

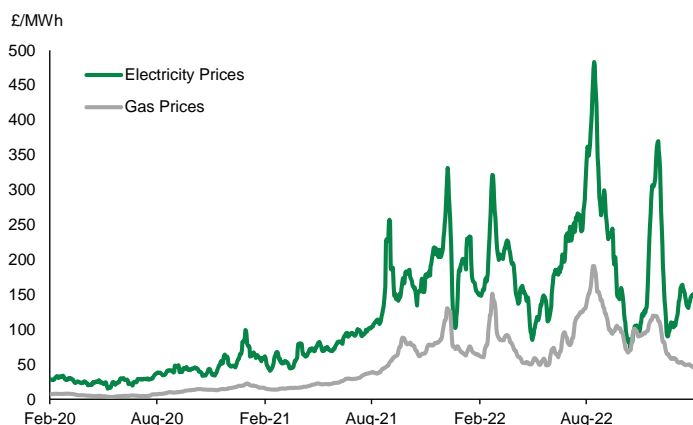
Investment Strategy Group: Snapshot – Eurozone & UK Outlook, Improving But Diverging

The euro area and UK economic outlooks have improved in the last few months. Several headwinds to growth, that we had anticipated at the start of the year, have not materialized which has led us to raise our 2023 GDP growth for both regions. We now expect euro area GDP to grow by +0.7% in 2023, thereby avoiding a recession. We have also revised our UK GDP growth forecast higher from -1.0 to -0.5% and continue to expect a recession here. In this note, we elaborate on the key drivers of our revised forecasts and address the question: why do we expect the Eurozone will steer clear of a recession this year, but the UK is unlikely to?

Eurozone to Avoid a Recession.

The widely feared energy crisis has turned out to be less severe than expected. In recent months, energy prices have fallen significantly (**Chart 1**) due to a milder winter and a sharp decline in gas consumption across sectors (~20% at euro area level). With gas storage levels around 80% in mid-January, supply restrictions are unlikely to materialise this year.

Chart 1: Gas and Electricity Prices Have Fallen Sharply



Source: Investment Strategy Group, Bloomberg.

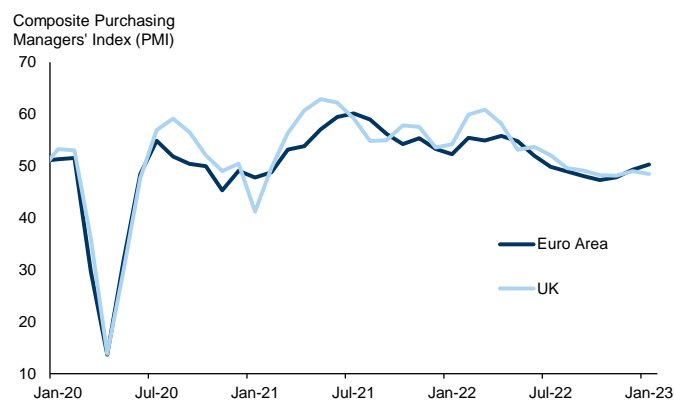
As a result, activity levels have surprised to the upside in the euro area. Both hard and soft indicators came out better than expected, with the latest surveys pointing to a pick up in

business activity at the start of the year (**Chart 2**).

In addition, the Eurozone is set to benefit from a quicker than expected reopening in China. Based on our calculations, China's re-opening and relaxation of travel rules could add around 0.2% to Eurozone growth in 2023 through both trade and tourism.

As a result of these factors, we now expect GDP growth of +0.7% for the year. Our higher forecast is driven primarily by stronger numbers in Q1-Q3 (expecting a gradual growth recovery near-term). However, we continue to expect a deceleration in Q4 due to tight financial conditions, depressed private demand, constrained gas supply and soft global growth. Finally, we note that while the outlook has improved, growth remains below potential through the year.

Chart 2: Diverging Momentum – Composite PMI



Source: Investment Strategy Group, Haver Analytics.

The UK is Unlikely to Avoid a Recession.

The UK economic outlook has also improved in recent months due to lower gas prices, better than expected activity data in the services sector, a resilient labor market, China re-opening and improving euro area growth.

Investment Strategy Group: Snapshot – Eurozone & UK Outlook, Improving But Diverging

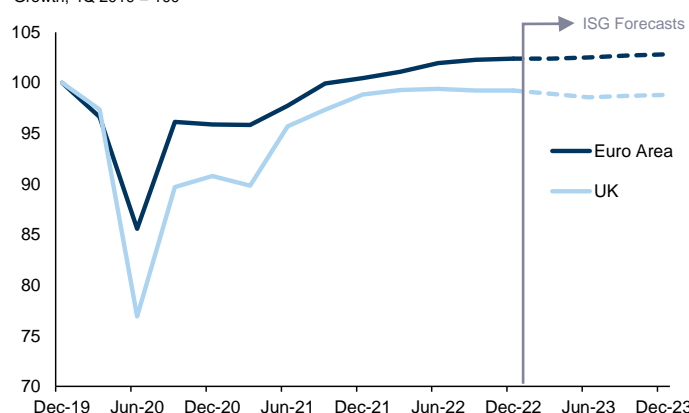
Even so, we believe these improvements are not sufficient for the UK to avert a recession. The UK economy has already contracted in Q3 2022, and while it avoided a technical recession in Q4 2022, the outlook remains weak with December GDP contracting by -0.5% m/m.

