
Market Snapshot

Point Break

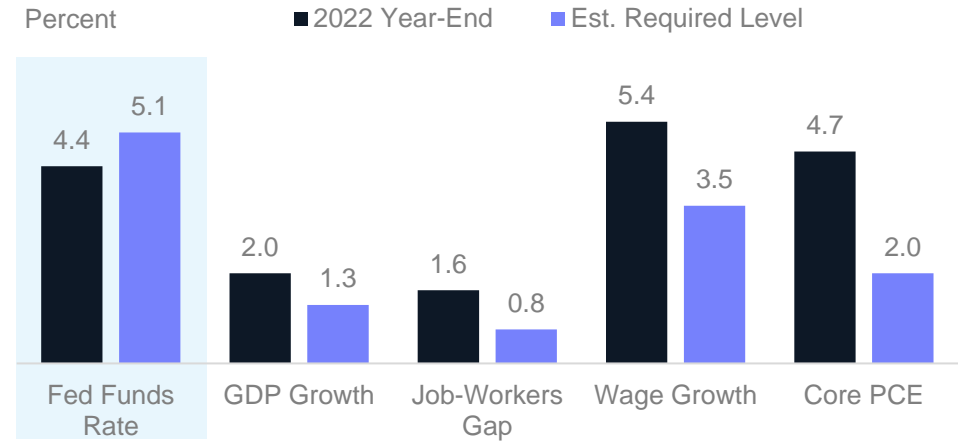
MARKET STRATEGY | STRATEGIC ADVISORY SOLUTIONS
JANUARY 2023

Executive Summary

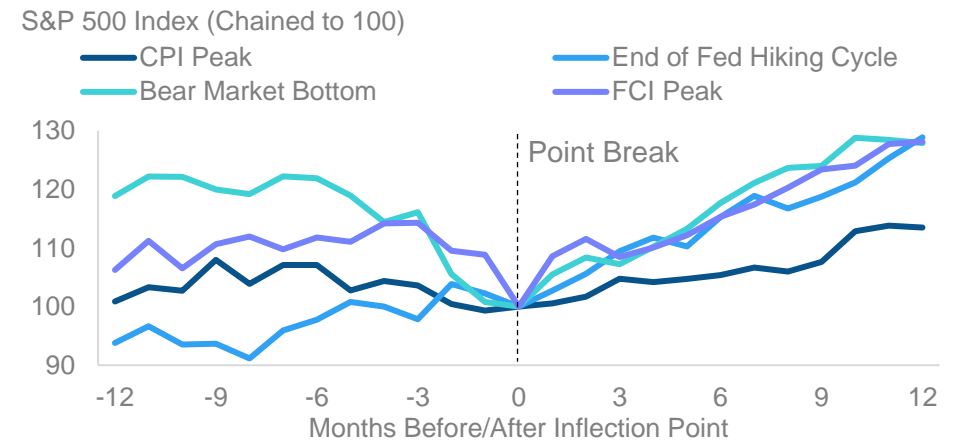
Point Break

- **Deceptively Simple:** The Fed is solving for inflation, the markets are solving for the Fed. We expect a terminal Fed Funds rate of 5.00%–5.25%, with risk to the upside. Our view is consistent with current market pricing.
- **The Fed’s Playbook:** To solve for inflation, we believe the Fed’s aim is to 1) bring GDP growth below trend, enough to 2) materially reduce labor demand, to ultimately 3) slow wage acceleration to 3.5%.
- **US Recession:** History and consensus thinking suggest that a recession is all but a done deal. We believe there is a narrow path for a soft landing due to: 1) less drag from tighter FCI, 2) less pain needed to unwind the jobs-workers gap, 3) ongoing supply chain improvement, and 4) well-anchored long-run inflation expectations.
- **Inflection Points:** Investment results for the S&P 500 look quite hopeful in the 12 months following the top/bottom of key trends:
 - **Peak Inflation:** 13.5%
 - **FCI Top:** 28.1%
 - **Market Bottom:** 27.9%
 - **Last Hike:** 28.9%
- **Bottom Line:** We believe the intersection between inflation and policy is likely to remain volatile, but there are already clear points of entry, including yield, idiosyncratic alpha, and pricing dislocations.

