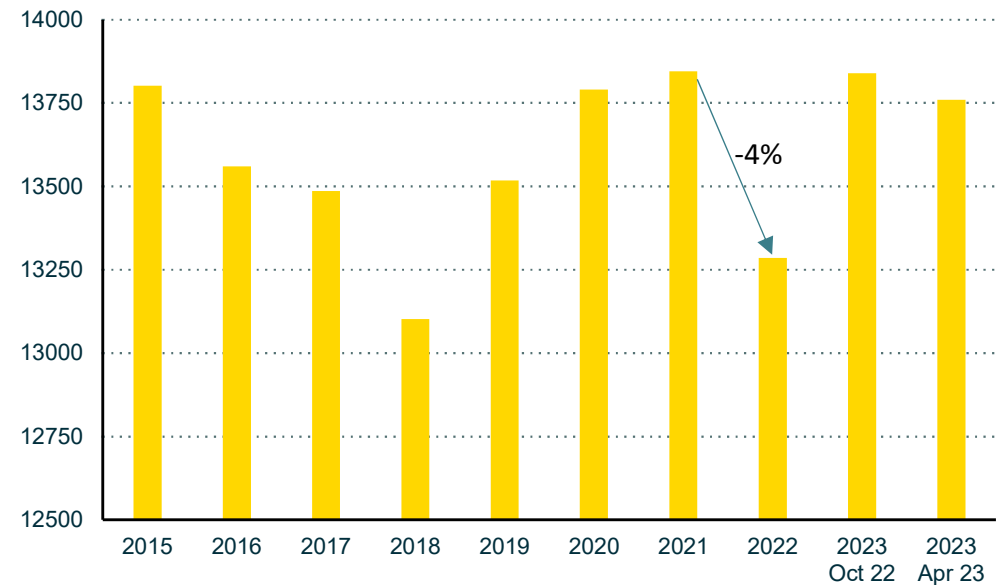


High energy prices curb energy-intensive metals production

Aluminium production by region in thousand tons



Global zinc production in thousand tons, ILZSG forecasts



Source: IAI, ILZSG, Bloomberg, Commerzbank Research



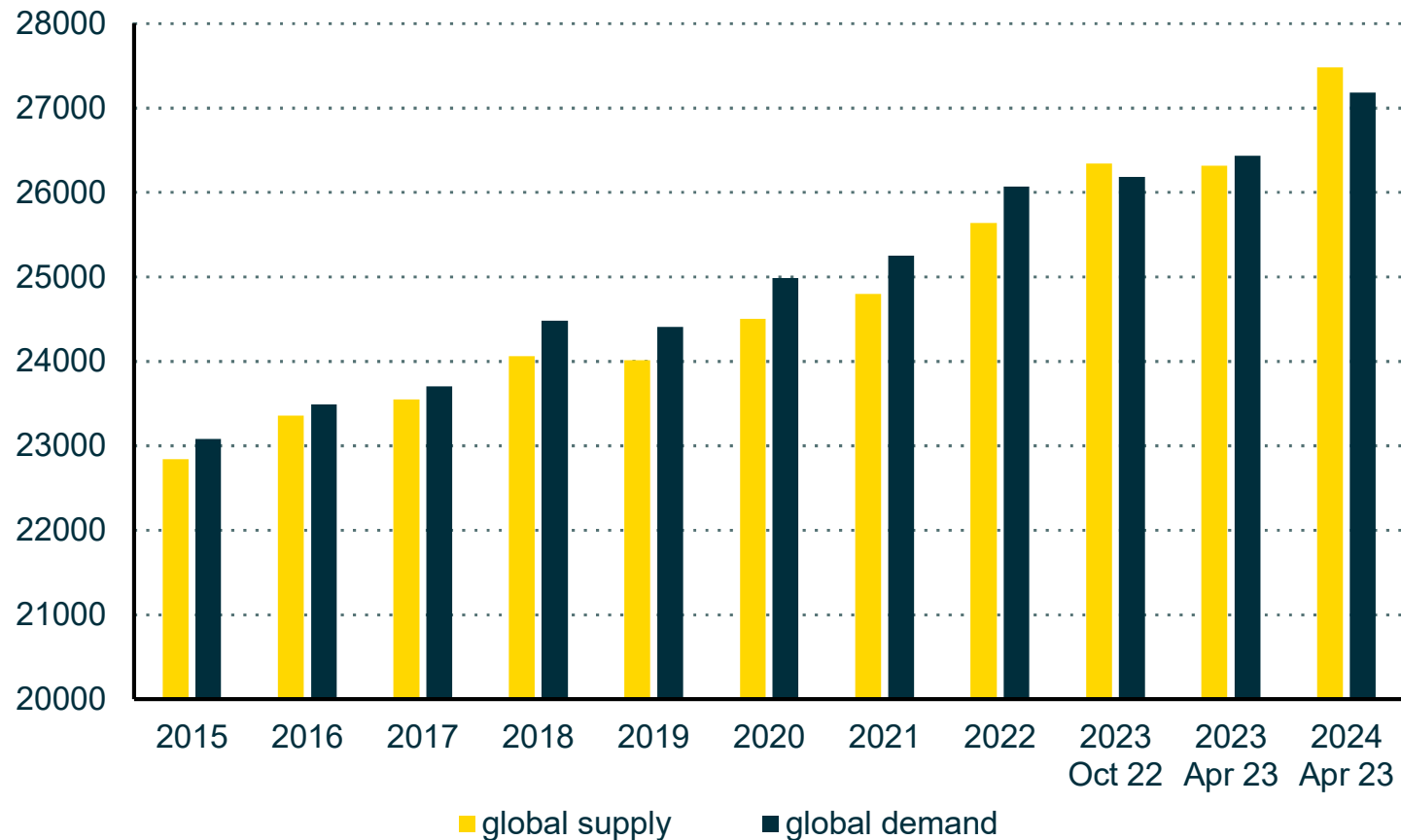
3

Supply and demand prospects



Copper market better supplied thanks to strong expansion of supply

in thousand tons, 2023 und 2024 ICSG forecasts



