

Galapagos (GLPG NA)

Neutral

Price: €121.10

08 Oct 2020

Key Takeaways from our 2020 CEO Conference Call

Last Monday we hosted a conference call with Galapagos CEO Onno van de Stolpe in the context of the 2020 JP Morgan European Healthcare CEO Conference Call Series (transcript available on request). The call centered on (1.) The ex-US commercial launch of Jyseleca (filgotinib) in RA (Rheumatoid Arthritis) following recent approvals in Europe and Japan, (2.) The possible outcomes in the US following the filgotinib CRL in RA; (3.) Thoughts on filgotinib in UC (Ulcerative Colitis) following the mixed Phase III data and latest timelines for remaining indications; (4.) Pipeline projects, with a focus on ziritaxestat (GLPG'1690) in SSc (Systemic Sclerosis) and IPF (Idiopathic Pulmonary Fibrosis), GLPG'1972 in OA (Osteoarthritis) and the novel TOLEDO programme.

On the positive side, Mr. Van de Stolpe stated his view that, irrespective of the outcome of the CRL in RA, GILD remain committed to the development of filgotinib beyond RA.

On the more cautious side, Mr. Van de Stolpe acknowledged that in the event that only the 100mg filgotinib dose receives FDA approval for RA, GILD could choose not to launch in the US for this indication and, under this scenario, GLPG would not take on US commercialisation for this indication themselves.

Near-term, we see performance for the remainder of the year driven by the TOLEDO pipeline event on October 27th, as well as Phase II (PINTA) data for GLPG'1205 IPF and Phase II (ROCCELLA) data for GLPG'1972 in OA, both expected by year end, where overall we see balanced risk/reward.

Jyseleca (filgotinib)

- **GLPG is ready to launch in RA and will start selling shortly:** Mr. Van de Stolpe highlighted his excitement around the ex-US commercialisation of Jyseleca, with GLPG already rolling out the launch; first in Germany, where Jyseleca will start to be sold in the coming two weeks, followed by the Netherlands by the beginning of November, and other European countries to follow soon. On pricing and reimbursement, GLPG will not compete on price, with Jyseleca to be priced in line with the other JAKs. On the benchmark for the launch, Mr. Van de Stolpe pointed to Rinvoq and Olumiant, both of which are seeing great uptake in the EU driven by i) oral formulation; ii) on par or better efficacy vs. biologics; iii) lack of need to change therapy over time, and he believes Jyseleca has a very competitive profile, with best-in-class safety, which could be the big point of differentiation. While COVID-19 will have an impact, the teams have prepared for both a virtual and physical launch and are optimistic that they will see good uptake.
- **US opportunity in RA hinges on 200mg approval:** Following the recent CRL received from the FDA in RA (fist take [here](#)), the next step will be a Type A meeting between partner GILD and the FDA in November, to further understand the rationale behind the CRL and the necessary steps required for refiling. While 200mg approval would give Jyseleca the unique proposition of being the only JAK with two dosages in the US, partner GILD don't see a commercial benefit of launching with just the 100mg dose in RA. Should only the 100mg dose receive FDA approval and, under this scenario, should GILD decide not to go forward in RA in the US, Mr. Van de Stolpe doesn't see a scenario where GLPG take on full US RA rights themselves. That being said, he doesn't believe GILD will withdraw from filgotinib entirely should the 200mg dose not get FDA approved in the US for RA.
- **GLPG believe IBD (UC and Crohn's) could be an equivalent or bigger commercial opportunity than RA:** Mr. Van de Stolpe confirmed that filing for UC in Europe and Japan will be done in 4Q'20 and early-21, respectively, with approval in Europe on track for 2H'21, while the US filing is waiting for the MANTA and MANTA-Ray safety trials to read out in 1H'21. Confidence in Crohn's is high given prior Phase II data and, with the prospect of being the first JAK to market in Crohn's, GLPG believe that ultimately the sales opportunity across UC and Crohn's is as big as, or bigger than in RA.
- **CRL in RA could have an impact on RA related diseases:** Mr. Van de Stolpe highlighted that the Type A FDA meeting is important with respect to the future of development for PsA (Psoriasis arthritis) and AS (Ankylosing

Spondylitis). The Phase III (PENGUIN) PsA (Psoriatic Arthritis) trials have already started recruiting, but the Phase III (SEALION) AS trial start could be reviewed, as a consequence of the Type A meeting / the CRL.

