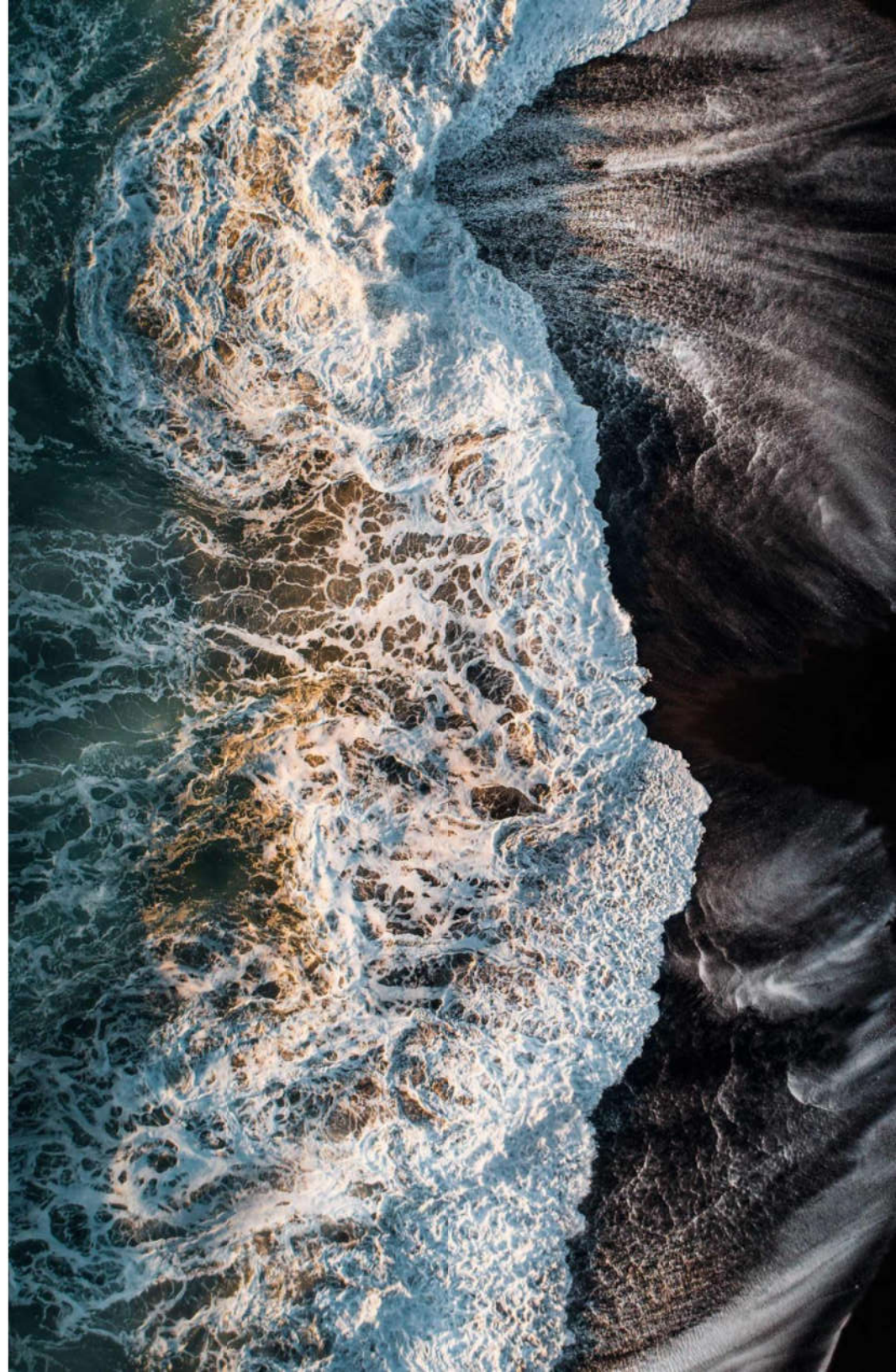


Market Know-How | 1Q 2023

POINT BREAK

Quarterly Insights and Implementation
Strategic Advisory Solutions

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POINT BREAK

Inflation continues to be the dominant global concern, even in a world of complex geopolitical dynamics that include military conflict in Ukraine, territorial flexing by China, and entrenched societal polarization. We expect the evolution of inflation and commensurate central bank responses to remain the prevailing theme in 2023. While waiting for the wave to break, however, investors must learn to surf.

Given the interplay between inflation and monetary policy, many see a recession as a natural byproduct of tighter financial conditions. History credibly informs such a view, but a US recession may not be a forgone conclusion given a healthy financial system, strong labor demand, and robust private sector. In the Euro area and the UK, heightened sensitivity to external energy supply makes a recession probable, if not already in progress.

The adjustment to a higher inflationary regime has been painful, with the traditional 60 / 40 portfolio delivering historically poor returns in 2022.¹ Even so, we think the opportunity set has been reset, with fixed income reasserting itself as a critical driver of diversification and cash flow.