Source: ICSG, Commerzbank Research

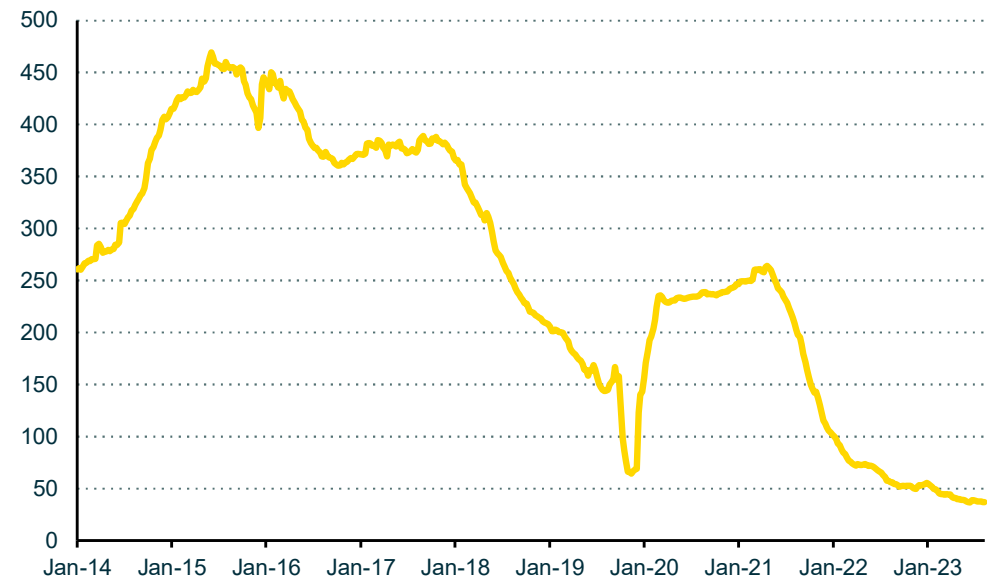


The same applies to the nickel market, but higher-grade nickel is scarce

Nickel supply and demand in thousand tons
2023 INSG forecast



LME nickel stocks in thousand tons



Source: INSG, LME, Bloomberg, Commerzbank Research



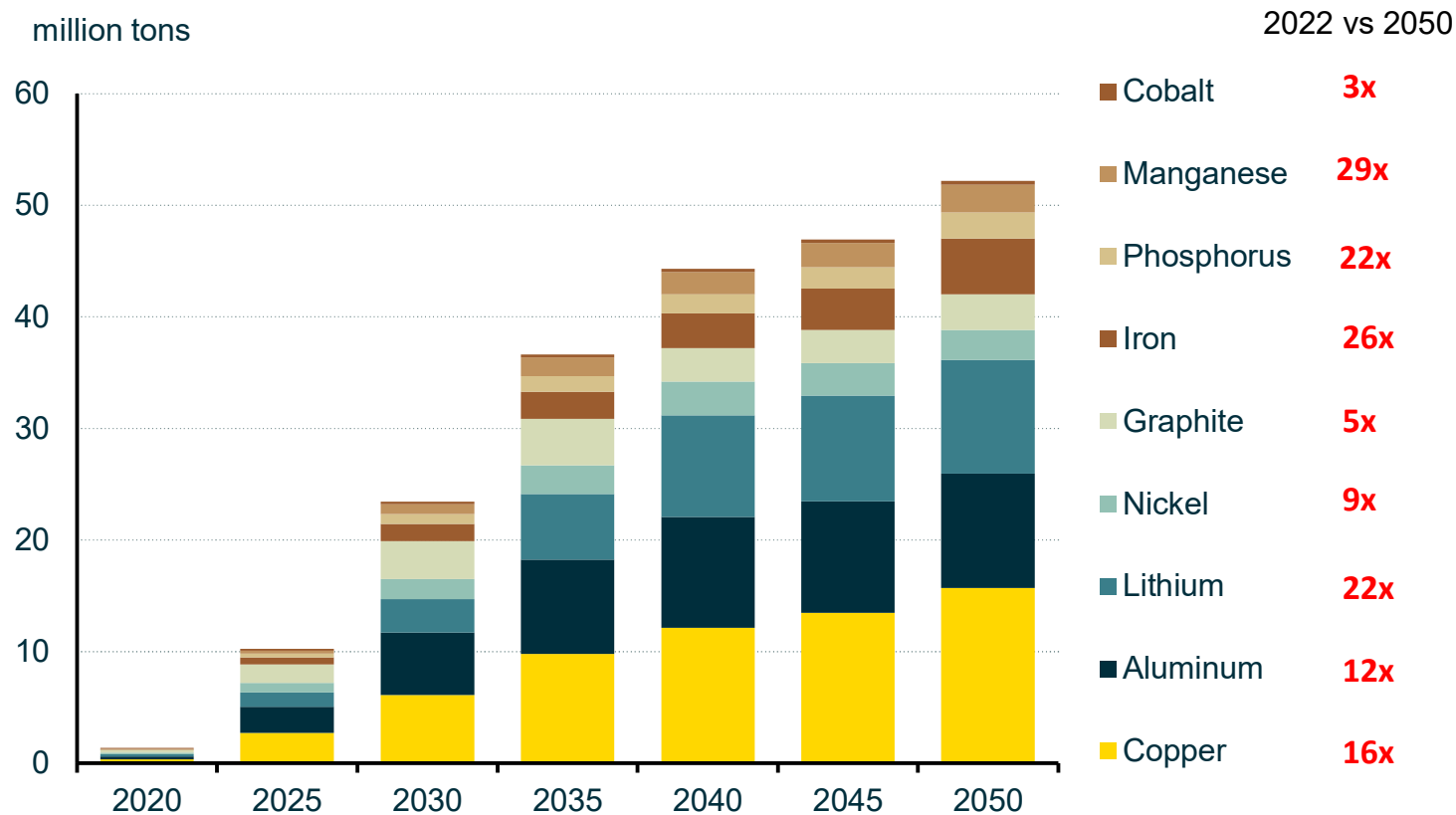
4

Decarbonisation as an important topic for the future, beneficiaries and losers among the metals