Ziritaxestat in SSc and IPF

- **Larger Phase II trial might be needed before moving into Phase III for SSc:** While GLPG are encouraged by the recent Phase II (NOVESA) readout (first take [here](#)), some secondary endpoints were not that meaningful due to a high placebo response, so a larger Phase II trial is likely to precede moving to Phase III development. On safety and FVC (Forced Vital Capacity) data, to be presented at an upcoming scientific conference, GLPG have not yet disclosed the nature of the reported serious adverse events and cautioned on reading across to IPF given different patient populations.
- **Futility analysis in IPF on track for the of 1H'21:** Recruitment of the Phase III (ISABELA) trial has picked up following the COVID-19 slowdown, with the company now close to 1,200 patients recruited, and the futility analysis on track for the end of 1H'21.

GLPG'1972 in OA

- **Data supports effect on cartilage breakdown but improvement on pain is likely a prerequisite for Phase III:** Mr. Van de Stolpe confirmed that GLPG will disclose both primary and secondary endpoints (incl. WOMAC score) with the headline data in 4Q'20. Pre-clinical and Phase I data seen to date supports an effect on cartilage breakdown, but the FDA is focused on pain.

Other

- **TOLEDO programme:** GLPG are starting four Phase II trials by YE'20.
- **4Q'20 catalysts:** Phase II (ROCCELLA) data for GLPG'1972 and Phase II (PINTA) data for GLPG'1205 IPF will come well within the first part of 4Q'20 and the TOLEDO roundtable on October 27 will address why GLPG believe TOLEDO can be a game changer for inflammatory and fibrotic diseases.
- **Cash burn:** Cash burn will increase in 2021 as GLPG expand their commercial efforts in UC.
- **Capital allocation:** Mr. Van de Stolpe highlighted that, with €5.5bn cash on hand, the company can handle a few years of serious cash burn without any problems and will have enough money available for M&A activities. In addition to smaller in-licenses, GLPG are also considering larger acquisitions with Phase II products, with continued focus on inflammation and fibrosis.

European Healthcare (Pharma, Biotech):

James D Gordon ^{AC}

(44-20) 7742-6654

james.d.gordon@jpmorgan.com

Bloomberg JPMA GORDON1 <GO>

Richard Vosser

(44-20) 7742-6652

richard.vosser@jpmorgan.com

Sarita Kapila (M.D.)

(44-20) 7134-4189

sarita.kapila@jpmchase.com

Laerke L Engkilde

(44-20) 7742-2917

laerke.engkilde@jpmorgan.com

J.P. Morgan Securities plc

Sector Specialist (Sales & Trading) contact details

Marjan Daeipour - Sales and Trading

(44 20) 7134-1329

marjan.daeipour@jpmorgan.com

www.jpmorganmarkets.com

Analyst Certification: The research analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple research analysts are primarily responsible for this report, the research analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the research analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect the research analyst's personal views about any and all of the subject securities or issuers; and (2) no part of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations

or views expressed by the research analyst(s) in this report. For all Korea-based research analysts listed on the front cover, if applicable, they also certify, as per KOFIA requirements, that their analysis was made in good faith and that the views reflect their own opinion, without undue influence or intervention.

All authors named within this report are research analysts unless otherwise specified. In Europe, Sector Specialists may be shown on this report as contacts but are not authors of the report or part of the Research Department.

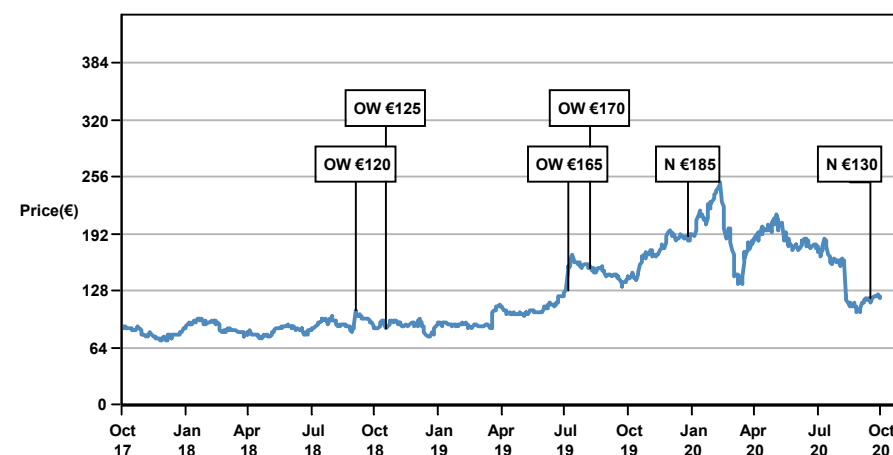
J.P. Morgan does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Important Disclosures

