

# Alpha Bank (ACBr.AT): 2020 First Look: NPE securitization to be closed in 4020



All in, this was a good set of results, with higher-than-expected PBT (+38% vs Inquiry Financial consensus) and positive capital evolution in the guarter (+c.70bps gog). Importantly, the bank expects to close its NPE securitization (project Galaxy) in 4Q20. P&L-wise, core revenues were in line with consensus with a slight beat in NII (+1% vs Cons) offsetting a minor miss on fees (-1% vs Cons). Trading came in significantly above consensus expectations (+17% vs Cons), driving a 3% beat (vs Cons) on revenues. Marginally higher-than-expected costs (+1% vs Cons) translated into a core PPP in line with consensus and a headline PPP +4% vs consensus on the back of higher trading gains. The bank booked €114mn of COVID-related provisions in the quarter, leading impairments to €261mn (-3% vs Cons) corresponding to an annualized cost of risk of 2.6% (1.5% underlying). B/S-wise, negative NPE formation in the quarter (-1% qoq) together with a marginal decrease in gross loans (-1% goq) led to a flat NPE ratio at 43.5%. Finally, the bank reported a CET1 B3FL ratio of c.14.7% in 2Q20, +c.70bps gog, with the positive sequential evolution driven by (1) net profit in the quarter, (2) positive impact of CRR changes and (3) lower RWAs, offsetting (4) other negative impacts.

For us, the five key takeaways from management during the Q&A were as follows:

- 1. NPE securitization (+) is expected to be closed in 4Q20 with a GBV of €10.8bn. In particular, the bank has received non-binding offers in early July and expects to receive binding ones in the beginning of 4Q20. The deal will reduce NPL and NPE ratios respectively to 13% and 24% (2Q20 pro-froma). The total capital impact of the transaction is expected between -250bps and -280bps with the positive impact of RWA relief (c.210bps) partially offsetting the loss on the NBV of assets sold and transaction costs (460-490bps). Finally, the P/L impact of the deal is expected at c.€2bn.
- 2. CoR (-): Management is expecting an increase in the underlying CoR due to more management actions and higher curings vs 2Q. All in, CoR is expected at c.240bps in 2020 (including COVID-related provisions), while underlying CoR at

Jose Abad +44(20)7051-4236 | jose.abad@gs.com Goldman Sachs International

Gabriele Poy +44(20)7552-4401 | gabriele.poy@gs.com Goldman Sachs International

Goldman Sachs does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. For Reg AC certification and other important disclosures, see the Disclosure Appendix, or go to <a href="https://www.gs.com/research/hedge.html">www.gs.com/research/hedge.html</a>. Analysts employed by non-US affiliates are not registered/qualified as research analysts with FINRA in the U.S.

- 180bps for the full year.
- 3. NII (=/-) is expected to be up 1% yoy in 2020 owing to several factors including: (1) lower funding costs on the back of TLTRO 3; (2) higher volumes as the bank expects new disbursement at >€5bn for FY20 (€3.5bn already achieved in 1H20); and (3) better spreads as the loan mix shifts towards the SME and corporate segments driven by guaranteed loans. Importantly, management expects a decline in the high-single-digit rate in NII as a result of the NPE securitization, this already including the positive factors mentioned above.
- **4. Core PPP (+):** Management sees core PPP to increase by 4%/5% yoy in 2020 driven by: (1) resilient NII, (2) fees expected to decline -4%/-5% yoy, improving vs the previous guidance of -5%/-7% yoy and (3) significant cost reduction, expected at 7% yoy (4% excluding the extraordinary costs booked in 2019).
- **5. Capital (=):** CRR changes had a positive impact of 52bps on CET1 in the quarter and the bank expects further 15bps from the more favourable treatment of software intangibles.

