Global Strategy Views Where to next for the reflation trade?

An eclectic mix of opportunities

1. The rotation back into growth and defensive parts of the market over recent weeks has been swift, raising many questions about where next for the reflation trade that marked the "hope" phase of the equity cycle. Much will depend on near term data around growth and inflation but context, of course, matters too. The cycle that started after the financial crisis was characterised by a powerful secular trend of growth outperforming value and defensive sectors outperforming cyclicals. While extreme relative to the standards of previous cycles, this dominant trend could be explained by a combination of growth scarcity (both in terms of nominal GDP and earnings – particularly outside of the US), ever lower bond yields – increasing the relative valuation of longer duration assets - and the dramatic bifurcation of earnings growth between growth (and predominantly tech stocks) and most of the rest of the market. Several value sectors faced unprecedented headwinds; the move towards zero interest rates (and negative in Europe) and the need to de-lever weighed on the banks while falling commodity prices hampered the energy related stocks.

2. The shift towards more cyclical and value leadership that dominated the period from the 2020 March low to the beginning of this year reflected a particularly strong inflection point in growth and inflation expectations following unprecedented policy support and progress on vaccinations. Given that there were record valuation spreads between growth and value parts of the market prior to this inflection point, the shift in confidence had a big impact on market leadership. As <u>Exhibit 1</u> shows, our baskets of global cyclicals relative to defensives started to outperform on a year over year basis, moving very closely with changes in growth expectations (represented here as the global composite PMI). The recent fading of cyclical outperformance has also coincided with a peak in growth momentum on this metric but would appear to be reflecting an expectation that the global PMI slows to the low 50s. As <u>Exhibit 2</u> shows, this is also true when we compare global value versus growth.

Peter Oppenheimer +44(20)7552-5782 | peter.oppenheimer@gs.com Goldman Sachs International

Sharon Bell +44(20)7552-1341 | sharon.bell@gs.com Goldman Sachs International

Lilia Peytavin +44(20)7774-8340 | lilia.peytavin@gs.com Goldman Sachs International

Guillaume Jaisson +44(20)7552-3000 | guillaume.jaisson@gs.com Goldman Sachs International

Andrea Ferrario +44(20)7552-4353 | andrea.ferrario@gs.com Goldman Sachs International

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 www.gs.com/research/hedge.html.

Exhibit 1: Cyclicals vs. defensives are pricing a moderation in economic activity...



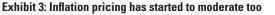
Source: Datastream, Bloomberg, Worldscope, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 2: ... and so is Value vs Growth

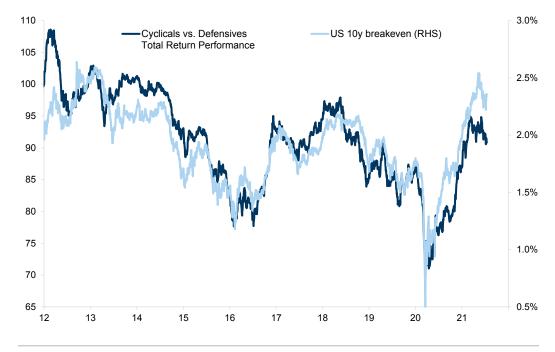


Source: Datastream, Haver Analytics, Goldman Sachs Global Investment Research

Another key driver of this rotation has been the shift in inflation expectations. As Exhibit <u>3</u> shows, the strong outperformance of the cyclical parts of the market also moved closely with inflation expectations which increased sharply in the first phase of the rotation, but has since moderated alongside the peak in growth momentum and also the shift in Fed dot plots.



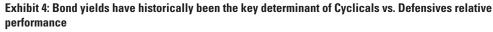
Global Cyclicals basket (GSWDCYCL) vs. Global Defensives basket (GSWDDEFS)



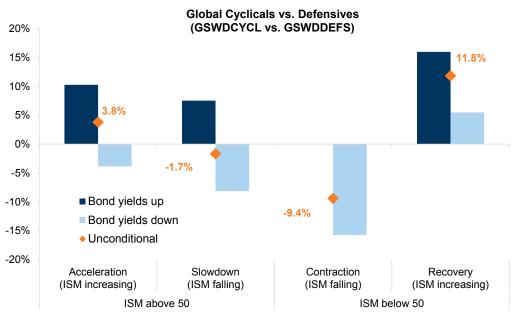
Source: Haver Analytics, Bloomberg, Datastream, Goldman Sachs Global Investment Research

