

**Goldman
Sachs**

SEPTEMBER 2024

Summer Review, Fall Preview

Goldman Sachs Ayco
Portfolio Strategy & Investments

SEPTEMBER 2024

Summer Review, Fall Preview

In our *Summer Review, Fall Preview* we recap key economic and financial market news from the summer and outline the Goldman Sachs Wealth Management Investment Strategy Group's (ISG) expectations for the rest of the year on the US economy, fixed income, and equities.

July was mixed for equities, with the S&P 500 reaching a new all-time high on July 16 before ceding most of its monthly gains in the second half. August performance was mixed too. The stock market sold off at the start of the month, experiencing the largest one-day drop of the year and spiking volatility on August 5 due to softer US economic data, notably a rise in the unemployment rate. That said, in the second half of the month, equities recovered to end up for the month following a string of better-than-expected economic data. Meanwhile, bond yields moved sharply lower over the summer months, particularly at the short end of the curve, as market participants gained greater confidence in the probability of the US Federal Reserve (the Fed) starting its rate cutting cycle in September.

Looking ahead to the rest of the year, key focus areas for investors remain US economic data, the Fed's easing cycle, and the outcome of the US election in November.

Summer Recap: Review of Financial Markets in July and August

Highlights From July...

July was a month of two halves for the markets. The first half saw the S&P 500 continuing to rise, reaching new all-time highs on July 16. The second half saw a pullback, led by a sell-off of technology stocks. That said, the S&P 500 still managed to end the month in positive territory with a 1.1% gain, outperforming the MSCI Emerging Markets Index, which fell by 0.1%, though lagging the remainder of the developed market universe as the MSCI EAFE Index gained 2.9%.

Turning to fixed income, in July the US yield curve bull-steepened – meaning short-term rates fell faster than long-term rates. The 2-, 10- and 30-year treasury yields fell by 49, 37, and 26 basis points respectively, as markets began to gain confidence the Fed would cut rates in September following softer inflation data.

On central bank monetary policy, both the Fed and European Central Bank (ECB) held interest rates steady at their July meetings, in line with expectations. Fed Chair Jerome Powell said a rate cut was “on the table” in September, while the ECB remained non-committal on its future path for interest rates. The Bank of Japan (BoJ) surprised analysts and hiked its policy rate from 0-0.10% to 0.25%.

In commodity markets, oil prices reversed most of their June gains. Gold hit a new all-time high, closing the month up ~5%.

Economic data for the month was mixed. Headline payrolls (released early August) slowed to 114k in July from 179k in the prior month, with private payrolls also slowing to 97k from 136k. Meanwhile, Q2 GDP came in at 2.8% annualized growth (later revised higher to 3.0%), above the 2.0% expectations.

Highlights From August...

August was a turbulent month for equities across markets, driven by a miss in the July non-farm payroll data (as mentioned above) and an increase in the unemployment rate that triggered the “Sahm Rule”¹. The Bank of Japan’s (BoJ) hawkish rhetoric added fuel to the fire, as markets experienced a substantial unwind in popular carry trades that had built up over past years as a result of the BoJ’s accommodative monetary policy stance. The combination of a sharp strengthening in the yen and global growth fears saw Japanese equities, as measured by the Topix Index, fall by more than 20% over three trading days. The S&P 500 was not immune to the market volatility, falling by 6% to start the month and declining 8% from its peak on July 16. The VIX Index, often coined the market’s “fear gauge”, hit an intra-day high of 66 amidst the market stress – a level only surpassed during the COVID-19 pandemic and the Global Financial Crisis, based on data since 1992. Bond yields fell sharply during the turmoil as the market focused its attention on weaker growth. This helped cushion the fall in equities, before remaining relatively steady throughout the latter half of the month. Fears subsided by the end of August, following a string of better-than-expected US data releases. The S&P 500 also recovered, ending the month close to its all-time-high reached in mid-July. The VIX Index ended the month below its long-term average.

The annual Jackson Hole Economic Policy Symposium was held toward the end of August, with Chair Jerome Powell stating that “the time has come for policy to adjust” and that the “timing and pace of rate cuts will depend on incoming data, the evolving outlook, and the balance of risks.” ISG’s base case remains that the Fed will cut by 25 basis points per meeting for the rest of this year, totaling 75 basis points.

