Goldman Sachs | Asset Management

February 10, 2023

MUSINGS

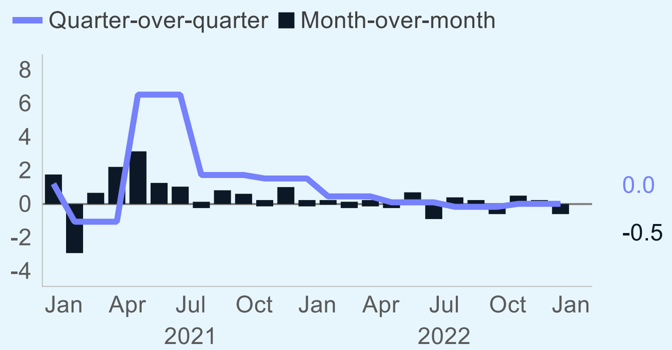
MACRO AT A GLANCE

European inflation – peaked but still elevated. Headline inflation in Germany increased 9.2% relative to a year earlier in January, falling further from last years 11.6% peak. The data imply annual Euro area inflation will remain well above the 1.7% level averaged between the ECB's founding in 1998 and 2019. Upside risks from a tight labour market support our expectation for further ECB rate hikes, including another outsized 50bps increase in March.

Weak UK growth momentum. The UK economy experienced flat growth in the fourth quarter of 2022, and momentum slowed into year-end with GDP contracting in December (see Chart). Weakness at the end of the year was driven by the services sector, likely reflecting normalisation in activity following a boost during the FIFA World Cup in November. Big picture, structural labour supply challenges continue to restrain growth while pushing up inflation, complicating the monetary policy outlook in the UK.

UK GDP contracted in December

UK GDP (%)



Source: Macrobond, Goldman Sachs Asset Management. As of December 2022.

POLICY PICTURE

A Fed peak and pause is still in sight. We think slow rebalancing of the labour market will lead to two more 25bps rate hikes in March and May, given it presents upside risks to core services inflation. Thereafter, we expect a pause in rate actions into 2024. Key developments to watch in the coming months beyond inflation and labour market data include updated Fed economic projections in March.

Hawkish surprise in Sweden. The Riksbank raised its policy rate by 50bps to 3% and guided to another hike alongside the start of active quantitative tightening in April. We think a weak housing market may temper tightening over time, but the hawkish surprise demonstrates how continued concerns about high underlying inflation can lead to near term policy surprises, even as energy inflation subsides.

> It's a good thing that we've been able to see the beginnings of disinflation without seeing, the labour market weaken."

Fed Chair Jerome Powell
The Economic Club of Washington, February 7, 2023

NAVIGATING FIXED INCOME

Recession Risk – What's Priced In?

Beyond curve inversion in interest rate and credit markets, and rating divergence within US high yield (HY) credit (see Chart), we think most financial assets reflect limited recession risk. Notably, despite high macro uncertainty and Corporate America's bearish view on the earnings outlook, risk assets have performed well year-to-date. We think the rally reflects three key factors:

1. **Resilient economic data** including solid US job gains
2. **Peak hawkishness** perceived to be behind us as central banks move to data-dependence and disinflation becomes more evident
3. **Strong investor demand**, particularly for high quality fixed income

Looking ahead, we are mindful that recent performance in financial assets creates less room for further gains (absent a reacceleration in growth and sharper deceleration in inflation) and more room for a selloff should downside growth risks re-emerge, or inflation reaccelerate.

Moderating Our Exposure to Agency MBS

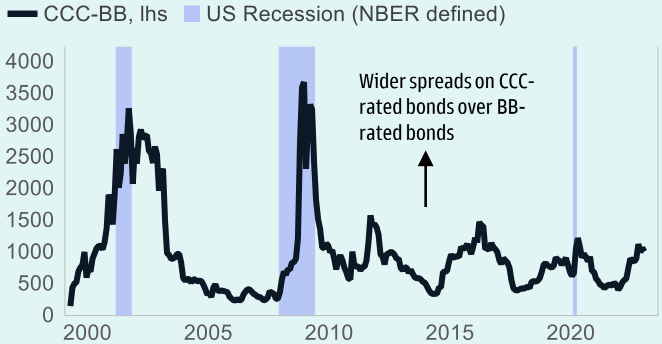
We used recent strength in agency mortgage-backed securities (MBS) as an opening to moderate our overweight exposure given three key pillars of our investment view have turned less supportive. Specifically:

1. **Spreads have compressed** from historic wides
2. **Rate volatility has fallen** sharply
3. **New supply is set to pick-up** as we move beyond a seasonally slow period

That said, we remain overweight as MBS tends to exhibit resilience to downside growth risks and continues to offer attractive yields, while spreads remain wide relative to history. Further, a technical tailwind from strong investor demand remains intact.

