

POLAND | MACRO OUTLOOK

Recovery and strong zloty in 2024

Indications of rebound already visible

NBP turns hawkish

Yields to slowly move down

Zloty to remain strong next year

Economy (%)	2023e	2024e	2025e
GDP (real, y/y)	0.4	2.7	3.2
Unempl. Rate	5.2	5.0	5.0
CPI (y/y)	11.6	5.3	3.7
Retail Sales (y/y)	-5.0	4.0	3.0
Ind. Prod. (y/y)	-2.0	2.5	4.0
Public Debt/GDP	50.0	53.0	55.0

Source: Erste Group Research

Market	Spot	24Q1	24Q2	24Q3
EUR/PLN	4.33	4.35	4.30	4.30
USD/PLN	4.01	3.95	3.87	3.74
Target Rate (%)	5.75	5.75	5.75	5.75
3M Rate (%)	5.85	5.70	5.50	5.40
2Y Bond (%)*	5.06	5.30	5.20	5.20
5Y Bond (%)*	5.04	5.30	5.20	5.20
10Y Bond (%)*	5.30	5.50	5.30	5.10

Source: FactSet, Erste Group Research

Rating	Current	Outlook
Moodys	A2	stable
S&P	A-	stable
Fitch	A-	stable

Source: Erste Group Research

General	2023
Population mn	38.2
GDP/Capita EUR	20,122

Source: Erste Group Research

Spot Rates as of:

12th Dec. 2023

All Research on Poland:

erstegroup.com/research

Analyst:

Cery Jakub

jakub.cery@erstegroup.com

+43 (0)5 0100 17338

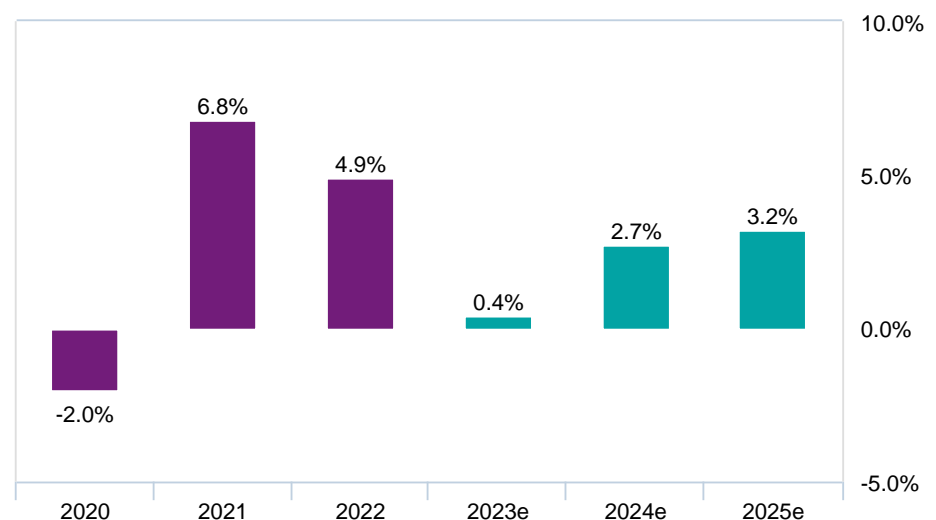
Note:

*Information on past performance is not a reliable indicator for future performance. Forecasts are not a reliable indicator for future performance.

After another interesting quarter, we can already see the first signs of a rebound in the Polish economy. The high-frequency indicators have been surprising to the upside, while 3Q GDP data showed annual growth for the first time this year. The anticipation for the next year is a rebound pushed by consumption, which could be pro-inflationary. Therefore, inflation will not be declining at such a fast pace as in previous months, and we see it stabilize at around 5% next year. However, only the new government's next steps will bring more clarity, not only on the inflation path, but also on the NBP's decisions in 2024.

As the NBP turned hawkish in autumn, the FX rate sharply appreciated, with no indications that this will be reversed soon. Moreover, the EUR 5bn in pre-financing from the RePowerEU chapter, paired with the normalization of relations with the EU, support the zloty even further. The financing needs are covered for this year, with approx. 20% of pre-financing to be done by the end of 2023. Next year, the need to borrow will be slightly higher than in this year, depending on the pace of fiscal consolidation.

GDP (real,y/y)