Finally, the majority of S&P 500 reported second quarter earnings by the end of August. Consensus S&P 500 12-months earnings estimates continued their upward trajectory through the reporting period. The current yearly change in consensus S&P 500 next 12-months earnings estimates is 11.5%, standing above the historical median of 6.8%.

¹ The “Sahm Rule” is an economic indicator used to identify recessions that uses the change in the three-month average of the unemployment rate from its low point in the prior 12 months.

Fall Preview: Expectations for the Rest of the Year

US Economic Outlook

Growth

US economic activity was strong in the first half of 2024 despite slowing slightly from the rapid pace seen in the second half of 2023. The continued resilience of the US economy has led ISG to revise up their 2024 GDP forecast this year. ISG now sees growth on track to reach 2.6% this year (broadly in line with the good case scenario projected in their 2024 Outlook and compared to a base case expectation of 1.9% at the start of the year).

While resilient, the US economy has begun to show some signs of softening, particularly in consumer spending. For example, personal consumption expenditure growth softened to a pace just above 2% in the first half of this year from around 3% in the second half of 2023. However, the moderation in activity should remain gradual, as continued jobs growth, healthy US consumer balance sheets, and expected Fed rate cuts continue to drive the expansion.

Recession Odds

The rise in the US unemployment rate, which stands at 4.2% in August, has rekindled recession fears, particularly after the rise triggered the "Sahm Rule".² These worries reflect the historical tendency for rising unemployment to catalyze an economic downturn as increasing layoffs lead to less spending, and in turn, further layoffs.

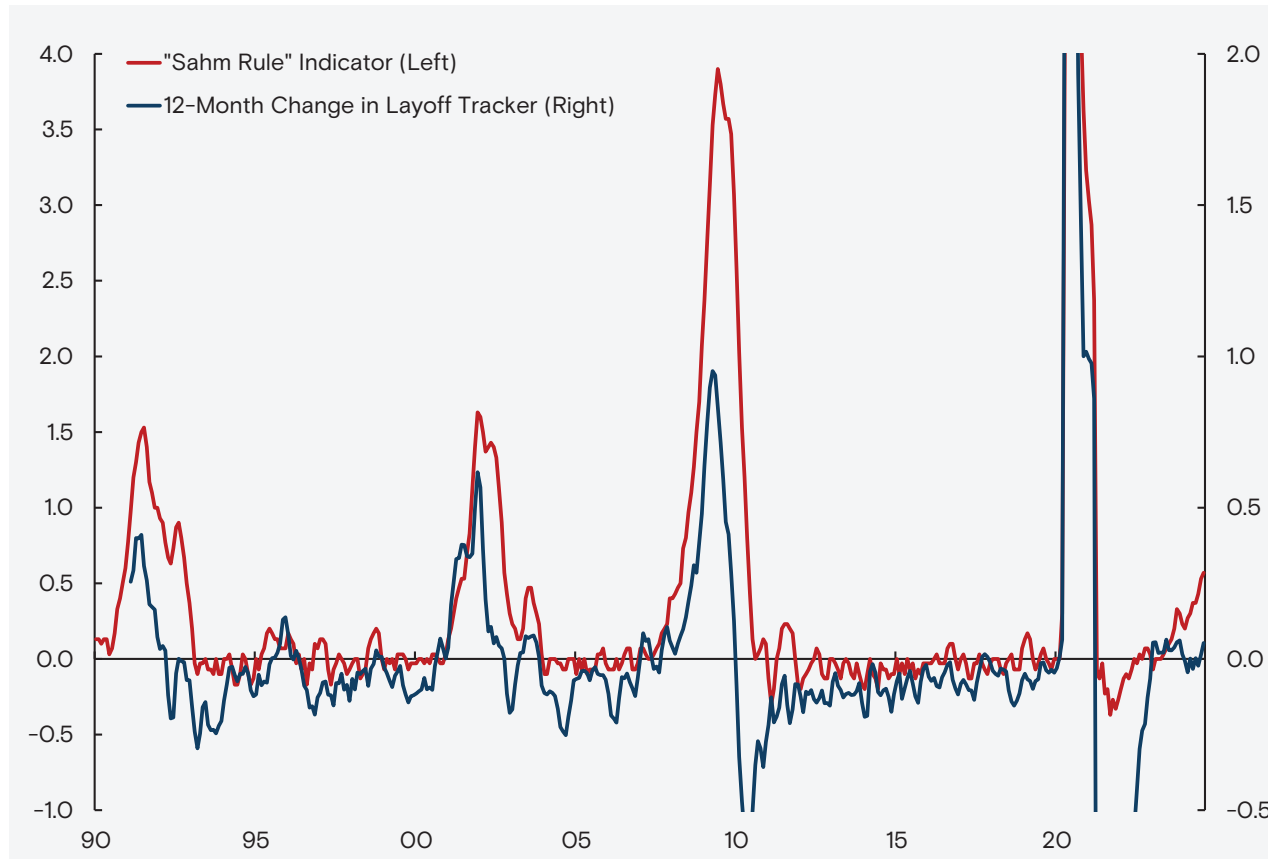
ISG's probability of a US recession over the coming 12-months has remained elevated at 30% since the start of the year, higher than the 18% unconditional odds since WWII and 13% odds since 1980. These elevated odds reflect the fact that historically reliable leading recession indicators — such as rising unemployment and inverted yield curves — still imply greater risks than normal for the longevity of the business cycle.