- **Market Maker/ Liquidity Provider:** J.P. Morgan is a market maker and/or liquidity provider in the financial instruments of/related to Galapagos.
- **Client:** J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as clients: Galapagos.
- **Debt Position:** J.P. Morgan may hold a position in the debt securities of Galapagos, if any.

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan-covered companies by visiting <https://www.jpmm.com/research/disclosures>, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request. J.P. Morgan's Strategy, Technical, and Quantitative Research teams may screen companies not covered by J.P. Morgan. For important disclosures for these companies, please call 1-800-477-0406 or e-mail research.disclosure.inquiries@jpmorgan.com.

Galapagos (GLPG.AS, GLPG NA) Price Chart



Date	Rating	Price (€)	Price Target (€)
13-Sep-18	OW	104.55	120
26-Oct-18	OW	86.04	125
15-Jul-19	OW	128.15	165
15-Aug-19	OW	152.05	170
06-Jan-20	N	188.40	185
24-Sep-20	N	118.70	130

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends. Initiated coverage Sep 12, 2018. All share prices are as of market close on the previous business day.

The chart(s) show J.P. Morgan's continuing coverage of the stocks; the current analysts may or may not have covered it over the entire period.

J.P. Morgan ratings or designations: OW = Overweight, N= Neutral, UW = Underweight, NR = Not Rated

Explanation of Equity Research Ratings, Designations and Analyst(s) Coverage Universe:

J.P. Morgan uses the following rating system: Overweight [Over the next six to twelve months, we expect this stock will outperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Neutral [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Underweight [Over the next six to twelve months, we expect this stock will underperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Not Rated (NR): J.P. Morgan has removed the rating and, if applicable, the price target, for this stock because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating and, if applicable, the price target, no longer should be relied upon. An NR designation is not a recommendation or a rating. In our Asia (ex-Australia and ex-India) and U.K. small- and mid-cap equity research, each stock's expected total return is compared to the expected total return of a benchmark country market index, not to those analysts' coverage universe. If it does not appear in the Important Disclosures section of this report, the certifying analyst's coverage universe can be found on J.P. Morgan's research website, www.jpmm.com.

Coverage Universe: Gordon, James D: Abcam (ABCA.L), Alcon (ALC.S), Alcon - GRS (ALC), Argencx (ARGX.BR), Argencx (ARGX.US) (ARGX), AstraZeneca (AZN.L), Dechra (DPH.L), Galapagos (GLPG.AS), Galapagos ADR (GLPG), Genmab A/S (GMAB.CO), GlaxoSmithKline (GSK.L), Grifols (GRLS.MC), Grifols (non-voting ADR) (GRFS), Grifols (non-voting) (GRLSbn.MC), Hikma Pharmaceuticals (HIK.L), Idorsia (IDIA.S), Lundbeck (LUN.CO), MorphoSys (MORG.DE), MorphoSys AG (MOR), Takeda (TAK), Vectura (VEC.L), Vifor Pharma AG (VIFN.S)

J.P. Morgan Equity Research Ratings Distribution, as of July 04, 2020

	Overweight (buy)	Neutral (hold)	Underweight (sell)
J.P. Morgan Global Equity Research Coverage	46%	39%	15%
IB clients*	53%	49%	38%
JPMS Equity Research Coverage	43%	42%	15%
IB clients*	75%	70%	58%

*Percentage of subject companies within each of the "buy," "hold" and "sell" categories for which J.P. Morgan has provided investment banking services within the previous 12 months. Please note that the percentages might not add to 100% because of rounding.

For purposes only of FINRA ratings distribution rules, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category. Please note that stocks with an NR designation are not included in the table above. This information is current as of the end of the most recent calendar quarter.