Weakness in lower quality bonds within US HY credit

Option adjusted spreads (basis points)



Source: Macrobond, Goldman Sachs Asset Management, ICE BoAML. As of January 2023.

MBS tends to display resilience as the economy slows

US MBS performance during periods of US economic contraction

NBER-defined US period of growth contraction	US MBS Index Cumulative Total Return Over the Contraction Period
Q1 2022	2.8%
Q1 2008 – Q1 2009	10.7%
Q2 2001 – Q3 2002	5.3%

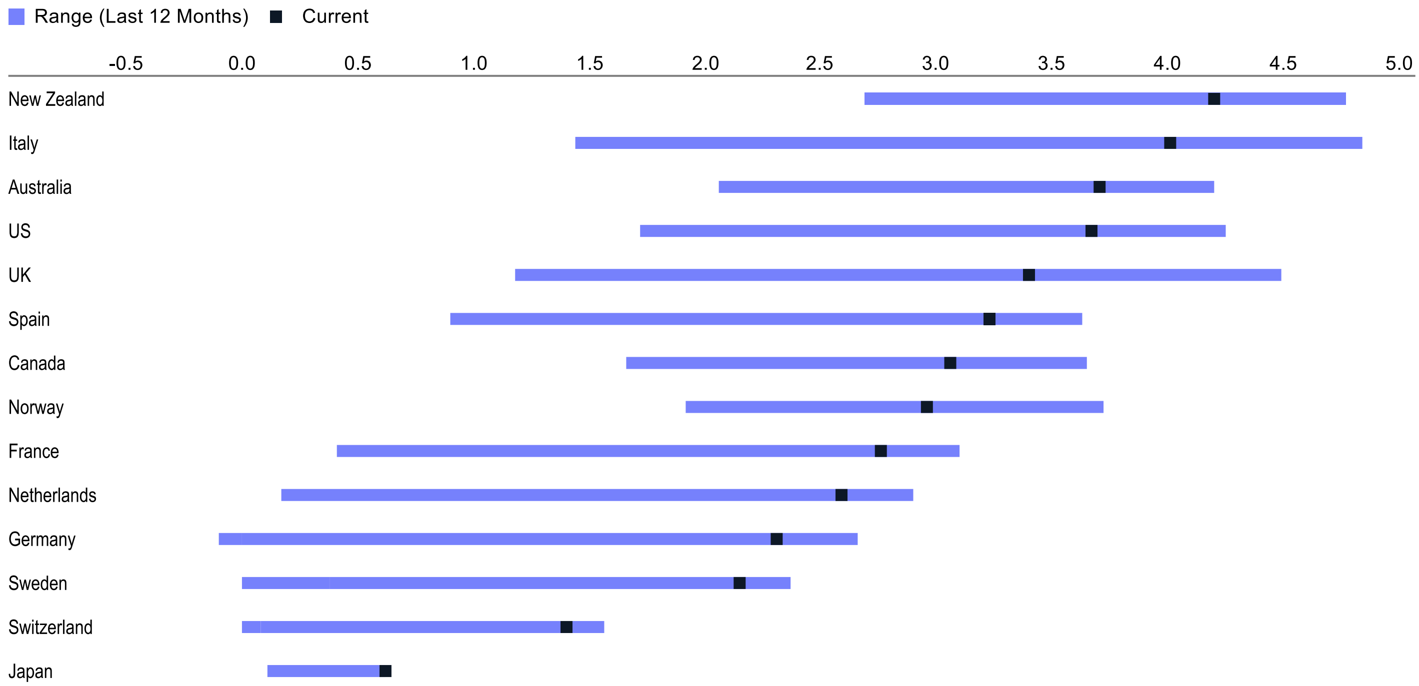
Source: Goldman Sachs Asset Management, Bloomberg, National Bureau of Economic Research (NBER).