In this edition of the Market Know-How, we explore how investors may navigate the ongoing period of inflation adjustment with emphasis on:

- Adjusting equity exposure in seeking to reflect renewed cross-asset competition by focusing on quality, profitability, and idiosyncratic positioning. In fixed income, add duration to address reinvestment risk.
- Monetizing elevated market volatility and stock dispersion to help improve after-tax performance via direct indexing.
- Diversifying existing exposure with alternative investments to potentially access unique sources of returns.

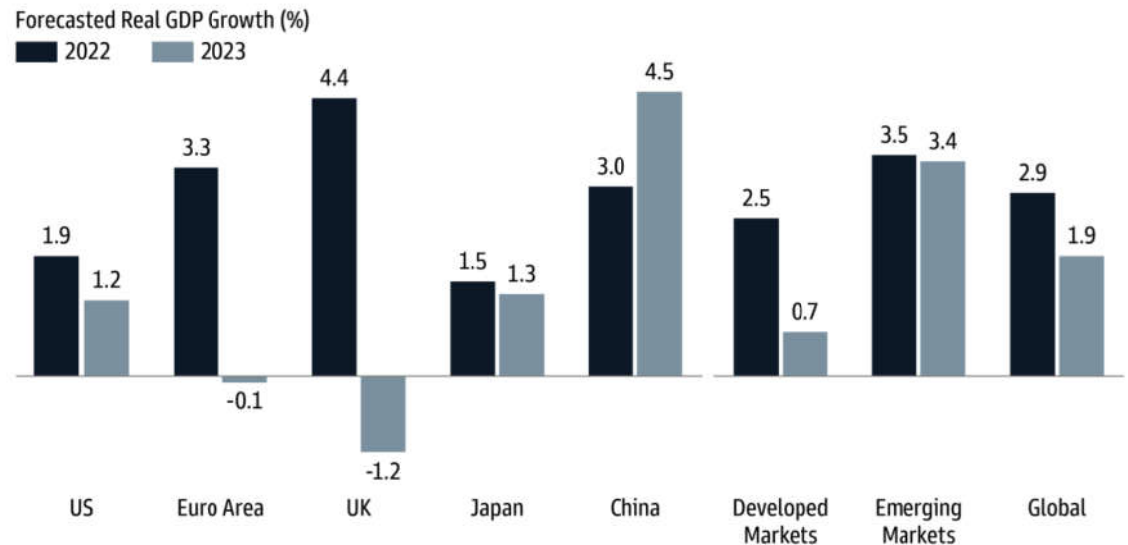
Source: Bloomberg¹ and Goldman Sachs Asset Management. "US" refers to United States. "UK" refers to United Kingdom. "Recession" refers to a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales. "60 / 40 portfolio" refers to an investment portfolio that is made up of 60% S&P 500 and 40% Bloomberg US Aggregate Bond Index. "Duration" refers to interest rate sensitivity. "Volatility" is a measure of variation of a financial instrument's price. "Direct indexing" refers to an investment strategy where an investor holds the underlying constituents that make up an index. Diversification does not protect an investor from market risk and does not ensure a profit. Views and opinions are current as of November 30, 2022, and may be subject to change, they should not be construed as investment advice. Economic and market forecasts presented herein reflect our judgment as of the date of this document and are subject to change without notice. These forecasts do not take into account the specific investment objectives, restrictions, tax and financial situation or other needs of any specific client. Actual data will vary and may not be reflected here. These forecasts are subject to high levels of uncertainty that may affect actual performance. Accordingly, these forecasts should be viewed as merely representative of a broad range of possible outcomes. These forecasts are estimated, based on assumptions, and are subject to significant revision and may change materially as economic and market conditions change. Goldman Sachs Asset Management has no obligation to provide updates or changes to these forecasts. Please see additional disclosures at the end of this document.

MACRO

We expect major central banks to prioritize price stability in 2023. While growth deceleration is a given, regional expectations vary. In Europe, we believe a recession is a likely consequence of the energy crisis, among other factors. US growth may hinge on consumer and corporate resilience. Meanwhile, easing policy and gradual reopening may finally reverse China's growth outlook.

Global Growth

The global economy is likely to grow below trend in 2023 as major central banks continue to tame inflation by normalizing demand. In Europe, competing tensions between fiscal easing—to buffer the pain of rising energy costs—and monetary tightening will likely determine the duration and magnitude of its recession. In the US, we believe the path to lower inflation will require right-sizing labor demand and reducing wage growth. Though progress has been made, more restrictive financial conditions may be necessary to help address an overheated economy.



Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of November 30, 2022. "Real GDP" refers to Gross Domestic Product adjusted for inflation, year-over-year. The economic and market forecasts presented herein are for informational purposes as of the date of this document. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document. **Past performance does not guarantee future results, which may vary.**

MACRO

Key Insights



LABOR

The jobs market remains tight, with clear excess demand across major economies. We forecast that US labor supply and demand must rebalance enough to bring wage growth down to a 3.5% pace, consistent with 2% core inflation. While the ratio of vacancies to unemployed persons is lower in the Euro area, we believe wage adjustments to compensate for higher inflation may still pressure the ECB.



HOUSING

We see early signs of easing. Aggressive monetary policy has sent mortgage rates to a decade high, presenting headwinds to housing affordability and price appreciation. Falling mortgage applications and declining home sales are clear effects of tighter financial conditions, but the magnitude of price moderation will structurally depend on regional supply. In the US, limited housing inventory will likely be a backstop against deeper contractions.