Strongly increasing metals demand for lithium-ion batteries

in million tons, multiple of demand 2050 vs. current, BNEF estimates

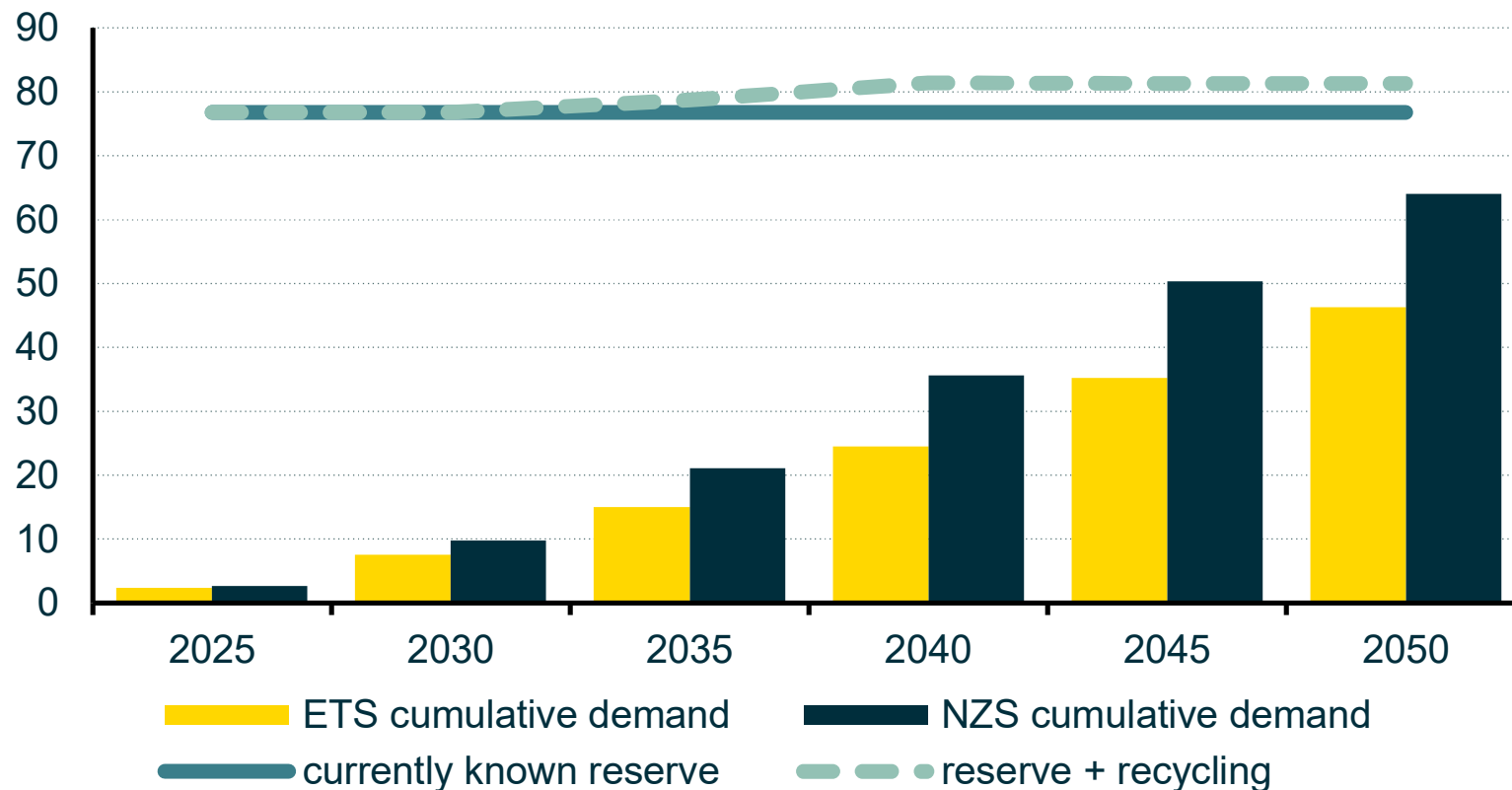


Source: BNEF, Commerzbank Research



Cumulative demand and cumulative reserves for Class-1 nickel

in million tons, ETS: Economic Transition Scenario, NZS: Net Zero Scenario, BNEF estimates