3. Our view has been that as we pass peak growth momentum, a mix of defensive and value areas of the market should continue to perform well (see more: <u>Global</u> <u>Macroscope Leadership in the New Cycle</u>, 14 June 2021) and we think that more frequent rotations between the sector styles are more likely now that we are in the "growth phase" of the market cycle. As <u>Exhibit 4</u> shows, while the despair phase, or

period when the ISM is contracting, is consistently negative for cyclicals and positive for defensives, the hope or recovery phase is largely the reverse. This is true irrespective of what is happening to bond yields. **The growth phase, broadly consistent with periods when the ISM is above 50 and slowing, is much more ambiguous in terms of leadership and is very dependent on whether bond yields are rising or falling.**



Annualised average 2-month return since 1973



Source: Datastream, Goldman Sachs Global Investment Research

4. More recently, however, the cyclical and value leadership has not just faded but largely reversed. There have been a number of catalysts. A slowing of US growth momentum and the peaking of all four China PMIs in June together with China's relatively unexpected 50bp RRR cut last week have raised concerns about a loss of global growth momentum. A sharp acceleration in the delta variant has added to this fear, while the shift in US dot plots has increased the focus of a possible policy error as a consequence of tightening policy too early. These worries have been reflected in the pull-back in our risk appetite indicator (GSRAII) which is also consistent with an expectation that the manufacturing ISM will slow markedly in coming months (Exhibit 5) - see more: <u>GOAL 2H Outlook: Reflation Moderation — Still pro-risk but more selective and focused on carry</u>, 1 July 2021.

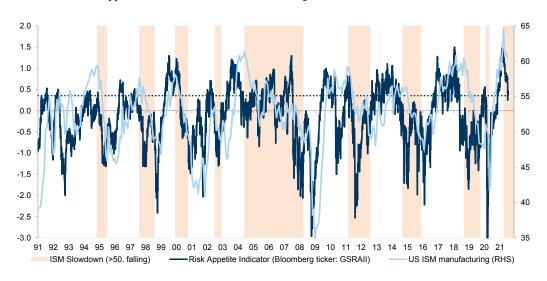
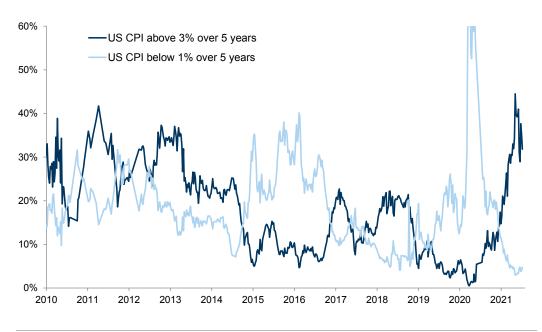


Exhibit 5: Our Risk Appetite Indicator has declined ahead of growth momentum

Source: Haver Analytics, Goldman Sachs Global Investment Research

5. Alongside this, we have seen a huge rally in bond markets in recent weeks; US 10 year bond yields have fallen around 15bp and are now back down to 1.3% from 1.7% at the start of April and the 10Y-2Y yield curve has flattened by more than 40bp. The rally has not been confined to the US. German yields are now back down to below -30bp having at one point earlier this year been at -10. Positioning and technicals may have played a part but it is clear that inflation expectations have moderated. As Exhibit 6 shows, **the market implied probability of US CPI rising above 3% over 5 years has retraced some of its earlier gains.**