CONSUMER

We forecast consumer spending to stay resilient despite ongoing price pressures weighing on real disposable income. Fiscal support may insulate European consumers from rising costs, while job gains and cost-of-living adjustments may catalyze a spending acceleration in the US. Ultimately, the global build-up in household net worth may keep debt serviceability manageable.



ENERGY

Global energy prices have eased from recent highs, leading us to believe that their contribution to headline inflation may diminish going forward. However, with price surges linked to the geopolitical backdrop and constrained inventory levels, potential risks are skewed to the upside. For example, we forecast that a European winter that is 1.5°C colder than normal could double TTF gas prices.



CHINA

We forecast growth in China to pick up gradually from here, which should be supported by additional policy easing in coming months. The country is currently experiencing its slowest pace of growth in nearly five decades amid significant property sector stress and the ongoing dynamic Zero-COVID policy. We expect the economy to gradually reopen in 2023.



CENTRAL BANK OUTLOOK

Central banks are committed to fostering restrictive monetary conditions, pending a convincing trend of falling inflation. While the peak pace of tightening has likely passed in the US, sticky inflation may lead the Fed to hike higher for longer. We believe the BoE and ECB are likely to follow suit, despite mounting growth concerns. Meanwhile, in Japan, continued adherence to yield curve control may remain the status quo, though limited by the depth of the BoJ's reserve.

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of November 30, 2022. "US" refers to United States. "Core inflation" refers to inflation excluding food and energy. "ECB" refers to the European Central Bank. "TTF" refers to the TTF Neutral Gas Price Index. "Fed" refers to the Federal Reserve. "BoE" refers to the Bank of England. "BoJ" refers to the Bank of Japan. The economic and market forecasts presented herein are for informational purposes as of the date of this document. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document.

MARKETS

Rapid rises in global interest rates have shifted investors' mindsets from "why should I be worried?" to "why I should be worried." However, we see the current landscape as widening the potential opportunity set for patient investors. Many traditional asset classes are awaiting central bank pauses, but investors may find alpha in the interim when considering cross-asset risks and opportunities.

Asset Class Outlook

We believe that the recent re-pricing across stocks and bonds has offered renewed opportunities for the traditional 60 / 40 portfolio, with potential enhancements available when looking to alternatives. Global equities are poised to outperform longer-term, especially with a bottom-up and idiosyncratic focus. Still, higher coupons in fixed income may invite competition for demand with equities. Real asset prices are pulled between demand concerns and structural undersupply, with our belief that the latter will prevail near-term. In our view, the pain of 2022 has given way to an inflection point across markets and regions.

	Least Favorable	Most Favorable
	Shorter Term	Longer Term
EQUITIES		
US Equities		
European Equities		
Japanese Equities		
Emerging Market (EM) Equities		
RATES		
US Government Fixed Income		
DM Government Fixed Income		
EM Debt Local		
Municipal Bonds		
CREDIT		
US Investment Grade		
US High Yield		
Euro Area Corporates		
Asia High Yield		
EM Debt Hard		
REAL ASSETS		
Oil		
Copper		
Gold		
Global Real Estate		
CURRENCIES		
US Dollar		
Euro		
British Pound		
Japanese Yen		
Chinese Renminbi		

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of November 30, 2022. "Alpha" refers to returns in excess of the benchmark. "60 / 40 portfolio" refers to an investment portfolio that is made up of 60% S&P 500 and 40% Bloomberg US Aggregate Bond Index. "Shorter term" refers to less than 12 months. "Longer term" refers to 1-5 years. For illustrative purposes only. The economic and market forecasts presented herein are for informational purposes as of the date of this document. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document.

MARKETS

Key Insights



EQUITIES

Global equity markets will likely face episodic market volatility until the growth-inflation mix improves and we have clear shifts in central bank postures. In the near-term, corporates have prioritized protecting profit margins over revenues. Consequently, we expect cost-cutting, -passing, and -hedging to be prominently featured to help against earnings contraction. Companies with sustainable cash flows and defensible profitability may be most rewarded.



RATES

Global yields will likely move in tandem with central bank policy paths, which continue to be dictated by the persistence of growth and inflation. We forecast a peak in US rates in 1H 2023, but stickier-than-expected inflation may elevate terminal rates. Across the globe, we believe peak curve inversion is behind us, but Euro area and UK rates remain tied to the energy outlook and the severity of respective recessions.



MUNIS

Municipal bonds face headwinds from challenging technicals, high inflation, and continued Treasury market volatility, but defensive characteristics and cheap valuations may act as tailwinds. We forecast that elevated tax-equivalent yields and resilient credit performance may attract retail buyers back to the market as fundamentals—strong revenue and prior fiscal support—remain supportive.



CREDIT

Higher starting yields have provided an offset to duration risk, in our view. Within the space, we maintain a quality bias as US credit markets have yet to price in significant recession risk. We see potential for HY spreads to widen further, but conservative capital management, a low wall of debt maturity near-term, and cash-rich balance sheets may act as buffers. In Europe, cheap valuations make yields attractive, but uncertainty around policy and the energy crisis pose as key headwinds.