CENTRAL BANK SNAPSHOT

	Interest Rate Policy	Balance Sheet Policy	Outlook	Our outlook relative to market-implied pricing
Fed	Federal funds rate: 4.5-4.75% Prior changes: February 2023 (+25bps) December 2022 (+50bps) June, July, September and November 2022 (+75bps) May 2022 (+50bps) March 2022 (+25bps)	The monthly pace of net asset purchases was reduced from November 2021 and ended in March 2022. Since June 2022, the Fed has engaged in balance sheet runoff.	We expect 25bps rate hikes in March and May before a pause in policy action into 2024. Expected terminal rate: 5.00-5.25%	Neutral
ECB	Deposit facility rate: 2.5% Prior changes: February 2023 and December 2022 (+50bps) September and October 2022 (+75bps) July 2022 (+50bps), the first hike since 2011	At the December 2022 meeting, the Governing Council announced the start of its balance sheet unwind for March 2023. The decline will amount to EUR 15bn per month on average until the end of the second quarter of 2023 and its subsequent pace will be determined over time. The anti-fragmentation tool, the Transmission Protection Instrument (TPI), unveiled in July 2022 will be used to ensure monetary policy is transmitted smoothly across all euro area countries.	We expect a 50bps hike at the March meeting, followed by two 25bps rate rises in May and June. Expected terminal rate: 3.5%.	Hawkish
BoE	Bank Rate: 4.0% Prior changes: February 2023 and December 2022 (+50bps) November 2022 (+75bps) August and September 2022 (+50bps) February, March, May, June 2022 (+25bps) December 2021 (+15bps)	In September/October 2022, the BoE temporarily purchased long-dated UK gilts and postponed active gilt sales; in November 2022 the BoE commenced active sales and an unwind of the temporary purchases.	We think risks for a 25bps rate hike in March are finely balanced. Further, we think rate cuts may be on the horizon later this year. Expected terminal rate: 4.25%.	Dovish
BoJ	Policy deposit rate: -0.10% Prior changes: January 2016, when the Bank introduced its negative interest rate policy (NIRP) 10-year JGB yield target: ~0%, with tolerance band of -/+50bp (yield curve control policy)	Following the December 2022 meeting, the BoJ has stepped up their defence of the new +0.5% YCC upper band by significantly increasing regular and ad-hoc Japanese Government Bond purchases along the yield curve. Targets for ETF, corporate bond and other risk asset purchases remain in place but in practice there have been limited recent buying.	The recent widening of the yield curve control band suggests this policy may be tweaked further or abandoned over the coming year. We also think there is a high likelihood of a rate rise and departure from NIRP.	Hawkish

Source: Goldman Sachs Asset Management. As of February 9, 2023. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation.

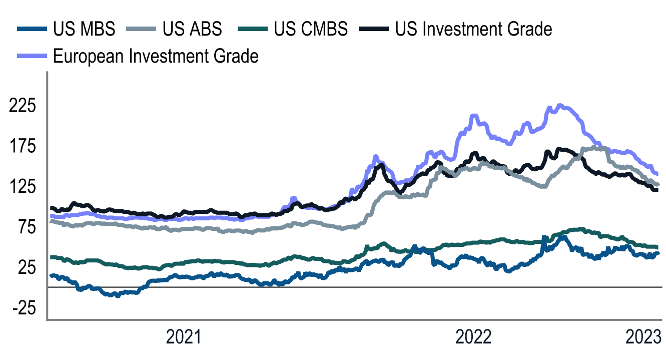
10-YEAR SOVEREIGN BOND YIELDS (%)



Source: Goldman Sachs Asset Management, Macrobond. As of February 10, 2023.

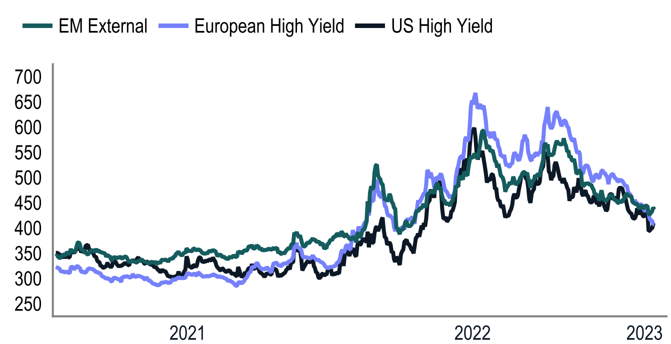
FIXED INCOME SECTOR SPREADS

Investment Grade and Securitized Spreads (bps)



Source:: Macrobond. ICE BoAML indices. As of February 9, 2023.