Source: Erste Group Research

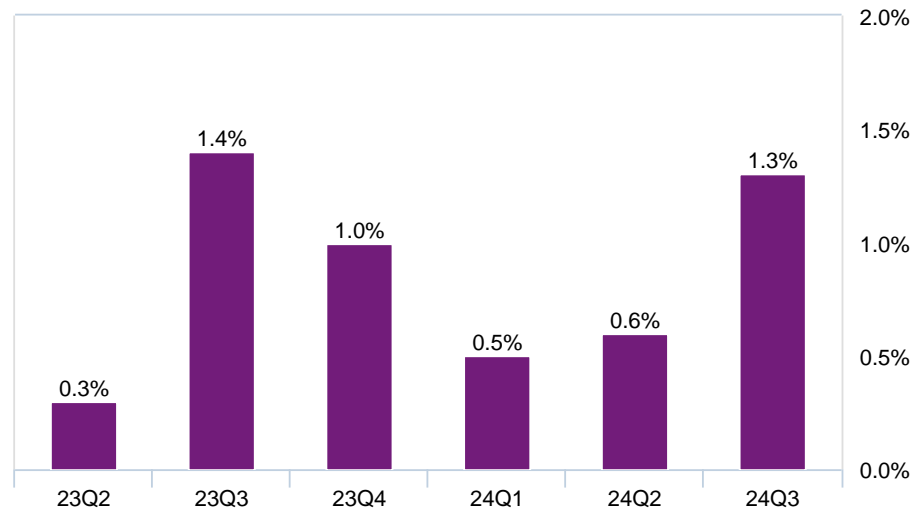
GDP

Indications of rebound already visible

The third quarter presented a contrasting picture compared to the first half of the year, suggesting that the lowest point was reached in 2Q. The growth rate for this quarter was recorded at +0.4% y/y, with consumption seeing a rebound of +0.8% y/y. However, the two primary factors influencing this year's performance are inventories, which are projected to deduct approx. 4.5pp from growth, and the trade balance, which is expected to contribute an additional 3.7pp. Investments continue to exhibit robust growth, due to the urgency to utilize the remaining EU funds from the previous funding period before the year-end. Due to the positive factors, we have revised our 2023 forecast upwards by 0.2pp to 0.4%.

Next year, we anticipate a significant recovery in consumption, driven by robust wage dynamics and the overall growth of disposable incomes. High-frequency indicators already suggest this trend, as retail sales have exceeded expectations recently. The gap in EU funding between two funding periods will be mitigated by the inflow of the RRP funds, which are expected to be released soon. Poland has already been promised EUR 5bn as pre-financing, which should be utilized next year. Furthermore, the negative impact of inventories on GDP should diminish, while net exports will also moderate. We project a growth rate of 2.7% for 2024, and 3.2% for the subsequent year.

GDP (real, s.a., q/q)



Source: Erste Group Research

Annual	2021	2022	2023e	2024e	2025e
GDP real	6.8%	4.9%	0.4%	2.7%	3.2%
CPI (y/y)	5.1%	14.3%	11.6%	5.3%	3.7%
Private Consumption	6.3%	3.0%	-0.8%	3.5%	3.0%

Source: Erste Group Research

Inflation

Inflation outlook uncertain

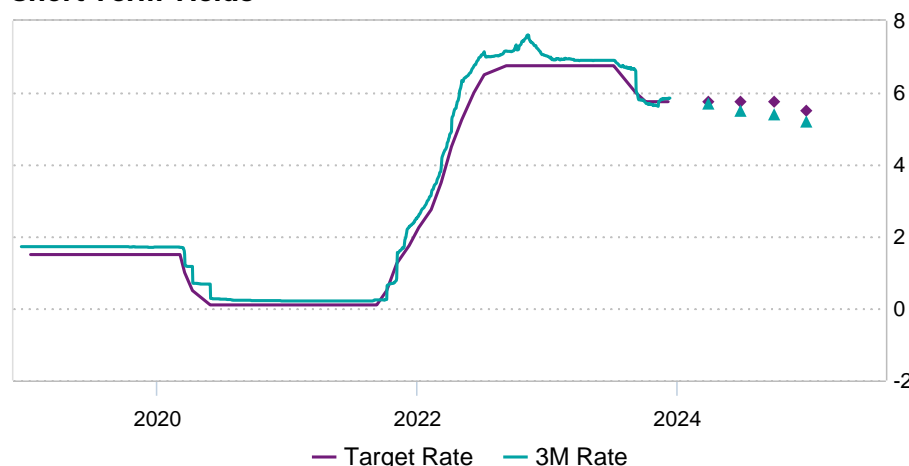
The flash estimate for November's CPI inflation was reported at 6.5%, close to October's figure of 6.6%. The significant decreases of inflation in September (-1.9pp) and October (-1.7pp) were supported by a favorable base effect and low prices of transportation fuels, which was now reversed. The inflation trajectory for the next year remains rather uncertain, largely dependent on the policy decisions of the incoming government. Key considerations include the potential continuation of the 0% VAT on certain food products, price caps on energy prices and other anti-inflationary measures. We expect inflation to circulate around 5% throughout next year.

Monetary Policy

NBP turns hawkish

After a sharp cut of the target rate in September by 75bp, a more moderate reduction of 25bp followed in October. These two cuts were the last for the foreseeable future, as the governor and other members of the MPC are changing their rhetoric to be more hawkish. With the inflation outlook uncertain, we see the pause in the easing cycle to be at least 2-3 quarters long. The crucial inflation developments will come in 1Q and 2Q next year, when we will have more clarity on whether the price pressures have eased for good. Real interest rates (both ex-post and ex-ante) will go over zero next year, which will be encouraging for foreign investments.