Exhibit 1: Alpha Bank - 2020 Earnings snapshot

€ mn, unless otherwise stated

	Actuals				2Q20E		Overview				
€ mn	2Q19	3Q19	4Q19	1Q20	2Q20	GSe	Cons	q/q	y/y	act/Gse	act/Cons
NII	389	383	387	381	391	384	388	2%	1%	2%	1%
Fee income	81	96	93	89	77	72	78	-13%	-5%	7%	-1%
Trading	124	80	121	86	129	75	110	50%	4%	71%	17%
Other	11	6	6	10	3	10	7	-74%	-77%	-74%	-62%
Trading & Other	135	86	127	96	131	85	117	37%	-3%	54%	12%
Total income	604	565	607	566	599	542	583	6%	-1%	11%	3%
Operating costs	-282	-280	-351	-259	-261	-259	-259	1%	-7%	1%	1%
Pre-provision-profits	323	285	256	307	338	283	324	10%	5%	20%	4%
Impairments	-246	-262	-245	-307	-261	-325	-268	-15%	6%	-20%	-3%
Other results	-9	-3	-6	-9	-4	-7	-3	-59%	-57%	-45%	42%
PBT	68	21	5	-9	74	-49	54		9%		38%
Corporate taxes	-9	-16	0	-1	23	15	-11			59%	
Net profit	59	5	6	-11	98	-34	42		64%		
Minorities	0	0	0	0	0	0	0	-70%	55%		
Attributable net profit	59	5	5	-11	98	-34	42		64%		
Core Income (NII + Fees)	470	479	480	470	468	457	466	0%	0%	3%	0%
Core PPP (Core Income - Costs)	188	199	129	211	207	198	207	-2%	10%	5%	0%
Capital and leverage RWA (bn)	46.6	47.2	46.6	46.9	44.9	47.0		-4%	-4%	-4%	
CT1 B3 FL capital (bn)	6.9	7.1	6.9	6.6	6.6	6.5		1%	-4%	1%	
CT1 B3 FL (%)	14.8%	15.1%	14.9%	14.0%	14.7%	13.9%		69bps	-11bps	81bps	
Loan / deposits	101.7%	99.6%	97.3%	94.9%	96.5%	94.7%	99.3%	2pp	-5pp	2pp	-3pp
Asset Quality - Group											
NPL ratio (%)	32.7%	30.0%	30.1%	30.0%	30.2%	29.7%	28.4%	19bps	-248bps	52bps	183bps
NPL coverage (%)	69%	67%	65%	64%	64%	64%		6bps	-466bps	6bps	
NPL balance (€bn)	16.8	14.7	14.7	14.7	14.7	14.6		0%	-12%	1%	
NPE ratio (%)	48.1%	45.5%	44.8%	43.5%	43.5%	44.2%		-1bps	-457bps	-70bps	
NPE coverage (%)	47%	44%	44%	44%	44%	43%		-11bps	-268bps	106bps	
NPE balance (€bn)	24.7	22.4	21.8	21.4	21.2	21.7		-1%	-14%	-2%	
Returns and efficiency											
ROE	2.9%	0.2%	0.3%	-0.5%	4.7%	-1.7%		-	183bps	-	
ROTE	3.0%	0.2%	0.3%	-0.6%	5.0%	-1.8%			197bps		
C/I	46.6%	49.5%	57.8%	45.8%	43.5%	47.8%	44.4%	-223bps	-309bps	-428bps	-89bps
CoR (on net loans)	2.46%	2.64%	2.49%	3.11%	2.63%	3.26%	2.64%	-48bps	17bps	-63bps	0bps
Key balances											
Total assets (bn)	63.0	62.7	63.5	66.6	68.6	66.9	66.4	3%	9%	3%	3%
Customer loans (bn)	39.9	39.5	39.3	39.8	39.4	39.9	41.4	-1%	-1%	-1%	-5%
Customer deposits (bn)	39.3	39.6	40.4	41.9	40.9	42.2	41.7	-2%	4%	-3%	-2%

Source: Company data, Inquiry Financial Consensus Data, Goldman Sachs Global Investment Research

#### Valuation and risks

We rate Alpha Bank Buy and our ROTE/COE-based 12-month price target is €1.34. Key downside risks to our investment view, forecasts and price target include: (1) potential sovereign rating downgrades; (2) the materialization of execution risks around the

"Hercules" plan (HAPS); (3) negative capital surprises; (4) a downgrade in the country's macro outlook; and/or (5) further margin compression (vs. expectations).