REAL ASSETS

Commodity markets are increasingly split between macro headwinds and micro tailwinds. Global recession fears have weakened expected demand, but we believe limited inventory relief remains the constraining factor. While Europe has improved its natural gas reserves, its ability to absorb demand shocks is still low. Meanwhile, inflation-linked assets, such as real estate and infrastructure, may benefit from attractive distribution yields.



CURRENCIES

Moves across key FX crosses are mirroring interest rate differentials, causing several central banks to unload reserves to curb currency depreciation. Importantly, macro challenges have further eroded the euro following economic spillover from the Russia-Ukraine military conflict. Lastly, the pound is struggling with the balancing act of UK fiscal and monetary policy.

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of November 30, 2022. "Growth-inflation mix" refers to the dynamic between Gross Domestic Product growth and high inflation. "Terminal rates" refers to the point where central banks' respective benchmark interest rates will come to rest. "UK" refers to the United Kingdom. "Duration" refers to interest rate sensitivity. "HY" refers to high yield. "FX" refers to foreign exchange. The economic and market forecasts presented herein are for informational purposes as of the date of this document. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document.

DURATION

OUTLOOK

Reinvestment Risk

US yields have risen substantially in the past year amid tighter monetary policy. However, we anticipate they may peak as we approach the end of the current Fed hiking cycle. While the 2-Year US Treasury yield has historically tracked the 10-Year yield around the end of prior hiking cycles, the two have diverged in the periods that followed. We believe such a divergence may underscore a nearing challenge for investors: reinvestment risk, particularly on the shorter end of the yield curve. For investors seeking income generation, we believe the relatively stickier yields achieved by extending duration will provide a more durable source of cash flow going forward.

Looking Long

We recognize that the risk of additional rate hikes may steer investors towards the front end of the curve. Still, that may not always be the case, and the transition may be abrupt. Specifically, at the 24-month mark following the past three Fed hiking cycles, the Bloomberg US Aggregate Bond Index has averaged a yield over double that of the shorter duration index. Additionally, higher starting yields may make any further rate spikes less painful. These future yield advantages are similarly powerful for munis, where we also observe supportive fundamentals. As the calendar flips forward, investors may find attractive yields when adding on duration, across both municipal and taxable bonds.

Top Right Section Notes: As of November 30, 2022. Chart shows the 2-Year US Treasury and 10-Year US Treasury yields since January 1, 2000. Shaded circles are centered on the month-end dates of the final hike of the Federal Funds rate during the past three Fed hiking cycles. These dates are May 31, 2000, June 30, 2006, and December 31, 2008. Bottom Right Section Notes: As of November 30, 2022. "Yield" refers to the yield to worst. Chart shows the average yield to worst of the Bloomberg US Aggregate Bond Index divided by the average yield to worst of the Bloomberg US Aggregate Bond: 1-3 Year Index at different time periods following the end of the month of the last hike in the last three Fed hiking cycles. Goldman Sachs does not provide accounting, tax, or legal advice. Please see additional disclosures at the end of this document. **Past performance does not guarantee future results, which may vary.**

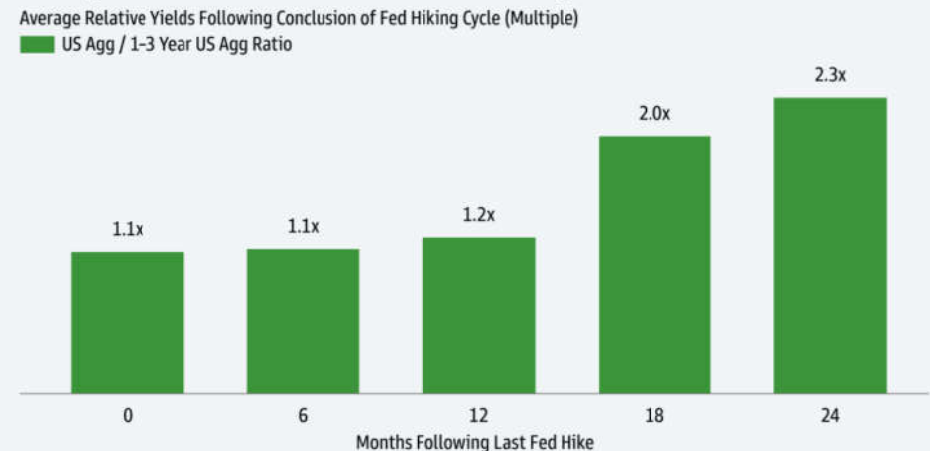
SOLUTIONS

Convergence, then Divergence



Source: Bloomberg and Goldman Sachs Asset Management.

Strong Fixed Income Performance Following the Last Fed Hike



Source: Bloomberg and Goldman Sachs Asset Management.

DIRECT INDEXING

OUTLOOK

Monetizing the Market Volatility

Exploiting losses is sometimes easier than building gains. Though the rapid rise in interest rates and the slowing growth backdrop have driven equities lower in 2022, we believe direct indexing may stand to benefit from market volatility. Direct indexing involves purchasing the underlying shares of an index, rather than owning an index fund. This investment strategy prioritizes tax-loss harvesting, which builds tax savings through capital losses while attempting to keep tracking error tight to the benchmark. Tax-loss harvesting works not only in down years but also in up years, historically, as individual constituents can still see intra-year declines. In fact, over the last decade, at least one-fifth of underlying S&P 500 companies have fallen -10% or greater at any given point each year.