High Yield and Emerging Market Spreads (bps)



Source: Macrobond. ICE BoAML indices. As of As of February 9, 2023.

RELATED INSIGHTS

[MUSINGS — February 3, 2023]
[MUSINGS — January 20, 2023]
[MUSINGS — January 6, 2023]
[Navigating Fixed Income in 2023]
[MUSINGS — January 27, 2023]
[MUSINGS — January 13, 2023]
[Q1 2023 Outlook: Bring On Bonds]
[Investment Ideas: Coming Up For Air]

Risk Consideration

Investments in fixed income securities are subject to the risks associated with debt securities generally, including credit, liquidity, interest rate, prepayment and extension risk. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. The value of securities with variable and floating interest rates are generally less sensitive to interest rate changes than securities with fixed interest rates. Variable and floating rate securities may decline in value if interest rates do not move as expected. Conversely, variable and floating rate securities will not generally rise in value if market interest rates decline. Credit risk is the risk that an issuer will default on payments of interest and principal. Credit risk is higher when investing in high yield bonds, also known as junk bonds. Prepayment risk is the risk that the issuer of a security may pay off principal more quickly than originally anticipated. Extension risk is the risk that the issuer of a security may pay off principal more slowly than originally anticipated. All fixed income investments may be worth less than their original cost upon redemption or maturity.

Municipal securities are subject to credit/default risk and interest rate risk and may be more sensitive to adverse economic, business, political, environmental, or other developments if it invests a substantial portion of its assets in the bonds of similar projects or in particular types of municipal securities. While interest earned on municipal securities is generally not subject to federal tax, any interest earned on taxable municipal securities is fully taxable at the federal level and may be subject to tax at the state level.

Disclosures

Views and opinions are current as of date of publication and may be subject to change, they should not be construed as investment advice.

Views and opinions expressed are for informational purposes only and do not constitute a recommendation by Goldman Sachs Asset Management to buy, sell, or hold any security.

Investments in fixed income securities are subject to the risks associated with debt securities generally, including credit, liquidity, interest rate, prepayment and extension risk. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. The value of securities with variable and floating interest rates are generally less sensitive to interest rate changes than securities with fixed interest rates. Variable and floating rate securities may decline in value if interest rates do not move as expected. Conversely, variable and floating rate securities will not generally rise in value if market interest rates decline. Credit risk is the risk that an issuer will default on payments of interest and principal. Credit risk is higher when investing in high yield bonds, also known as junk bonds. Prepayment risk is the risk that the issuer of a security may pay off principal more quickly than originally anticipated. Extension risk is the risk that the issuer of a security may pay off principal more slowly than originally anticipated. All fixed income investments may be worth less than their original cost upon redemption or maturity.

Individual portfolio management teams for Goldman Sachs Asset Management may have views and opinions and/or make investment decisions that, in certain instances, may not always be consistent with the views and opinions expressed herein.

This material is provided at your request for informational purposes only. It is not an offer or solicitation to buy or sell any securities.

The website links provided are for your convenience only and are not an endorsement or recommendation by Goldman Sachs Asset Management of any of these websites or the products or services offered. Goldman Sachs Asset Management is not responsible for the accuracy and validity of the content of these websites.

Although certain information has been obtained from sources believed to be reliable, we do not guarantee its accuracy, completeness or fairness. We have relied upon and assumed without independent verification, the accuracy and completeness of all information available from public sources.

This information discusses general market activity, industry or sector trends, or other broad-based economic, market or political conditions and should not be construed as research or investment advice. This material has been prepared by Goldman Sachs Asset Management and is not financial research nor a product of Goldman Sachs Global Investment Research (GIR). It was not prepared in compliance with applicable provisions of law designed to promote the independence of financial analysis and is not subject to a prohibition on trading following the distribution of financial research. The views and opinions expressed may differ from those of Goldman Sachs Global Investment Research or other departments or divisions of Goldman Sachs and its affiliates. Investors are urged to consult with their financial advisors before buying or selling any securities. This information may not be current and Goldman Sachs Asset Management has no obligation to provide any updates or changes.