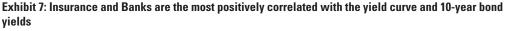


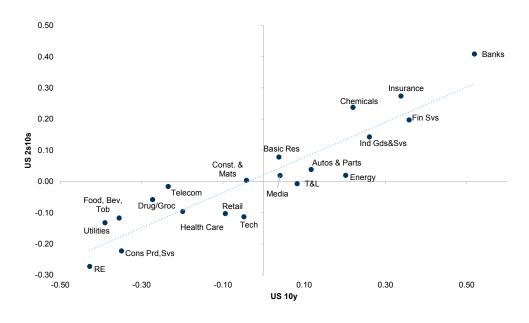


Source: Federal Reserve of Minneapolis, Goldman Sachs Global Investment Research

6. Inflation expectations, bond yields and the slope of the yield curve can have a

significant impact on sector relative returns, particularly at perceived turning points. As <u>Exhibit 7</u> shows, classic value areas of the market like banks, basic resources, energy and autos have the highest positive correlation of returns with the slope of the US yield curve and also with US 10 year bond yields. The sharp move lower in these that has occurred over the past few weeks has understandably hit the relative returns of these sectors. **But our bond strategists continue to think that these moves have overshot the fundamentals**.





5Y correlations based on weekly moves - World sectors versus market

Source: Datastream, Worldscope, Goldman Sachs Global Investment Research

7. What can we expect from here? Our view is that in the near term, in the absence of any clarity over the steady state for growth and inflation beyond the current bounce, investors will tend to extrapolate incremental data point, including the current earnings season, and trade the perceived shifts in direction until there is a clearer direction of the medium term trajectory. From conversations with clients, there appears to be no strong consensus on this. Many believe that the cyclical rotation was a short-lived phenomenon driven by a one-off recovery from an unusual recession. Following the sugar rush of stimulus provided by a mix of monetary and fiscal support, we could well go back to a "secular stagnation" environment of slow growth and low interest rates and inflation. This argument is also supported by the fear that higher government debt levels will weigh on future growth should bond yields rise, providing a kind of automatic brake that constrains future growth and inflation. Such an outcome would clearly favour a return to the secular leadership of growth and defensives.

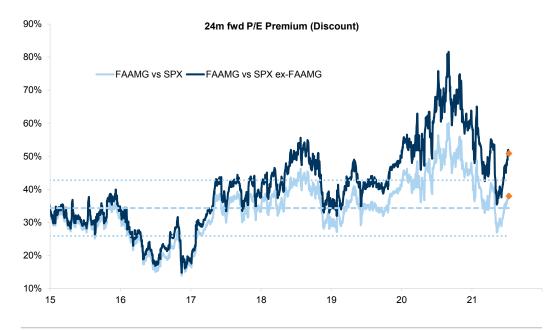
8. The contrary view is that the markets underestimate the inflationary consequences of the current combination of monetary support and fiscal expansion. Despite the arguments of temporary supply bottlenecks driving inflation, the US June core CPI rose by 0.88% month-over-month, a fourth consecutive beat. Used cars and

travel/transportation accounted for two-thirds of the increase, but the more persistent and cyclical categories exhibited some strength as well. In coming months, US growth should benefit not only from stronger job creation but also from a positive inventory cycle, following a likely large drawdown in Q2. This narrative is also supported by the expectations that the next few years will be very different from the past cycle. A marginal shift towards more localised supply chains, higher minimum wages and taxation will force higher consumer prices than we have seen before. At the same time policies to support a shift in the energy mix to comply with net zero carbon could add to energy prices paid by industry and consumers. Additionally, a huge boost in carbon neutral investment spending would generate higher material costs and inflation expectations, while increased capex could mop up excess savings, pushing up the level of real yields as well. **This outcome would point to a much longer and structural support for cyclical and value parts of the market**.

9. In the short term we think the rotation back to defensives and growth has gone too far. Our economists argue that there should be a sizable slowdown as reopening concludes and the fiscal impulse turns negative with spending out of pent-up savings providing only a partial offset (their growth forecast of 2.6% in the US in 2022 and 1.9% in 2023 on a Q4/Q4 basis is now ½-¾pp below the median FOMC projection - see more: *Global Views: A Favorable Midyear Report*, 6 July 2021), but a much sharper slowdown seems to have already been fully priced in the markets. Furthermore, our rates strategists believe current intermediate and longer maturity yield levels are much too low and do not reflect the macro environment. While they acknowledge that there aren't any obvious near-term catalysts that will take them back up, they seem to be pricing a pretty adverse outcome and an assumption that BYs are never likely to rise, which we think is wrong - their YE forecast for US 10Y is 1.9%. **Given the sharp pullback, we think the asymmetry is getting a lot better for investment in cyclicals/value and our commodity analysts remain positive about commodities.**

10. Over the medium term our US strategists continue to like technology, but their relative valuation has rebounded again and have gone back to pre-pandemic highs. Unprofitable tech, in particular, looks vulnerable to any back up in bond yields which would also likely challenge the renewed outperformance of the US market relative to others.