Inflationary pressures also remain strong. The UK faces both elevated energy prices, like Europe, and tight labor markets, like the US. In response, we expect the BoE to increase rates to 4.5% and keep them in restrictive territory this year unless the economic outlook starts to deteriorate materially and/or inflation decelerates sharply. Because monetary policy affects the real economy with a lag (usually 12 months), these higher rates have yet to fully feed in through to the real economy. The UK economy is also much more sensitive to higher interest rates given its larger share of floating rate mortgages (**Chart 3**) and shorter dated fixed rate instruments. In 2023, around a third of households will have to re-mortgage, putting downward pressures on household consumption. Finally, fiscal tightening from April onward, ongoing strike actions, and lower business investments will further weigh on the outlook.

Taken together, we expect UK GDP to contract in both Q1 and Q2 2023. Peak to trough, we project GDP to fall around -0.6%, before recovering in H2 2023. Our new forecast suggests the UK economy will shrink by -0.5% this year.

Chart 4: Eurozone and UK Growth Path

Growth, 4Q 2019 = 100

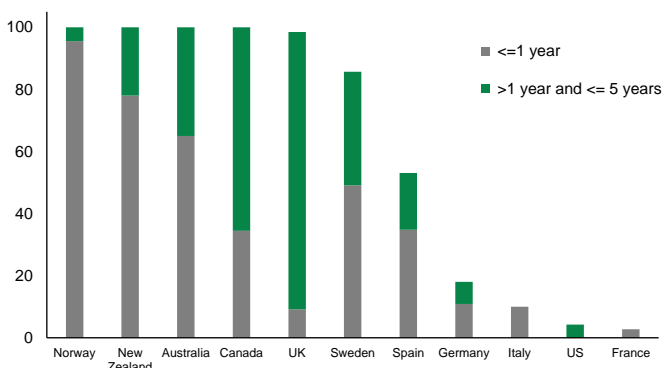


Note: These forecasts are estimated, based on assumptions, and are subject to significant revision and may change materially as economic and market conditions change.

Source: Investment Strategy Group, Haver Analytics.

Chart 3: UK Mortgages are Either Floating or Shorter Dated Fixed Rate

% of Total Mortgages



Source: Investment Strategy Group, Goldman Sachs Global Investment Research, ONS.

Investment Strategy Group

Important Information

Our Relationship with Clients. Goldman Sachs & Co. LLC (“we,” “us,” and “GS&Co.,” and together with its affiliates, “Goldman Sachs” or “GS”) is registered with the Securities and Exchange Commission (“SEC”) as both a broker-dealer and an investment adviser and is a member of the Financial Industry Regulatory Authority (“FINRA”) and the Securities Investor Protection Corporation (“SIPC”). We predominantly offer investment advisory and brokerage services to retail investors through our Wealth Management business unit, which includes Private Wealth Management (“PWM”). How we are compensated by you may change over time and will depend on various factors. Please ask questions and review the GS&Co. Form CRS and GS&Co. Relationship Guide/Regulation Best Interest disclosures (available at: <https://www.goldmansachs.com/disclosures/customer-relationship-summary-form-crs/index.html>) for important information, including the difference between advisory and brokerage accounts, compensation, fees, conflicts of interest, and our obligations to you. We are part of a full-service, integrated investment banking, investment management, and brokerage firm. Other firm businesses may implement investment strategies that are different from the strategies used or recommended for your portfolio.

Intended Audience. This material is generally intended for clients of PWM and/or prospective clients who would meet the eligibility requirements to be clients of PWM. If you have any questions on whether this material is intended for you, please contact your PWM Team. Materials that discuss advisory services are generally intended for individuals who are Qualified Clients as defined under Rule 305-3 of the Investment Advisers Act of 1940. Materials that discuss alternative investment products are generally intended for recipients who qualify as Accredited Investors as defined in the Securities Act of 1933. GS&Co. considers client suitability, eligibility, and sophistication when distributing marketing materials; not all materials are appropriate for all GS clients. Distribution is premised on the reasonable belief that the recipient has sufficient financial expertise and/or access to resources to independently analyze the information presented. If you do not believe you meet these criteria, please disregard and contact your PWM Team.

