

FLASH NOTE

Artifex Mundi - Buy - Last update: 01.09.2025

Target Price: PLN 21.80 | Close as of 09/09/2025: PLN 15.98

Analyst:

Krzysztof Tkocz,
+48 22 257 57 52
krzysztof.tkocz@erstegroup.com

Final Q2'25 results in line with preliminaries

The final results for Q2'25 turned out to be in line with the preliminary results presented in mid-August.

Q2'25 Quarterly snapshot												
Consolidated, IFRS (PLN, mn)	Reported			Expected			Reported			Reported		
	Q2'24	Q2'25	y/y	Prelim.	Erste	Cons.	vs. Prelim.	vs. Erste	vs. Cons.	1H'24	1H'25	y/y
Revenue	24.6	26.1	6.0%	26.1	26.1	26.1	0.0%	0.0%	0.1%	52.1	52.8	1.2%
Unsolved	22.6	24.8	9.5%	24.8	24.8	-	0.0%	-0.2%	-	47.4	49.7	4.9%
HOPA games	1.8	1.1	-36.5%	1.1	1.1	-	0.0%	-0.1%	-	4.3	2.7	-38.0%
Operating costs	17.6	20.8	18.1%	20.8	21.0	-	0.0%	-1.2%	2.1%	36.9	39.7	7.6%
EBIT	7.1	5.4	-24.2%	5.4	5.1	5.3	0.0%	4.2%	2.1%	15.2	13.1	-14.3%
EBITDA	8.3	6.5	-21.5%	-	6.3	6.7	-	3.1%	-2.7%	17.7	15.4	-13.1%
Adj. EBITDA	8.5	6.6	-21.7%	-	6.5	-	-	1.9%	-	18.1	15.5	-14.1%
Financial activity, net	0.6	0.9	45.1%	0.9	2.1	-	0.0%	-59.6%	-	0.6	2.5	340.2%
Profit before tax	7.7	6.2	-18.8%	6.2	7.3	-	0.0%	-14.4%	-	15.8	15.6	-1.3%
Income tax	0.7	0.6	-20.9%	0.6	0.7	-	0.0%	-18.7%	-	1.5	1.4	-3.7%
Net income	6.9	5.7	-18.6%	5.7	6.6	5.6	0.0%	-14.0%	1.3%	14.4	14.2	-1.1%
Adj. net income	7.1	5.8	-18.9%	-	6.8	-	-	-14.9%	-	14.7	14.3	-2.7%
EBITDA margin	33.6%	24.9%	-	24.1%	25.6%	-	-	-	-	33.9%	29.1%	-
Adj. EBITDA margin	34.3%	25.4%	-	24.9%	-	-	-	-	-	34.6%	29.4%	-
EBIT margin	28.7%	28.7%	-	28.7%	28.7%	20.1%	-	-	-	28.7%	28.7%	-
Net income margin	28.2%	28.2%	-	28.2%	28.2%	21.4%	-	-	-	28.2%	28.2%	-
Adj. net income margin	28.9%	22.2%	-	26.0%	-	-	-	-	-	28.2%	27.1%	-

Source: Erste Group Research, company

Revenue increased by 6% y/y to PLN 26.1mn in Q2'25. Unsolved generated PLN 24.8mn in revenue (95% share in Q2'25 revenue, +9% y/y), HOPA games = PLN 1.1mn (4% share in Q2'25 revenue; -37% y/y), and Bladebound generated PLN 0.1mn (1% share in Q2'25 revenue; flat y/y).

Costs. COGS were significantly lower y/y (-29%) due to lower royalties = PLN 1.3mn (-30% y/y; effect of higher UA expenditures) and depreciation = PLN 1.1mn (-6% y/y). SG&A costs increased by 29% y/y to PLN 18.4mn in Q2'25, due to higher selling costs (the effect of higher UA expenditures), and flat G&A costs (+3% y/y).

Ajd. EBITDA. At the adj. EBITDA level, the company generated PLN 6.6mn (-22% y/y).

Net profit. Balance on financing activities amounted to PLN 0.9mn in Q2'25 (of which PLN 0.5mn relates to FX differences) vs. PLN 0.6mn in Q2'24. Net profit amounted to PLN 5.7mn in Q2'25 vs. PLN 6.9mn in Q2'24.