Short Term Yields



Source: FactSet, Erste Group Research

Market (%)	Spot	24Q1	24Q2	24Q3	24Q4
Target Rate	5.75	5.75	5.75	5.75	5.50
3M Rate	5.85	5.70	5.50	5.40	5.20

Source: FactSet, Erste Group Research

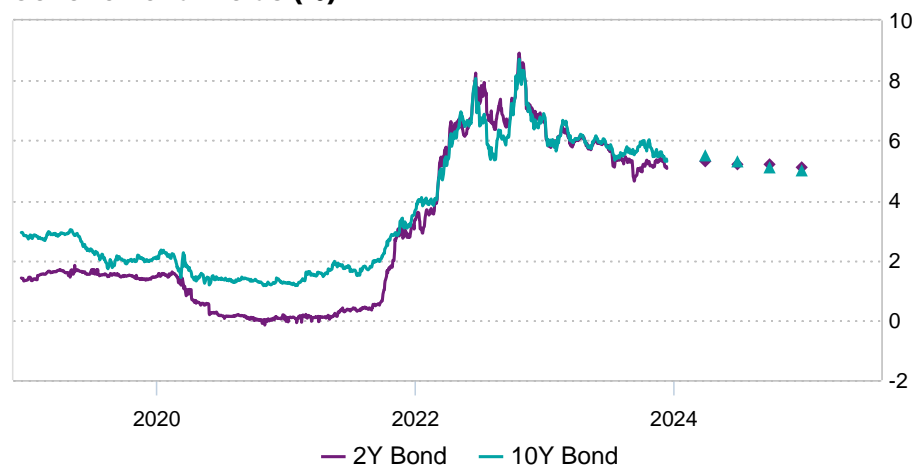
Bond Yields

Yields to slowly move down

Polish gross financing needs were completed already in October, with the aim to pre-finance as much as 20% of the next year's expected needs. The borrowing requirements next year will be higher than in 2023, with risks of increasing even more, as the pace of fiscal consolidation might be slower, due to upcoming local, European and presidential elections. Next year will see large redemptions of both foreign and domestic debt in January, followed by significant items between March and May.

The 10Y yield went down by around 50 basis points in the last week of October; since then, it has moved in the band between 5.5% and 5.75%. The long end of the yield curve is influenced by several factors, which move in opposite directions. On one hand, the anticipation of slower fiscal consolidation pushes the yield upwards; on the other hand, inflation expectations in the medium term have decreased, as the NBP vows to keep rates higher for longer. We see the 10Y yield moving closer to 5% in the next year, potentially even lower.

Generic Bond Yields (%)



Source: FactSet, Erste Group Research

Market	Spot	24Q1	24Q2	24Q3	24Q4
2Y Bond*	5.06	5.30	5.20	5.20	5.10
5Y Bond*	5.04	5.30	5.20	5.20	5.10
10Y Bond*	5.30	5.50	5.30	5.10	5.00

Source: FactSet, Erste Group Research

Polish Zloty

Zloty to remain strong next year

The Polish zloty has experienced a decline in its exchange rate by 6.5% over the past two months, reaching its strongest levels in three and a half years at 4.32. The FX rate is influenced by two main factors, the policy expectations of the NBP (and ECB) and the anticipated resolution of the frozen payments from the RPP. Regarding the latter, once the 'super milestones' are resolved, a significant inflow of euros occurs, leading to an appreciation of the zloty.

The primary factor behind the steep appreciation is the changed tone of the MPC in Poland, which turned more hawkish in recent months. As a result, the market expects the next rate cut only towards the end of the next year. Furthermore, the ECB could start its cutting cycle sooner than anticipated. Both assumptions play into the strengthening of the zloty, which we expect to oscillate around 4.3-4.35 per euro under the base case scenario. Nonetheless, the FX rate could see a lot of volatility, as the inflation outlook, and thus the NBP's actions, are still uncertain.

EUR/PLN



Source: FactSet, Erste Group Research

	Spot	24Q1	24Q2	24Q3	24Q4
EUR/PLN	4.33	4.35	4.30	4.30	4.35
<i>vs. Spot</i>		0.5%	-0.7%	-0.7%	0.5%
USD/PLN	4.01	3.95	3.87	3.74	3.78
<i>vs. Spot</i>		-1.5%	-3.5%	-6.7%	-5.7%

Source: FactSet, Erste Group Research

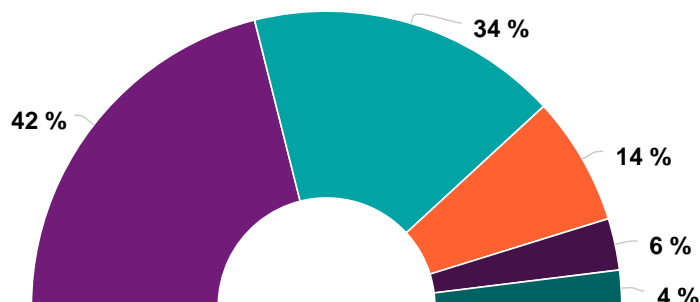
Politics

Opposition-led parliament to stabilize EU relationship

Although the party Law and Justice (PiS) won the parliamentary elections with 35.4%, forming a majority government failed, as they were allocated only 194 MPs out of 460. The new coalition of parties, which includes the Civic coalition, the Third Way and the New Left selected Tusk as their Prime Minister. They will shift Poland's direction towards the EU and improve the rule of law, which has led to almost EUR 60bn in RRP funds being frozen. The new coalition will be able to rely on 247 MPs in total.