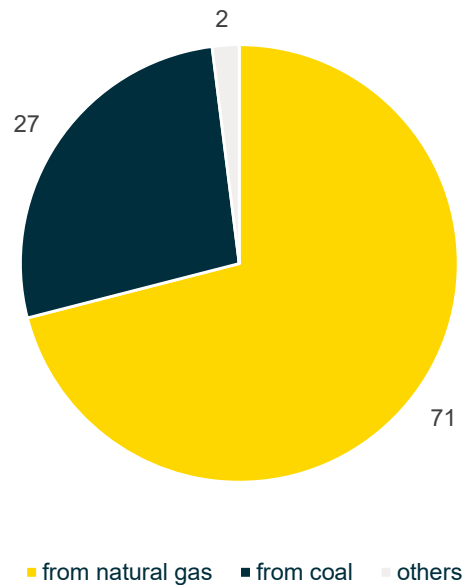


Source: BNEF, Commerzbank Research

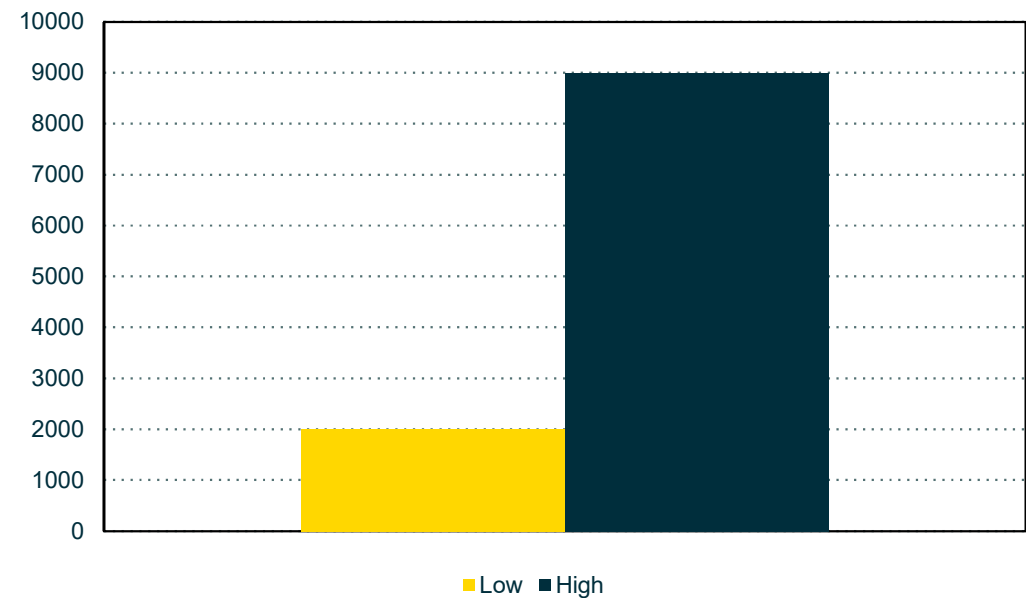


Hydrogen economy requires large quantities of platinum

Production of hydrogen using various energy sources in percent (2018)



Estimated gross demand for platinum in fuel cells, various assumptions, cumulative until 2050, in tons



