

China: Takeaways from President Xi's opening remarks at the 20th Party congress

Bottom line:

- The 20th National Congress of the Communist Party of China (NCCPC) convened today in Beijing and will conclude on 22 October. Through the opening remarks, President Xi summarized the achievements over the past five years and set out the blueprint for the Party and the country for the future.
- In summary, 1) President Xi's "Thoughts on Socialism with Chinese Characteristics for a New Era" have been further highlighted; 2) national security and social stability appear to have become more important, especially for the security of key supply chains; 3) President Xi reiterated the "One Country, Two Systems" principle, and strengthened the stance to secure national sovereignty; and 4) economic development remains important, with continued focus on high-quality growth.
- Our textual analysis suggests the adjusted frequency of "security," "people", "socialism", "modernization" and "military" this time increased versus five years ago, that of "growth" and "law-based governance" remained largely stable, while that of "economy", "market" and "reform" declined somewhat.
- We believe the ongoing Party congress may not be an inflection point for major policy changes. We maintain our view that a reopening will probably be delayed until at least Q2 2023, and implemented gradually to the extent possible. Policymakers' reaction function such as "no flooding of easing measures" and the top leadership's long-term goals are unlikely to change after the Party Congress.
- In terms of equity market implications, we are not changing our views in the absence of any fresh and material policy and political inputs so far from the Congress—We prefer China A over Offshore equities, and would continue to focus on thematic ideas such as "Common Prosperity" and "Little Giants" to trade for sustainable alpha in the stock market. That said, we'd argue that a high level of risk premium is embedded in prevailing equity valuations, and investors should consider option strategies to tactically position in the market.

Andrew Tilton

+852-2978-1802 | andrew.tilton@gs.com Goldman Sachs (Asia) L.L.C.

Timothy Moe, CFA +65-6889-1199 | timothy.moe@gs.com Goldman Sachs (Singapore) Pte

Hui Shan

+852-2978-6634 | hui.shan@gs.com Goldman Sachs (Asia) L.L.C.

Kinger Lau, CFA +852-2978-1224 | kinger.lau@gs.com Goldman Sachs (Asia) L.L.C.

Lisheng Wang

+852-3966-4004 | lisheng.wang@gs.com Goldman Sachs (Asia) L.L.C.

Si Fu, Ph.D.

+852-2978-0200 | si.fu@gs.com Goldman Sachs (Asia) L.L.C.

Xinquan Chen

+852-2978-2418 | xinquan.chen@gs.com Goldman Sachs (Asia) L.L.C.

Yuting Yang +852-2978-7283 | yuting.y.yang@gs.com Goldman Sachs (Asia) L.L.C.

Kevin Wang, CFA

+852-2978-2446 | kevin.wang@gs.com Goldman Sachs (Asia) L.L.C.

Main points from GS Economics team:

1. The 20th National Congress of the Communist Party of China (NCCPC) convened today in Beijing and will conclude on 22 October (For more on this see the latest <u>GS Top of Mind</u> publication and <u>our preview</u>). Through the opening remarks today, President Xi summarized the achievements over the past five years and set out the blueprint for the Party and the country for the future.

