

## CEEMEA in Focus

## Playing the Long Game: Five Takeaways from Cairo

- We visited Cairo on Sunday and Monday of this week (May 8-9), meeting the usual mix of official and private sector organisations and individuals. This note highlights our five most important take-aways.
- **Take-away #1: Gulf Financing Has Given Egypt Breathing Space.** Egypt has received close to \$13bn in financial support so far from the Gulf, staving off the need for a sharper economic adjustment to the balance of payments shock it experienced in the wake of Russia's invasion of Ukraine. This has provided breathing space to negotiate a new programme with the IMF and to consider longer-term measures to address structural vulnerabilities.
- **Take-away #2: Longer-Term Pressures Persist.** While Gulf funds secure near-term prospects, we did not sense any complacency that longer-term challenges, notably the structural trade deficit, posed a threat to future external stability and the currency in the medium term.
- **Take-away #3: Policy Makers' Focus Has Shifted to Structural Reform.** Policy makers appear focused on structural reforms, namely promoting private and foreign direct investment in the manufacturing/tradable sector. A range of initiatives are being launched to achieve these aims, including announced privatisations and a new traffic-light system indicating the state's degree of involvement in various sectors of the economy.
- **Take-away #4: An IMF Deal Appears Imminent.** Negotiations appear to be underway for a 3-year, funded programme of a size in the order of \$3bn-\$5bn. The authorities stressed that the programme was likely to emphasise structural reforms and expected the negotiations to be concluded by end-June.
- **Take-away #5: Rate and FX Policy Uncertainty Weakens the Investment Thesis in the Near Term.** Contrary to our expectations, the authorities do not appear to be prioritising a reversal of the portfolio outflows witnessed since the Russian invasion of Ukraine. In our view, this will reduce pressure on rates and the FX, although rising inflationary pressures have prompted us to raise our rate hike forecast for the CBE's May meeting from 50bp to 100bp. Ongoing uncertainty on this front weakens any local market investment thesis for the time being, in our view.

Farouk Soussa  
+44(20)7051-9349 |  
farouk.soussa@gs.com  
Goldman Sachs International

## Playing the Long Game: Five Takeaways from Cairo

Egypt has come under acute balance of payments pressure as investor concerns that its exposure to higher commodity prices, Russian/Ukrainian tourism and tightening global financial conditions have led to a sell-off in Egyptian risk assets. We think the direct impact of the Russia-Ukraine war on the current account will be to widen it by around 1.7pp of GDP this year, relative to our previous forecasts, to 4.1% of GDP. Moreover, since mid-February, we estimate that around \$20bn in portfolio investment has exited the local t-bill and bond market, and yields on 5-year Eurobonds are currently approaching 11%, close to all-time highs. Net foreign assets in the monetary system have fallen sharply, prompting sizeable emergency financial support from the country's oil-rich Gulf neighbours and urgent discussions with the IMF. Meanwhile, the Central Bank of Egypt (CBE) has hiked rates by 100bp and allowed the Pound to depreciate by over 15%, exacerbating an already worsening inflation outlook.

It was against this backdrop that we visited Cairo on Sunday and Monday of this week (May 8-9), meeting the usual mix of official and private sector organisations and individuals. This note highlights our five most important take-aways.

### Take-away #1: Gulf Financing Has Given Egypt Breathing Space

Saudi Arabia, the UAE and Qatar have responded quickly and decisively in order to help stabilise Egypt's balance of payments. More support may be forthcoming in the near future, including from Kuwait, which is reportedly considering investments in Egypt in line with its neighbours. Our understanding of the support received or pledged so far is as follows:

- **Saudi Arabia:** The kingdom has deposited \$5bn with the CBE and has pledged up to \$10bn in investments. These sums are not additive: the initial \$5bn deposit will be used to finance part of the investments.
- **UAE:** The UAE has deposited \$3bn with the CBE and has in addition completed purchases of over \$1.8bn of assets. With a total investment programme of \$10bn in Egypt, we expect a further \$5bn in commitments over the medium term.
- **Qatar:** Qatar has deposited \$3bn with the CBE and is seeking to use this to fund investments in Egypt in the near term.

This amounts to close to \$13bn in realised support so far, with a possible additional \$10bn in further support coming in the medium term, \$5bn each from Saudi Arabia and the UAE.

Gulf financing has helped limit the impact of portfolio outflows on external buffers and provided much-needed FX liquidity to the domestic market. In our view, this has staved off the need for a sharper and more painful external adjustment in the near term or a much steeper rise in domestic rates, providing the Egyptian authorities with the space to negotiate a new programme with the IMF and to consider longer-term measures to address its external vulnerabilities.

## Take-away #2: Longer-Term Pressures Persist

In addition to Gulf support, we heard in our conversations that a number of other factors have helped ease near-term pressures on the currency, including:

- The bottoming out of portfolio outflows following the depreciation and rate hike by the CBE in March.
- The CBE directive for banks to cease providing Inward Documentary Credit (IDC) to importers, and instead to require Letters of Credit (LCs) for all imports.
- A slowdown in imports as importers assess domestic demand in the light of recent price hikes.
- A seasonal increase in remittances observed by local banks (due to Ramadan, Eid, etc.).

That said, it was widely expected that many of these factors would provide only temporary reprieve. In the absence of a substantial pick-up in tourism receipts and an improvement in external financing conditions, pressures on the currency were widely expected to resume in the longer term.