ACBr.AT	12m Pr	rice Target: <b>€1.34</b>	Price: <b>€0.54</b>	L	6.4%	
Buy		GS Forecast				
			12/19	12/20E	12/21E	12/22E
Market cap:		Net inc. (€ mn) Tang. BVPS (€)	97.0	(126.3)	(25.1)	399.7
	€839.5mn / \$992.0mn		5.14	4.92	3.61	3.87
3m ADTV: €7.8mn / \$8.8mn		EPS (€)	0.06	(80.0)	(0.02)	0.26
	Greece	DPS (€)	0.00	0.00	0.00	0.00
	Europe Banks	GS ROTE (%)	1.2	(1.6)	(0.4)	6.9
Tang. equity/tan	•	P/TBV (X)	0.4	0.1	0.2	0.1
	11.4 M&A Rank: 3	P/E (X)	23.9	NM	NM	2.1
	IVIQA Hank: 3	Dividend yield (%)	0.0	0.0	0.0	0.0
		CET1 ratio (%)	14.9	13.6	10.4	11.7
			3/20	6/20E	9/20E	12/20E
		EPS (€)	(0.01)	(0.02)	(0.02)	(0.03)

Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 26 Aug 2020 close.

# Disclosure Appendix

# **Reg AC**

We, Jose Abad and Gabriele Poy, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

#### **GS Factor Profile**

The Goldman Sachs Factor Profile provides investment context for a stock by comparing key attributes to the market (i.e. our coverage universe) and its sector peers. The four key attributes depicted are: Growth, Financial Returns, Multiple (e.g. valuation) and Integrated (a composite of Growth, Financial Returns and Multiple). Growth, Financial Returns and Multiple are calculated by using normalized ranks for specific metrics for each stock. The normalized ranks for the metrics are then averaged and converted into percentiles for the relevant attribute. The precise calculation of each metric may vary depending on the fiscal year, industry and region, but the standard approach is as follows:

**Growth** is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

Financial Returns and Multiple use the Goldman Sachs analyst forecasts at the fiscal year-end at least three quarters in the future. Growth uses inputs for the fiscal year at least seven quarters in the future compared with the year at least three quarters in the future (on a per-share basis for all metrics).

For a more detailed description of how we calculate the GS Factor Profile, please contact your GS representative.

# **M&A Rank**

Across our global coverage, we examine stocks using an M&A framework, considering both qualitative factors and quantitative factors (which may vary across sectors and regions) to incorporate the potential that certain companies could be acquired. We then assign a M&A rank as a means of scoring companies under our rated coverage from 1 to 3, with 1 representing high (30%-50%) probability of the company becoming an acquisition target, 2 representing medium (15%-30%) probability and 3 representing low (0%-15%) probability. For companies ranked 1 or 2, in line with our standard departmental guidelines we incorporate an M&A component into our target price. M&A rank of 3 is considered immaterial and therefore does not factor into our price target, and may or may not be discussed in research.

#### Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

#### **Disclosures**

#### The rating(s) for Alpha Bank is/are relative to the other companies in its/their coverage universe:

ABN Amro Group, Addiko Bank AG, Allied Irish Banks, Alpha Bank, Arion Banki hf, Arrow Global Group, BAWAG Group, BBVA, BNP Paribas, BPER Banca, Banca Monte dei Paschi di Siena, Banco BPM SpA, Banco Comercial Portugues, Banco Sabadell, Banco Santander, Bank Pekao, Bank of Ireland Group, Bank of Piraeus, Bankia, Bankinter, Barclays Plc, CaixaBank SA, Commerzbank AG, Credit Agricole SA, Credit Suisse, DNB, Danske Bank, Deutsche Bank, EFG International, Erste Bank, Eurobank Ergasias SA, HSBC, ING Groep NV, Intesa Sanpaolo, Julius Baer Group, KBC Group, Lloyds Banking Group, Moneta Money Bank AS, National Bank of Greece, Natixis, Natwest Group, Nordea, OTP Bank Nyrt, PKO Bank Polski, Raiffeisen Bank International, SEB, Santander Bank Polska, Societe Generale, Standard Chartered, Svenska Handelsbanken, Swedbank, UBI Banca, UBS Group, UniCredit, Unicaja Banco SA, Virgin Money UK PLC, Vontobel

# **Company-specific regulatory disclosures**

The following disclosures relate to relationships between The Goldman Sachs Group, Inc. (with its affiliates, "Goldman Sachs") and companies covered by the Global Investment Research Division of Goldman Sachs and referred to in this research.