- 2. Our key takeaways from President Xi's remarks today:
- The report further highlighted Xi's "Thoughts on Socialism with Chinese Characteristics for a New Era". President Xi summarized the achievements over the past five years, especially on socialism theory and thoughts, party leadership, high-quality growth, structural reforms, people's livelihood (including Covid control), among others. He emphasized that from now on, the CPC's core task is to lead Chinese people to build China into a "great modern socialist country", to achieve the second centennial goal,¹ and to comprehensively strive for the "great rejuvenation of the Chinese nation" via the modernization with Chinese characteristics.² President Xi called for continued adherence and further development of the thoughts on a long-term basis.
- Increased emphasis on national security and social stability. President Xi highlighted the importance of national security and social stability, required improving the legal, strategical, policy, risk monitoring and emergency management systems to ensure national security, safeguard the supply chains of food, energy and other key products, and improve the efficiency of social governance. He specially mentioned that "Chinese people must hold their rice bowls firmly in their own hands", signaling the importance of food self-sufficiency and security.
- On national sovereignty, President Xi emphasized the need to comprehensively, accurately and firmly implement the national basic policy of "One Country, Two Systems". Regarding Taiwan issues, he pledged to make the most efforts to pursue for a peaceful reunification, but said China will not commit to abandoning the military option. President Xi stressed that China must achieve and has the ability to achieve a complete reunification. He also required strengthening military training and battle preparedness.
- Economic development remains important, with continued focus on high-quality growth. President Xi reiterated that "the principal contradiction facing Chinese society is that between unbalanced and inadequate development, and the people's ever-growing needs for a better life", and China's long-term prospect as "to basically achieve socialist modernization by 2035", and "to build China into a great

¹ Note among the "Two Centenaries" goals, China has fulfilled the first goal to "build a moderately prosperous society in all respects" by 2021 (the centenary of the founding of the CCP in 1921) and has been working on the second goal to "build a modern socialist country that is prosperous, strong, democratic, culturally advanced and harmonious" by 2049 (the centenary of the founding of the People's Republic of China).

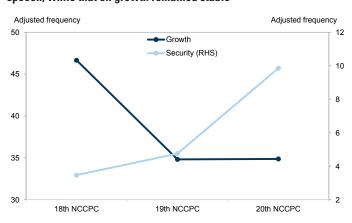
² According to Xi's remarks, the modernization with Chinese characteristics required adhering to the CCP's leadership and socialism with Chinese characteristics, achieving high-quality growth, developing the whole-process people's democracy, achieving the common prosperity, promoting the harmonious coexistence between human and nature, and building a community with a shared future for mankind, etc.

modern socialist country that is prosperous, strong, democratic, culturally advanced, harmonious, and beautiful by the middle of this century." He highlighted the need to focus on the real economy when boosting the modernization of industrial supply chains.

President Xi also emphasized a few other issues, including 1) further improving people's income, livelihood and employment; 2) accelerating the establishment of a housing system that ensures supply through multiple sources, provides housing support through multiple channels, and encourages both housing purchase and renting (we note President Xi didn't mention "housing is for living in, not for speculation" during his speech, but this was flagged in his full reports at the 19th and 20th NCCPC); 3) employing a gradualist approach to pursue the decarbonization targets; 4) improving the public health system and emergency response mechanism, especially against major epidemics; 5) maintaining the high pressure on corruption.

3. We compare the number of times major keywords were used in the President Xi's opening remarks at the 20th NCCPC, with his speech at the 19th NCCPC (in 2017) and former President Hu Jintao's at the 18th (in 2012). Based on our textual analysis, we find the adjusted frequency of "people," "socialism," "modernization," "security" and "military" this time increased versus five years ago (adjusted for the length of reports), that of "growth" and "law-based governance" remained largely stable, while that of "economy," "reform and "market" declined somewhat (Exhibit 1 and Exhibit 2).

Exhibit 1: The emphasis on security increased in Xi's 20th NCCPC speech, while that on growth remained stable



Adjusted frequency refers to the number of select keywords per 1000 words in the reports available.

Source: Government websites, Goldman Sachs Global Investment Research

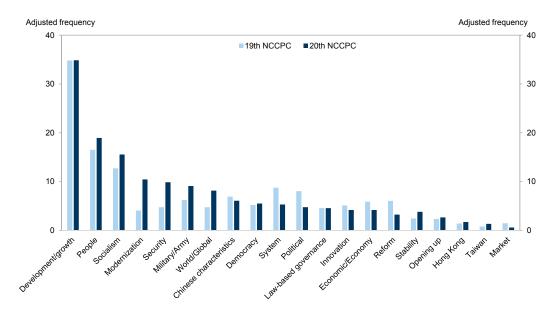


Exhibit 2: Shifting emphasis in Xi's speeches from the 19th to 20th Party Congress