OCF. OCF amounted to PLN -2.3mn in Q2'25 vs. PLN 4.8mn in Q2'24. The decrease resulted from higher costs of games production y/y and higher UA expenditures. OCF/adj. EBITDA ratio was at -34% in Q2'25 compared to 56% in Q2'24.

Capital expenditures for game production = PLN 7.4mn (+10% y/y, -8% q/q). Average employment in Q2'25 was 121 (+8% r/r), down from 123 in Q1'25. By the end of Q2 2025, expenditure on the new RPG game amounted to PLN 43.2mn (+PLN 3.6mn q/q), and on Unsolved PLN 26.7mn (+PLN 2.9mn q/q).

Cash position. At the end of Q2'25, the company had PLN 30.1mn cash with bonds (-2.1 q/q).

Business update:

1) Unsolved - In H1'25, work continued on developing the current version of the game, including increasing the number of titles available in the application to 54, from 50 at the end of 2024, as well as introducing a cloud save option to Unsolved. Work on the metagame is proceeding according to schedule.

2) New RPG game - In H1'25, the studio's work focused on preparing a version of the game containing all key game modes and functionalities, which, after the testing phase, will be released in a soft launch format. The work proceeded according to schedule.

Conference call will be held 16.09 (Tuesday) at 14:00pm.

ART: Key Figures

P&L (PLN mn)	Q2'24	Q3'24	Q4'24	Q1'25	Q2'25	y/y	q/q
Revenue	24.6	26.2	25.2	26.7	26.1	6%	-2%
Unsolved	22.6	24.3	23.3	24.9	24.8	9%	0%
HOPA games	1.8	1.7	1.7	1.5	1.1	-37%	-24%
Other	0.2	0.2	0.2	0.3	0.2	-9%	-31%
COGS	3.3	2.7	3.2	2.7	2.3	-29%	-15%
Gross profit	21.4	23.5	22.0	23.9	23.8	11%	-1%
Marketing costs	11.7	14.6	11.7	13.9	15.8	35%	14%
Other cost of sales	0.2	0.2	0.2	0.4	0.1	-53%	-77%
G&A	2.4	2.3	2.2	1.9	2.4	3%	27%
Other operating activities	0.0	-0.1	0.0	0.0	-0.1		
EBIT	7.1	6.3	8.0	7.7	5.4	-24%	-30%
EBITDA	8.3	7.6	9.4	8.9	6.1	-26%	-31%
EBITDA adj.	8.5	7.7	9.9	8.9	6.6	-22%	-25%
Financial activity, net	0.6	1.9	-2.1	1.7	0.9		
Other	0.0	0.0	0.0	0.0	0.0		
Profit before tax	7.7	8.2	5.9	9.4	6.2	-19%	-34%
Income tax	0.7	0.7	0.4	0.8	0.6		
Net profit	6.9	7.5	5.5	8.5	5.7	-19%	-34%
Net profit adj.	7.1	7.7	5.9	8.5	5.8		
D&A	1.2	1.3	1.4	1.2	0.7	-39%	-38%
Tax rate	9.4%	8.5%	6.5%	9.0%	9.1%		
OCF	4.8	-0.1	3.3	-1.7	-2.3		
OCF/adj. EBITDA ratio	56.4%	-0.8%	33.3%	-19.7%	-34.2%		
Unsolved revenues / UA costs	51.7%	60.0%	50.0%	55.9%	63.9%		
Unsolved - first margin	10.9	9.7	11.6	11.0	9.0	-18%	-18%
EBITDA margin	33.6%	28.9%	37.4%	33.3%	23.3%		
Adj. EBITDA margin	34.3%	29.6%	39.1%	33.3%	25.4%		
EBIT margin	28.7%	24.0%	31.8%	28.9%	20.5%		
Net profit margin	28.2%	28.8%	21.9%	32.0%	21.6%		
Adj. net profit margin	28.9%	29.5%	23.6%	32.0%	22.2%		

OPINION. NEUTRAL. The final results for Q2'25 turned out to be in line with the preliminary figures presented in mid-August, which we view as neutral. Game production expenditures declined q/q to PLN 7.4mn (-8% q/q), which comes as a slight surprise to us (CAPEX in 2025 may turn out to be slightly lower than we assumed in our latest recommendation). Work on the two most important projects, i.e. the metagame for Unsolved and the new RPG game, is progressing according to schedule. We expect that the seasonal decline in CPI will translate into a further rebound in revenues; thus, in the coming months the company should be able to pursue record-high revenues from Unsolved and a significant improvement in the first margin in H2'25 (both y/y and compared to H1'25).