More Than Tax-Alpha

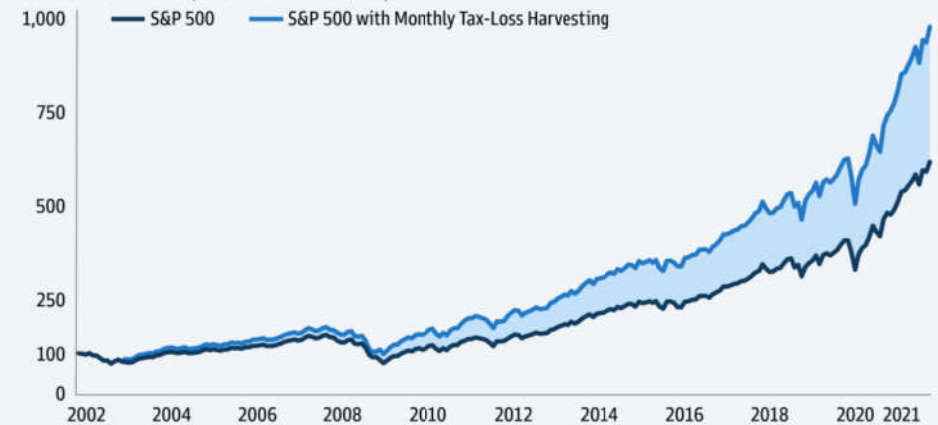
The tax-alpha achieved from harvesting losses is, in our view, a compelling feature of direct indexing, but it's not the only one. We see a variety of other potential benefits that come with building a war chest of capital losses, including the ability to liquidate concentrated stock positions, reduce active risk in portfolios, and help offset significant taxable events such as the sale of a business or real estate. Additionally, owning individual securities instead of an index fund allows investors to achieve these potential benefits while expressing preferences, such as sector tilts. The power of direct indexing extends beyond reducing investors' tax bills, making this strategy attractive to those seeking to express individual customization.

Top Right Section Notes: As of December 31, 2021. "Direct indexing" refers to an investment strategy where an investor holds the underlying constituents that make up an index. Chart shows the after-tax performance of the S&P 500 and the S&P 500 with monthly tax-loss harvesting based on data from January 1, 2002 to December 31, 2021. Actual results may vary. Goldman Sachs does not provide accounting, tax, or legal advice. For illustrative purposes only. Bottom Right Section Notes: As of November 30, 2022. "Tax-Alpha" refers to the potential value created by the effective tax management of investments. Chart shows both the proportion of S&P 500 companies within a calendar year that experienced a -10% drawdown at any point in time and the calendar year's S&P 500 total return. Please see additional disclosures at the end of this document. **Past performance does not guarantee future results, which may vary.**

SOLUTIONS

Tax Breaks

S&P 500 Performance (After-Tax Growth of \$100)



Source: Bloomberg and Goldman Sachs Asset Management.

Death and Tax-Loss Harvesting

Proportion of S&P 500 Companies with Losses >-10% at Any Point in Each Year



Source: Goldman Sachs Asset Management.

SECONDARIES

OUTLOOK

Primer on Secondaries

With public market returns challenged, many investors now look to private market alternatives, including secondaries, for enhanced risk-adjusted returns. Secondaries provide exposure to partially—or fully-funded portfolio interests by 1) acquiring assets from limited partners seeking liquidity and 2) providing liquidity to general partners. This ability to access prior vintages may be particularly attractive to investors looking to grow their private market allocations. Additionally, secondaries have historically delivered similar returns to direct private equity with less volatility. With many institutional investors looking to rebalance their portfolios via the secondary market, supply is poised to increase, potentially spurring greater discounts than usual.

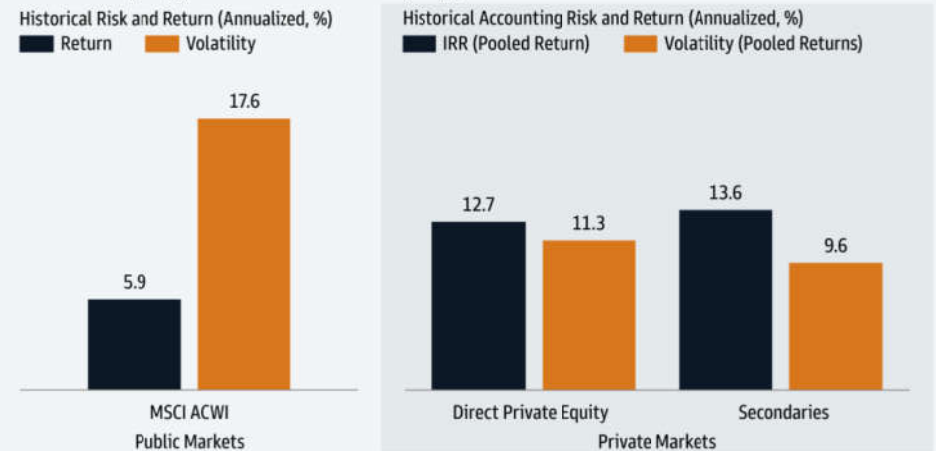
Smoothing Out the Risks

Secondaries investing can help manage risks across strategies and managers, providing investors with broader access to private markets. By purchasing into a known pool of assets—that may have a greater number of underlying holdings than in a direct private equity fund—investors potentially have both more transparency and less concentration risk. Also, the secondaries J-curve, or the cash flows throughout the fund lifetime, may allow for faster distributions and greater capital efficiency compared to the direct private equity J-curve. Lastly, investors can access secondaries in an array of asset classes, from private equity to real estate and infrastructure.