Equity Valuation and Risks: For valuation methodology and risks associated with covered companies or price targets for covered companies, please see the most recent company-specific research report at <http://www.jpmorganmarkets.com>, contact the primary analyst or your J.P. Morgan representative, or email research.disclosure.inquiries@jpmorgan.com. For material information about the proprietary models used, please see the Summary of Financials in company-specific research reports and the Company Tearsheets, which are available to download on the company pages of our client website, <http://www.jpmorganmarkets.com>. This report also sets out within it the material underlying assumptions used.

Analysts' Compensation: The research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

Registration of non-US Analysts: Unless otherwise noted, the non-US analysts listed on the front of this report are employees of non-US affiliates of J.P. Morgan Securities LLC, may not be registered as research analysts under FINRA rules, may not be associated persons of J.P. Morgan Securities LLC, and may not be subject to FINRA Rule 2241 or 2242 restrictions on communications with covered companies, public appearances, and trading securities held by a research analyst account.

Other Disclosures

J.P. Morgan is a marketing name for investment banking businesses of JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide.

All research reports made available to clients are simultaneously available on our client website, J.P. Morgan Markets. Not all research content is redistributed, e-mailed or made available to third-party aggregators. For all research reports available on a particular stock, please contact your sales representative.

Any data discrepancies in this report could be the result of different calculations and/or adjustments.

Any long form nomenclature for references to China; Hong Kong; Taiwan; and Macau within this research report are Mainland China; Hong Kong SAR, China; Taiwan, China; Macau SAR, China.

Options and Futures related research: If the information contained herein regards options or futures related research, such information is available only to persons who have received the proper options or futures risk disclosure documents. Please contact your J.P. Morgan Representative or visit <https://www.theocc.com/components/docs/riskstoc.pdf> for a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options or http://www.finra.org/sites/default/files/Security_Futures_Risk_Disclosure_Statement_2018.pdf for a copy of the Security Futures Risk Disclosure Statement.

Changes to Interbank Offered Rates (IBORs) and other benchmark rates: Certain interest rate benchmarks are, or may in the future become, subject to ongoing international, national and other regulatory guidance, reform and proposals for reform. For more information, please consult: https://www.jpmorgan.com/global/disclosures/interbank_offered_rates

Private Bank Clients: Where you are receiving research as a client of the private banking businesses offered by JPMorgan Chase & Co. and its subsidiaries ("J.P. Morgan Private Bank"), research is provided to you by J.P. Morgan Private Bank and not by any other division of J.P. Morgan, including but not limited to the J.P. Morgan corporate and investment bank and its research division.

Legal entity responsible for the production of research: The legal entity identified below the name of the Reg AC research analyst who authored this report is the legal entity responsible for the production of this research. Where multiple Reg AC research analysts authored this report with different legal entities identified below their names, these legal entities are jointly responsible for the production of this research.

Legal Entities Disclosures and Country-/Region-Specific Disclosures:

Argentina: JPMorgan Chase Bank N.A Sucursal Buenos Aires is regulated by Banco Central de la República Argentina ("BCRA"- Central Bank of Argentina) and Comisión Nacional de Valores ("CNV"- Argentinian Securities Commission) - ALYC y AN Integral N°51). **Australia:** J.P. Morgan Securities Australia Limited ("JPMSAL") (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by the Australian Securities and Investments Commission and is a Market, Clearing and Settlement Participant of ASX Limited and CHIX. This material is issued and distributed in Australia by or on behalf of JPMSAL only to "wholesale clients" (as defined in section 761G of the Corporations Act 2001). A list of all financial products covered can be found by visiting <https://www.jpmm.com/research/disclosures>. J.P. Morgan seeks to cover companies of relevance to the domestic and international investor base across all Global Industry Classification Standard (GICS) sectors, as well as across a range of market capitalisation sizes. If applicable, in the course of conducting public side due diligence on the subject company(ies), the Research Analyst team may at times perform such diligence through corporate engagements such as site visits, discussions with company representatives, management

