

This document has been prepared by IPOPEMA Securities S.A. with its registered seat in Warsaw, Próźna 9, 00-107 Warsaw, Poland, entered into the Register of Entrepreneurs of the National Court Register maintained by the District Court for the City of Warsaw, XII Commercial Division of the National Court Register under entry number KRS 0000230737, the initial capital and paid capital in the amount of PLN 2.993.783,60, NIP 5272468122, www.ipopema.pl. IPOPEMA Securities S.A. is supervised by the Polish Financial Supervision Authority (Komisja Nadzoru Finansowego), Piękną 20, 00-549 Warsaw, Poland.

This document was prepared by IPOPEMA Securities S.A. for information purposes only. This document is addressed to IPOPEMA Securities S.A. clients entitled to receive it on the basis of contracts for the provision of services. This document, using mass media distribution channels, may also reach other investors. It has been produced independently of the company mentioned in this document and any forecasts, opinions and expectations are entirely those of IPOPEMA Securities S.A. Unless otherwise specified, the estimates and opinions contained in the document constitute an independent assessment of IPOPEMA Securities S.A. analysts preparing the document as of the date of issuing the document.

IPOPEMA Securities S.A. prepared this document with the preservation of all adequate diligence, thoroughness and reliability on the basis of publicly available information which IPOPEMA Securities S.A. believes to be reliable. The sources of data are primarily: Bloomberg, Reuters, EPFR, Polska Agencja Prasowa, WSE, Główny Urząd Statystyczny, Narodowy Bank Polski, financial press, online financial and economic services. While due diligence has been taken by IPOPEMA Securities S.A. to ensure that the facts stated herein are accurate and that any forecasts, opinions and expectations contained herein are fair and reasonable, IPOPEMA Securities S.A. has not independently verified all the information given in this document. Accordingly, no representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information and opinions contained in this document. The opinions expressed in the document can change without notice and IPOPEMA Securities S.A. is under no obligation to keep these opinion current. None of the IPOPEMA Securities S.A. or any other person accepts any liability whatsoever for any loss howsoever arising from any use of this document or its contents or otherwise arising in connection therewith provided that IPOPEMA Securities S.A. has been exercised due diligence and integrity during its preparation. This document may be sent to the mass media, however its copying or publishing in whole or in part as well as dissemination of information enclosed to it is allowed only with prior permission of IPOPEMA Securities S.A. This document nor any copy hereof is not to be distributed directly or indirectly in the United States, Australia, Canada or Japan, subject to the following section.

Important disclosures for U.S. Persons: Auerbach Grayson & Company Inc. may distribute this document in the U.S. This document is provided for distribution to Major U.S. Institutional Investors in reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended and may not be furnished to any other person in the U.S. Each Major U.S. Institutional Investor that receives this document shall not distribute or provide it to any other person. Under no circumstances should any U.S. recipient of this document effect any transaction to buy or sell securities or related financial instruments through IPOPEMA Securities S.A. Any U.S. recipient of this document wishing to effect any transaction to buy or sell securities or related financial instruments based on the information provided in this document should do so only through Auerbach Grayson & Company Inc. 25 West 45th Street, Floor 16, New York, NY 10036 U.S. which is a registered broker dealer in the U.S. IPOPEMA Securities S.A. is not a registered broker-dealer in the U.S. and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. IPOPEMA Securities S.A. and its research analysts are not associated persons of Auerbach Grayson & Company, nor are they affiliated with Auerbach Grayson & Company. The author of this document whose name appears in this document is not registered or qualified as a research analyst with the Financial Industry Regulatory Authority ("FINRA"), is not subject to the SEC rules on research analysts and is not subject to FINRA's rules on debt research analysts and debt research reports, equity research analysts and equity research reports. U.S. recipients should take into account that information on non-U.S. securities or related financial instruments discussed in this document may be limited. The financial instruments of non-U.S. issuers may not be registered with, or be subject to the regulations of, the SEC. Foreign companies may not be subject to audit and reporting standards and regulatory requirements comparable to those in effect within the U.S.

This document does not constitute any offer to sell or induce any offer to buy or sell any financial instruments, cannot be relied on in connection with any contract or liability and does not constitute advertising or promotion of a financial instrument or the company. Investment decisions should only be made on the basis of a prospectus or other publicly available information and materials.