Entities Providing Services. Investment advisory and/or financial counseling services may be provided by GS&Co., an affiliate, or an external manager under the wrap program sponsored by GS&Co. Affiliates may include but are not limited to The Ayco Company, L.P. d/b/a Goldman Sachs Ayco Personal Financial Management (“Ayco”) (a wholly-owned subsidiary of The Goldman Sachs Group, Inc. or “GS Group”); United Capital Financial Advisers, LLC d/b/a Goldman Sachs Personal Financial Management (“GS PFM”); or another affiliate. Brokerage services are provided by GS&Co. Banking and payment services (including check-writing, ACH, direct debit, and margin loans) are provided or facilitated by GS&Co. Over-The-Counter (“OTC”) derivatives, foreign exchange forwards, and related financing are offered by GS&Co. Trust services are provided by The Goldman Sachs Trust Company, N.A. or The Goldman Sachs Trust Company of Delaware. Deposit products, mortgages, and bank loans are offered by Goldman Sachs Bank USA, member Federal Deposit Insurance Corporation (“FDIC”) and an Equal Housing Lender. GS&Co. and its present and future affiliates may offer and provide through the GS Family Office (“GSFO”) offering—or through a client referral to third parties—a suite of personal family office services (“GSFO Services”) specifically designed for certain Wealth Management (“WM”) clients of GS. As part of GSFO Services, GSFO may discuss with you various aspects of financial planning, including but not necessarily limited to the potential income tax consequences of your investments, estate planning, philanthropic endeavors, and certain other activities that may affect your income tax, gift tax and estate tax. GSFO Services vary among clients, are provided based on individual client needs and preferences, and are generally limited to educational consultations that should not be viewed as tax or legal advice. GSFO does not provide investment advice, investment management services, or advise on or offer the sale of insurance products. GSFO Services are offered in the United States through GS&Co. but may also be provided in part by Ayco. Ayco may, separately and distinctly from GSFO Services, provide tax and insurance advice in addition to personal family office services (“Ayco Family Office Services”). We encourage you to clearly establish your set of services with your advisory team.

Investment Strategy Group (“ISG”). The Investment Strategy Group, part of the Asset & Wealth Management business (“AWM”) of GS, focuses on asset allocation strategy formation and market analysis for GS Wealth Management. Any information that references ISG, including their model portfolios, represents the views of ISG, is not financial research and is not a product of GS Global Investment Research and may vary significantly from views expressed by individual portfolio management teams within AWM, or other groups at GS. ISG Model Portfolios are provided for illustrative purposes only. Your actual asset allocation may look significantly different based on your particular circumstances and risk tolerance. Model performance calculations assume that (1) each asset class was owned in accordance with the recommended weight; (2) all tactical tilts were tracked at the time the recommendation was made; and (3) the portfolios are rebalanced at the end of every quarter. Model performance is calculated using the daily returns (actual or interpolated) of indices that ISG believes are representative of the asset classes included in the model. Results shown reflect the total return but generally do not consider any investment management fees, commissions or other transaction expenses, which would reduce returns. Hedge fund indices and data from Cambridge Associates are net of manager fees. The results shown reflect the reinvestment of dividends and other earnings. All returns are pre-tax and are not adjusted for inflation. Additional information about the model portfolio performance calculations is available upon request.

Investment Risks and Information. GS&Co. offers a range of products that you should carefully consider for their unique terms and risks prior to investing to ensure they are appropriate for your individual circumstances. Below are descriptions of major risks for our more complex products; please review the offering documents and product prospectuses for particular products, as well as additional information about the nature and risks of these and other products in GS&Co.’s ADV Part 2A Brochure and PWM Relationship Guide. Investing involves the risk of loss.

Alternative Investments (“AI”). AIs may involve a substantial degree of risk, including the risk of total loss of capital, use of leverage, lack of liquidity, and volatility of returns. Private equity, private credit, private real estate, hedge funds, and AI investments structured as private investment funds are subject to less regulation than other types of