Disclosure of particular interests or indications of conflicts of interest according to delegated Regulation (EU) 958/2016 supplementing Article 20 of Regulation (EU) 596/2014 (MAR):

Company	ISIN	1 ECB/affiliates holdings exceed 5% of the share capital of issuer or vice versa	2 market maker or liquidity provider for issuer/instrumen ts	3 agreement for the provision of services of investment firms over the previous 12 months	4a Agreement with the covered company about the production of analyses	4b Agreement with a third party about the production of analyses	5 Managed or co- managed a public offering over the previous 12 months	6 Draft of report disclosed to issuer prior its publication	7 Analyst has a position in the issued share capital of the issuer	8 Net Long Position exceeding 0.5% of the issued share capital of issuer	9 Net Short Position exceeding 0.5% of the issued share capital of issuer
Artifex Mundi	PLARTFX00011										

The above specific disclosures (marked with “Y” if applicable), are valid at the time of publication of this report.
September 10 2025

For a more detailed and an up-to-date overview of conflicts of interests for all analysed companies and/or financial instruments by Erste Group, which are updated regularly upon changes, please follow below link:

[Disclosure | Erste Group Bank AG](#)

Disclaimer

This investment research (the "Document") has been prepared by Erste Securities Polska S.A., a subsidiary of Erste Group Bank AG (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.

Artifex Mundi has been covered by this investment research under the Warsaw Stock Exchange's Analytical Support Programme (the "Programme"). The Programme assumes that Erste Securities Polska S.A. will receive remuneration from the Warsaw Stock Exchange for the analytical coverage of Artifex Mundi. To the above extent, the Warsaw Stock Exchange, as the principal, is entitled to the copyrights to the report.

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 Prospectus Regulation, the 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 and are advised to mind the client information pursuant to the Austrian Securities Supervision Act 2018 and pursuant to Polish Trading in Financial Instruments Act 2005. 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. Facts are clearly distinguished in the document from interpretations, estimates, opinions, and other types of non-factual information. 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 banking services or advice 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, Switzerland, Australia, 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. Erste Group further reserves the right not to update any information provided herein or to cease updates at all. Misprints and printing errors reserved.

Notice to recipients in the United States of America: This Document has been prepared outside the United States by Erste Securities Polska S.A., a subsidiary of Erste Group Bank AG (together with consolidated subsidiaries "Erste Group") Erste Group is not registered with the U.S. Securities and Exchange Commission as a broker - dealer in the United States nor is it a member of the Financial Institutions Regulatory Authority ("FINRA"). Furthermore, this Document has been prepared and reviewed by research analysts employed by Erste Group who are not registered nor qualified as research analysts with FINRA and are not subject to FINRA rules. This Document may only be distributed in the United States to "Major US Institutional Investors" (as defined in, and pursuant to the exemption provided by, Rule 15a-6 under the U.S. Securities Exchange Act of 1934 and the no-action letters thereunder). Orders utilizing Erste Group for the purchase or sale of the securities that are the subject of this Document may be transmitted only to Baader Helvea Inc. in its role as Chaperone.

Declaration of Responsible Analyst(s): The analyst(s) named in this report certify that: (1) the views expressed in this Document accurately reflect their own personal views about any or all of the subject securities referred to in this Document, (2) no part of their compensation was, is or will be, directly or indirectly, related to the specific recommendation or views expressed in this Document.

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 extensive 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.

Disclosure Checklist

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/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.

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/legal/Recommendations_Distribution.pdf

All disclosures of conflicts of interest, applicable to this publication, are valid in the same extend for Erste Group Bank AG and Erste Securities Polska S.A.

Description of specific disclosures

Erste Group rating definitions

Buy	> +20% from target price
Accumulate	+10% < target price < +20%
Hold	0% < target price < +10%
Reduce	-10% < target price < 0%
Sell	< -10% from target price

Our target prices are established by determining the fair value of stocks, taking into account additional fundamental factors and news of relevance for the stock price (such as M&A activities, major forthcoming share deals, positive/negative share/sector sentiment, news) and refer to 12 months from now. All recommendations are to be understood relative to our current fundamental valuation of the stock. The recommendation does not indicate any relative performance of the stock vs. a regional or sector benchmark.