Source: IEA, Hydrogen Council, Commerzbank Research

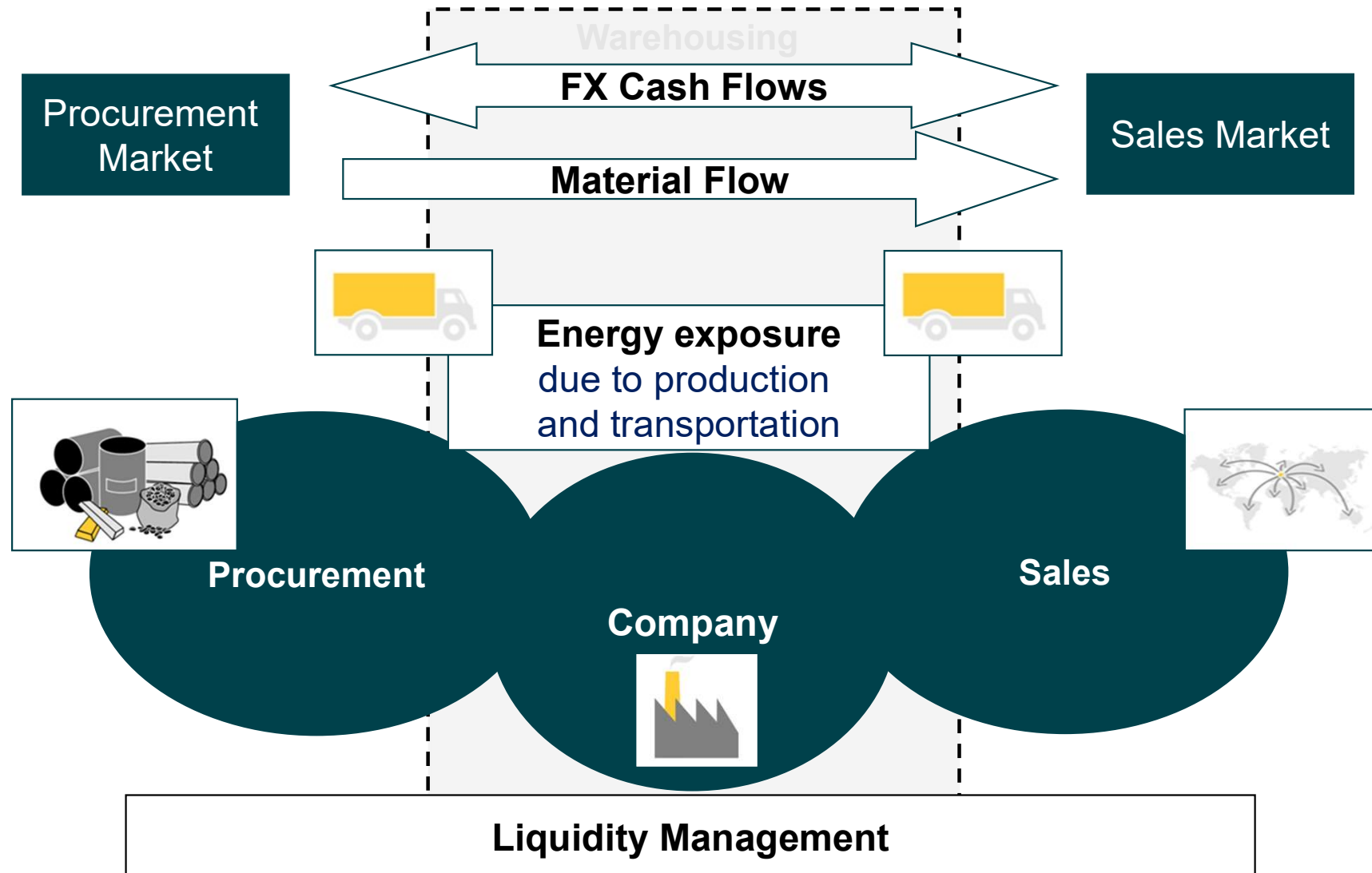


5

Risk Management in Commodities



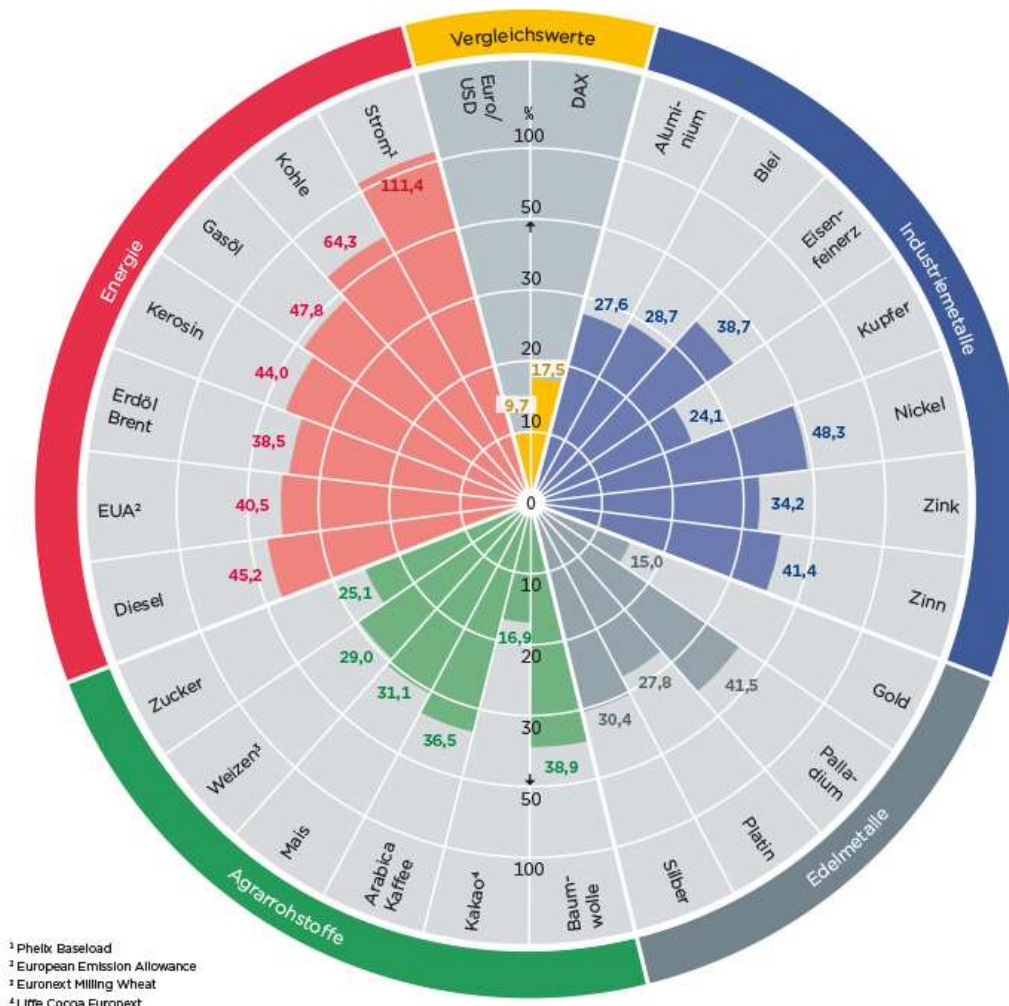
Potential Market Price Risks along the Value Chain





If you believe hedging FX and IR makes sense...