Top Right Section Notes: As of March 31, 2022. "IRR" refers to the internal rate of return. "Volatility" measures the standard deviation in price of a financial instrument over time. Please see additional disclosures regarding MSCI ACWI Index, Direct Private Equity, and Secondaries data at the end of this document. Bottom Right Section Notes: As of November 30, 2022. "J-curve" refers to the cumulative net cash flow seen by an investor, which for private equity investments is typically negative in the first several years after the initial commitment due to capital being drawn down for investments and generally becomes positive after capital is returned and the fund becomes net cash flow positive. Please see additional disclosures at the end of this document. For illustrative purposes only. Actual returns of any private equity fund may differ significantly. **Past performance does not guarantee future results, which may vary.**

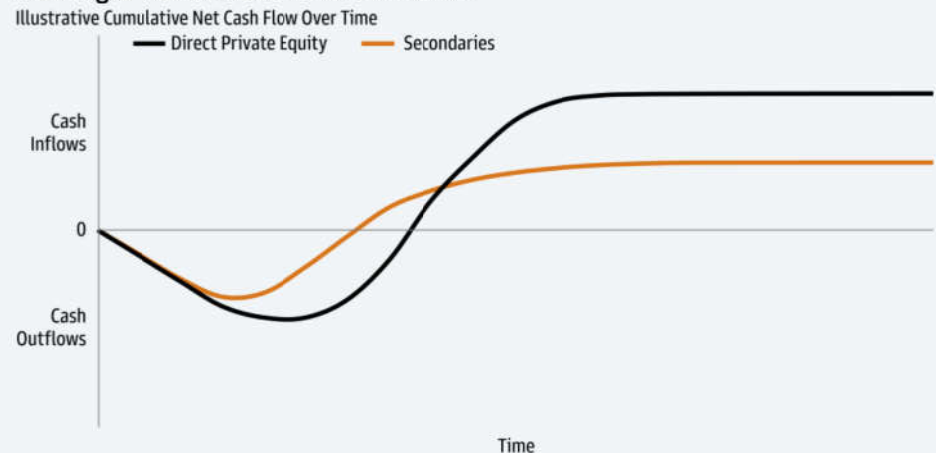
SOLUTIONS

Public Equity, Direct Private Equity, Secondaries



Source: Cambridge Associates, Bloomberg, and Goldman Sachs Asset Management.

Getting a Head Start on the J-Curve



Source: Goldman Sachs Asset Management.

MARKET SOLUTIONS

In a world of macro uncertainty, there may be a menu of asset classes serving as potential solutions.

	FIXED INCOME			EQUITIES			SATELLITES / ALTERNATIVES		
	Ultra-Short Duration	Core	Municipal	Value	Buy-Write	Direct Indexing	Real Assets	Private Credit	Absolute Return Strategies
Sticky Inflation	●			●			●		
Elevated Rates	●	●	●	●			●	●	●
Recession Risk	●	●	●	●	●				●
Equity Volatility	●	●	●	●	●	●	●	●	●
Income Generation	●	●	●	●	●		●	●	
Tax Efficiency	●		●		●	●	●		

Source: Goldman Sachs Asset Management. As of November 30, 2022. Goldman Sachs does not provide accounting, tax, or legal advice. Please see additional disclosures at the end of this document. A buy-write strategy refers to an investment that receives call premium on an underlying equity position to generate income. An absolute return strategy refers to an investment strategy intended to deliver positive returns, regardless of broader market conditions. This material is provided for educational purposes only and should not be construed as investment advice or an offer or solicitation to buy or sell securities. For illustrative purposes only.

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GLOSSARY

Equities

The **Dow Jones US Select Real Estate Securities Index** tracks companies that are both equity owners and operators of real estate in the US.

The **MSCI All Country World (ACWI) Index** is a market capitalization weighted index designed to provide a broad measure of equity-market performance throughout the world. It comprises of stocks from 23 developed countries and 24 emerging markets.

The unmanaged **MSCI EAFE Index (unhedged)** is a market capitalization weighted composite of securities in 21 developed markets.

The **MSCI Emerging Markets Equity Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets.

The **Russell 2000 Index** measures the performance of the small-cap segment of the US equity universe. The **Russell 2000 Index** is a subset of the **Russell 3000 Index** representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership.

The **S&P 500 Index** is the Standard & Poor's 500 Composite Stock Prices Index of 500 stocks, an unmanaged index of common stock prices. The index figures do not reflect any deduction for fees, expenses or taxes. It is not possible to invest directly in an unmanaged index.