A history of all recommendations within the last 12 months is provided under the following link:
Research Disclaimer | Erste Group Bank AG

Explanation of valuation parameters and risk assessment

Unless otherwise stated in the text of the financial investment research, target prices in the publication are based on a discounted cash flow valuation and/or comparison of valuation ratios with companies seen by the analyst as comparable or a combination of the two methods. The result of this fundamental valuation is adjusted to reflect the analyst's views on the likely course of investor sentiment. Whichever valuation method is used there is a significant risk that the target price will not be achieved within the expected timeframe. Risk factors include unforeseen changes in competitive pressures or in the level of demand for the company's products. Such demand variations may result from changes in technology, in the overall level of economic activity or, in some cases, from changes in social values. Valuations may also be affected by changes in taxation, in exchange rates, in the capital market sentiment and in regulatory provisions. Investment in overseas markets and instruments such as ADRs can result in increased risk from factors such as exchange rates, exchange controls, taxation, political, economic and social conditions.

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

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/legal/Bewertungsmethoden_and_Valuations.pdf

Planned frequency of updates

Target prices for individual stocks are meant to be 12 month target prices, starting from the date of the publication. Target prices and recommendations are reviewed usually upon release of quarterly reports, or whenever circumstances require.

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. a 12M TP 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) (Sonnemannstraße 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: Banka 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 and Erste Securities Polska S.A. 2025. All rights reserved.

Published by:

Erste Securities Polska S.A.
Research Department
00-103 Warsaw, Królewska Street 16

Head Office: Warsaw
Commercial Register: KRS No. 0000065121
District Court for the Capital City of Warsaw, 12th Commercial Division
Erste Securities Polska S.A. Homepage: www.esp.pl

and

Erste Group Bank AG
Group Research
1100 Vienna, Austria, Am Belvedere 1
Head Office: Vienna
Commercial Register No: FN 33209m
Commercial Court of Vienna
Erste Group Homepage: www.erstegroup.com