Volatilities from: 01.07.2022 - 30.06.2023

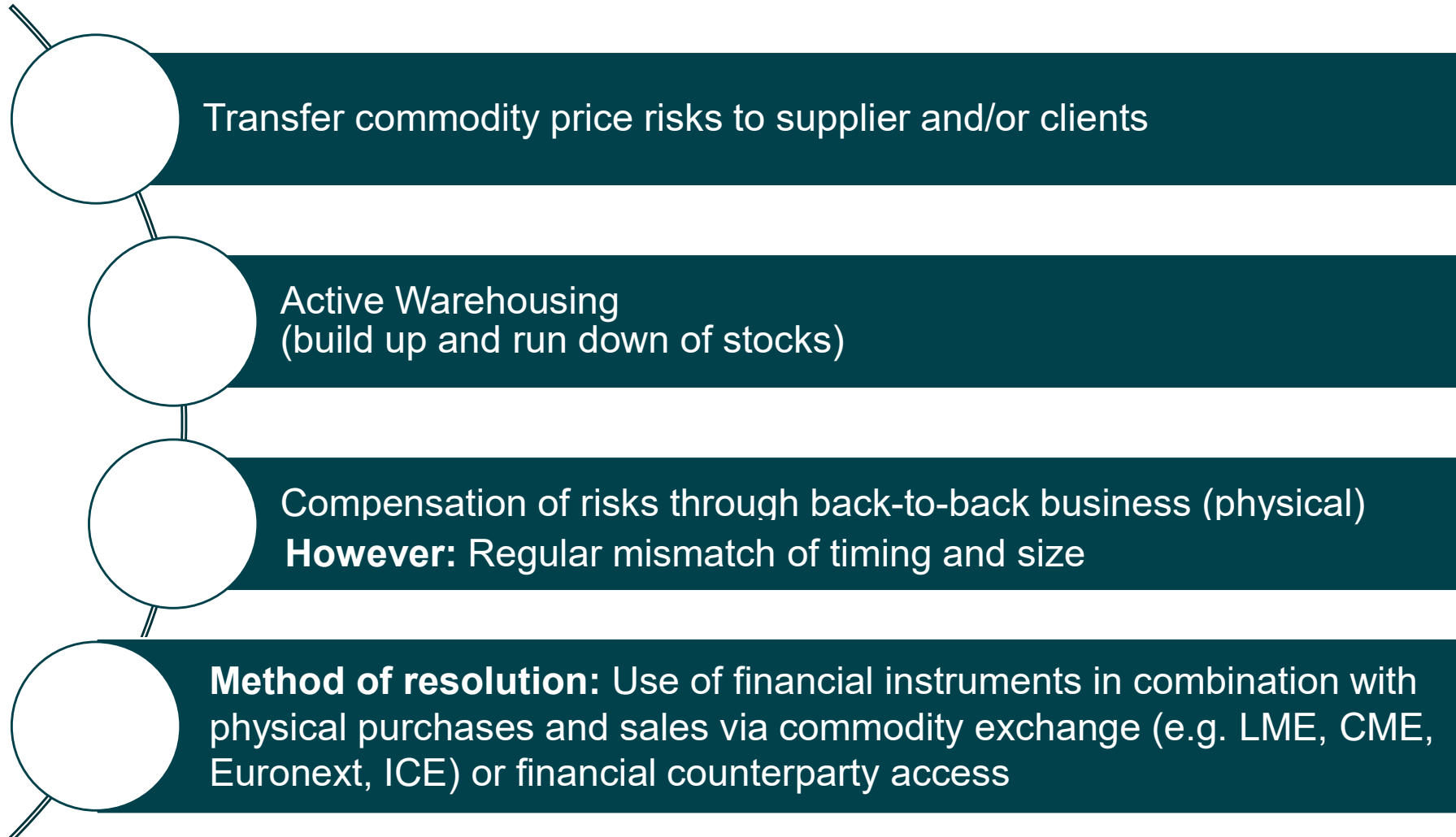


...hedging your commodity exposure is a MUST.

¹ Phelix Baseload
² European Emission Allowance
³ Euronext Milling Wheat
⁴ Liffe Cocoa Euronext



Financial instruments as a part of your commodity hedging tool box





One-stop hedging: Covering (almost) all your hedging needs

Energy		Agriculture		Precious Metals	Metals																	
Crude oil & Distillates <table border="1"> <tr> <td>Oil</td> <td>ICE Brent NYMEX WTI</td> <td>Fuel Oil</td> <td>1% FOB NWE Cargoes 1% FOB Barges ARA 1% CIF Cargoes NWE 3,5% CIF MED Cargoes 3,5% FOB Barges ARA 1% CIF MED Cargoes 3,5% FOB MED Cargoes 3,5% CIF Cargoes NWE SGP 180/ 380 CST Gulf Coast HSFO Marine FO 0,5% FOB Barges R'dam Marine FO 0,5% FOB SGP NYMEX NY Harbour ULSD</td> <td rowspan="4"> Gold Silver Platinum Palladium <i>Also:</i> Leases Ounces accounts Overdrafts E-Solutions </td> <td rowspan="4"> Aluminium Lead Copper Nickel Zinc Tin Iron Ore Steel Scrap </td> </tr> <tr> <td>Gasoil</td> <td>ICE Gasoil 0,1% CIF Cargoes NWE 0,1% FOB Barges R'dam 0,1% CIF MED Cargoes 10ppm FOB Cargoes SGP</td> <td>Naphtha</td> <td>Naphtha Cargoes CIF NWE</td> </tr> <tr> <td>Jet Fuel</td> <td>NWE CIF Cargoes FOB Barges ARA FOB SGP Kerosene FOB MED Cargoes</td> <td colspan="2"></td> </tr> <tr> <td>Diesel</td> <td>10ppm FOB Barges ARA 10ppm CIF Cargoes NWE 10ppm CIF Cargoes NWE (-UK) 10ppm CIF Cargoes MED ULSD Gulf Coast</td> <td colspan="2"></td> </tr> </table>		Oil	ICE Brent NYMEX WTI	Fuel Oil	1% FOB NWE Cargoes 1% FOB Barges ARA 1% CIF Cargoes NWE 3,5% CIF MED Cargoes 3,5% FOB Barges ARA 1% CIF MED Cargoes 3,5% FOB MED Cargoes 3,5% CIF Cargoes NWE SGP 180/ 380 CST Gulf Coast HSFO Marine FO 0,5% FOB Barges R'dam Marine FO 0,5% FOB SGP NYMEX NY Harbour ULSD	Gold Silver Platinum Palladium <i>Also:</i> Leases Ounces accounts Overdrafts E-Solutions	Aluminium Lead Copper Nickel Zinc Tin Iron Ore Steel Scrap	Gasoil	ICE Gasoil 0,1% CIF Cargoes NWE 0,1% FOB Barges R'dam 0,1% CIF MED Cargoes 10ppm FOB Cargoes SGP	Naphtha	Naphtha Cargoes CIF NWE	Jet Fuel	NWE CIF Cargoes FOB Barges ARA FOB SGP Kerosene FOB MED Cargoes			Diesel	10ppm FOB Barges ARA 10ppm CIF Cargoes NWE 10ppm CIF Cargoes NWE (-UK) 10ppm CIF Cargoes MED ULSD Gulf Coast			Cocoa ICE US, Europe Coffee ICE „C“ Arabica & Robusta Maize CBOT, Euronext Natural Rubber Frozen Concentrated Orange Juice Cotton No. 2 Rapeseed Euronext Soybean/-meal/-oil CBOT Sugar ICE US #11, Europe Wheat CBOT, Euronext		
Oil	ICE Brent NYMEX WTI	Fuel Oil	1% FOB NWE Cargoes 1% FOB Barges ARA 1% CIF Cargoes NWE 3,5% CIF MED Cargoes 3,5% FOB Barges ARA 1% CIF MED Cargoes 3,5% FOB MED Cargoes 3,5% CIF Cargoes NWE SGP 180/ 380 CST Gulf Coast HSFO Marine FO 0,5% FOB Barges R'dam Marine FO 0,5% FOB SGP NYMEX NY Harbour ULSD	Gold Silver Platinum Palladium <i>Also:</i> Leases Ounces accounts Overdrafts E-Solutions	Aluminium Lead Copper Nickel Zinc Tin Iron Ore Steel Scrap																	
Gasoil	ICE Gasoil 0,1% CIF Cargoes NWE 0,1% FOB Barges R'dam 0,1% CIF MED Cargoes 10ppm FOB Cargoes SGP	Naphtha	Naphtha Cargoes CIF NWE																			
Jet Fuel	NWE CIF Cargoes FOB Barges ARA FOB SGP Kerosene FOB MED Cargoes																					
Diesel	10ppm FOB Barges ARA 10ppm CIF Cargoes NWE 10ppm CIF Cargoes NWE (-UK) 10ppm CIF Cargoes MED ULSD Gulf Coast																					
Cracksreads/ Differentials Different combinations or differentials of the above underlyings.		Emissions <table border="1"> <tr> <td>EU Emissions Trading System (EU ETS)</td> <td>EUA EUAA UKA</td> </tr> <tr> <td>Voluntary compensation</td> <td>VER (GS, Verra, CDM)</td> </tr> </table>		EU Emissions Trading System (EU ETS)	EUA EUAA UKA	Voluntary compensation	VER (GS, Verra, CDM)															
EU Emissions Trading System (EU ETS)	EUA EUAA UKA																					
Voluntary compensation	VER (GS, Verra, CDM)																					
<table border="1"> <tr> <th>Gas</th> <th>Electricity & Coal</th> </tr> <tr> <td>NatGas THE Gas TTF Gas</td> <td>Electricity Phelix Baseload Coal Coal API2</td> </tr> </table>		Gas	Electricity & Coal	NatGas THE Gas TTF Gas	Electricity Phelix Baseload Coal Coal API2																	
Gas	Electricity & Coal																					
NatGas THE Gas TTF Gas	Electricity Phelix Baseload Coal Coal API2																					