Investment Strategy Group

- pooled vehicles. Review the Offering Memorandum, Subscription Agreement, and any other applicable offering documents for risks, potential conflicts of interest, terms and conditions and other disclosures.
- **Commodities.** The risk of loss in trading commodities can be substantial due, but not limited, to lack of liquidity, volatile political, market, and economic conditions, and abrupt changes in price which may result from unpredictable factors including weather, labor strikes, inflation, foreign exchange rates, etc. Due to the use of leverage, a small move against your position may result in a loss that may be larger than your initial deposit.
- **Currencies.** Currency exchange rates can be extremely volatile, particularly during times of political or economic uncertainty. There is a risk of loss when an investor has exposure to foreign currency or holds foreign currency traded investments.
- **Digital Assets / Cryptocurrency.** Digital assets regulation is still developing across all jurisdictions and governments may in the future restrict the use and exchange of any or all digital assets. Digital assets are generally not backed nor supported by any government or central bank, are not FDIC insured and do not have the same protections that U.S. or other countries' bank deposits may have and are more volatile than traditional currencies. Transacting in digital assets carries the risk of market manipulation and cybersecurity failures such as the risk of hacking, theft, programming bugs, and accidental loss. Differing forms of digital assets may carry different risks. The volatility and unpredictability of the price of digital assets may lead to significant and immediate losses.
- **Over-the-Counter ("OTC") Derivatives.** OTC derivatives are illiquid as there is no public market. The price or valuation of each OTC derivative transaction is individually negotiated between GS&Co. and each counterparty, and GS&Co. does not represent or warrant that the prices for which it offers OTC derivative transactions are the best prices available. You may therefore have trouble establishing whether the price you have been offered for a particular OTC derivative transaction is fair. OTC derivatives may trade at a value that is different from the level inferred from interest rates, dividends, and the underlier due to factors including expectations of future levels of interest rates and dividends, and the volatility of the underlier prior to maturity. The market price of the OTC derivative transaction may be influenced by many unpredictable factors, including economic conditions, GS creditworthiness, the value of any underliers, and certain actions taken by GS. Because GS may be obligated to make substantial payments to you as a condition of an OTC derivative transaction, you must evaluate the credit risk of doing business with GS. Depending on the type of transaction, your counterparty may be GS&Co. or another GS affiliate. Counterparties may be subject to different rules depending on whether they are a registered U.S. broker dealer. OTC derivative transactions with GS affiliates cannot be assigned or transferred without GS's prior written consent. The provisions of an OTC derivative transaction may allow for early termination and, in such cases, either you or GS may be required to make a potentially significant termination payment depending upon whether the OTC derivative transaction is in-the-money at the time of termination. You should carefully review the Master Agreement, including any related schedules, credit support documents, addenda, and exhibits. You may be requested to post margin or collateral at levels consistent with the internal policies of GS to support written OTC derivatives.
- **Emerging Markets and Growth Markets.** Emerging markets and growth markets investments involve certain considerations, including political and economic conditions, the potential difficulty of repatriating funds or enforcing contractual or other legal rights, and the small size of the securities markets in such countries coupled with a low volume of trading, resulting in potential lack of liquidity and price volatility.
- **Non-US Securities.** Non-US securities investments are subject to differing regulations, less public information, less liquidity, and greater volatility in the countries of domicile of the security issuers and/or the jurisdiction in which these securities are traded. In addition, investors in securities such as ADRs/GDRs, whose values are influenced by foreign currencies, effectively assume currency risk.
- **Options.** The purchase of options can result in the loss of an entire investment and the risk of uncovered options is potentially unlimited. You must read and understand the current Options Disclosure Document before entering into any options transactions. The booklet entitled Characteristics and Risk of Standardized Options can be obtained from your PWM team or at <http://www.theocc.com/components/docs/riskstoc.pdf>. A secondary market may not be available for all options. Transaction costs may be significant in option strategies that require multiple purchases and sales of options, such as spreads. Supporting documentation for any comparisons, recommendations, statistics, technical data, or other information will be supplied upon request.
- **Real Estate.** Real estate investments, including real estate investments trusts ("REITS") and non-traded REITS, involve additional risks not typically associated with other asset classes. Such investments (both through public and private markets) may be subject to changes in broader macroeconomic conditions, such as interest rates, and sensitivities to temporary or permanent reductions in property values for the geographic region(s) represented. Non-traded REITS may carry a higher risk of illiquidity, incomplete or nontransparent valuations, dilution of shares, and conflicts of interest.
- **Structured Investments.** Structured investments are complex and investors assume the credit risk of the issuer or guarantor. If the issuer or guarantor defaults, you may lose your entire investment, even if you hold the product to maturity. Structured investments often perform differently from the asset(s) they reference. Credit ratings may pertain to the credit rating of the issuer and are not indicative of the market risk associated with the structured investment or the reference asset. Each structured investment is different, and for each investment you should consider 1) the possibility that at expiration you may be forced to own the reference asset at a depressed price; 2) limits on the ability to share in upside appreciation; 3) the potential for increased losses if the reference asset declines; and 4) potential inability to sell given the lack of a public trading market.

Investment Strategy Group

- **Tactical Tilts.** Tactical tilts may involve a high degree of risk. No assurance can be made that profits will be achieved or that substantial losses will not be incurred. For various reasons, GS may implement a tactical tilt, invest in an affiliated fund that may invest in tactical tilts, or unwind a position for its client advisory accounts or on its own behalf before your advisor does on behalf of your account, or may implement a tactical tilt that is different from the tactical tilt implemented by advisors on client accounts, which could have an adverse effect on your account and may result in poorer performance by your account than by GS or other client accounts.
- **U.S. Registered Mutual Funds / Exchange Traded Funds (“ETFs”) or Exchange Traded Notes (“ETNs”).** You should consider a fund’s investment objectives, risks, and costs, and read the summary prospectus and/or the Prospectus (which may be obtained from your PWM Team) carefully before investing. You may obtain documents for ETFs or ETNs for free by 1) visiting EDGAR on the SEC website at <http://www.sec.gov/>; 2) contacting your PWM Team; or 3) calling toll-free at 1-866-471-2526. Unlike traditional mutual funds, ETFs can trade at a discount or premium to the net asset value and are not directly redeemable by the fund. Leveraged or inverse ETFs, ETNs, or commodities futures-linked ETFs may experience greater price movements than traditional ETFs and may not be appropriate for all investors. Most leveraged and inverse ETFs or ETNs seek to deliver multiples of the performance (or the inverse of the performance) of the underlying index or benchmark on a daily basis. Their performance over a longer period of time can vary significantly from the stated daily performance objectives or the underlying benchmark or index due to the effects of compounding. Performance differences may be magnified in a volatile market. Commodities futures-linked ETFs may perform differently than the spot price for the commodity itself, including due to the entering into and liquidating of futures or swap contracts on a continuous basis to maintain exposure (i.e., “rolling”) and disparities between near term future prices and long term future prices for the underlying commodity. You should not assume that a commodity-futures linked ETF will provide an effective hedge against other risks in your portfolio.