Group Research

Head of Group Research Friedrich Mostböck, CEFA®, CESGA®	+43 (0)5 0100 11902	Pavel Krabicka Martin Havlan	+420 224 995 411 +420 224 995 551
CEE Macro/Fixed Income Research Head: Juraj Kotian (Macro/FI) Katarzyna Rzentarzewska (Fixed income) Jakub Cery (Fixed income)	+43 (0)5 0100 17357 +43 (0)5 0100 17356 +43 (0)5 0100 17384	Institutional Equity Sales Hungary Levente Nándori Balázs Zánkay Krisztián Kandik	+361 235 5141 +361 235 5156 +361 235 5140
Croatia/Serbia Alen Kovac (Head) Mate Jelić Ivana Rogic	+385 72 37 1383 +385 72 37 1443 +385 72 37 2419	Institutional Equity Sales Poland Jacek Jakub Langer (Head) Tomasz Galanciak Przemyslaw Nowosad Maciej Senderek Wojciech Wysocki	+48 22 257 5711 +48 22 257 5715 +48 22 257 5712 +48 22 257 5713 +48 22 257 5714
Czech Republic David Navratil (Head) Jiri Polansky Michal Skorepa	+420 956 765 439 +420 956 765 192 +420 956 765 172	Institutional Equity Sales Romania Adrian Barbu	+40 7305 18635
Hungary Orsolya Nyeste János Nagy	+361 268 4428 +361 272 5115	Group Markets Retail and Agency Business Head: Martin Langer	+43 (0)5 0100 11313
Romania Ciprian Dascalu (Head) Vlad Nicolae Ionita Eugen Sinca	+40 3735 10108 +40 7867 15618 +40 3735 10435	Markets Retail Sales AT Head: Markus Kaller	+43 (0)5 0100 84239
Slovakia Maria Valachyova (Head) Matej Hornak Marian Kocis	+421 2 4862 4185 +421 902 213 591 +421 904 677 274	Group Markets Execution Head: Kurt Gerhold Retail & Sparkassen Sales Head: Uwe Kolar	+43 (0)5 0100 84232 +43 (0)5 0100 83214
Major Markets & Credit Research Head: Rainer Singer	+43 (0)5 0100 17331	Markets Corporate Sales AT Head: Martina Kranzl-Carvell	+43 (0)5 0100 84147
Ralf Burchert, CEFA®, CESGA® (Sub-Sovereigns & Agencies) Hans Engel (Global Equities) Maurice Jiszda, CEFA®, CFDS® (USA, CHF) Peter Kaufmann, CFA® (Corporate Bonds) Heiko Langer (Financials & Covered Bonds) Stephan Lingnau (Global Equities) Maximilian Möstl (Credit Analyst Austria) Carmen Riefler-Kowarsch (Financials & Covered Bonds) Bernadett Povazsai-Römhild, CEFA®, CESGA® (Corporate Bonds) Elena Stalelov, CIAA® (Corporate Bonds) Gerald Walek, CFA® (Eurozone)	+43 (0)5 0100 16314 +43 (0)5 0100 19835 +43 (0)5 0100 19630 +43 (0)5 0100 11183 +43 (0)5 0100 85509 +43 (0)5 0100 16574 +43 (0)5 0100 17211 +43 (0)5 0100 19632 +43 (0)5 0100 17203 +43 (0)5 0100 19641 +43 (0)5 0100 16360	Group Securities Markets Head: Thomas Einramhof	+43 (0)50100 84432
CEE Equity Research Head: Henning EBkuchen, CESGA® Daniel Lion, CIAA® (Technology, Ind. Goods&Services) Michael Marschallinger, CFA® Nora Varga-Nagy, CFA® (Telecom) Christoph Schultes, MBA, CIAA® (Real Estate) Thomas Unger, CFA® (Banks, Insurance) Vladimira Urbankova, MBA (Pharma) Martina Valenta, MBA	+43 (0)5 0100 19634 +43 (0)5 0100 17420 +43 (0)5 0100 17906 +43 (0)5 0100 17416 +43 (0)5 0100 11523 +43 (0)5 0100 17344 +43 (0)5 0100 17343 +43 (0)5 0100 11913	Institutional Distribution Core Head: Jürgen Niemeier Institutional Distribution DACH+ Head: Marc Frieberthshäuser Bernd Bollhof Andreas Goll Mathias Gindele Ulrich Inhofner Sven Kienzle Rene Klasen Popovic Danijel Christopher Lampe-Traupe Michael Schmotz Christoph Ungerböck Klaus Vosseler	+49 (0)30 8105800 5503 +49 (0)711 810400 5540 +49 (0)30 8105800 5525 +49 (0)711 810400 5561 +49 (0)711 810400 5562 +43 (0)5 0100 85544 +49 (0)711 810400 5541 +49 (0)30 8105800 5521 +43 (0)5 0100 85545 +49 (0)30 8105800 5523 +43 (0)5 0100 85542 +43 (0)5 0100 85558 +49 (0)711 810400 5560
Croatia/Serbia Mladen Dodig (Head) Magdalena Basic Ivan Lisec Boris Pevalek, CFA® Marko Plastic Davor Spoljar, CFA®	+381 11 22 09178 +385 99 237 1407 +385 99 237 2012 +385 99 237 2201 +385 99 237 5191 +385 72 37 2825	Slovakia Šariota Šipulová Monika Smělková	+421 2 4862 5619 +421 2 4862 5629
Czech Republic Petr Bartek (Head, Utilities) Jan Bystřický	+420 956 765 227 +420 956 765 218	Institutional Distribution CEE & Insti AM CZ Head: Antun Burić Jaromir Malak	+385 (0)7237 2439 +43 (0)5 0100 84254
Hungary József Miró (Head) András Nagy Tamás Pletser, CFA® (Oil & Gas)	+361 235 5131 +361 235 5132 +361 235 5135	Czech Republic Head: Ondrej Čech Milan Bartoš Jan Porvich Pavel Zdichynec	+420 2 2499 5577 +420 2 2499 5562 +420 2 2499 5566 +420 2 2499 5590
Poland Cezary Bernatek (Head) Piotr Bogusz Lukasz Janiczak Jakub Szkopek Krzysztof Tkocz	+48 22 257 5751 +48 22 257 5755 +48 22 257 5754 +48 22 257 5753 +48 22 257 5752	Croatia Head: Antun Burić Zvonimir Tukač Ana Tunjić Natalija Zujic	+385 (0)7237 2439 +385 (0)7237 1787 +385 (0)7237 2225 +385 (0)7237 1638
Romania Caius Rapanu	+40 3735 10441	Hungary Head: Peter Csizmadia Gábor Bálint Balazs Papay Gergő Szabo	+36 1 237 8211 +36 1 237 8205 +36 1 237 8213 +36 1 237 8209
Group Institutional & Retail Sales		Romania Catalin Marius Budur	+40 786 715650
Group Institutional Equity Sales Head: Michal Ržek	+420 224 995 537	Institutional Asset Management Czech Republic Head: Petr Holeček Petra Maděrová Martin Peřina David Petráček Blanca Weinerová Petr Valenta	+420 956 765 453 +420 956 765 178 +420 956 765 106 +420 956 765 809 +420 956 765 317 +420 956 765 140
Institutional Equity Sales Austria Werner Fuerst Viktoria Kubalova Thomas Schneidhofer Oliver Schuster	+43 (0)5 0100 83121 +43 (0)5 0100 83124 +43 (0)5 0100 83120 +43 (0)5 0100 83119	Group Fixed Income Securities Markets Head: Goran Hobljaj	+43 (0)50100 84403
Institutional Equity Sales Croatia Matija Tkalicanac	+385 72 37 21 14	FISM Flow Head: Goran Hobljaj Margit Hraschek Bernad Thaler Ciprian Mitu Christian Kienesberger Zsuzsanna Toth	+43 (0)5 0100 84403 +43 (0)5 0100 84117 +43 (0)5 0100 84119 +43 (0)5 0100 85612 +43 (0)5 0100 84323 +36-1-237 8209
Institutional Equity Sales Czech Republic Head: Michal Ržek Jakub Brukner	+420 224 995 537 +420 731 423 294	Poland Pawel Kielek Michal Jarmakowicz	+48 22 538 6223 +43 50100 85611