Economic and market forecasts presented herein reflect a series of assumptions and judgments as of the date of this presentation and are subject to change without notice. These forecasts do not take into account the specific investment objectives, restrictions, tax and financial situation or other needs of any specific client. Actual data will vary and may not be reflected here. These forecasts are subject to high levels of uncertainty that may affect actual performance. Accordingly, these forecasts should be viewed as merely representative of a broad range of possible outcomes. These forecasts are estimated, based on assumptions, and are subject to significant revision and may change materially as economic and market conditions change. Goldman Sachs has no obligation to provide updates or changes to these forecasts. Case studies and examples are for illustrative purposes only.

Investments in fixed-income securities are subject to credit and interest rate risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price.

THIS MATERIAL DOES NOT CONSTITUTE AN OFFER OR SOLICITATION IN ANY JURISDICTION WHERE OR TO ANY PERSON TO WHOM IT WOULD BE UNAUTHORIZED OR UNLAWFUL TO DO SO.

Prospective investors should inform themselves as to any applicable legal requirements and taxation and exchange control regulations in the countries of their citizenship, residence or domicile which might be relevant.

Goldman Sachs does not provide legal, tax or accounting advice, unless explicitly agreed between you and Goldman Sachs (generally through certain services offered only to clients of Private Wealth Management). Any statement contained in this presentation concerning U.S. tax matters is not intended or written to be used and cannot be used for the purpose of avoiding penalties imposed on the relevant taxpayer. Notwithstanding anything in this document to the contrary, and except as required to enable compliance with applicable securities law, you may disclose to any person the US federal and state income tax treatment and tax structure of the transaction and all materials of any kind (including tax opinions and other tax analyses) that are provided to you relating to such tax treatment and tax structure, without Goldman Sachs imposing any limitation of any kind. Investors should be aware that a determination of the tax consequences to them should take into account their specific circumstances and that the tax law is subject to change in the future or retroactively and investors are strongly urged to consult with their own tax advisor regarding any potential strategy, investment or transaction.

United Kingdom: In the United Kingdom, this material is a financial promotion and has been approved by Goldman Sachs Asset Management International, which is authorized and regulated in the United Kingdom by the Financial Conduct Authority.

European Economic Area (EEA): This material is a financial promotion disseminated by Goldman Sachs Bank Europe SE, including through its authorised branches ("GSBE"). GSBE is a credit institution incorporated in Germany and, within the Single Supervisory Mechanism established between those Member States of the European Union whose official currency is the Euro, subject to direct prudential supervision by the European Central Bank and in other respects supervised by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufischt, BaFin) and Deutsche Bundesbank.

Switzerland: For Qualified Investor use only – Not for distribution to general public. This is marketing material. This document is provided to you by Goldman Sachs Bank AG, Zürich. Any future contractual relationships will be entered into with affiliates of Goldman Sachs Bank AG, which are domiciled outside of Switzerland. We would like to remind you that foreign (Non-Swiss) legal and regulatory systems may not provide the same level of protection in relation to client confidentiality and data protection as offered to you by Swiss law.

Asia Pacific: Please note that neither Goldman Sachs Asset Management International nor any other entities involved in the Goldman Sachs Asset Management business maintain any licenses, authorizations or registrations in Asia (other than Japan), except that it conducts businesses (subject to applicable local regulations) in and from the following jurisdictions: Hong Kong, Singapore and Malaysia. This material has been issued for use in or from Hong Kong by Goldman Sachs Asset Management (Hong Kong) Limited, in or from Singapore by Goldman Sachs Asset Management (Singapore) Pte. Ltd. (Company Number: 201329851H) and in or from Malaysia by Goldman Sachs (Malaysia) Sdn Berhad (880767W).

Australia: This material is distributed by Goldman Sachs Asset Management Australia Pty Ltd ABN 41 006 099 681, AFSL 228948 ('GSAMA') and is intended for viewing only by wholesale clients for the purposes of section 761G of the Corporations Act 2001 (Cth). This document may not be distributed to retail clients in Australia (as that term is defined in the Corporations Act 2001 (Cth)) or to the general public. This document may not be reproduced or distributed to any person without the prior consent of GSAMA. To the extent that this document contains any statement which may be considered to be financial product advice in Australia under the Corporations Act 2001 (Cth), that advice is intended to be given to the intended recipient of this document only, being a wholesale client for the purposes of the Corporations Act 2001 (Cth).