Source: Government websites, Goldman Sachs Global Investment Research

- 4. We continue to believe the ongoing Party congress may not be <u>an inflection point for major policy changes</u>. Specifically, key health and political considerations suggest to us a reopening will probably be delayed until <u>at least Ω2 2023</u>, and implemented gradually to the extent possible. In the past week, <u>state media</u> has doubled down the zero-Covid policy stance, dimming the hope of an imminent reopening. Moreover, we believe policymakers' reaction function such as "no flooding of easing measures" and the top leadership's long-term goals such as "housing is for living in, not for speculation" despite no mention of it in Xi's speech today but appeared in <u>his full report</u> released afterwards are <u>unlikely to change</u> significantly after the Party Congress.
- 5. **Timeline for key events ahead**: According to the agenda, in coming days, Party leaders and delegates will focus on the amendment to the Party's constitution, a review of the report of the 19th CPC Central Committee, and the election of the 20th CPC Central Committee and the 20th CPC Central Commission for Discipline Inspection. The new Politburo Standing Committee will be revealed at the first plenary session of the 20th CPC Central Committee (following the conclusion of the 20th Party congress, likely on 23 October). There will also be several press conferences by policymakers during the Party congress. We list the (likely timeline) for key political and policy events in coming quarters in Exhibit 3.

Exhibit 3: A series of high-level policymaker meetings will occur over the next year $\,$

Dates (possible)	Key political and policy events
Oct 16-22 2022	The 20th Party Congress
Oct 23 2022	First Plenum of the 20th CPC Central Committee
Early Dec 2022	Politburo meeting on 2023 economic policy outlook, preparation for CEWC
Mid Dec 2022	Central Economic Work Conference (CEWC)
Jan/Feb 2023	Second Plenum of the 20th Party Congress
Mar 2023	Two Sessions - NPC and CPPCC
Oct/Nov 2023	Third Plenum of the 20th Party Congress

Source: Xinhua, www.gov.cn

Main points from GS Portfolio Strategy team:

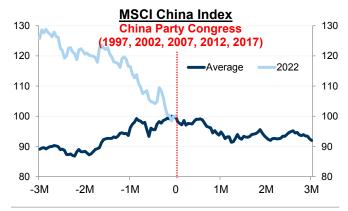
- 1. Empirically, over the past 5 Party Congress cycles (i.e. 25 years), Chinese stocks <u>have</u> tended to perform well 1 month in the run-up to the Congress, but **range-trade when** the event was in progress, and correct 5% on average 1 month post the meeting. However, the pre-Congress rally didn't materialize this time around as MSCI China has already fallen 4% so far in the 4th quarter alongside global equities and risk assets on intensifying growth, inflation, policy, and geopolitical concerns worldwide.
- 2. As widely expected, the opening speech by President Xi on Day 1 of the Congress offered limited incrementally new information about potential changes in Party leadership, cyclical policy directions, and other geopolitical and ideological subjects. This means that all eyes will be on October 23 when new members of the Politburo and Politburo Standing Committee will be officially unveiled, with the spotlight centering on whether President Xi will break the tradition of a two-term limit and secure an unprecedented third term as the CCP Party Secretary. While data points are limited, leadership transition (or lack thereof) could be influential to short-term returns as the market usually performed well post the event in the episodes where a leadership transition took place (i.e. 2002 and 2012), perhaps reflecting market expectation that incoming leaders would focus on growth when they took office.
- 3. On policy, the event (after it is concluded) has been perceived by some investors as a potential trigger for the authorities to gradually relax the Covid-related restrictions, and more broadly, for policymakers to turn more aggressive on growth supportive measures. In fact, re-opening beneficiaries have outperformed since August likely catalyzed by the reduction of travel/social gathering restrictions in Hong Kong and Macau, and the confirmation that several high-profile events will be held in China in the coming quarters although the optimism has faded somewhat in the past few days with mass testings are still being conducted across the country, and State media outlets and senior officials from the National Health Commission reiterating the justifications for sticking with the zero-Covid approach. Overall, our economists do not expect a drastic shift of policy dynamics post the Congress and expect the Zero Covid Policy to stay effective until 2Q23 on political and public health considerations, but the composition of top Party leadership will probably shed light on the policy directions going forward. For now, our policy news trackers, which group key words from State-sponsored media platforms into 2 main categories—ideology/politics and economy/markets—suggest to us that the policy focus has remained largely consistent in the lead-up to the Congress, with the balance shifting modestly from ideology to growth.
- 4. While uncertainties still abound, one observation that stands out to us is that **a high level of (event/political) risk premium is arguably embedded in prevailing equity valuations** relative to previous Congress cycles. This is partly reflected by: a) the wide and "unexplained" valuation discounts to prevailing index PE per our top-down macro PE model which has historically matched well with realized index valuations; b) elevated implied volatility and skew in index option pricing; and, c) rising country risk premium based on the Credit-Default-Swap (CDS) market pricing. At the headline index level, MSCI China and CSI300 is trading on 9.1x and 11.0x, -1.2 s.d. and -0.6 s.d. to their