There are several economic reforms planned by the winning parties, such as reinstating Sunday shopping, increasing the tax-free part of income and keeping the social program 800+. The new government is also expected to support the development of the capital market in Poland. The pro-market approach assumes that the stock market should become one of Poland's economic growth drivers by increasing the market's role in financing the economy. The future government will also push harder for clean energy transition, supported by inflows of EU funds.

Parliament Seats



- Law and Justice (PiS) | Right
- Civic coalition (KO) | Center-right
- Third Way | Center-right
- New Left | Left
- Confederation | Far-right

Source: Erste Group Research

Last Election:
2023, Q4

Next Election:
2027, Q4

Sustainable Development Goals

RePowerEU to make Poland greener

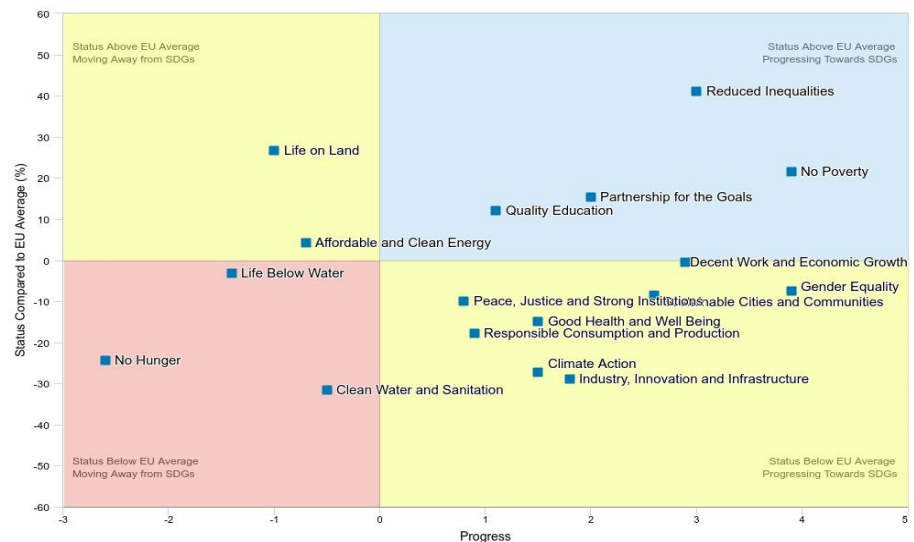
A publication from the European Commission on Sustainable development in the EU for 2023 revealed relatively mixed performance of Poland. 7 out of 17 SDGs are above the EU average, which is the 3rd best result in CEE after Croatia and Slovenia. However, when we look at the progress in the individual SDGs, 5 out of 17 marked negative development, which is the highest number in CEE alongside Romania. Related to SDGs, Poland has boosted their RRP massively by the RePowerEU chapter, which will accelerate the movement towards green sources of energy. The additional 25 billion Euros will be used for moving away from coal-based electricity production towards improved electricity transmission and distribution networks and offshore wind farms.

Progress Overview



Source: Erste Group Research

Progress Overview



Source: Erste Group Research

Forecasts

Annual	2017	2018	2019	2020	2021	2022	2023e	2024e	2025e
Real GDP growth	5.1	5.9	4.5	-2.0	6.8	4.9	0.4	2.7	3.2
Inflation (CPI, avg)	2.0	1.6	2.3	3.4	5.1	14.3	11.6	5.3	3.7
Unemployment rate (avg)	7.3	6.1	5.4	5.9	5.9	5.1	5.2	5.0	5.0
Retail sales growth	5.5	4.6	4.7	-3.7	5.8	6.0	-5.0	4.0	3.0
Industrial output growth	6.2	5.4	5.1	-1.9	14.4	10.7	-2.0	2.5	4.0
Private consumption growth	6.3	4.4	3.5	-3.6	6.3	3.0	-0.8	3.5	3.0
Fixed capital formation growth	1.6	12.6	6.2	-2.3	2.1	4.5	8.5	3.0	5.0
Percent of GDP									
Trade balance	-1.0	-2.3	-0.8	1.3	-1.3	-3.8	3.9	0.5	0.0
Current account balance	-1.1	-1.9	-0.2	2.5	-1.4	-3.3	0.8	0.0	-1.0
Budget balance	-1.5	-0.2	-0.7	-6.9	-1.8	-3.4	-5.4	-4.5	-3.5
Public debt	50.6	48.7	45.7	57.2	53.8	49.1	50.0	53.0	55.0
FX, money market									
USDLCY average	3.78	3.61	3.84	3.90	3.94	4.46	4.26	3.88	3.79
EURLCY average	4.26	4.26	4.29	4.44	4.59	4.68	4.47	4.35	4.40
EURLCY eop	4.17	4.29	4.25	4.56	4.59	4.68	4.35	4.35	4.40
(percent)									
CB policy rate (avg.)	1.50	1.50	1.50	0.50	0.50	5.40	6.30	5.60	4.50
3m interbank offer rate (avg.)	1.73	1.71	1.72	0.66	0.80	5.92	6.30	5.00	4.40
2Y Yield (average)*	1.86	1.57	1.56	0.47	1.10	6.23	5.50	5.10	4.00
5Y Yield (average)*	2.77	2.50	1.92	0.94	1.90	6.28	5.50	5.20	4.00
10Y Yield (average)*	3.43	3.21	2.33	1.51	2.25	6.00	5.80	5.20	4.30