Any advice provided in this document is provided by either Goldman Sachs Asset Management International (GSAMI), Goldman Sachs International (GSI), Goldman Sachs Asset Management, LP (GSAMLP) or Goldman Sachs & Co. LLC (GSCo).

Both GSCo and GSAMLP are regulated by the US Securities and Exchange Commission under US laws, which differ from Australian laws. Both GSI and GSAMI are regulated by the Financial Conduct Authority and GSI is authorized by the Prudential Regulation Authority under UK laws, which differ from Australian laws. GSI, GSAMI, GSCo, and GSAMLP are all exempt from the requirement to hold an Australian financial services licence under the Corporations Act of Australia and therefore do not hold any Australian Financial Services Licences. Any financial services given to any person by GSI, GSAMI, GSCo or GSAMLP by distributing this document in Australia are provided to such persons pursuant to ASIC Class Orders 03/1099 and 03/1100. No offer to acquire any interest in a fund or a financial product is being made to you in this document. If the interests or financial products do become available in the future, the offer may be arranged by GSAMA in accordance with section 911A(2)(b) of the Corporations Act. GSAMA holds Australian Financial Services Licence No. 228948. Any offer will only be made in circumstances where disclosure is not required under Part 6D.2 of the Corporations Act or a product disclosure statement is not required to be given under Part 7.9 of the Corporations Act (as relevant).

Canada: This presentation has been communicated in Canada by Goldman Sachs Asset Management LP, which is registered as a portfolio manager under securities legislation in all provinces of Canada and as a commodity trading manager under the commodity futures legislation of Ontario and as a derivatives adviser under the derivatives legislation of Quebec. Goldman Sachs Asset Management LP is not registered to provide investment advisory or portfolio management services in respect of exchange-traded futures or options contracts in Manitoba and is not offering to provide such investment advisory or portfolio management services in Manitoba by delivery of this material.

Japan: This material has been issued or approved in Japan for the use of professional investors defined in Article 2 paragraph (31) of the Financial Instruments and Exchange Law by Goldman Sachs Asset Management Co., Ltd.

Cambodia: Please Note: The attached information has been provided at your request for informational purposes only and is not intended as a solicitation in respect of the purchase or sale of instruments or securities (including funds) or the provision of services. Neither Goldman Sachs Asset Management (Singapore) Pte. Ltd. nor any of its affiliates is licensed as a dealer or investment advisor under The Securities and Exchange Commission of Cambodia. The information has been provided to you solely for your own purposes and must not be copied or redistributed to any person without the prior consent of Goldman Sachs Asset Management.

Timor: Please Note: The attached information has been provided at your request for informational purposes only and is not intended as a solicitation in respect of the purchase or sale of instruments or securities (including funds), or the provision of services. Neither Goldman Sachs Asset Management (Singapore) Pte. Ltd. nor any of its affiliates is licensed under any laws or regulations of Timor-Leste. The information has been provided to you solely for your own purposes and must not be copied or redistributed to any person or institution without the prior consent of Goldman Sachs Asset Management.

Vietnam: Please Note: The attached information has been provided at your request for informational purposes only. The attached materials are not, and any authors who contribute to these materials are not, providing advice to any person. The attached materials are not and should not be construed as an offering of any securities or any services to any person. Neither Goldman Sachs Asset Management (Singapore) Pte. Ltd. nor any of its affiliates is licensed as a dealer under the laws of Vietnam. The information has been provided to you solely for your own purposes and must not be copied or redistributed to any person without the prior consent of Goldman Sachs Asset Management.

Brazil: These materials are provided at your request and solely for your information, and in no way constitutes an offer, solicitation, advertisement or advice of, or in relation to, any securities, funds, or products by any of Goldman Sachs affiliates in Brazil or in any jurisdiction in which such activity is unlawful or unauthorized, or to any person to whom it is unlawful or unauthorized. This document has not been delivered for registration to the relevant regulators or financial supervisory bodies in Brazil, such as the Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários – CVM) nor has its content been reviewed or approved by any such regulators or financial supervisory bodies. The securities, funds, or products described in this document have not been registered with the relevant regulators or financial supervisory bodies in Brazil, such as the CVM, nor have been submitted for approval by any such regulators or financial supervisory bodies. The recipient undertakes to keep these materials as well as the information contained herein as confidential and not to circulate them to any third party.