Goldman Sachs China

respective past 10Y averages, with more than 30% and 23% of the index constituents trading below their book value. All these suggest to us that there could be potential for risk premium to moderate due to removal of political uncertainty and perhaps improving policy visibility when the Congress ends.

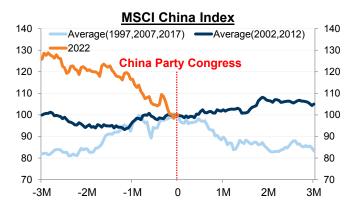
5. We are not changing our strategies in the absence of any fresh and material policy and political inputs so far from the Congress—we prefer China A over Offshore equities as the former is comparatively less exposed/sensitive to the global macro headwinds and US-China tensions, and could receive downside support from the "National Team" if it is called into action on significant market weakness. Thematically, the increased emphasis on national security, social stability, technology development, and innovation (relative to President Xi's opening speech at the 19th Party Congress), these likely policy priorities reinforce our view that investors should align their portfolio with strategic policy directions to trade for sustainable alpha in China, with our "Common Prosperity" portfolio offering investors broad exposures to "mass but unique consumption," "hard" technology and manufacturing upgrading, green/renewable energy, and SOE reformers. In a similar vein, we'd highlight our new thematic portfolio— Chinese "Little Giants" (GSSRCNLG)—which contains growthy small/mid caps in strategically important sectors for China (Cap Goods, (New) Materials, Tech Hardware) that are handpicked by the authorities for explicit policy support. For investors who can utilize derivatives, we believe risk reversals (or similar structures) on HSCEI continues to look attractive, considering: a) the put strike levels are below/close to GFC lows for HSCEI which has corrected 54% from its 2021 peak and 13% in the past month; b) index valuations are at the low end of the historical range (7.8x fP/E, -1.2 s.d.) and skew is high; and, c) fundamentally, we expect 10% profit growth per annum for Chinese corporates over the next 5 years.

Exhibit 4: Chinese stocks usually trade well ahead of, consolidate around, and correct post the Congress in the past 5 cycles



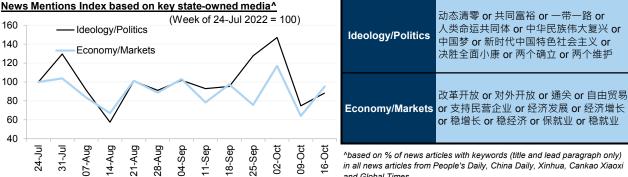
Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 5: Chinese stocks usually traded better in the episodes where top Party leadership took place



Source: MSCI, FactSet, Goldman Sachs Global Investment Research

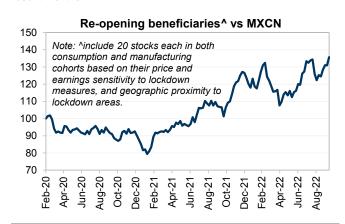
Exhibit 6: Policy emphasis on economy/markets has modestly risen in the past week per articles from State-sponsored media outlets