Security-Specific References. References to a specific company or security are intended solely as examples or for context and are not research or investment advice; do not rely upon them in making an investment decision. GS may have a relationship with such companies and/or its securities that may present conflicts of interest. Contact your PWM Team for further information on any securities mentioned.

Off-Platform Investments. If you ask us for guidance on external investment opportunities not offered by GS, any information we may provide is as an accommodation only and we will not be acting as your advisor. We assume no obligation to determine whether the opportunity is suitable for you in connection with such investment decisions and will not assume any liability for such investment decisions. Our Form ADV has information on conflicts of interest we may have in connection with any such requests.

ISG/GIR Forecasts. Economic and market forecasts presented (“forecasts”) generally reflect either ISG’s or Goldman Sachs Global Investment Research’s (“GIR”) views and are subject to change without notice. Forecasts do not consider investment objectives, restrictions, tax and financial situations or other needs of any specific client. Forecasts are subject to high levels of uncertainty that may affect actual performance and represents only one of a broad range of possible outcomes. Forecasts and any return expectations are as of the date of this material, and do not project returns of any given investment or strategy. Forecasts are estimated, based on capital market assumptions, and are subject to significant revision and may change materially as economic and market conditions change. Any case studies and examples are for illustrative purposes only. If applicable, a copy of the GIR Report used for GIR forecasts is available upon request. Forecasts do not reflect advisory fees, transaction costs, and other expenses a client would have paid, which would reduce return.

Client Specific Markets. Investments held in your name with a subcustodian in the local market where traded in order to comply with local law will be indicated on your statements.

Performance / Estimated Income / Estimated Cash Flow. Past performance is not a guide of future results and may include investments no longer owned in current or closed accounts. Current performance may be lower or higher than the performance data quoted. Where not relevant or representative, outliers may be excluded. To request the most current or historical performance data, or asset classification schema information, please contact your PWM team at the number provided on your monthly statement or toll-free in the U.S. at 1-800-323-5678.

Performance reports, where shown, generally present the relevant time weighted performance, which is a combination of daily returns compounded over a specified time period with the removal of the deposit and withdrawal impacts, and may show internal rate of return calculations where requested. Aggregate performance may not equal the sum of returns at an investment level. Where performance is shown net of fees, actual fees may differ. Net performance for advisory accounts is calculated net of fees and expenses that were or would have been paid in connection with GS’s services, including management fees, and might include investments for which actual market prices are not currently available. If included, estimated income figures and estimated private equity future cash flows are estimates of future activity, and actual results may vary substantially. GS&Co. has adjusted performance calculations for certain asset classes or strategies and may do so in the future. Performance of net cash (i.e., cash less margin debit) is generally included in the total performance calculation but not displayed separately. Option performance is included in the performance of the asset class of the underlier.

Offer to Provide Additional Performance Information. Where GS provides you with the results of a subset of investments extracted from a portfolio (“extracted performance”), you may request the performance results of the total portfolio. Where GS provides you with illustrative performance regarding private fund investments that was not actually achieved by GS (“hypothetical performance”), you may request additional information regarding the risks and limitations of using such performance.

Investment Strategy Group

Indices / Benchmarks. References to indices, benchmarks, or other measures of relative market performance over a specified period are informational only and are not predictions or guarantees of performance. In addition to the benchmark assigned to a specific investment strategy, other benchmarks ("Comparative Benchmarks") may be displayed, including ones displayed at your request. Managers may not review the performance of your account against the performance of Comparative Benchmarks. Where a benchmark for a strategy has changed, the historical benchmark(s) are available upon request. Inception to date ("ITD") returns and benchmark/reference portfolio returns may reflect different periods. ITD returns for accounts or asset classes only reflect performance during periods in which your account(s) held assets and/or were invested in the asset class. The benchmark or reference portfolio returns shown reflect the benchmark / portfolio performance from the date of inception of your account or your initial investment in the asset class. If displayed, estimated income figures are estimates of future activity obtained from third party sources.

Indices are unmanaged and investors cannot directly invest in them. The figures for the index reflect the reinvestment of all income or dividends, as applicable, but may not always reflect the deduction of any fees or expenses which would reduce returns. Where appropriate, relevant index trademarks or index information has been licensed or sub-licensed for use. Inclusion of index information does not mean the relevant index or its affiliated entities sponsor, endorse, sell, or promote the referenced securities, or that they make any representation or warranty regarding either the advisability of investing in securities or the ability of the index to track market performance.

Pricing and Valuations. Prices do not necessarily reflect realizable values and are based on information considered to be reliable but are not guaranteed for accuracy, currency, or as realizable values. Certain positions may be provided by third parties or may appear without a price if GS is unable to obtain a price and/or the security is not actively traded for a certain amount of time. Pricing sources and methods are available upon request and are subject to change.