## Take-away #3: Policy-Makers' Focus Has Shifted to Structural Issues

The impact of the Covid pandemic and the acute nature of the external pressures of the past few weeks seem to have shifted policy makers' attention to Egypt's twin external vulnerabilities, namely a structurally wide trade deficit and a reliance on volatile inflows, most importantly tourism and portfolio inflows. This shift appears to be being reinforced by ongoing negotiations with the IMF which are reportedly heavily focused on these issues. Many of those we met, including policy makers, argued that the country's poor export competitiveness and dependence on imports was largely due to a lack of private and foreign direct investment in the tradable/manufacturing sector, mainly because of a poor investment environment and excessive competition by state-owned enterprises. In our discussions, policy makers highlighted the following areas of reform to address this:

- Promoting private investment.
- Promoting foreign direct investment.
- Incentives for the manufacturing/tradable sector.

A range of initiatives are being launched to achieve these aims, including a number of recent announcements regarding the upcoming privatisation and divestment of state and military assets. An overarching strategy is being developed to define and restrict the role of the state in the economy and will reportedly be announced imminently, and will include a new traffic-light system that will distinguish between three tiers of state intervention:

- **Red:** this is to include industries/sectors in which the government believes that the state should continue to play a dominant role (e.g., infrastructure) and where further investments are planned.
- **Amber:** this is to include industries/sectors in which the state will play a limited role and in which no further state-led investment is expected.

- **Green:** this is to include industries/sectors in which the state will play no role beyond that of regulator, where appropriate, and where any current state-owned assets will be divested over time.

In our discussions, various views were expressed regarding the likely success of this reform initiative and the political will of the government to follow through, with many interlocutors stressing the need to bridge the trust gap between the private and state sector. In our view, this can be achieved with the establishment of a strong track record on the part of the government in following through on commitments, which will be measurable in the extent to which it achieves many of the privatisations/divestments/IPOs it has set out to do. A new IMF programme is also important in this regard, in our view, as it would provide an anchor for the implementation of these reforms.

#### **Take-away #4: An IMF Deal Appears Imminent**

An IMF deadline appears to be imminent. We heard from the authorities that negotiations were currently underway for a 3-year, funded programme of a size in the order of \$3bn-\$5bn. The parameters of the programme were expected to be broadly in line with the previous EFF in 2016-2019, with quantitative targets including a primary balance initially of 1.5% of GDP rising gradually to 2% of GDP. The authorities stressed that the programme was likely to put a much greater emphasis on structural reforms, particularly those highlighted above. They expected the negotiations to be concluded by end-June.

#### **Take-away #5: Rate and FX Policy Uncertainty Weakens the Investment Thesis in Near Term**

The breathing space afforded by Gulf financing, the easing of immediate FX pressures, the shift of focus to structural vulnerabilities and the expected conclusion of IMF negotiations all reinforced our impression (backed by repeated assertions to that effect in many of our meetings) that the authorities were not prioritising a reversal of the portfolio outflows witnessed since the Russian invasion of Ukraine. In our view, this has important implications for rates and FX:

- **Yields on local debt may not rise by more than 100bp-200bp** – the Ministry of Finance emphasised the need to maintain fiscal discipline over the desirability of attracting portfolio investments. While their expectation was that such inflows would materialise in the near future on the back of positive policy announcements and developments, they stressed that they would be cautious in the extent to which they would raise the yields offered in t-bill and bond auctions in order to facilitate this to avoid a negative impact on their debt-servicing bill and overall fiscal balance.
- **Policy rates going up** – There was a consensus among those we spoke to that the CBE would raise rates in the next meeting on May 19, but a wide variance in expectations regarding the magnitude of the rise. We heard arguments that the supply-side nature of the shock, measures to limit the risk of dollarisation (including the launching of 18% one-year CDs that have so far attracted EGP600bn in retail investment), and concerns regarding the negative impact on economic growth

would limit the extent of rate rises in the near term. Against this, higher-than-expected rate rises in the US and rising inflationary pressures (with April CPI rising to 13.1%yoy, surprising consensus expectations to the upside) are likely to require monetary tightening. On balance, we think the higher-than-expected April inflation number and steeper Fed hikes will push the CBE to raise rates by 100bp in their next meeting in May (our previous expectation was for a 50bp hike). We are sticking with our forecast of a further 50bp hike in June, but believe this will be data-dependent, with risks skewed to the upside.

- **FX likely to weaken marginally, if at all** – We did not come away with a clear sense of FX policy going forward. Risks to the currency appear to be skewed towards further depreciation in the near term notwithstanding the temporary easing of FX pressures, and local interlocutors were almost unanimously expecting such a move imminently. However, the authorities' tolerance for further FX weakening was not clear to us, and we think will be at least in part a function of IMF negotiations, with any move down on the FX a precursor to the conclusion of an IMF deal.

Overall, uncertainty regarding rate and FX policies remains high, in our view, and we think weakens any local market investment thesis for the time being.

# Disclosure Appendix

## Reg AC

I, Farouk Soussa, hereby certify that all of the views expressed in this report accurately reflect my 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' Australia 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 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](mailto: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](mailto: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 résolution ("ACPR") and regulated by the Autorité de contrôle prudentiel et de résolution and the Autorité des marchés 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 (Finansinspektionen) 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 an 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 [https://www.fiadocumentation.org/fia/regulatory-disclosures\\_1/fia-uniform-futures-and-options-on-futures-risk-disclosures-booklet-pdf-version-2018](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.**