Source: Erste Group Research

Contacts

Group Research

Head of Group Research

Friedrich Mostböck, CEFA®, CESGA® +43 (0)5 0100 11902

CEE Macro/Fixed Income Research

Head CEE: Juraj Kotian (Macro/FI) +43 (0)5 0100 17357

Katarzyna Rzentarzewska (Fixed income) +43 (0)5 0100 17356

Jakub Cery (Fixed Income) +43 (0)5 0100 17384

Croatia/Serbia

Head: Alen Kovac (Fixed income) +385 62 37 1383

Mate Jelic (Fixed income) +385 72 37 1443

Ivana Rogic (Fixed income) +385 62 37 2419

Czech Republic

Head: David Navratil (Fixed income) +420 956 765 439

Jiri Polansky (Fixed Income) +420 956 765 192

Michal Skorepa (Fixed income) +420 956 765 456

Hungary

Orsolya Nyeste (Fixed Income) +36 1 268 4428

Janos Nagy (Fixed Income) +36 1 272 5115

Romania

Head: Ciprian Dascalu +40 3735 10108

Eugen Sinca (Fixed income) +40 3735 10435

Dorina Ilasco (Fixed Income) +40 3735 10436

Vlad Nicolae Ionita (Fixed Income) +40 7867 15618

Slovakia

Head: Maria Valachyova, (Fixed income) +421 2 4862 4185

Matej Hornak (Fixed income) +421 902 213 591

Major Markets & Credit Research

Head: Gudrun Egger, CEFA® +43 (0)5 0100 11909

Ralf Burchert, CEFA® (Sub-Sovereigns & Agencies) +43 (0)5 0100 16314

Hans Engel (Senior Analyst Global Equities) +43 (0)5 0100 19835

Margarita Grushanina (Economist AT, Quant Analyst) +43 (0)5 0100 11957

Peter Kaufmann, CFA® (Corporate Bonds) +43 (0)5 0100 11183

Stephan Lingnau (Global Equities) +43 (0)5 0100 16574

Heiko Langer (Financials & Covered Bonds) +43 (0)5 0100 85509

Bernadett Povazsai-Römhild, CEFA®, CESGA® (Corporate Bonds) +43 (0)5 0100 17203

Carmen Riefler-Kowarsch (Financials & Covered Bonds) +43 (0)5 0100 19632

Elena Statelov, CIIA® (Corporate Bonds) +43 (0)5 0100 19641

Gerald Walek, CFA® (Economist Euro, CHF) +43 (0)5 0100 16360

Rainer Singer (Senior Economist Euro, US) +43 (0)5 0100 17331

CEE Equity Research

Head: Henning EBkuchen +43 (0)5 0100 19634

Daniel Lion, CIIA® (Technology/Industrial Goods&Services) +43 (0)5 0100 17420

Michael Marschallinger, CFA +43 (0)5 0100 17906

Nora Nagy (Telecom) +43 (0)5 0100 17416

Thomas Unger, CFA® (Banks, Insurance) +43 (0)5 0100 16314

Christoph Schultes, MBA, CIIA® (Real Estate) +43 (0)5 0100 11523

Vladimira Urbankova, MBA (Pharma) +43 (0)5 0100 17343

Martina Valenta, MBA +43 (0)5 0100 11913

Croatia/Serbia

Head: Mladen Dodig (Equity) +381 11 22 09 178

Boris Pevalek, CFA® (Equity) +385 99 237 2201

Marko Plastic (Equity) +385 99 237 5191

Matej Pretkovic (Equity) +385 99 237 7519

Magdalena Basic (Equity) +385 99 237 1407

Boris Barbic (Equity) +385 99 237 1041

Davor Spoljar, CFA® (Equity) +385 62 37 2825

Czech Republic

Head: Petr Bartek (Equity, Utilities) +420 956 765 227

Jan Safranek (Equity) +420 956 765 218

Hungary

Head: Jozsef Miro +361 235 5131

Andras Nagy (Equity) +361 235-5132

Tamas Pletser, CFA® (Equity) +361 235-5135

Poland

Head: Cezary Bernatek (Equity) +48 22 257 57 51

Piotr Bogusz (Equity) +48 22 257 57 55

Lukasz Janczak (Equity) +48 22 257 57 54

Krzysztof Kawa (Equity) +48 22 257 57 52

Jakub Szkopek (Equity) +48 22 257 57 53

Romania

Caius Rapanu (Equity) +40 3735 10441

Editor Research CEE

Brett Aarons +420 956 711 014

Treasury - Erste Bank Vienna

Head of Group Markets

Oswald Huber +43 (0)5 0100 848901

Group Markets Retail and Agency Business

Head: Christian Reiss +43 (0)5 0100 84012

Group Markets Execution

Head: Kurt Gerhold +43 (0)5 0100 84232

Retail & Sparkassen Sales

Head: Uwe Kolar +43 (0)5 0100 83214

Markets Retail Sales CZ

Head: Roman Choc +420 956 765 374

Markets Retail Sales HUN

Head: Peter Kishazi +36 1 23 55 853

GM Retail Products & Business Development

Head: Martin Langer +43 (0)50100 11313

Markets Retail Sales AT

Head: Markus Kaller +43 (0)5 0100 84239

Corporate Treasury Product Distribution AT

Head: Martina Kranzl-Carvell +43 (0)5 0100 84147

Fixed Income Institutional Sales

Group Securities Markets

Head: Thomas Einramhof +43 (0)5 0100 84432

Institutional Distribution Core

Head: Jürgen Niemeier +49 (0)30 8105800
5503

Institutional Distribution DACH+

Head: Marc Frieberthäuser +49 (0)711 810400 5540
Bernd Bollhof +49 (0)30 8105800
5525