- Hedges can be executed as **spot** transactions, **plain vanilla** or **structured**.
- In the precious metals business we offer **unallocated accounts**, as well as **overdrafts**, **leases** and **swaps**.
- All transactions are concluded on the basis of **bilateral** agreements (**OTC**).

Tailor made solutions are available at your request!

Disclaimer



In accordance with ESMA MAR requirements this report was completed 11 August 2023 and disseminated 11 August 2023.

This document has been created and published by the Group Research department (GM-R) within the Group Management division of Commerzbank AG, Frankfurt/Main or Commerzbank's non-US branch offices mentioned in the document.

Please note that the author(s) certify that (a) the views expressed in this report accurately reflect their personal view about the subject securities and issuers; and (b) no part of their compensation was, is, or will be directly or indirectly related to the specific recommendation(s) or views expressed by them contained in this document.

It has not been determined in advance whether and in what intervals this document will be updated. Unless otherwise stated current prices refer to the most recent trading day's closing price or spread which may fluctuate.

Disclaimer

This document is for information purposes only and has been prepared for recipients who, like professional clients according to MiFID II, have the experience, knowledge and expertise to understand information related to the financial markets. The document does not take into account specific circumstances of any recipient and the information contained herein does not constitute the provision of investment advice. It is not intended to be and should not be construed as a recommendation, offer or solicitation to acquire, or dispose of, any of the financial instruments and/or securities mentioned in this document and will not form the basis or a part of any contract or commitment whatsoever. Investors should seek independent professional advice and draw their own conclusions regarding suitability of any transaction including the economic benefits, risks, legal, regulatory, credit, accounting and tax implications.

The information in this document is based on public data obtained from sources believed by Commerzbank to be reliable and in good faith, but no representations, guarantees or warranties are made by Commerzbank with regard to accuracy, completeness or suitability of the data. Commerzbank has not performed any independent review or due diligence of publicly available information regarding an unaffiliated reference asset or index. The opinions and estimates contained herein reflect the current judgement of the author(s) on the date of this document and are subject to change without notice. The opinions do not necessarily correspond to the opinions of Commerzbank. Commerzbank does not have an obligation to update, modify or amend this document or to otherwise notify a reader thereof in the event that any matter stated herein, or any opinion, projection, forecast or estimate set forth herein, changes or subsequently becomes inaccurate.

In order to address potential conflicts of interest Commerzbank's Research department operates independently of other business units of the bank. This is achieved by way of physical and administrative information barriers and separate reporting lines as well as by written internal policies and procedures.

This communication may contain trading ideas where Commerzbank may trade in such financial instruments with customers or other counterparties. Any prices provided herein (other than those that are identified as being historical) are indicative only, and do not represent firm quotes as to either size or price. The past performance of financial instruments is not indicative of future results. No assurance can be given that any financial instrument or issuer described herein would yield favourable investment results. Any forecasts or price targets shown for companies and/or securities discussed in this document may not be achieved due to multiple risk factors including without limitation market volatility, sector volatility, corporate actions, the unavailability of complete and accurate information and/or the subsequent transpiration that underlying assumptions made by Commerzbank or by other sources relied upon in the document were inapposite.

Commerzbank and/or its affiliates may act as a market maker in the instrument(s) and/or its derivative that has been mentioned in our research reports. Employees of Commerzbank and/or its affiliates may provide written or oral commentary, including trading strategies, to our clients and business units that may be contrary to the opinions conveyed in this research report. Commerzbank may perform or seek to perform investment banking services for issuers mentioned in research reports.

Neither Commerzbank nor any of its respective directors, officers or employees accepts any responsibility or liability whatsoever for any expense, loss or damages arising out of or in any way connected with the use of all or any part of this document.