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 Prospectus Regulation, the 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 Supervision 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. Facts are clearly distinguished in the document from interpretations, estimates, opinions, and other types of non-factual information. 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 banking services or advice 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, Switzerland, Australia, 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.

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 extensive 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/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.](#)

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/legal/Recommendations_Distribution.pdf

Erste Group rating definitions

Buy	> +20% from target price
Accumulate	+10% < target price < +20%
Hold	0% < target price < +10%
Reduce	-10% < target price < 0%
Sell	< -10% from target price

Our target prices are established by determining the fair value of stocks, taking into account additional fundamental factors and news of relevance for the stock price (such as M&A activities, major forthcoming share deals, positive/negative share/sector sentiment, news) and refer to 12 months from now. All recommendations are to be understood relative to our current fundamental valuation of the stock. The recommendation does not indicate any relative performance of the stock vs. a regional or sector benchmark.

A history of all recommendations within the last 12 months is provided under the following link:

[Research Disclaimer | Erste Group Bank AG](#)

Explanation of valuation parameters and risk assessment

Unless otherwise stated in the text of the financial investment research, target prices in the publication are based on a discounted cash flow valuation and/or comparison of valuation ratios with companies seen by the analyst as comparable or a combination of the two methods. The result of this fundamental valuation is adjusted to reflect the analyst's views on the likely course of investor sentiment. Whichever valuation method is used there is a significant risk that the target price will not be achieved within the expected timeframe. Risk factors include unforeseen changes in competitive pressures or in the level of demand for the company's products. Such demand variations may result from changes in technology, in the overall level of economic activity or, in some cases, from changes in social values. Valuations may also be affected by changes in taxation, in exchange rates, in the capital market sentiment and in regulatory provisions. Investment in overseas markets and instruments such as ADRs can result in increased risk from factors such as exchange rates, exchange controls, taxation, political, economic and social conditions.

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

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/legal/Bewertungsmethoden_and_Valuations.pdf

Planned frequency of updates

Target prices for individual stocks are meant to be 12 month target prices, starting from the date of the publication. Target prices and recommendations are reviewed usually upon release of quarterly reports, or whenever circumstances require.

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. a 12M TP 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 2024. 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