Andreas Goll +49 (0)711 810400 5561

Mathias Gindele +49 (0)711 810400 5562

Ulrich Inhofner +43 (0)50100 85544

Sven Kienzle +49 (0)711 810400 5541

Rene Klasen +49 (0)30 8105800 5521

Christopher Lampe-Traupe +49 (0)30 8105800
5523

Danijel Popovic +49 1704144713

Michael Schmotz +43 (0)5 0100 85542

Christoph Ungerböck +43 (0)5 0100 85558

Klaus Vosseler +49 (0)711 810400 5560

Slovakia

Sarlota Sipulova +421 2 4862 5619

Monika Smelikova +421 2 4862 5629

Institutional Distribution CEE & Insti AM CZ

Head: Antun Burić +385 (0)7237 2439

Jaromir Malak +43 (0)50100 84254

Czech Republic

Head: Ondrej Cech +420 2 2499 5577

Milan Bartos +420 2 2499 5562

Jan Porvich +420 2 2499 5566

Institutional Asset Management Czech Republic

Head: Petr Holecek +420 956 765 453

Petra Maderova +420 956 765 178

Martin Perina +420 956 765 106

Petr Valenta +420 956 765 140

Blanka Weinerova +420 956 765 317

David Petracek +420 956 765 809

Croatia

Head: Antun Buric +385 (0)72 37 2439

Hungary

Head: Peter Csizmadia +361 237 8211

Romania and Bulgaria

Head: Octavian Florin Munteanu +40 746128914

Group Fixed Income Securities Markets

Head: Goran Hobljaj 43 (0)50100 84403

Fixed Income Flow Sales

Margit Hraschek +43 (0)5 0100 84117

Christian Kienesberger +43 (0) 5 0100 84323

Ciprian Mitu +43 (0)50100 85612

Bernd Thaler +43 (0) 5 0100 84119

Zsuzsanna Toth +36 1 237 8209

Fixed Income Flow Trading

Head: Goran Hobljaj +43 (0)5 0100 84403

Group Fixed Income Securities Trading

Head: Goran Hobljaj 43 (0)50100 84403

Group Equity Trading & Structuring

Head: Ronald Nemec +43 (0)50100 83011

Business Support

Bettina Mahoric +43 (0)50100 86441

Disclaimer

This investment research (the "Document") has been prepared by Erste Group Bank AG or any of its consolidated subsidiaries (together with consolidated subsidiaries "Erste Group") independently and objectively for the purpose of providing additional economical information about the analyzed company or companies. The Document is based on reasonable knowledge of Erste Group's analyst in charge of producing the Document as of the date thereof and may be amended from time to time. It only serves for the purpose of providing non-binding information and does not constitute investment advice or marketing communication. This Document does not constitute or form part of, and should not be construed as, an offer, recommendation or invitation to subscribe for or purchase any financial or connected financial instrument, and neither this Document nor anything contained herein shall form the basis of or be relied on in connection with or act as an inducement to enter into any contract or inclusion of a financial or connected financial instrument in a trading strategy. The document is also not a prospectus in the sense of the Regulation (EU) 2017/1129, Austrian Capital Market Act 2019 or comparable legal provisions. All information, analysis and conclusions provided herein are of general nature. This Document does not purport to provide a comprehensive overview about any investment, the potential risks and results nor does this Document take into account any individual needs of an investor (the "Investor") in relation to proceeds, tax aspects, risk awareness and appropriateness of the financial instrument or connected financial instruments. Therefore, this Document does not replace any investor- and investment-related evaluation nor any comprehensive risk disclosure; any financial instrument has a different risk level. Performance charts and example calculations do not provide any indication for future performance of a financial instrument resp. connected financial instruments. Information about past performance does not necessarily guarantee a positive development in the future and investments in financial instruments incl. connected financial instruments can be of risk and speculative nature. All projections, forecasts and price targets are clearly and prominently labelled as such, and the material assumptions made in producing or using them are indicated. Forecasts of future developments are based purely on estimates and assumptions. Actual future developments may differ from the forecast. Forecasts are therefore not a reliable indicator of future results and developments. The weaker the Company's credit-worthiness is, the higher the risk of an investment will be. Not every investment is suitable for every investor. Neither this document nor any of its components form the basis of any contract or commitment whatsoever. Therefore, Investors shall consult their advisors (in particular legal and tax advisors) prior to taking any investment decision to ensure that – irrespective of information provided herein – an intended transaction of a financial or connected financial instrument is appropriate for the Investor's needs and intention, that the Investor has understood all risks and that, after due examination, the Investor has concluded to make the investment and is in a position to bear the economical outcome of such investment. Investors are referred, for instance, to the suitability test according to the Austrian Securities Act 2018 and are advised to mind the client information pursuant to the Austrian Securities Supervision Act 2018. The performance of an investment is reduced by commissions, fees and other charges that depend on the individual circumstances of the investor. As a result of currency fluctuations, the investment result may increase or decrease. Investment research is produced by Erste Group Research within the framework provided by applicable laws. The opinions featured in the equity and credit research reports may vary. Investors in equities may pursue different interests compared to those of investors on the credit side, related to the same issuer. The analyst has no authority whatsoever to make any representation or warranty on behalf of the analyzed company resp. issuer, Erste Group, one of its companies, or any other person. Care is taken, that all substantially