Consolidated Reporting and Third Party Investments. Where GS provides a consolidated report or references information regarding your non-GS investments held by third party custodians, such information provided as a courtesy for informational purposes only; it is not your official statement. Such information (including value of any materials/information provided to us. GS does not perform review or diligence on, independently verify the accuracy of information regarding, or provide advice on such non-GS investments; GS assumes no responsibility for the accuracy of the source information and such assets may not be included on GS's books and records. Unless otherwise agreed in writing, we have not assessed whether those investments fit within your investment objective and the asset classification shown may not be accurate and/or may differ from your custodian or external adviser's classification. You should maintain the original source documents (including third party financial statements) and review them for any notices or relevant disclosures. Assets held away may not be covered by SIPC.

Tax Information. GS does not provide legal, tax or accounting advice, unless explicitly agreed in writing between you and GS, and does not offer the sale of insurance products. You should obtain your own independent tax advice based on your circumstances. The information included in this presentation, including, if shown, in the Tax Summary section, does not constitute tax advice, has not been audited, should not be used for tax reporting, and is not a substitute for the applicable tax documents, including your Form 1099, Schedule K-1 for private investments, which we will provide to you annually, or your monthly GS account statement(s). The cost basis included in this presentation may differ from your cost basis for tax purposes. Information regarding your AIs and transactions for retirement accounts are not included in the Tax Summary section.

Notice to ERISA / Qualified Retirement Plan / IRA / Coverdell Education Savings Account (collectively, "Retirement Account") Clients: Information regarding your Retirement Account(s) included in this presentation is for informational purposes only and does not constitute investment or other advice or a recommendation relating to any investment or other decisions, and GS is not a fiduciary or advisor with respect to any person or plan by reason of providing the presentation including under the Employee Retirement Income Security Act of 1974 or Department of Labor Regulations. Unless GS agrees otherwise, any target allocation shown for such Retirement Account represents decisions you have communicated to GS regarding such asset allocation, without any advice or recommendations from GS, after considering your financial circumstances, objectives, risk tolerance and goals.

GSFO Services. Where GS&Co. provides or refers GSFO Services, it does so based on individual client needs. Not all clients will receive all services and certain activities may fall beyond the scope of the GSFO Services. Any asset management services provided are governed by a separate investment management agreement (as may be applicable). Personnel providing GSFO Services do not provide discretionary management over client investments. Where GSFO provides art or collectibles advisory services, such services are generally limited to education; GS does not recommend purchasing art or collectibles as an investment strategy, provide formal or informal appraisals of the value of, or opine on the future investment potential of, any specific artwork or collectible. Any discussions of pending legislation, or hypothetical projections based on same, are educational and should not be construed as or relied upon as investment, tax, or legal advice. Upon your request, the Family Office team may discuss with you various aspects of financial planning; the scope of such planning services will vary among clients and may only include episodic and educational consultations that should not be viewed as tax advice. GS&Co. assumes no duty to take action pursuant to any recommendations, advice, or financial planning strategies discussed with you as part of GSFO Services. It is your responsibility to determine if and how any such recommendations, advice, or financial planning strategies should be implemented or otherwise followed, and you are encouraged to consult with your own tax advisor and other professionals regarding your specific circumstances. GS is not liable for any services received from your independent advisors or the results of any incident arising from any such services or advice. Cybersecurity consultations provided by GS&Co. are intended to provide a general overview of cyber and physical security threats, but are not comprehensive; GS is not liable for any incident following such consultations. GS&Co. is not liable for clients' ultimate selection and utilization of any Third Party Vendor for any GSFO Services, or the results of any incident arising from any such referral. GS&Co. is not responsible for the supervision, monitoring, management, or performance of such Third Party Vendors and is not liable for any failure of Third Party Vendors to render services or any losses incurred as a result of such services. Ayco Family Office

Investment Strategy Group

Services may also be offered through Ayco. These services are separate and distinct from those services provided by GSFO, and may vary substantially.

Other Services. Any provided financial planning services, including cash flow analyses based on information you provide, are hypothetical illustrations of mathematical principles and are not a prediction or projection of performance of an investment or investment strategy. Certain illustrations may be predicated on an Investment Analysis tool, an interactive technological tool that produces simulations and statistical analyses that present the likelihood of various investment outcomes based on client input. Such services may not address every aspect of a client's financial life; topics that were not discussed with you may still be relevant to your financial situation. In providing financial services, GS relies on information provided by you and is not responsible for the accuracy or completeness of any such information, nor for any consequences related to the use of any inaccurate or incomplete information. Where materials and/or analyses are provided to you, they are based on the assumptions stated therein, which are likely to vary substantially from the examples shown if they do not prove to be true. These examples are for illustrative purposes only and do not guarantee that any client will or is likely to achieve the results shown. Assumed growth rates are subject to high levels of uncertainty and do not represent actual trading and may not reflect material economic and market factors that may have an impact on actual performance. GS has no obligation to provide updates to these rates.