Exhibit 8: FAAMG stocks trading around 5-year average relative valuation

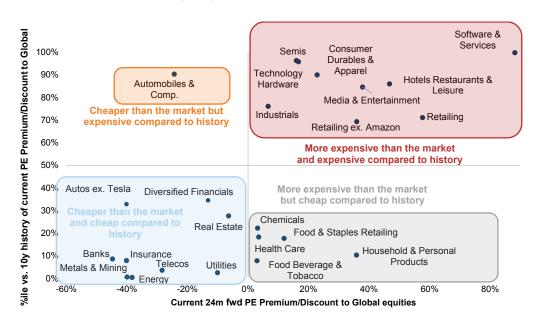


FAAMG: equally-weighted aggregate computed as 1 / average earnings yield

Source: FactSet, Goldman Sachs Global Investment Research

In terms of value, the mix of sectors that look cheap has also shifted over recent months. In <u>Exhibit 9</u> we show the relative valuation based on 24 month forward consensus numbers of the x-axis and the percentile of the relative valuation relative to history on the y-axis. For much of the past cycle the top right would be dominated by mainly long duration growth and defensive sectors while the bottom left would be mainly a mixture of value and growth. In mid June, the cheaper areas were a mixture of deep value (financials, energy mining and autos for example) and some defensive areas like healthcare and consumer staples while the top right was dominated by a combination of long duration technology, like software services, together with many traditional industrial cyclicals.



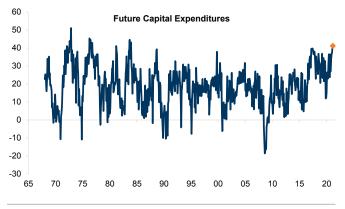


Source: FactSet, Goldman Sachs Global Investment Research

Currently, the same deep value areas remain in the bottom left while some cyclical sectors like industrial and semis have de-rated somewhat and chemicals have moved down from the top right to the bottom right-hand box. We still believe that steeper yield curves will drive another rotation back into some cyclical parts of the market but expect a combination of defensive growth and deep value to offer the best shorter term opportunities. Beyond that we continue to expect the market to be less dominated by clearly defined by factor and sector leadership in time. The opportunities for market leadership are starting to become more diverse across both sectors and geographies. Technology is becoming a larger component of all industries, while the shift to de-carbonisation is enhancing growth opportunities in the parts of the market that had underperformed for so long. As Exhibit 10 shows, capex intentions in the US are rising to the highest levels for many years, consistent with the readings from our capex tracker.

Exhibit 10: Capex intentions in the US are rising to the highest levels for many years

Philadelphia Fed Future Capital Expenditures diffusion index



Source: Federal Reserve Bank of Philadelphia, Goldman Sachs Global Investment Research

Exhibit 11: US capex has risen to levels not seen since 2018



Source: Department of Commerce, Goldman Sachs Global Investment Research

The clear distinction between Growth and Value is likely to fade and give way to a greater focus on alpha opportunities and increased sector and geographical diversification (see more: <u>Global Macroscope - Leadership in the New Cycle</u>, 14 June 2021).

Disclosure Appendix

Reg AC

We, Peter Oppenheimer, Sharon Bell, Lilia Peytavin, Guillaume Jaisson and Andrea Ferrario, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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

Disclosures

MSCI Disclosure

All MSCI data used in this report is the exclusive property of MSCI, Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced or redisseminated in any form and may not be used to create any financial instruments or products or any indices. This information is provided on an "as is" basis, and the user of this information assumes the entire risk of any use made of this information. Neither MSCI, any of its affiliates nor any third party involved in, or related to, computing or compiling the data makes any express or implied warranties or representations with respect to this information (or the results to be obtained by the use thereof), and MSCI, its affiliates and any such third party hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the data have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages. MSCI and the MSCI indexes are service marks of MSCI and its affiliates. The Global Industry Classification Standard (GICS) were developed by and is the exclusive property of MSCI and Standard & Poor's. GICS is a service mark of MSCI and S&P and has been licensed for use by The Goldman Sachs Group.