^based on % of news articles with keywords (title and lead paragraph only) in all news articles from People's Daily, China Daily, Xinhua, Cankao Xiaoxi and Global Times

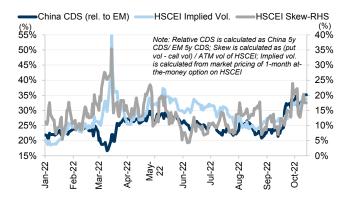
Source: Factiva, Goldman Sachs Global Investment Research

Exhibit 7: Market expectation on re-opening has strenghtened in recent months



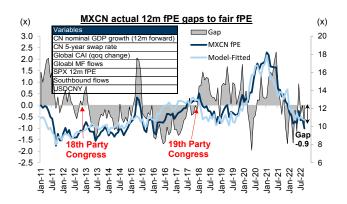
Source: FactSet, MSCI, Goldman Sachs Global Investment Research

Exhibit 9: Significant risk premium seems embedded in equity prices



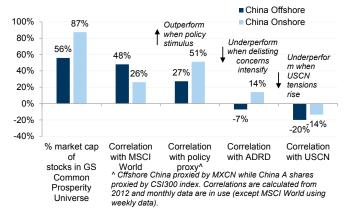
Source: Goldman Sachs Global Investment Research

Exhibit 8: Prevailing valuations are trading at high discounts to our model-implied fair values relative to previous Congress cycles



Source: Bloomberg, FactSet, Goldman Sachs Global Investment Research

Exhibit 10: Chinese A shares look better positioned than Offshore equities from a macro risk exposure and policy perspective



Source: Bloomberg, Wind, FactSet, Goldman Sachs Global Investment Research

16 October 2022 8 For the exclusive use of SHIBIN.XIE@VOYA.COM

Goldman Sachs China

Disclosure Appendix

Reg AC

We, Andrew Tilton, Timothy Moe, CFA, Hui Shan, Kinger Lau, CFA, Lisheng Wang, Si Fu, Ph.D., Xinquan Chen, Yuting Yang and Kevin Wang, CFA, 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

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: This information is being provided to you for information purposes only and is not, and under no circumstances should be construed as, an advertisement, offering or solicitation by Goldman Sachs & Co. LLC for purchasers of securities in Canada to trade in any Canadian security. Goldman Sachs & Co. LLC is not registered as a dealer in any jurisdiction in Canada under applicable Canadian securities laws and generally is not permitted to trade in Canadian securities and may be prohibited from selling certain securities and products in certain jurisdictions in Canada. If you wish to trade in any Canadian securities or other products in Canada please contact Goldman Sachs Canada Inc., an affiliate of The Goldman Sachs Group Inc., or another registered Canadian dealer. 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 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 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

Goldman Sachs China

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 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.

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, 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 and the Autorité des marches financiers ("AMF") disseminates research in France; GSI - Sucursal en España (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 disseminate research and additionally, GSBE, Copenhagen Branch filial af GSBE, Tyskland, supervised by the Danish Financial Authority disseminates research in the Kingdom of Denmark; GSBE - Sucursal en España (Madrid branch) subject (to a limited extent) to local supervision by the Bank of Spain 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 Italy (Banca d'Italia) and the Italian Companies and Exchange Commission (Commissione Nazionale per le Società e la Borsa "Consob") disseminates research in Italy; GSBE - Succursale de Paris (Paris branch), supervised by the AMF and by the ACPR disseminates research in France; and GSBE - Sweden Bankfilial (Stockholm branch), to a limited extent, subject to local supervision by the Swedish Financial Supervisory Authority (Finansinpektionen) disseminates research in the Kingdom of Sweden.

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 (https://www.sipc.org).

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.

Goldman Sachs China

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.isp 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 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

© 2022 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.