That said, there are several reasons why recession is still not ISG's base case:

1. **Rising Unemployment is Being Driven by Labor Supply More Than Layoffs.** Unlike past episodes, the increase in the unemployment rate has occurred alongside a sudden expansion in labor supply. This has been driven by a surge in immigration over 2022-2023, rather than a sudden drop in labor demand and spiking layoffs. *Exhibit 1* shows a divergence today where layoffs have been broadly flat over the past year, despite rising unemployment. This is a critical distinction as fewer layoffs implies less of a headwind to spending which would typically precede a recession.

² The "Sahm Rule" is an economic indicator used to identify recessions that uses the change in the three-month average of the unemployment rate from its low point in the prior 12 months.

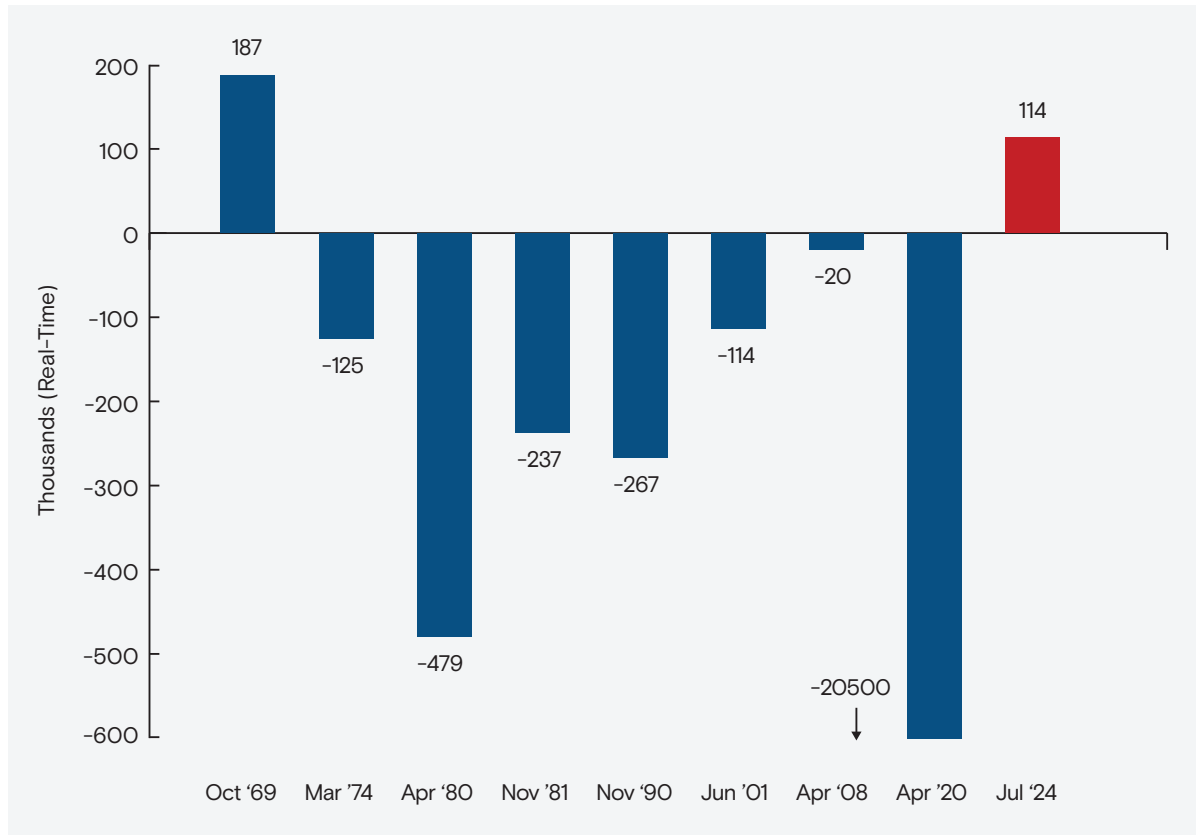
Exhibit 1: "Sahm Rule" Indicator Versus 12-Month Change in Layoffs