presentations, etc. Research issued by JPMSAL has been prepared in accordance with J.P. Morgan Australia's Research Independence Policy which can be found at the following link: [J.P. Morgan Australia - Research Independence Policy](#). **Brazil:** Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Ombudsman J.P. Morgan: 0800-7700847 / ouvidoria.jp.morgan@jpmorgan.com. **Canada:** J.P. Morgan Securities Canada Inc. is a registered investment dealer, regulated by the Investment Industry Regulatory Organization of Canada and the Ontario Securities Commission and is the participating member on Canadian exchanges. This material is distributed in Canada by or on behalf of J.P. Morgan Securities Canada Inc. **China:** J.P. Morgan Securities (China) Company Limited has been approved by CSRC to conduct the securities investment consultancy business. **Dubai:** JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - The Gate, West Wing, Level 3 and 9 PO Box 506551, Dubai, UAE. This material has been distributed to persons regarded as professional clients or market counterparties as defined under the DFSA rules. **Germany:** This material is distributed in Germany by J.P. Morgan Securities plc, Frankfurt Branch, which is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht and also by J.P. Morgan AG ("JPM AG"), which is a member of the Frankfurt Stock Exchange, is authorised by the European Central Bank ("ECB") and is regulated by the Federal Financial Supervisory Authority (BaFin). JPM AG is a company incorporated in the Federal Republic of Germany with a registered office at Taunustor 1, 60310 Frankfurt am Main, the Federal Republic of Germany. **Hong Kong:** J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong, and J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. JP Morgan Chase Bank, N.A., Hong Kong is organized under the laws of the United States with limited liability. **India:** J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai - 400098, is registered with the Securities and Exchange Board of India (SEBI) as a 'Research Analyst' having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited (SEBI Registration Number - INZ000239730) and as a Merchant Banker (SEBI Registration Number - MB/INM000002970). Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: www.jpmpi.com. For non-local research material, this material is not distributed in India by J.P. Morgan India Private Limited. **Indonesia:** PT J.P. Morgan Sekuritas Indonesia is a member of the Indonesia Stock Exchange and is regulated by the OJK a.k.a. BAPEPAM LK. **Korea:** This material is issued and distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch, which is a member of the Korea Exchange (KRX) and is regulated by the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). **Japan:** JPMorgan Securities Japan Co., Ltd. and JPMorgan Chase Bank, N.A., Tokyo Branch are regulated by the Financial Services Agency in Japan. **Malaysia:** This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X), which is a Participating Organization of Bursa Malaysia Berhad and holds a Capital Markets Services License issued by the Securities Commission in Malaysia. **Mexico:** J.P. Morgan Casa de Bolsa, S.A. de C.V. and J.P. Morgan Grupo Financiero are members of the Mexican Stock Exchange and are authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. **New Zealand:** This material is issued and distributed by JPMSAL in New Zealand only to "wholesale clients" (as defined in the Financial Advisers Act 2008). JPMSAL is registered as a Financial Service Provider under the Financial Service providers (Registration and Dispute Resolution) Act of 2008. **Pakistan:** J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan. **Philippines:** J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission. **Russia:** CB J.P. Morgan Bank International LLC is regulated by the Central Bank of Russia. **Singapore:** This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMSS) [MCI (P) 018/04/2020 and Co. Reg. No.: 199405335R], which is a member of the Singapore Exchange Securities Trading Limited, and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore) [MCI (P) 052/09/2020], both of which are regulated by the Monetary Authority of Singapore. This material is issued and distributed in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289 (SFA). This material is not intended to be issued or distributed to any retail investors or any other investors that do not fall into the classes of "accredited investors," "expert investors" or "institutional investors," as defined under Section 4A of the SFA. Recipients of this material in Singapore are to contact JPMSS or JPMCB Singapore in respect of any matters arising from, or in connection with, the material. As at the date of this material, JPMSS is a designated market maker for certain structured warrants listed on the Singapore Exchange where the underlying securities may be the securities discussed in this material. Arising from its role as a designated market maker for such structured warrants, JPMSS may conduct hedging activities in respect of such underlying securities and hold or have an interest in such underlying securities as a result. The updated list of structured warrants for which JPMSS acts as designated market maker may be found on the website of the Singapore Exchange Limited: <http://www.sgx.com>. **South Africa:** J.P. Morgan Equities South Africa Proprietary Limited is a member of the Johannesburg Securities Exchange and is regulated by the Financial Services Board. **Taiwan:** J.P. Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. Material relating to equity securities is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited, subject to the license scope and the applicable laws and the regulations in Taiwan. According to Paragraph 2, Article 7-1 of Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers (as amended or supplemented) and/or other applicable laws or regulations, please note that the recipient of this material is not permitted to engage in any activities in connection with the material that may give rise to conflicts of interests, unless otherwise disclosed in the "Important Disclosures" in this material. **Thailand:** This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission, and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500. **UK and European Economic Area (EEA):** J.P. Morgan Securities plc ("JPMS plc") is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Registered in England & Wales No. 2711006. Registered Office 25 Bank Street, London, E14 5JP. Unless specified to the contrary, material is distributed in the UK and the EEA by JPMS plc. This material is directed in the UK only to: (a) persons having professional experience in matters relating to investments falling within article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) (Order) 2005 ("the FPO"); (b) persons outlined in article 49 of the FPO (high net worth companies, unincorporated associations or partnerships, the trustees of high value trusts, etc.); or (c) any persons to whom this communication may otherwise lawfully be made; all such persons being referred to as "relevant persons". This material must not be acted on or relied on by persons who are not relevant