Not a Municipal Advisor. Except where GS expressly agrees otherwise, GS is not acting as a municipal advisor and the opinions or views contained in this presentation are not intended to be, and do not constitute, advice, including within the meaning of Section 15B of the Securities Exchange Act of 1934.

Additional Information for Ayco Clients. Your GS team may include individuals from your Ayco team. Ayco may provide tax advice or other Ayco Family Office Services to certain clients. Ayco does not provide brokerage services. As part of its financial counseling services, Ayco may provide you with certain reports where similar information contained herein is presented differently. You should view each report independently and raise any questions with your Ayco team.

No Distribution; No Offer or Solicitation. This material may not, without GS' prior written consent, be (i) duplicated by any means, or (ii) distributed to any person that is not an employee, officer, director, or authorized agent of the recipient. This material is not an offer or solicitation with respect to the purchase or sale of any security in any jurisdiction in which such offer or solicitation is not authorized, or to any person to whom it would be unlawful to make such offer or solicitation. We have no obligation to provide any updates or changes to this material.

Argentina: The information has been provided at your request.

Australia: This material is being disseminated in Australia by Goldman Sachs & Co ("GSCo"); Goldman Sachs International ("GSI"); Goldman Sachs (Singapore) Pte ("GSSP") and/or Goldman Sachs (Asia) LLC ("GSALLC"). In Australia, this document, and any access to it, is intended only for a person that has first satisfied Goldman Sachs that:

- The person is a Sophisticated or Professional Investor for the purposes of section 708 of the Corporations Act 2001 (Cth) ("Corporations Act"); or
- The person is a wholesale client for the purposes of section 761G of the Corporations Act.

No offer to acquire any financial product or interest in any securities or interests of any kind is being made to you in this document. If financial products or interests in any securities or interests of any kind do become available in the future, the offer may be arranged by an appropriately licensed Goldman Sachs entity in Australia in accordance with section 911A(2) (b) of the Corporations Act. Any offer will only be made in circumstances where disclosures and/or disclosure statements are not required under Part 6D.2 or Part 7.9 of the Corporations Act (as relevant).

To the extent that any financial service is provided in Australia by GSCo, GSI, GSSP and/or GSALLC, those services are provided on the basis that they are provided only to "wholesale clients", as defined for the purposes of the Corporations Act. GSCo, GSI, GSSP and GSALLC are exempt from the requirement to hold an Australian Financial Services Licence under the Corporations Act and do not therefore hold an Australian Financial Services Licence. GSCo is regulated by the Securities and Exchange Commission under US laws; GSI is regulated by the Financial Conduct Authority and the Prudential Regulation Authority under laws in the United Kingdom; GSSP is regulated by the Monetary Authority of Singapore under Singaporean laws; and GSALLC is regulated by the Securities and Futures Commission under Hong Kong laws; all of which differ from Australian laws. Any financial services given to any person by GSCo, GSI, and/or GSSP in Australia are provided pursuant to ASIC Class Orders 03/1100; 03/1099; and 03/1102 respectively.

Bahrain: GSI represents and warrants that it has not made and will not make any invitation to the public in the Kingdom of Bahrain to subscribe for the fund. This presentation 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 presentation will not be issued, passed to, or made available to the public generally.

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

Investment Strategy Group

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.

Chile: Fecha de inicio de la oferta: (i) La presente oferta se acoge a la Norma de Carácter General N° 336 de la Superintendencia de Valores y Seguros de Chile; (ii) La presente oferta versa sobre valores no inscritos en el Registro de Valores o en el Registro de Valores Extranjeros que lleva la Superintendencia de Valores y Seguros, por lo que los valores sobre los cuales ésta versa, no están sujetos a su fiscalización; (iii) Que por tratarse de valores no inscritos, no existe la obligación por parte del emisor de entregar en Chile información pública respecto de estos valores; y (iv) Estos valores no podrán ser objeto de oferta pública mientras no sean inscritos en el Registro de Valores correspondiente.

Dubai: Goldman Sachs International ("GSI") is authorised and regulated by the Dubai Financial Services Authority ("DFSA") in the DIFC and the Financial Services Authority ("FSA") authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and Prudential Regulation Authority in the UK. Registered address of the DIFC branch is Level 5, Gate Precinct Building 1, Dubai International Financial Centre, PO Box 506588, Dubai, UAE and registered office of GSI in the UK is Plumtree Court, 25 Shoe Lane, London, EC4A 4AU, United Kingdom. This material is only intended for use by market counterparties and professional clients, and not retail clients, as defined by the DFSA Rulebook. Any products that are referred to in this material will only be made available to those clients falling within the definition of market counterparties and professional clients.

Israel: Goldman Sachs is not licensed to provide investment advice or investment management services under Israeli law.