Note: The layoff tracker is an average of initial claims, JOLTS layoff rate, and employed to unemployed flows, expressed as z-scores.
 Source: Goldman Sachs Wealth Management Investment Strategy Group, Bureau of Labor Statistics, Haver Analytics.

2. **Other Economic Indicators are Stronger Than Past Periods When the "Sahm Rule" Triggered.** Considering the muted growth in layoffs, it is perhaps unsurprising that other labor market indicators look relatively healthy. For example, the change in non-farm payrolls was already negative in seven of eight of the past episodes when the "Sahm Rule" rose above 0.5%, whereas July payrolls grew by 89k and August payrolls, released on September 6, grew by 142k (*see Exhibit 2*).
3. **Other Real Time Recession Models Have Not Triggered.** Keep in mind that the "Sahm Rule" is not the only recession indicator with a proven track record. The other historically reliable indicators which ISG tracks are not corroborating the warning from the "Sahm Rule".

Exhibit 2: Change in Nonfarm Payrolls



Source: Goldman Sachs Wealth Management Investment Strategy Group, Bureau of Labor Statistics, NFIB, Haver Analytics.

Inflation

Inflation proved stickier than expected at the beginning of the year, though reports through the summer — as measured by the consumer price index (CPI) — have shown inflation is cooling. If recent monthly core CPI prints were annualized, core inflation would be consistent with inflation at the Fed’s 2% target.

Given stickier than expected inflation in the early part of the year, ISG now expects annual core PCE inflation (personal consumption expenditures) to hover around 2.6-2.8% in the second half of 2024 — higher than the 2-2.5% range they had expected at the beginning of the year.

Monetary Policy

ISG’s base case expectation is now for three, 25-basis-point rate cuts this year, starting in September. Stickier inflation data from the first half of 2024 delayed ISG expectations for the start of the cutting cycle. ISG initially tempered their expectations for cuts down to two this year, before increasing to three following weaker recent employment data. Further labor market weakening would likely prompt deeper and quicker cuts.

US Fixed Income Outlook

With still elevated recession odds – recall ISG assign a 30% probability to a US recession in the next 12 months – the role of duration in a portfolio becomes even more important. Although expected returns for cash and Intermediate Treasuries are similar through year-end, duration provides superior expected returns in scenarios with negative growth shocks. In fact, high-quality fixed income is the only asset class that has effectively hedged against deflationary shocks in the past. Of note, bonds rose in value in all but one of the large equity drawdowns in the last 100 years, providing a valuable source of diversification (*see Exhibit 3*).

ISG continues to recommend that clients stay invested in high-quality fixed income in line with their strategic duration target, which is four years for a US taxable moderate portfolio. ISG expects the US 10-year bond yield to end the year at a target range of 3.80-4.20%.

Exhibit 3: Performance of Bonds and Equities During US Equity Drawdowns



Past performance is not indicative of future result, which may vary.