The document was prepared without taking into account the needs and situation of the recipients of the document. When preparing the document, IPOPEMA Securities S.A. does not examine the recipient's investment objectives, risk tolerance level, time horizon and financial standing of the investors. The company or the financial instruments discussed in the document may not be suitable for the users of the document, i.e. it may not be suitable for the specific objectives and time horizon or the financial situation. Information included in the document cannot be regarded as a substitute for obtaining investment advice service. The value of financial instruments may fluctuate, including declines. Changes in FX rates may have an adverse effect on the value of investments. The investment in financial instruments is linked to investment risks including loss of entire or part of the invested capital. Past performance is not necessarily indicative of future results. IPOPEMA Securities S.A. points out that the price of financial instruments is affected by many different factors that are or may be independent of the company and the results of its operations. These include, among others changing economic, legal, political and tax conditions. IPOPEMA Securities S.A. may have issued in the past or may issue other documents in the future, presenting other conclusions, not consistent with those presented herein document. Such documents reflect different assumptions, points of view and analytical methods adopted by the analysts preparing them.

Investors should be aware that IPOPEMA Securities S.A. or its related entities may have a conflict of interest that could affect this document's objectivity. The investor should assume that IPOPEMA Securities S.A. or its related entities may provide services in favour of the company and obtain remuneration on this account. They may also have another financial interest with respect to the company. IPOPEMA Securities S.A. or its related entities may seek to do business with the company or other entities mentioned in this document. IPOPEMA Securities S.A. has an organizational structure and internal regulations in place to ensure that the client's interests are not compromised in the event of a conflict of interests, in relation to preparing this document. Conflict of interest management policy is available on the website at <https://www.ipopemasecurities.pl/analizy-i-rekomendacje.p162>. This document was prepared irrespective and independently of the interests of IPOPEMA Securities S.A., the company that is the subject of this document and holder of financial instrument issued by aforementioned company. IPOPEMA Securities S.A., its shareholders, employees and associates may hold long or short positions in the company's financial instruments or other financial instruments related to the company's financial instruments.

Information on the conflict of interest arising in connection with the preparation of the document (if any) is provided below.

On the order of the Warsaw Stock Exchange S.A. ("WSE"), IPOPEMA Securities S.A. creates analytical materials for the following companies: AC S.A., Capital Park S.A., PKB Pekabex S.A., Vigo System S.A. The WSE has proprietary copyrights to these materials. For the preparation of IPOPEMA Securities S.A. receives remuneration from the WSE. Information on the program is available on the website <https://www.gpw.pl/gpwpa>.

IPOPEMA Securities S.A. uses a number of valuation methodologies including discounted cash flows models (such as discounted operating earnings or dividend discount model), and earnings and cash-flow based models, which are often related to comparisons with selected peer companies. Cash flow models encapsulate the cash streams forecast to flow to a company, and are widely used in the investment industry. Peer comparisons factor in amongst other factors, differential growth rates, and indicate how expensive one company might appear relative to a chosen comparator. The subjective opinions of the report's author or authors, formed by their knowledge and experience, play a significant role in the valuation. Also included are assumptions on numerous economic variables, particularly interest rates, inflation and exchange rates and varying these assumptions could result in significantly different opinions. The strength of the earnings and cash flow based models is the closer attention to a company on a standalone basis, and tying the valuation to its fundamental value. The weakness of such method is the number of assumptions, which need to be adopted and resulting sensitivity to those assumptions. The peer comparisons methods are less dependent on the analyst's judgment as to the individual parameters, however the problem with this method appears when the peer comparator is over- or undervalued. Moreover, leading multiples (based on the future earnings, book values, operating profit or cash flows) include an analyst's estimate of those values.

This document was not transferred to the company prior to its publication. This document was prepared according to the author's own view, assumptions and knowledge.

Recommendations issued by IPOPEMA Securities S.A. they are valid for a period of 12 months from the date of issue, unless they are updated during this period. IPOPEMA Securities S.A. updates the issued recommendations depending on the market situation and subjective analysts' assessment.

This document is an investment research within the meaning of Art. 36 par. 1 of the Commission Delegated Regulation (EU) 2017/565.

List of all recommendations regarding any financial instrument or issuer that have been disseminated within the last 12 months by IPOPEMA Securities S.A. is available on the website at <https://www.ipopemasecurities.pl/analizy-i-rekomendacje.p162>.

The date and the time stated on the front page is the date of the preparation of this document. The price used throughout the recommendation to calculate adequate ratios is the "last" price mentioned on the front page of this document.

The definitions of terms used in the document include:
NII – Net interest income – interest income minus interest expense.