material sources of information are clearly and prominently indicated. While all reasonable care has been taken to ensure that the facts stated herein are accurate and that the forecasts, opinions and expectations contained herein are fair and reasonable, Erste Group (including its representatives and employees) neither expressly nor tacitly makes any guarantee as to or assumes any liability for the up-to-dateness, completeness and correctness of the content of this Document. Neither Erste Group nor any of its respective managing directors, supervisory board members, executive board members, directors, officers or other employees shall be in any way liable for any costs, losses or damages (including subsequent damages, indirect damages and loss of profit) howsoever arising from the use of or reliance on this Document. Erste Group as well as representatives and employees principally may, to the extent permitted by law, have a position in stated financial instruments resp. connected financial instruments and may provide trading support or otherwise engage in transactions involving these financial instruments and/or connected financial instruments. Further, Erste Group as well as representatives and employees may principally offer investment services to, or may take over management function in a company or issuer referred to in this Document. This Document has been produced in line with Austrian law and for the territory of Austria. Forwarding this Document as well as marketing of financial instruments resp. connected financial instruments described herein are restricted or interdicted in certain jurisdictions. This, inter alia, applies to the United States, Canada, Australia, Switzerland, Korea and Japan. In particular, neither this Document nor any copy hereof may be taken or transmitted or distributed, directly or indirectly, into the United States or to US Persons (as defined in the U.S. Securities Act of 1933, as amended) unless applicable laws of the United States or certain federal states of the United States provide for applicable exemptions. Any failure to comply with these restrictions may constitute a violation of the laws of any such other jurisdiction. Persons receiving possession of this Document are obliged to inform themselves about any such restrictions and to adhere to them. By accepting this Document, the recipient agrees to be bound by the foregoing limitations and to adhere to applicable regulations. The document may not be reproduced or redistributed to other persons without the consent of Erste Group. Further information may be provided by Erste Group upon request. This Document and information, analysis, comments and conclusions provided herein are copyrighted material. Erste Group reserves the right to amend any opinion and information provided herein at any time and without prior notice. Erste Group further reserves the right not to update any information provided herein or to cease updates at all. Misprints and printing errors reserved.

Erste Group is not registered or certified as a credit agency in accordance with Regulation (EC) No 1060/2009 of the European Parliament and of the Council of 16 September 2009 on credit rating agencies (the Credit Rating Agencies Regulation). Any assessment of the issuers creditworthiness does not represent a credit rating pursuant to the Credit Rating Agencies Regulation. Interpretations and analysis of the current or future development of credit ratings are based upon existing credit rating documents only and shall not be considered as a credit rating itself. If one of the clauses provided for in this disclaimer is found to be illicit, inapplicable or not enforceable, the clause has to be treated separately from other clauses provided for in this disclaimer to the largest extent possible. In any case, the illicit, inapplicable or not enforceable clause shall not affect the licitness, applicability or enforceability of any other clauses.

Important disclosures

THIS DOCUMENT MAY NOT BE BROUGHT INTO THE UNITED STATES OF AMERICA, CANADA, SWITZERLAND, AUSTRALIA, KOREA OR JAPAN, TO ANY PERSON WHO IS A CITIZEN OF THOSE STATES, OR SENT OR DISTRIBUTED TO ANY MEDIA IN ANY OF THOSE STATES.

General disclosures

All recommendations given by Erste Group Research are independent, objective and are based on the latest company, industry and other general information publicly available which Erste Group Research considers being reliable; however, Erste Group does not represent or assume any liability for the completeness of accuracy of such information or its recommendation. The best possible care and integrity is used to avoid errors and/or misstatements. No influence on the rating and/or target price is being exerted by either the covered company or other internal departments of Erste Group. Each research drawn up by an analyst is reviewed by a senior research executive or agreed with a senior analyst/deputy (4-eyes-principle). Erste Group has implemented thorough Compliance Rules on personal account dealings of analysts (please see "Conflicts of Interest"). Analysts are not allowed to involve themselves in any paid activities with the covered companies except as disclosed otherwise. 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. Erste Group may engage in transactions with financial instruments, on a proprietary basis or otherwise, in a manner inconsistent with the view taken in this research report. In addition, others within Erste Group, including strategists and sales staff, may take a view that is inconsistent with that taken in this research report.

Conflicts of interest

Erste Group Bank AG ensures with internal policies that conflicts of interest are managed in a fair and reasonable manner. The policy „Managing Conflict of Interest in connection with Investment Research“ is provided under the following

link:
https://www.erstegroup.com/content/dam/at/eh/www_erstegroup_com/en/research/documents/legal/Managing_Conflicts_of_Interest_-_Umgang_mit_IK.pdf.