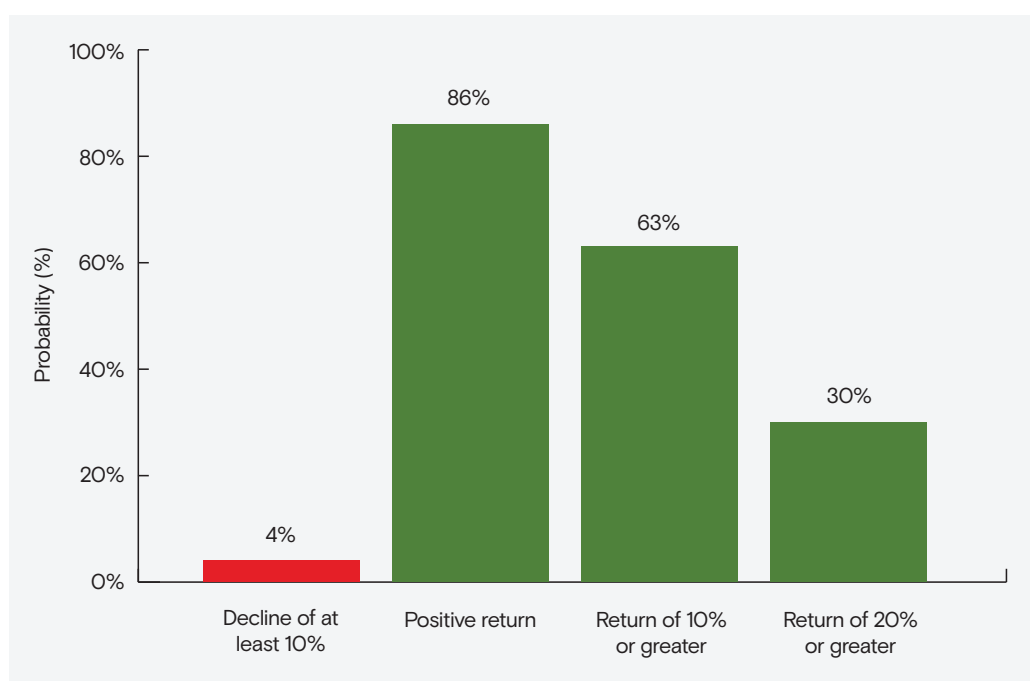
Bonds are modeled using US Intermediate Treasuries. Equities are modeled using S&P 500 Index.

Source: Goldman Sachs Wealth Management Investment Strategy Group, Datastream, Ibbotson, Global Financial Data.

US Equity Outlook

ISG continues to recommend clients stay invested in US equities at their customized strategic asset allocation weight for several reasons. First, the macroeconomic backdrop remains supportive for equities. During past economic expansions, US equity markets have been much more likely to generate a positive return. In fact, since 1945, in years when the economy was expanding, the S&P 500 has generated a positive annual total return 86% of the time, and a 20% or greater total annual return about 30% of the time (*see Exhibit 4*). According to ISG, these favorable odds significantly raise the hurdle of underweighting stocks absent an imminent recession view that has not already been priced in.

Exhibit 4: Odds of Various S&P 500 One-Year Total Returns During US Economic Expansions³



Past performance is not indicative of future result, which may vary.

³ Based on data since 1945. Source: Goldman Sachs Wealth Management Investment Strategy Group, Bloomberg.

Moreover, corporate fundamentals are equally supportive. Consensus earnings estimates over the next 12 months have resumed their upward trajectory, after declining or stagnating during much of 2022 and 2023. ISG continues to estimate an 8–10% earnings growth this year. Since the market ultimately follows the path of earnings, improving earnings provide fundamental support to the advance of the S&P 500.

Of course, some of this good news is already reflected in today's valuations, which have been cheaper than current levels at least 90% of the time historically. However, history has repeatedly shown that high valuations alone are not a sufficient reason to underweight stocks. The initial price-to-earnings ratio has explained only 6% of the variation in returns over the next year. During periods of elevated valuations in the past, investors have still achieved substantial subsequent returns and there can be a penalty for exiting equities prematurely (*see Exhibit 5*).

Exhibit 5: S&P 500 Forward Returns After Crossing 9th & 10th Deciles of Valuation