persons. Any investment or investment activity to which this material relates is only available to relevant persons and will be engaged in only with relevant persons. Research issued by JPMS plc has been prepared in accordance with JPMS plc's policy for prevention and avoidance of conflicts of interest related to the production of Research which can be found at the following link: [J.P. Morgan EMEA - Research Independence Policy](#). U.S.: J.P. Morgan Securities LLC ("JPMS") is a member of the NYSE, FINRA, SIPC, and the NFA. JPMorgan Chase Bank, N.A. is a member of the FDIC. Material published by non-U.S. affiliates is distributed in the U.S. by JPMS who accepts responsibility for its content.

General: Additional information is available upon request. The information in this material has been obtained from sources believed to be reliable. While all reasonable care has been taken to ensure that the facts stated in this material are accurate and that the forecasts, opinions and expectations contained herein are fair and reasonable, JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) make no representations or warranties whatsoever to the completeness or accuracy of the material provided, except with respect to any disclosures relative to J.P. Morgan and the Research Analyst's involvement with the issuer that is the subject of the material. Accordingly, no reliance should be placed on the accuracy, fairness or completeness of the information contained in this material. Any data discrepancies in this material could be the result of different calculations and/or adjustments. J.P. Morgan accepts no liability whatsoever for any loss arising from any use of this material or its contents, and neither J.P. Morgan nor any of its respective directors, officers or employees, shall be in any way responsible for the contents hereof, apart from the liabilities and responsibilities that may be imposed on them by the relevant regulatory authority in the jurisdiction in question, or the regulatory regime thereunder. Opinions, forecasts or projections contained in this material represent J.P. Morgan's current opinions or judgment as of the date of the material only and are therefore subject to change without notice. Periodic updates may be provided on companies/industries based on company-specific developments or announcements, market conditions or any other publicly available information. There can be no assurance that future results or events will be consistent with any such opinions, forecasts or projections, which represent only one possible outcome. Furthermore, such opinions, forecasts or projections are subject to certain risks, uncertainties and assumptions that have not been verified, and future actual results or events could differ materially. The value of, or income from, any investments referred to in this material may fluctuate and/or be affected by changes in exchange rates. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Past performance is not indicative of future results. Accordingly, investors may receive back less than originally invested. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipients of this material must make their own independent decisions regarding any securities or financial instruments mentioned herein and should seek advice from such independent financial, legal, tax or other adviser as they deem necessary. J.P. Morgan may trade as a principal on the basis of the Research Analysts' views and research, and it may also engage in transactions for its own account or for its clients' accounts in a manner inconsistent with the views taken in this material, and J.P. Morgan is under no obligation to ensure that such other communication is brought to the attention of any recipient of this material. Others within J.P. Morgan, including Strategists, Sales staff and other Research Analysts, may take views that are inconsistent with those taken in this material. Employees of J.P. Morgan not involved in the preparation of this material may have investments in the securities (or derivatives of such securities) mentioned in this material and may trade them in ways different from those discussed in this material.

"Other Disclosures" last revised September 26, 2020.

Copyright 2020 JPMorgan Chase & Co. All rights reserved. This report or any portion hereof may not be reprinted, sold or redistributed without the written consent of J.P. Morgan.