Goldman Sachs beneficially owned 1% or more of common equity (excluding positions managed by affiliates and business units not required to be aggregated under US securities law) as of the month end preceding this report: Alpha Bank (€0.54)

Goldman Sachs has received compensation for investment banking services in the past 12 months: Alpha Bank (€0.54)

Goldman Sachs expects to receive or intends to seek compensation for investment banking services in the next 3 months: Alpha Bank (€0.54)

Goldman Sachs had an investment banking services client relationship during the past 12 months with: Alpha Bank (€0.54)

Goldman Sachs had a non-securities services client relationship during the past 12 months with: Alpha Bank (\$£0.54)

#### Distribution of ratings/investment banking relationships

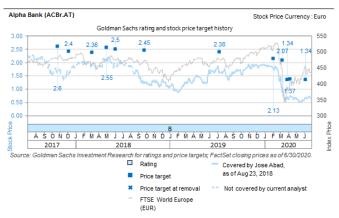
Goldman Sachs Investment Research global Equity coverage universe

	F	Rating Distribution	n	Investme	Investment Banking Relationships			
	Buy	Hold	Sell	Buy	Hold	Sell		
Global	47%	36%	17%	65%	58%	54%		

As of July 1, 2020, Goldman Sachs Global Investment Research had investment ratings on 3,015 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by the FINRA Rules. See 'Ratings, Coverage universe and related definitions' below. The Investment

Banking Relationships chart reflects the percentage of subject companies within each rating category for whom Goldman Sachs has provided investment banking services within the previous twelve months.

# Price target and rating history chart(s)



The price targets shown should be considered in the context of all prior published Goldman Sachs research, which may or may not have included price targets, as well as developments relating to the company, its industry and financial markets.

# **Regulatory disclosures**

# Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs trades or may trade as a principal in debt securities (or in related derivatives) of issuers discussed in this report.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy generally prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director or advisor of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman Sachs & Co. LLC and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with subject company, public appearances and trading securities held by the analysts.

**Distribution of ratings:** See the distribution of ratings disclosure above. **Price chart:** See the price chart, with changes of ratings and price targets in prior periods, above, or, if electronic format or if with respect to multiple companies which are the subject of this report, on the Goldman Sachs website at <a href="https://www.gs.com/research/hedge.html">https://www.gs.com/research/hedge.html</a>.

#### Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. Australia: Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of the Global Investment Research Division of Goldman Sachs Australia may attend site visits and other meetings hosted by the companies and other entities which are the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. To the extent that the contents of this document contains any financial product advice, it is general advice only and has been prepared by Goldman Sachs without taking into account a client's objectives, financial situation or needs. A client should, before acting on any such advice, consider the appropriateness of the advice having regard to the client's own objectives, financial situation and needs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests and a copy of Goldman Sachs' Australian Sell-Side Research Independence Policy Statement are available at: <a href="https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html">https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html</a>. Brazil: Disclosure information in relation to CVM Instruction 598 is available at https://www.gs.com/worldwide/brazil/area/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 20 of CVM Instruction 598, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. Canada: Goldman Sachs Canada Inc. is an affiliate of The Goldman Sachs Group Inc. and therefore is included in the company specific disclosures relating to Goldman Sachs (as defined above). Goldman Sachs Canada Inc. has approved of, and agreed to take responsibility for, this research report in Canada if and to the extent that Goldman Sachs Canada Inc. disseminates this research report to its clients. Hong Kong: Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. India: Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited, Research Analyst - SEBI Registration Number INH000001493, 951-A, Rational House, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India, Corporate Identity Number U74140MH2006FTC160634, Phone +91 22 6616 9000, Fax +91 22 6616 9001. Goldman Sachs may beneficially own 1% or more of the securities (as such term is defined in clause 2 (h) the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. Japan: See below. Korea: This research, and any access to it, is intended only for "professional investors" within the meaning of the Financial Services and Capital Markets Act, unless otherwise agreed by Goldman Sachs. Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. New Zealand: Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for 'wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests is available at: https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. Russia: Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity.

Research reports do not constitute a personalized investment recommendation as defined in Russian laws and regulations, are not addressed to a specific client, and are prepared without analyzing the financial circumstances, investment profiles or risk profiles of clients. Goldman Sachs assumes no responsibility for any investment decisions that may be taken by a client or any other person based on this research report. **Singapore:** Further information on the covered companies referred to in this research may be obtained from Goldman Sachs (Singapore) Pte. (Company Number: 198602165W). **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

**European Union:** Disclosure information in relation to Article 6 (2) of the European Commission Delegated Regulation (EU) (2016/958) supplementing Regulation (EU) No 596/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the technical arrangements for objective presentation of investment recommendations or other information recommending or suggesting an investment strategy and for disclosure of particular interests or indications of conflicts of interest is available at <a href="https://www.gs.com/disclosures/europeanpolicy.html">https://www.gs.com/disclosures/europeanpolicy.html</a> which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