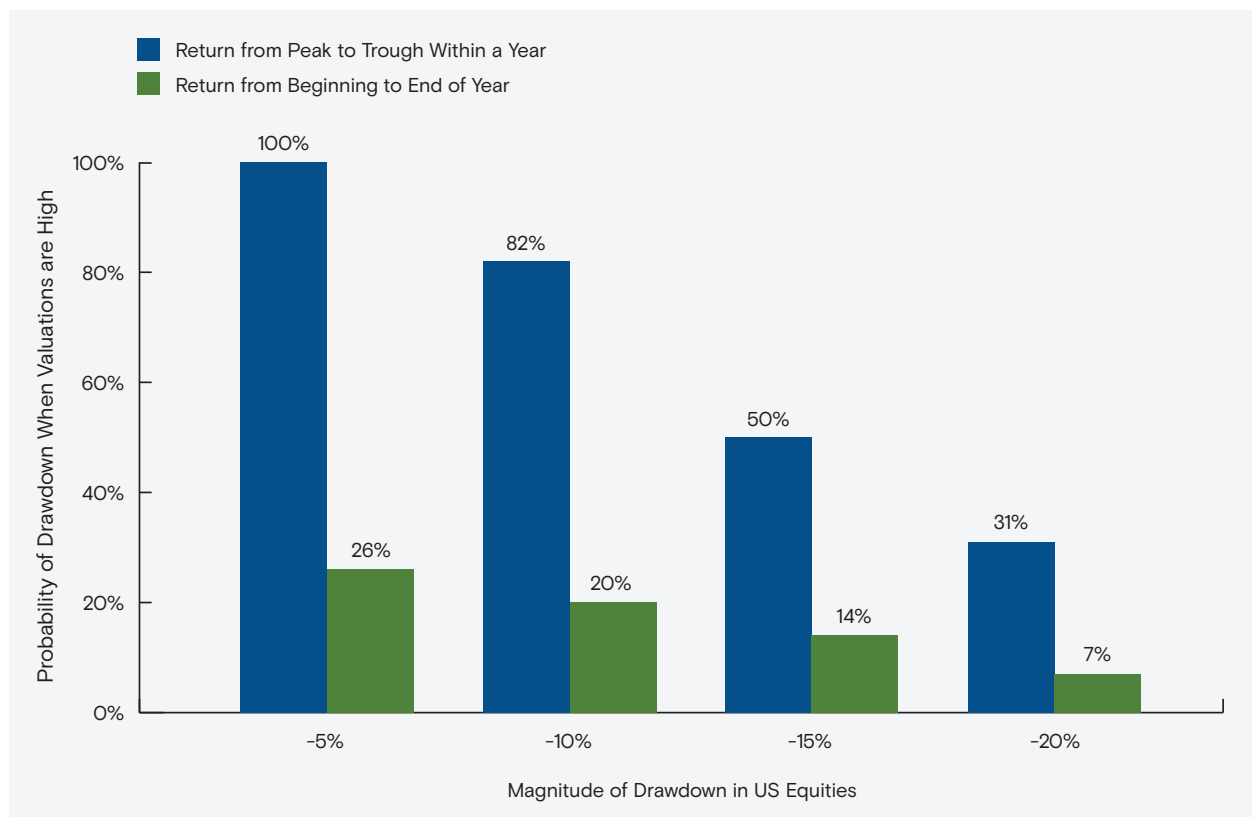
Source: Goldman Sachs Wealth Management Investment Strategy Group, Bloomberg.

Volatility, Pullbacks & Risks

ISG's recommendation to stay invested in US equities does not preclude occasional market pullbacks, which can happen at any time. Pullbacks of approximately 5–10% — the most recent of which occurred this summer from peak levels on July 16 — represent normal equity volatility, rather than a compelling reason to underweight stocks. In fact, the odds of a 10% pullback during a year are greater than 80% when valuations are elevated like they are today (*see Exhibit 6*). But the likelihood of that loss persisting through year-end is significantly lower at 20%, suggesting most pullbacks ultimately resolve in higher prices.

ISG acknowledges there are many risks to the outlook, notably geopolitical and political risks, that could alter the course or lead to volatility. ISG recommends portfolios be positioned at their customized strategic asset allocation, where they are designed to ride out volatility and provide staying power in the event of market disruptions or declines.

Exhibit 6: S&P 500 One-Year Drawdown Probability from 9th or 10th Decile of Valuations, Excluding 2017



Past performance is not indicative of future result, which may vary.
 Source: Goldman Sachs Wealth Management Investment Strategy Group, Bloomberg.

Conclusion

ISG recommends clients stay invested in a well-diversified portfolio at their long-term strategic asset allocation consistent with their risk tolerance.

ISG also continues to recommend an overweight to US assets in their customized strategic asset allocation relative to market capitalization benchmarks, given their long-standing view of US preeminence. According to ISG, the drivers that underpin US preeminence are intact – including the resilience of US institutions, economic strength supported by abundant natural resources, human capital advantages, and a vibrant, innovative, and efficient private sector. These factors are set to persist into the foreseeable future and endure even in the face of social, cultural, and political fissures.