Equity baskets disclosure

The ability to trade the basket(s) discussed in this research will depend upon market conditions, including liquidity and borrowing constraints at the time of trade.

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.

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: https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. Brazil: Disclosure information in relation to CVM Resolution n. 20 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 Resolution n. 20, 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:** Goldman Sachs (Singapore) Pte. (Company Number: 198602165W), which is regulated by the Monetary Authority of Singapore, accepts legal responsibility for this research, and should be contacted with respect to any matters arising from, or in connection with, this research. **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 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 and United Kingdom: 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 (including as that Delegated Regulation is implemented into United Kingdom domestic law and regulation following the United Kingdom's departure from the European Union and the European Economic Area) 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 https://www.gs.com/disclosures/europeanpolicy.html 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.

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.; Public Communication Channel Goldman Sachs Brazil: 0800 727 5764 and / or contatogoldmanbrasil@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Canal de Comunicação com o Público Goldman Sachs Brasil: 0800 727 5764 e/ou contatogoldmanbrasil@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 (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.

Effective from the date of the United Kingdom's departure from the European Union and the European Economic Area ("Brexit Day") the following information with respect to distributing entities will apply:

Goldman Sachs International ("GSI"), authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA, has approved this research in connection with its distribution in the United Kingdom.

European Economic Area: GSI, authorised by the PRA and regulated by the FCA and the PRA, disseminates research in the following jurisdictions within the European Economic Area: the Grand Duchy of Luxembourg, Italy, the Kingdom of Belgium, the Kingdom of Denmark, the Kingdom of Norway, the Republic of Finland, Portugal, the Republic of Cyprus and the Republic of Ireland; GS -Succursale de Paris (Paris branch) which, from Brexit Day, will be authorised by the French Autorité de contrôle prudentiel et de resolution ("ACPR") and regulated by the Autorité de contrôle prudentiel et de resolution ("ACPR") and regulated by the Autorité de contrôle prudentiel et de resolution ("ACPR") and regulated by the Autorité de contrôle prudentiel et de resolution ("ACPR") and regulated by the Autorité de contrôle prudentiel et de resolution ("ACPR") and regulated by the Spain (Madrid branch) authorized in Spain by the Comisión Nacional del Mercado de Valores disseminates research in the Kingdom of Spain; GSI - Sweden Bankfilial (Stockholm branch) is authorized by the SFSA as a "third country branch" in accordance with Chapter 4, Section 4 of the Swedish Securities and Market Act (Sw. lag (2007:528) om värdepappersmarknaden) disseminates research in the Kingdom of Sweden; Goldman Sachs Bank Europe SE ("GSBE") is a credit institution incorporated in Germany and, within the Single Supervisory Mechanism, subject to direct prudential supervision by the European Central Bank and in other respects supervised by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and Deutsche Bundesbank and disseminates research in the Federal Republic of Germany and those jurisdictions within the European Economic Area where GSI is not authorised to disseminates research in the Kingdom of Spain; GSBE - Succursale Italia (Milan branch) to the relevant applicable extent, subject to local supervision by the Bank of Ital (Banca d'Italia) and the Italian Companies and Exchange Commission (Commissione Nazi

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 (<u>https://www.sipc.org</u>).

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.

We and our affiliates, officers, directors, and employees, 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, unless otherwise prohibited by regulation or Goldman Sachs policy.

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 focused on investment themes across markets, industries and sectors. It does not attempt to distinguish between the prospects or performance of, or provide analysis of, individual companies within any industry or sector we describe.

Any trading recommendation in this research relating to an equity or credit security or securities within an industry or sector is reflective of the investment theme being discussed and is not a recommendation of any such security in isolation.

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 https://www.theocc.com/about/publications/character-risks.jsp and

<u>https://www.fiadocumentation.org/fia/regulatory-disclosures_1/fia-uniform-futures-and-options-on-futures-risk-disclosures-booklet-pdf-version-2018</u>. 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 https://research.gs.com.

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

© 2021 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.