**Japan:** Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan and Type II Financial Instruments Firms Association. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

# Ratings, coverage universe and related definitions

**Buy (B), Neutral (N), Sell (S)** -Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's total return potential relative to its coverage universe. Any stock not assigned as a Buy or a Sell on an Investment List with an active rating (i.e., a stock that is not Rating Suspended, Not Rated, Coverage Suspended or Not Covered), is deemed Neutral. Each region's Investment Review Committee manages Regional Conviction lists, which represent investment recommendations focused on the size of the total return potential and/or the likelihood of the realization of the return across their respective areas of coverage. The addition or removal of stocks from such Conviction lists do not represent a change in the analysts' investment rating for such stocks.

**Total return potential** represents the upside or downside differential between the current share price and the price target, including all paid or anticipated dividends, expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The total return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

**Coverage Universe:** A list of all stocks in each coverage universe is available by primary analyst, stock and coverage universe at <a href="https://www.gs.com/research/hedge.html">https://www.gs.com/research/hedge.html</a>.

**Not Rated (NR).** The investment rating and target price have been removed pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or strategic transaction involving this company and in certain other circumstances. **Rating Suspended (RS).** Goldman Sachs Research has suspended the investment rating and price target for this stock, because there is not a sufficient fundamental basis for determining, or there are legal, regulatory or policy constraints around publishing, an investment rating or target. The previous investment rating and price target, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS).** Goldman Sachs has suspended coverage of this company. **Not Covered (NC).** Goldman Sachs does not cover this company. **Not Available or Not Applicable (NA).** The information is not available for display or is not applicable. **Not Meaningful (NM).** The information is not meaningful and is therefore excluded.

#### **Global product; distributing entities**

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; Ombudsman Goldman Sachs Brazil: 0800 727 5764 and / or ouvidoriagoldmansachs@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Ouvidoria Goldman Sachs Brasil: 0800 727 5764 e/ou ouvidoriagoldmansachs@gs.com. Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9h às 18h; in Canada by either Goldman Sachs Canada Inc. or Goldman Sachs & Co. LLC; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. LLC. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

**European Union:** Goldman Sachs International authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, has approved this research in connection with its distribution in the European Union and United Kingdom.

#### **General disclosures**

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates and forecasts contained herein are as of the date hereof and are subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. Goldman Sachs & Co. LLC, the United States broker dealer, is a member of SIPC (<a href="https://www.sipc.org">https://www.sipc.org</a>).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analyst's published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analyst's fundamental equity rating for such stocks, which rating reflects a stock's return potential relative to its coverage universe as described herein.

We and our affiliates, officers, directors, and employees, excluding equity and credit analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options and futures disclosure documents which are available from Goldman Sachs sales representatives or at <a href="https://www.theocc.com/about/publications/character-risks.jsp">https://www.theocc.com/about/publications/character-risks.jsp</a> and

https://www.fiadocumentation.org/fia/regulatory-disclosures\_1/fia-uniform-futures-and-options-on-futures-risk-disclosures-booklet-pdf-version-2018.

Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

Differing Levels of Service provided by Global Investment Research: The level and types of services provided to you by the Global Investment Research division of GS may vary as compared to that provided to internal and other external clients of GS, depending on various factors including your individual preferences as to the frequency and manner of receiving communication, your risk profile and investment focus and perspective (e.g., marketwide, sector specific, long term, short term), the size and scope of your overall client relationship with GS, and legal and regulatory constraints. As an example, certain clients may request to receive notifications when research on specific securities is published, and certain clients may request that specific data underlying analysts' fundamental analysis available on our internal client websites be delivered to them electronically through data feeds or otherwise. No change to an analyst's fundamental research views (e.g., ratings, price targets, or material changes to earnings estimates for equity securities), will be communicated to any client prior to inclusion of such information in a research report broadly disseminated through electronic publication to our internal client websites or through other means, as necessary, to all clients who are entitled to receive such reports.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data related to one or more securities, markets or asset classes (including related services) that may be available to you, please contact your GS representative or go to <a href="https://research.gs.com">https://research.gs.com</a>.

Disclosure information is also available at <a href="https://www.gs.com/research/hedge.html">https://www.gs.com/research/hedge.html</a> or from Research Compliance, 200 West Street, New York, NY 10282

#### © 2020 Goldman Sachs.

No part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed without the prior written consent of The Goldman Sachs Group, Inc.