Disclosures

Our Relationship with Clients. Depending on our relationship with you, we (The Ayco Company, L.P. (“Goldman Sachs Ayco” or Goldman Sachs “GS”)) may act as an adviser, a broker-dealer, or both. Our roles and obligations vary depending on the capacity in which we act. Where we act as an adviser, our primary role is to give you advice, help you manage your investments or, where applicable, help hire another adviser to do so. Where we act as a broker, our primary role is to execute trades for you based on your instructions and any advice we give you is incidental to our brokerage services. How we are compensated by you (and sometimes by issuers or managers of investments who compensate us based on what you buy) and how your Goldman Sachs Ayco Team is compensated may change over time and will depend on various factors including, but not limited to, whether you are classified as a professional or retail client, have an advisory or brokerage account, and on the investments made in your account. Please ask questions to make sure you understand your rights and our obligations to you, the difference between advisory and brokerage accounts, and / or how we are compensated based on the capacity in which we act. 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. Please see <https://www.goldmansachs.com/disclosures/customer-relationship-summary-form-crs/index.html> for important disclosures regarding Regulation Best Interest and Form CRS.

Intended Audience. This material is generally intended for clients of Goldman Sachs Ayco and/or prospective clients who would meet the eligibility requirements to be clients of Goldman Sachs Ayco. If you have any questions on whether this material is intended for you, please contact your Goldman Sachs Ayco Team. Ayco considers client suitability, eligibility, and sophistication when distributing marketing materials; not all materials are appropriate for all Ayco 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 Ayco Team.

Entities Providing Services. Advisory services may be offered by The Ayco Company, L.P. (“Goldman Sachs Ayco”), Goldman Sachs & Co. LLC (“GS&Co.”), another affiliate, or an external manager under the wrap programs sponsored by GS&Co and Goldman Sachs Ayco. Brokerage services are offered through GS&Co and Mercer Allied Company, L.P. (a limited purpose broker-dealer), both affiliates of Goldman Sachs Ayco and members Financial Industry Regulatory Authority (“FINRA”) / Securities Investor Protection Corporation (“SIPC”), or Fidelity Investments. GS& Co. provides brokerage services, banking services (including check-writing, debit cards, direct debit, direct deposit, electronic bill pay, overdraft protection and Bank to Bank Transfers via ACH), custody, margin loans and strategic wealth advisory services. Financial counseling services are provided by Goldman Sachs Ayco. 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. All of these affiliated entities are subsidiaries of The Goldman Sachs Group, Inc. (“Firm”, “GS” or “Goldman Sachs”), a worldwide, full-service investment banking, broker-dealer, asset management, and financial services organization. Deposit products, mortgages, and bank loans are offered by Goldman Sachs Bank USA, member Federal Deposit Insurance Corporation (“FDIC”) and an Equal Housing Lender. Fidelity Investments is an independent company, unaffiliated with Goldman Sachs Ayco. Fidelity Investments is a service provider to Goldman Sachs Ayco. There is no form of legal partnership, agency affiliation, or similar relationship between your financial advisor and Fidelity Investments, nor is such a relationship or endorsement created or implied by the information herein. Fidelity Investments has not been involved with the preparation of the content supplied by Goldman Sachs Ayco or GS&Co and does not guarantee, or assume any responsibility for, its content. Fidelity Investments is a registered service mark of FMR LLC. Clearing, custody, or other brokerage services may be provided by National Financial Services LLC or Fidelity Brokerage Services LLC.

This presentation is for informational and educational purposes only and is not a substitute for individualized professional advice. The information provided should not be construed as personal financial planning, investment, tax or legal advice. No investment decisions should be made using this data.

Articles were commissioned and approved by Goldman Sachs Ayco, but may not reflect the institutional opinions of Goldman Sachs Group, Inc., Goldman Sachs Bank USA or any of their affiliates, subsidiaries or divisions. Goldman Sachs Ayco have no obligation to provide any updates or changes to this data. Information is subject to change without notice.

Any advice contained in the communication including attachments and enclosures is intended for the sole use of the addressee and is limited to the facts and circumstances actually known to the author at the time of this writing.

Investment Strategy Group (“ISG”). The Investment Strategy Group, part of the Asset and 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 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.
- **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 Ayco 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 Goldman Sachs Ayco 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 Goldman Sachs Ayco Team for further information on any securities mentioned.

ISG/GIR Forecasts. Economic and market forecasts presented ("forecasts") generally reflect either ISG's or GIR's 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.

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.

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 and educational purposes only and does not constitute investment or other advice or a recommendation relating to any investment or other decisions, and neither Goldman Sachs Ayco, nor GS are 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 Goldman Sachs Ayco or GS has agreed otherwise, any target allocation shown for such Retirement Account represents decisions you have communicated to us regarding such asset allocation, without any advice or recommendations from Goldman Sachs Ayco or GS, after considering your financial circumstances, objectives, risk tolerance and goals.