Polish Retail

Net F&C – Net fee and commission income – fee and commission income minus fee and commission expense.

LLP – loan loss provisions – an expense set aside as an allowance for bad loans.

NPL – non-performing loan – loans that are in default or close to be in default.

Cost/Income – operating expenses divided by total banking revenue.

ROE – return on equity – net income (or adjusted net income) divided by the average shareholders' equity.

ROA – return on assets – net income (or adjusted net income) divided by the average assets.

EBIT – earnings before interests and tax.

EBITDA – earnings before interests, tax, depreciation and amortization.

EPS – earnings per share – the net income (or adjusted net income) divided by the number of shares outstanding.

P/E – price to earnings ratio – price divided by earnings per share.

PEG – P/E ratio divided by the annual EPS growth, usually over a certain period of time.

CAGR – compound annual growth rate.

BVPS – book value per share, the book value of the Company's equity divided by the number of shares outstanding.

P/BV – price to book value – price divided by the BVPS.

DPS – dividend per share – dividend of a given year divided by the number of shares outstanding.

DY – dividend yield – dividend of a given year divided by the current price.

DDM – dividend discount model – a fundamental method of valuation based on the assumption that the value of stock equals the sum of all discounted future dividends.

FV – Fair Value, calculated based on valuation methods outlined in the document.

The author of this document has no conflict of interest with the company that is the subject of this document. The point of view expressed in the document reflects the personal opinion of the author of the document on the analyzed company and its financial instruments. Investors should be aware that flexible part of the author's compensation may depend on general financial performance of IPOPEMA Securities S.A.

IPOPEMA Securities S.A. shall act with due diligence, honestly, fairly, professionally and in accordance with the provisions of the applicable law.

IPOPEMA Securities S.A. does not guarantee achieving the investor's investment objective, the performance of company or prospective prices referred to herein.

When applying ratings for companies following criteria are used with regards to the difference between IPOPEMA's FV and company's price at the date of recommendation:

Rating	Difference between FV and price at recommendation
Buy	Above 10%
Hold	In between (and including) -10% and 10%
Sell	Below -10%

IPOPEMA Research - Distribution by rating category (July 1 – September 30, 2019)

	Number	%
Buy	18	58%
Hold	10	32%
Sell	3	10%
Total	31	100%

Rating History – LPP

Date	Recommendation	Fair Value	Price at recommendation	Author
07/06/2019	HOLD	PLN 5.80	PLN 7,220	Marek Szymański
17/06/2019	HOLD	PLN 7,717 (adjusted on 17/06/2019 by PLN 60 DPS)	PLN 7,300	Marek Szymański
30/09/2019	BUY	PLN 9,500	PLN 8,540	Marek Szymański
10/12/2019	BUY	PLN 9,950	PLN 8,605	Marek Szymański

Rating History – CCC

Date	Recommendation	Fair Value	Price at recommendation	Author
07/06/2019	BUY	PLN 174.5	PLN 150.5	Marek Szymański
30/09/2019	HOLD	PLN 150.3	PLN 139.1	Marek Szymański
10/12/2019	HOLD	PLN 116.4	PLN 107.8	Marek Szymański

Rating History – Dino

Date	Recommendation	Fair Value	Price at recommendation	Author
22/01/2019	BUY	PLN 119.0	PLN 101.0	Krzysztof Kawa
10/01/2019	HOLD	PLN 127.0	PLN 131.8	Krzysztof Kawa
10/12/2019	HOLD	PLN 144.7	PLN 136.5	Krzysztof Kawa

Rating History – Eurocash

Date	Recommendation	Fair Value	Price at recommendation	Author
22/01/2019	HOLD	PLN 18.73	PLN 19.4	Krzysztof Kawa
02/09/2019	BUY	PLN 23.3	PLN 20.7	Krzysztof Kawa
10/12/2019	SELL	PLN 18.4	PLN 21.24	Krzysztof Kawa

Rating History – VRG

Date	Recommendation	Fair Value	Price at recommendation	Author
07/06/2019	BUY	PLN 5.00	PLN 3.85	Marek Szymański
10/12/2019	BUY	PLN 4.70	PLN 3.97	Marek Szymański

Rating History – Monnari

Date	Recommendation	Fair Value	Price at recommendation	Author
07/06/2019	HOLD	PLN 6.00	PLN 5.78	Marek Szymański
10/12/2019	HOLD	PLN 3.25	PLN 3.07	Marek Szymański