Colombia: This presentation does not have the purpose or the effect of initiating, directly or indirectly, the purchase of a product or the rendering of a service by Goldman Sachs Asset Management to Colombian residents. Goldman Sachs Asset Management's products and/or services may not be promoted or marketed in Colombia or to Colombian residents unless such promotion and marketing is made in compliance with Decree 2555 of 2010 and other applicable rules and regulations related to the promotion of foreign financial and/or securities-related products and/or services in Colombia or to Colombian residents.

Bahrain: FOR INTENDED AUDIENCES ONLY– NOT FOR WIDER DISTRIBUTION

This material has not been reviewed by the Central Bank of Bahrain (CBB) and the CBB takes no responsibility for the accuracy of the statements or the information contained herein, or for the performance of the securities or related investment, nor shall the CBB have any liability to any person for damage or loss resulting from reliance on any statement or information contained herein. This material will not be issued, passed to, or made available to the public generally.

Kuwait: FOR INTENDED AUDIENCES ONLY– NOT FOR WIDER DISTRIBUTION

The investments described in this document have not been and will not be registered, authorised, licensed or approved for offering, marketing or sale in the State of Kuwait pursuant to Law No. 31 of 1990 and Law No. 7 of 2010 nor by the Central Bank of Kuwait or any other relevant Kuwaiti government agency and shall not be offered or sold in the State of Kuwait, except in compliance with the above. No private or public offering is being made in the State of Kuwait, and no agreement relating to the sale of such investments will be concluded in the State of Kuwait. No marketing or solicitation or inducement activities are being used to offer or market such investments in the State of Kuwait.

Oman: FOR INTENDED AUDIENCES ONLY– NOT FOR WIDER DISTRIBUTION

The Capital Market Authority of the Sultanate of Oman (the "CMA") is not liable for the correctness or adequacy of information provided in this document or for identifying whether or not the services contemplated within this document are appropriate investment for a potential investor. The CMA shall also not be liable for any damage or loss resulting from reliance placed on the document.

Qatar: FOR INTENDED AUDIENCES ONLY– NOT FOR WIDER DISTRIBUTION

This document has not been, and will not be, registered with or reviewed or approved by the Qatar Financial Markets Authority, the Qatar Financial Centre Regulatory Authority or Qatar Central Bank and may not be publicly distributed. It is not for general circulation in the State of Qatar and may not be reproduced or used for any other purpose.

Saudi Arabia: FOR INTENDED AUDIENCES ONLY– NOT FOR WIDER DISTRIBUTION

The Capital Market Authority does not make any representation as to the accuracy or completeness of this document, and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this document. If you do not understand the contents of this document you should consult an authorised financial adviser.

FOR INTENDED AUDIENCES ONLY– NOT FOR WIDER DISTRIBUTION

These materials are presented to you by Goldman Sachs Saudi Arabia Company ("GSSA"). GSSA is authorised and regulated by the Capital Market Authority ("CMA") in the Kingdom of Saudi Arabia. GSSA is subject to relevant CMA rules and guidance, details of which can be found on the CMA's website at www.cma.org.sa.

The CMA does not make any representation as to the accuracy or completeness of these materials, and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of these materials. If you do not understand the contents of these materials, you should consult an authorised financial adviser.

United Arab Emirates: FOR INTENDED AUDIENCES ONLY– NOT FOR WIDER DISTRIBUTION

This document has not been approved by, or filed with the Central Bank of the United Arab Emirates or the Securities and Commodities Authority. If you do not understand the contents of this document, you should consult with a financial advisor.

South Africa: Goldman Sachs Asset Management International is authorised by the Financial Services Board of South Africa as a financial services provider.

By receiving this presentation, and in case any contact is made with Goldman Sachs Asset Management, each recipient resident in Colombia acknowledges and agrees that it has contacted Goldman Sachs Asset Management at its own initiative and not as a result of any promotion or publicity by Goldman Sachs Asset Management or any of their respective agents or representatives. Colombian residents acknowledge that (1) the receipt of this presentation does not constitute a solicitation from Goldman Sachs Asset Management for its products and/or services, and (2) they are not receiving from Goldman Sachs Asset Management any direct or indirect promotion or marketing of financial and/or securities-related products and/or services.