Disclosures of potential conflicts of interest relating to Erste Group Bank AG and affiliated companies as well as relevant employees and representatives with respect to the issuer(s) resp. financial instruments are updated daily. An overview of conflicts of interest for all analysed companies by Erste Group Research is provided under the following link: [Disclosure | Erste Group Bank AG](#).

If this financial analysis is sponsored research by the company or the issuer, this is disclosed as conflict of interest point number 4. If this financial analysis is sponsored research financed by third parties, this is disclosed as conflict of interest point number 5. In principle, analysts are prohibited from holding stocks in shares they analyze. Nevertheless, should the exceptional case arise that an analyst and/or another natural person involved in the production of the financial analysis holds a position in the issued share capital of the issuer to which the financial analysis refers, this is disclosed via conflict of interest point number 8.

The distribution of all recommendations and the distribution of recommendations in relation to which investment services have been provided is available under the following

link:
https://www.erstegroup.com/content/dam/at/eh/www_erstegroup_com/en/research/documents/legal/Recommendations_Distribution.pdf.

A history of all recommendations within the last 12 months is provided under the following link: [Research Disclaimer | Erste Group Bank AG](#).

Valuation and methodology

Detailed information about the valuation and methodology of investment research by the Erste Group Bank AG is provided under the following link:

https://www.erstegroup.com/content/dam/at/eh/www_erstegroup_com/en/research/documents/legal/Bewertungsmethoden_and_Valuations.pdf.

All market prices within this publication are closing prices of the previous trading day (unless otherwise mentioned within the publication).

Planned frequency of updates for recommendations

Target prices or recommendations for financial instruments are meant to be 12 month target prices or equivalent recommendations (except if other validity period is stipulated) starting from the date of the publication. Target prices and recommendations are reviewed usually upon release of quarterly reports, or whenever circumstances require (e.g. company updates, ad-hoc publications, etc.).

Periodical publications are identified by their respective product name and indicate update frequency as such (e.g. Quarterly). Recommendations mentioned within these publications are updated in an according frequency, unless otherwise mentioned (e.g. target price or recommendation is not updated on a monthly base, even when mentioned in summarizing monthly/quarterly product).

If a recommendation change has been made in this publication, please see the following link for a detailed overview of the previous recommendation(s): <https://www.erstegroup.com/en/research/research-legal>.

Links

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

Additional notes to readers in the following countries

Austria: Erste Group Bank AG is registered in the Commercial Register at Commercial Court Vienna under the number FN 33209m. Erste Group Bank AG is authorized and regulated by the European Central Bank (ECB) (Sonnenmannstraße 22, D-60314 Frankfurt am Main, Germany) and by the Austrian Financial Market Authority (FMA) (Otto-Wagner Platz 5, A-1090, Vienna, Austria).

Germany: Erste Group Bank AG is authorised for the conduct of investment business in Germany by the Austrian Financial Market Authority (FMA) and subject to limited regulation by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin).

United Kingdom (UK): Erste Group Bank AG is regulated for the conduct of investment business in the UK by the Financial Conduct Authority and the Prudential Regulation Authority. This document is directed exclusively to eligible counterparties and professional clients. It is not directed to retail clients. No persons other than an eligible counterparty or a professional client should read or rely on any information in this document. Erste Group Bank AG does not deal for or advise or otherwise offer any investment services to retail clients.

Czech Republic: Česká spořitelna, a.s. is regulated for the conduct of investment activities in Czech Republic by the Czech National Bank (CNB).

Croatia: Erste Bank Croatia is regulated for the conduct of investment activities in Croatia by the Croatian Financial Services Supervisory Agency (HANFA).

Hungary: Erste Bank Hungary ZRT. and Erste Investment Hungary Ltd. are regulated for the conduct of investment activities in Hungary by the Hungarian Financial Supervisory Authority (PSZAF).

Serbia: Erste Group Bank AG is regulated for the conduct of investment activities in Serbia by the Securities Commission of the Republic of Serbia (SCRS).

Romania: Banca Comerciala Romana is regulated for the conduct of investment activities in Romania by the Romanian National Securities Commission (CNVM).

Poland: Erste Securities Polska S.A. is regulated for the conduct of investment activities in Poland by the Polish Financial Supervision Authority (PFSA).

Slovakia: Slovenská sporiteľňa, a.s. is regulated for the conduct of investment activities in Slovakia by the National Bank of Slovakia (NBS).

Switzerland: This research report does not constitute a prospectus or similar communication in connection with an offering or listing of securities as defined in Articles 652a, 752 and 1156 of the Swiss Code of Obligation and the listing rules of the SWX Swiss Exchange.

Hong Kong: This document may only be received in Hong Kong by 'professional investors' within the meaning of Schedule 1 of the Securities and Futures Ordinance (Cap.571) of Hong Kong and any rules made there under.

© Erste Group Bank AG 2023. All rights reserved.

Published by:

Erste Group Bank AG
Group Research
1100 Vienna, Austria, Am Belvedere 1
Head Office: Wien
Commercial Register No: FN 33209m
Commercial Court of Vienna

Erste Group Homepage: www.erstegroup.com