Korea: No Goldman Sachs entity, other than Goldman Sachs (Asia) L.L.C., Goldman Sachs Asset Management International and Goldman Sachs Asset Management Korea Co., Ltd., is currently licensed to provide discretionary investment management services and advisory services to clients in Korea and nothing in this material should be construed as an offer to provide such services except as otherwise permitted under relevant laws and regulations. Goldman Sachs (Asia) L.L.C. is registered as a Cross-Border Discretionary Investment Management Company and a Cross-Border Investment Advisory Company with the Korean Financial Supervisory Commission, and as a licensed corporation for, amongst other regulated activities, advising on securities and asset management with the Hong Kong Securities & Futures Commission. Goldman Sachs Asset Management International is licensed as a Cross-Border Discretionary Investment Management Company and a Cross-Border Investment Advisory Company with the Korean Financial Supervisory Commission, as an investment adviser with the Securities and Exchange Commission of the United States and for Managing Investments with the Financial Services Authority of the United Kingdom. Goldman Sachs Asset Management Korea Co., Ltd. is licensed as an Asset Management Company in Korea and is also registered as an Investment Advisory Company and Discretionary Investment Management Company with the Korean Financial Supervisory Commission. Details of their respective officers and major shareholders can be provided upon request.

Oman: The information contained in these materials neither constitutes a public offer of securities in the Sultanate of Oman as contemplated by the Commercial Companies Law of Oman (Sultani Decree 4/74) or the Capital Market Law of Oman (Sultani Decree 80/98) nor does it constitute an offer to sell, or the solicitation of any offer to buy Non-Omani securities in the Sultanate of Oman as contemplated by Article 6 of the Executive Regulations to the Capital Market Law (issued vide Ministerial Decision No. 4/2001). Additionally, these materials are not intended to lead to the conclusion of any contract of whatsoever nature within the territory of the Sultanate of Oman.

Panama: These Securities have not been and will not be registered with the national Securities Commission of the Republic of Panama under Decree Law No. 1 of July 8, 1999 (the "Panamanian Securities Act") and may not be offered or sold within Panama except in certain limited transactions exempt from the registration requirements of the Panamanian Securities Act. These Securities do not benefit from the tax incentives provided by the Panamanian Securities Act and are not subject to regulation or supervision by the National Securities Commission of the Republic of Panama. This material constitutes generic information regarding Goldman Sachs and the products and services that it provides and should not be construed as an offer or provision of any specific services or products of Goldman Sachs for which a prior authorization or license is required by Panamanian regulators.

Peru: The products or securities referred to herein have not been registered before the Superintendencia del Mercado de Valores (SMV) and are being placed by means of a private offer. SMV has not reviewed the information provided to the investor.

Qatar: The investments described in this document have not been, and will not be, offered, sold or delivered, at any time, directly or indirectly in the State of Qatar in a manner that would constitute a public offering. 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. This document is intended for the original recipient only and must not be provided to any other person. It is not for general circulation in the State of Qatar and may not be reproduced or used for any other purpose.

Singapore: This document has not been delivered for registration to the relevant regulators or financial supervisory bodies in Hong Kong or Singapore, nor has its content been reviewed or approved by any financial supervisory body or regulatory authority. The information contained in this document is provided at your request and for your information only. It does not constitute an offer or invitation to subscribe for securities or interests of any kind. Accordingly, unless permitted by the securities laws of Hong Kong or Singapore, (i) no person may issue or cause to be issued this document, directly or indirectly, other than to persons who are professional investors, institutional investors, accredited investors or other approved recipients under the relevant laws or regulations (ii) no person may issue or have in its possession for the purposes of issue, this document, or any advertisement, invitation or document relating to it, whether in Hong Kong, Singapore or elsewhere, which is

Investment Strategy Group

directed at, or the contents of which are likely to be accessed by, the public in Hong Kong or Singapore and (iii) the placement of securities or interests to the public in Hong Kong and Singapore is prohibited. Before investing in securities or interests of any kind, you should consider whether the products are suitable for you.

South Africa: Goldman Sachs does not provide tax, accounting, investment or legal advice to our clients, and all clients are advised to consult with their own advisers regarding any potential investment/transaction. This material is for discussion purposes only, and does not purport to contain a comprehensive analysis of the risk/ rewards of any idea or strategy herein. Any potential investment/transaction described within is subject to change and Goldman Sachs Internal approvals. Goldman Sachs International is an authorised financial services provider in South Africa under the Financial Advisory and Intermediary Services Act, 2002.

Ukraine: Goldman Sachs & Co. LLC is not registered in Ukraine and carries out its activity and provides services to its clients on a purely cross-border basis and has not established any permanent establishment under Ukrainian law. The information contained in this document shall not be treated as an advertisement under Ukrainian law.

United Arab Emirates: The information contained in this document does not constitute, and is not intended to constitute, a public offer of securities in the United Arab Emirates in accordance with the Commercial Companies Law (Federal Law No. 8 of 1984, as amended) or otherwise under the laws of the United Arab Emirates. 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. This document is provided to the recipient only and should not be provided to or relied on by any other person.

United Kingdom: This material has been approved for issue in the United Kingdom solely for the purposes of Section 21 of the Financial Services and Markets Act 2000 by GSI, Plumtree Court, 25 Shoe Lane, London, EC4A 4AU, United Kingdom. Authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority.

© 2023 Goldman Sachs. All rights reserved.