The **S&P Developed ex-US Property Index** measures the performance of real estate companies domiciled in countries outside the United States.

The **S&P Developed ex-US Small Cap Index** covers the smallest 15% of companies from developed countries (excluding the US) ranked by total market capitalization.

Fixed Income

The **Bloomberg US Aggregate Bond Index** represents an unmanaged diversified portfolio of fixed income securities, including US Treasuries, investment grade corporate bonds, and mortgage backed and asset-backed securities.

The **Bloomberg US Aggregate Bond Index 1-3 Yr** is the 1-3 year component of the Bloomberg US Aggregate Bond Index.

The **Bloomberg EM USD Aggregate Index** is a flagship hard currency Emerging Markets debt benchmark that includes USD denominated debt from sovereign, quasi-sovereign, and corporate EM issuers.

The **Bloomberg Global High Yield Index** provides a broad-based measure of the global high-yield fixed income market.

The **Bloomberg Municipal Bond Index** covers the USD-denominated long-term tax-exempted bond market, including state and local general obligation bonds, revenue bonds, insured bonds, and prerefunded bonds.

The **Bloomberg US Corporate Investment Grade Index** includes publicly issued US corporate and specified foreign debentures and secured notes.

The **Bloomberg US High Yield Index** covers the universe of fixed rate, non-investment grade debt.

The **Credit Suisse Leveraged Loan Index** tracks the investable leveraged loan market by representing tradable, senior-secured, US-dollar denominated, non-investment grade loans.

The **J.P. Morgan 1-Month Cash Index** measures the total return of a rolling investment in a short-term fixed income instrument with a one-month maturity.

The **J.P. Morgan EMBI Global Composite Index** is an unmanaged index tracking dollar-denominated debt instruments issued in emerging markets.

The **S&P/LSTA US Leveraged Loan 100 Index** is designed to reflect the performance of the largest facilities in the leveraged loan market.

The **US Treasury Bond** is a debt obligation backed by the United States government and its interest payments are exempt from state and local taxes. However, interest payments are not exempt from federal taxes.

Other

Alpha refers to returns in excess of the benchmark return.

Duration is a measure of the sensitivity of the price of a fixed income investment to a change in interest rates.

Gross Domestic Product (GDP) is the value of finished goods and services produced within a country's borders over one year.

The **HFRI Fund of Funds Composite Index** is an equal weighted, net of fee, index composed of approximately 800 fund-of-funds which report to HFR.

Risk assets refers to assets that carry a degree of price volatility.

The **S&P GSCI Commodity Index** is a composite index of commodity sector returns, representing an unleveraged, long-only investment in commodity futures that is broadly diversified across the spectrum of commodities.

Standard deviation is defined as a measure of the dispersion of a set of data from its mean.

The **TTF Neutral Gas Price Index** is the volume-weighted average price of all trades executed in all the spot contracts.

A US recession is defined by the NBER as a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales.

Volatility is a measure of variation of a financial instrument's price.

Yield refers to the earnings generated and realized on an investment over a particular period.

RISK DISCLOSURES

Equity securities are more volatile than fixed income securities and subject to greater risks. Small and mid-sized company stocks involve greater risks than those customarily associated with larger companies.

International securities entail special risks such as currency, political, economic, and market risks.

Emerging markets securities may be less liquid and more volatile and are subject to a number of additional risks, including but not limited to currency fluctuations and political instability.

Buy-write strategies are subject to market risk, which means that the value of the securities in which it invests may go up or down in response to the prospects of individual companies, particular sectors and/or general economic conditions. They are also subject to the risks associated with writing (selling) call options, which limits the opportunity to profit from an increase in the market value of stocks in exchange for up-front cash at the time of selling the call option. In a rising market, the strategy could significantly underperform the market, and the options strategies may not fully protect it against declines in the value of the market.

Investments in fixed-income securities are subject to credit and interest rate risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. Credit risk is the risk that an issuer will default on payments of interest and principal. This risk is higher when investing in high yield bonds, also known as junk bonds, which have lower ratings and are subject to greater volatility. All fixed income investments may be worth less than their original cost upon redemption or maturity.

Although Treasuries are considered free from credit risk, they are subject to interest rate risk, which may cause the underlying value of the security to fluctuate.

Income from municipal securities is generally free from federal taxes and state taxes for residents of the issuing state. While the interest income is tax-free, capital gains, if any, will be subject to taxes. Income for some investors may be subject to the federal Alternative Minimum Tax (AMT).

Investors should also consider some of the potential risks of alternative investments: Alternative Strategies. Alternative strategies often engage in leverage and other investment practices that are speculative and involve a high degree of risk. Such practices may increase the volatility of performance and the risk of investment loss, including the entire amount that is invested. Manager experience. Manager risk includes those that exist within a manager's organization, investment process or supporting systems and infrastructure. There is also a potential for fund-level risks that arise from the way in which a manager constructs and manages the fund. Leverage. Leverage increases a fund's sensitivity to market movements. Funds that use leverage can be expected to be more "volatile" than other funds that do not use leverage. This means if the investments a fund buys decrease in market value, the value of the fund's shares will decrease by even more. Counterparty risk. Alternative strategies often make significant use of over-the-counter (OTC) derivatives and therefore are subject to the risk that counterparties will not perform their obligations under such contracts. Liquidity risk. Alternative strategies may make investments that are illiquid or that may become less liquid in response to market developments. At times, a fund may be unable to sell certain of its illiquid investments without a substantial drop in price, if at all. Valuation risk. There is risk that the values used by alternative strategies to price investments may be different from those used by other investors to price the same investments. The above are not an exhaustive list of potential risks. There may be additional risks that should be considered before any investment decision.