Goldman Sachs Ayco and GS&Co make recommendations based on the specific needs and circumstances of each client. Clients should carefully consider their own investment objectives and never rely on any single chart, graph, or marketing piece to make decisions. Investing involves risk, and investments may lose value. There are no investment strategies that guarantee a profit or protect against loss.

In their capacity as investment advisers, Goldman Sachs Ayco and GS&Co may prepare reports that reflect a client's overall investment portfolio and financial position based on information provided to Goldman Sachs Ayco and GS&Co by their respective clients, which neither Goldman Sachs Ayco or GS&Co certifies for accuracy or completeness. Goldman Sachs Ayco does not provide attest or compilation services and they do not prepare, present, audit, review or examine prospective financial information or express any opinion as to the accuracy or validity of that information.

Goldman Sachs Ayco may provide tax advice to its clients. Tax advice is provided as part of Goldman Sachs Ayco's comprehensive financial planning services, which are not related to the preparation or presentation of financial statements. Certain tax matters may require Goldman Sachs Ayco to consult with your tax counsel in formulating its tax advice. Goldman Sachs Ayco does not provide accounting advice to their clients. GS&Co does not provide accounting or tax advice to its clients, unless explicitly agreed between the client and GS&CO. All clients should be aware that tax treatment is subject to change by law, in the future or retroactively, and clients should consult with their tax advisors regarding any potential strategy, investment or transaction.

Neither Goldman Sachs or Ayco, provide legal advice to their clients, and all clients should consult with their own legal advisor regarding any potential strategy, investment, financial plan, estate plan or with respect to their interest in any employee benefit or retirement plan.

Potential Conflicts of Interest. Under certain of Goldman Sachs Ayco's financial counseling programs, Goldman Sachs Ayco may recommend securities or investment products, including those offered by its affiliates. This could lead to conflicts of interest of which you should be aware. The Goldman Sachs Group, Inc., Goldman Sachs Ayco, and their affiliates and employees (collectively, "Goldman Sachs") are engaged in businesses and have interests other than providing financial counseling services to individuals. This includes the management and sale of investment funds and other financial products that may be recommended to counseled individuals, and investment activities and business operations that may affect such funds or products. Goldman Sachs, Goldman Sachs Ayco and its counselors may receive various forms of compensation, commissions, payments, rebates and services related to sponsoring, managing or selling investment products recommended to counseled individuals. This may incentivize Goldman Sachs Ayco or its affiliates and their employees to recommend such products over others which might also be appropriate for counseled individuals.

Goldman Sachs' arrangements with outside managers may differ, and currently Goldman Sachs, Goldman Sachs Ayco and its counselors receive greater compensation for accounts managed by Goldman Sachs affiliates than in connection with separate accounts managed by non-Goldman Sachs entities.

Goldman Sachs Ayco or its affiliates may engage in insurance consulting or the insurance agency business for purposes of offering insurance contracts to counseled individuals, including variable life insurance contracts for which Goldman Sachs Ayco or its counselors may receive various forms of compensation. In addition, investment advisors of investment funds and products that may be offered to counseled individuals also may have other clients, businesses, and interests in addition to managing the assets of such product. Present and future activities of Goldman Sachs and other advisers in addition to those described in this supplement may give rise to additional conflicts of interest. More information regarding Goldman Sachs Ayco's business practices and conflicts is set forth in Goldman Sachs Ayco's Form ADV brochure, which is available upon request

Illustrations or projections are based on certain assumptions that we believe are reasonable. If any of these assumptions do not prove to be true, results are likely to vary substantially from the examples shown herein. These examples are for illustrative purposes only, do not purport to show actual results, and no representation is being made that any client will or is likely to achieve the results shown.

Trademarks: AycoAnswerLine®, Aycofn®, MoneyinMotion®, and SurvivorSupport® are registered trademarks of Goldman Sachs Ayco. These services are provided exclusively by Goldman Sachs Ayco.

Not a Municipal Advisor. Goldman Sachs Ayco 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.

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.

©2024 The Ayco Company, L.P., All Rights Reserved. Brokerage services are offered through Goldman Sachs & Co. LLC and Mercer Allied Company, L.P. (a limited purpose broker-dealer), both affiliates of Goldman Sachs Ayco and members [FINRA/SIPC](#).

09.2024 | 0642 J9069 | SEAL: 463973