This presentation is strictly private and confidential and may not be reproduced or used for any purpose other than evaluation of a potential investment in Goldman Sachs Asset Management's products or the procurement of its services by the recipient of this this presentation or provided to any person or entity other than the recipient of this this presentation.

Esta presentación no tiene el propósito o el efecto de iniciar, directa o indirectamente, la adquisición de un producto a prestación de un servicio por parte de Goldman Sachs Asset Management a residentes colombianos. servicios financieros y /o del mercado de valores en Colombia o a residentes colombianos.

Los productos y/o servicios de Goldman Sachs Asset Management no podrán ser ofrecidos ni promocionados en Colombia o a residentes Colombianos a menos que dicha oferta y promoción se lleve a cabo en cumplimiento del Decreto 2555 de 2010 y las otras reglas y regulaciones aplicables en materia de promoción de productos y/o .Al recibir esta presentación, y en caso que se decida contactar a Goldman Sachs Asset Management, cada destinatario residente en Colombia reconoce y acepta que ha contactado a Goldman Sachs Asset Management por su propia iniciativa y no como resultado de cualquier promoción o publicidad por parte de Goldman Sachs Asset Management o cualquiera de sus agentes o representantes. Los residentes colombianos reconocen que (1) la recepción de esta presentación no constituye una solicitud de los productos y/o servicios de Goldman Sachs Asset Management, y (2) que no están recibiendo ninguna oferta o promoción directa o indirecta de productos y/o servicios financieros y/o del mercado de valores por parte de Goldman Sachs Asset Management.

Esta presentación es estrictamente privada y confidencial, y no podrá ser reproducida o utilizada para cualquier propósito diferente a la evaluación de una inversión potencial en los productos de Goldman Sachs Asset Management o la contratación de sus servicios por parte del destinatario de esta presentación, no podrá ser proporcionada a una persona diferente del destinatario de esta presentación.

The opinions expressed in this research paper are those of the authors, and not necessarily of Goldman Sachs Asset Management. The investments and returns discussed in this paper do not represent any Goldman Sachs product.

This research paper makes no implied or express recommendations concerning how a client's account should be managed. This research paper is not intended to be used as a general guide to investing or as a source of any specific investment recommendations.

This report is produced and distributed by the Global Investment Research Division of Goldman Sachs, and is not a product of Goldman Sachs Asset Management. The views and opinions expressed may differ from those of Goldman Sachs Asset Management or other departments or divisions of Goldman Sachs and its affiliates. 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. This information may not be current and Goldman Sachs Global Investment Research has no obligation to provide any updates or change.

Index Benchmarks

Indices are unmanaged. The figures for the index reflect the reinvestment of all income or dividends, as applicable, but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indices.

The indices referenced herein have been selected because they are well known, easily recognized by investors, and reflect those indices that the Investment Manager believes, in part based on industry practice, provide a suitable benchmark against which to evaluate the investment or broader market described herein. The exclusion of "failed" or closed hedge funds may mean that each index overstates the performance of hedge funds generally.

Sector Spread Indexes

US Investment Grade Corporates: ICE BofAML US Corporate Index

US High Yield Corporates: ICE BofAML US Corporate High Yield Index

European Investment Grade Corporates: ICE BofAML Euro Corporate Index

European High Yield Corporates: ICE BofAML Euro High Yield Index

ABS: ICE BofAML US Fixed Rate Asset-Backed Securities Index

MBS: ICE BofAML US Agency Mortgage-Backed Securities Index

CMBS: ICE BofAML US Fixed Rate Commercial Mortgage-Backed Securities Index

EM External Debt: J.P. Morgan, EMBI Global Diversified Face Constrained Index

Past performance does not guarantee future results, which may vary. The value of investments and the income derived from investments will fluctuate and can go down as well as up. A loss of principal may occur.

Abbreviations: US Federal Reserve (Fed), European Central Bank (ECB), Bank of England (BoE), Bank of Japan (BoJ), Swiss National Bank (SNB), Central Bank of Sweden (Riksbank), Reserve Bank of New Zealand (RBNZ), Central Bank of Norway (Norges Bank) Bank of Canada (BoC), Reserve Bank of Australia (RBA), Quantitative Easing (QE), Quantitative Tightening (QT), Pandemic Emergency Purchase Program (PEPP), Consumer price index (CPI), producer price index (PPI), developed markets (DM), emerging markets (EM), Japanese Government Bond (JGB).

Confidentiality