An investment in real estate securities is subject to greater price volatility and the special risks associated with direct ownership of real estate.

Concentration in infrastructure-related securities involves sector risk and concentration risk, particularly greater exposure to adverse economic, regulatory, political, legal, liquidity, and tax risks associated with MLPs and REITs.

Investments in master limited partnerships ("MLPs") are subject to certain risks, including risks related to limited control and limited rights to vote, potential conflicts of interest, cash flow risks, dilution risks, limited liquidity and risks related to the general partner's right to force sales at undesirable times or prices.

Investing in REITs involves certain unique risks in addition to those risks associated with investing in the real estate industry in general. REITs whose underlying properties are concentrated in a particular industry or geographic region are also subject to risks affecting such industries and regions. The securities of REITs involve greater risks than those associated with larger, more established companies and may be subject to more abrupt or erratic price movements because of interest rate changes, economic conditions and other factors.

There may be additional risks that are not currently foreseen or considered.

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Date of first use: December 09, 2022. 298152-OTU-1709111.

Page 2 Relative Asset Class Calendar-Year Performance Notes: "Bank Loans" are represented by the Credit Suisse Leveraged Loan Index. "Commodities" are represented by the S&P GSCI Commodity Index. "Emerging Market (EM) Debt" is represented by the JPM EMBI Global Composite Index. "Emerging Market (EM) Equity" is represented by the MSCI Emerging Markets Index. "Hedge Funds" are represented by the HFRI Fund of Funds Index. "High Yield" is represented by the Bloomberg Global High Yield Index. "Int. Equity" is represented by the MSCI EAFE Index. "Int. Real Estate" is represented by the S&P Developed ex-US Property Index. "Int. Small Cap" is represented by the S&P Developed ex-US Small Cap Index. "US Agg. Bonds" are represented by the Bloomberg US Aggregate Bond Index. "US Large Cap" is represented by the S&P 500 Index. "US Municipal" is represented by the Bloomberg Municipal Bond Index. "US Real Estate" is represented by the Dow Jones US Select Real Estate Securities Index. "US Small Cap" is represented by the Russell 2000 Index.

Page 9 Top Right Notes: "Index Fund" refers to a fund that tracks the performance of a specific benchmark or index. "Tax-loss harvesting" refers to the timely selling of securities at a loss in order to offset the amount of capital gains tax due on the sale of other securities at a profit. "Tracking error" refers to the consistency of excess returns, measured by the difference between the return on a portfolio or fund, and the benchmark it is expected to mirror. After-tax performance considers the S&P 500 index return on top of the hypothetical capital gains saved by realizing losses at the combined long-term capital gains and net investment income tax rate of 23.8%. Cost basis is calculated on a monthly basis with adjustments made annually to reflect gains/losses and taxes paid. Analysis assumes that all capital gains/losses are categorized as long-term and fall under the long-term tax rate. Short-term capital gains taxes are excluded for conservatism. Dividend income paid in 2002 is taxed at the ordinary income tax rate (40.8%). For all other years after, dividend income is considered qualified dividend income and taxed at the combined long-term capital gains and net investment income tax rate (23.8%). Index returns are used as a proxy for baskets of similar stocks. Analysis does not factor in wash sale rules. Actual results may vary. Goldman Sachs does not provide accounting, tax, or legal advice. For illustrative purposes only.

Page 8 Bottom Right Notes: The starting points in the Fed Hiking cycles used are May 31, 2000, June 30, 2006, and December 31, 2008. "Duration" refers to the sensitivity of bond prices to a change in interest rates. "Fed" refers to Federal Reserve. "Hiking cycle" refers to period where the Federal Reserve is raising the Federal Funds rate. Goldman Sachs does not provide accounting, tax or legal advice.

Page 10 Top Left Notes: "Vintage" refers to the typical year in which a fund's investment period begins. "Secondaries investing" refers to private market investments in other existing funds.

Page 10 Top Right Notes: The annualized return and volatility of the MSCI ACWI Index are calculated based on quarterly data from January 1, 2000 to March 31, 2022. The annualized pool fund IRR and volatility of the private market asset classes are calculated based on quarterly pooled fund data from January 1, 2000 to March 31, 2022, sourced through Cambridge Associates. Data is based on accounting numbers that are reported and may not reflect the potential dispersion of returns across funds.

Page 10 Bottom Right Notes: Chart shows the illustrative net cash flows of a direct private equity investment over its hypothetical fund lifetime and the illustrative net cash flows of a secondary investment that backfills into said direct private equity investment. "Vintage Year" refers to the year in which a fund's investment period begins.

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