Commerzbank may provide hyperlinks to websites of entities mentioned in this document, however the inclusion of a link does not imply that Commerzbank endorses, recommends or approves any material on the linked page or accessible from it. Commerzbank does not accept responsibility whatsoever for any such material, nor for any consequences of its use.

This document is for the use of the addressees only and may not be reproduced, redistributed or passed on to any other person or published, in whole or in part, for any purpose, without the prior, written consent of Commerzbank. The manner of distributing this document may be restricted by law or regulation in certain countries, including the United States. Persons into whose possession this document may come are required to inform themselves about and to observe such restrictions. By accepting this document, a recipient hereof agrees to be bound by the foregoing limitations.

Additional notes to readers in the following countries:

Germany: Commerzbank AG is registered in the Commercial Register at Amtsgericht Frankfurt under the number HRB 32000. Commerzbank AG is supervised by both the German regulator, Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), Graurheindorfer Strasse 108, 53117 Bonn, Marie-Curie-Strasse 24-28, 60439 Frankfurt am Main and the European Central Bank, Sonnemannstrasse 20, 60314 Frankfurt am Main, Germany.

United Kingdom: This document is not for distribution to retail customers and has been issued or approved for issue in the United Kingdom by Commerzbank AG, London Branch, which is authorised and regulated by Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and the European Central Bank. Authorised by the Prudential Regulation Authority. Subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of our regulation by the Prudential Regulation Authority are available from us on request.

Disclaimer (contd.)



United States: To the extent this report is distributed to U.S. investors, it is restricted from being sent to U.S. retail investors. Commerz Markets LLC ("CMLLC") is a U.S. registered broker-dealer and wholly owned subsidiary of Commerzbank AG. For securities purposes, Commerzbank AG provides this report as a third-party report, therefore the involved research analysts may not be registered with FINRA and the reports are not subject to the full provisions of FINRA Rule 2242. Any securities transactions by US investors resulting from this report must be effected with CMLLC. CMLLC is a member of FINRA and SIPC. Banking and swap services in the U.S. will be provided by Commerzbank AG in accordance with the Dodd-Frank Wall Street Reform and Consumer Protection Act. Commerzbank AG is not a member of SIPC and is a provisionally registered swap dealer with the CFTC.

Canada: The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. Under no circumstances is the information contained herein to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. In Canada, the information contained herein is intended solely for distribution to Permitted Clients (as such term is defined in National Instrument 31-103) with whom Commerzbank AG and/or Commerz Markets LLC deals pursuant to the international dealer exemption. The information contained herein is not permitted to reference securities of an issuer incorporated, formed or created under the laws of Canada or a province or territory of Canada, as Commerzbank AG and Commerz Markets LLC operates under the international dealer exemption pursuant to National Instrument 31-103. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon these materials, the information contained herein or the merits of the securities described herein and any representation to the contrary is an offence.

European Economic Area: Where this document has been produced by a legal entity outside of the EEA, the document has been re-issued by Commerzbank AG, London Branch for distribution into the EEA. Commerzbank AG, London Branch is authorised and regulated by Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and the European Central Bank. Authorised by the Prudential Regulation Authority. Subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority.

Switzerland: Neither this research report nor the information contained herein should be regarded as personal recommendations for transactions in financial instruments within the meaning of the Financial Services Act.

Singapore: This document is furnished in Singapore by Commerzbank AG, Singapore branch. It may only be received in Singapore by an institutional investor, an accredited investor or an expert investor as respectively defined in section 4A of the Securities and Futures Act, Chapter 289 of Singapore ("SFA") pursuant to section 274 or section 275 (as applicable) of the SFA. Nothing in this document constitutes accounting, legal, regulatory, tax, financial or other advice and/or recommendations to the recipient of this communication. Further, the communication/information provided herein does not constitute a "financial advisory service" within the meaning of the Financial Advisers Act, Chapter 110 of Singapore ("FAA") and therefore, the regulatory requirements and duties that may be owed to a client pursuant to or in connection with the FAA are not applicable to the recipient in connection with this communication. Recipients are advised to seek independent advice from their own professional advisers about the information contained discussed herein.

Japan: This information and its distribution do not constitute and should not be construed as a "solicitation" under the Financial Instrument Exchange Act (FIEA) of Japan. This information may be distributed from Commerzbank international branches outside Japan solely to "professional investors" as defined in Section 2(31) of the FIEA and Section 23 of the Cabinet Ordinance Regarding Definition of Section 2 of the FIEA. Please note that Commerzbank AG, Tokyo Branch has not participated in its preparation. Any instruments referred in this report cannot be introduced by the Branch. You should contact the Corporate Clients division of Commerzbank AG for inquiries on availability of such instruments.

Australia: Commerzbank AG does not hold an Australian financial services licence. This document is being distributed in Australia to wholesale customers pursuant to an Australian financial services licence exemption for Commerzbank AG under Class Order 04/1313. Commerzbank AG is regulated by Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) under the laws of Germany which differ from Australian laws.

People's Republic of China (PRC): This document is furnished by Commerzbank AG and is only intended for institutions that are eligible for financial transactions. No-one else may rely on any information contained within this document. Any derivative transactions by PRC persons may only be entered into by PRC financial institutions which are permitted to conduct derivatives business in the PRC and have obtained all necessary regulatory approvals in the PRC.

© Commerzbank AG 2023. All rights reserved. Version 23.04

Commerzbank Offices

Frankfurt Commerzbank AG

DLZ- Gebäude 2, Händlerhaus
Mainzer Landstraße 153
60327 Frankfurt

Tel: + 49 69 136 21200

London Commerzbank AG

PO BOX 52715
30 Gresham Street
London, EC2P 2XY

Tel: + 44 207 623 8000

New York Commerz Markets LLC

225 Liberty Street, 32nd floor.
New York,
NY 102811050

Tel: + 1 212 703 4000

Singapore Commerzbank AG

71, Robinson Road, #421
Singapore 068895

Tel: +65 631 10000



COMMERZBANK