THE FED’S PLAYBOOK TO TAMING INFLATION



MULTIPLE INFLECTION POINTS



Top Right Source: Goldman Sachs Global Investment Research (GIR) and Goldman Sachs Asset Management. As of December 31, 2022. All forecasts refer to Goldman Sachs Global Investment Research. Please see definitions in the top right chart in the disclosures at the end of this presentation. Bottom Right Source: Bloomberg, Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. “CPI” refers to the Consumer Price Index. “FCI” refers to the GIR’s US Financial Conditions Index. As of December 31, 2022. “We” refers to Goldman Sachs Asset Management, Strategic Advisory Solutions. “Recession” refers to a significant decline in economic activity that is spread across the economy and lasts more than a few months. “Alpha” refers to returns in excess of a benchmark. 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. **Past performance does not guarantee future results, which may vary.**

Sources of Volatility

POLICY RATES

5.13%

Forecasted Fed terminal rate, reached by May 2023

BUSINESS SENTIMENT

<50

ISM Manufacturing PMI while also contracting, in two consecutive months

CONSUMER SENTIMENT

8mos

Streak of UMich. Consumer Sentiment prints below 60, longest streak on record

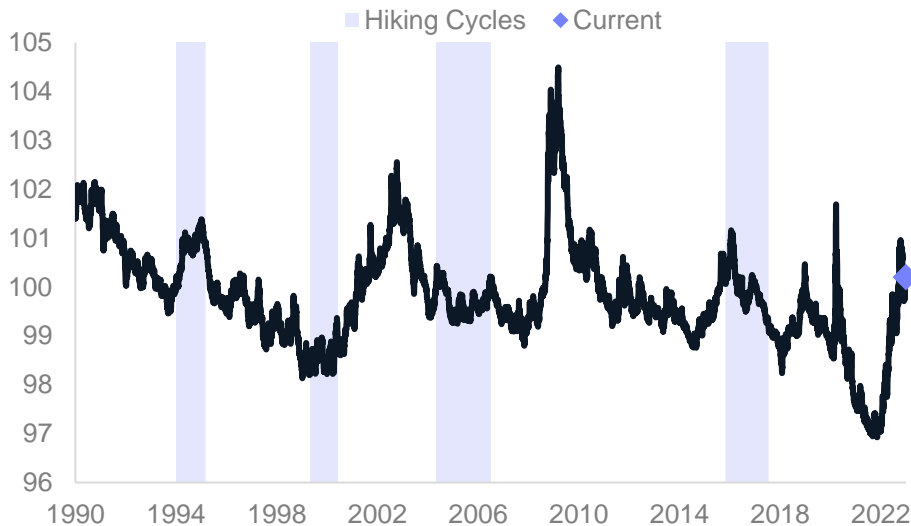
RECESSION RISK

65%

Consensus US recession probability

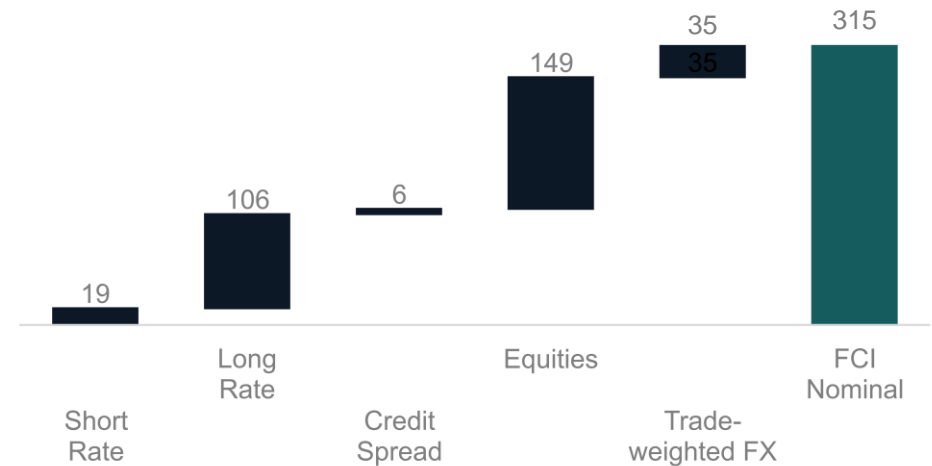
US FINANCIAL CONDITIONS INDEX

US Financial Conditions Index



TIGHTENING ACROSS COMPONENTS

US Financial Conditions Index Movement in 2022 (bps)



Source: Goldman Sachs Global Investment Research, Bloomberg, and Goldman Sachs Asset Management. All as of December 31, 2022 or latest available. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation. Bottom Notes: "US Financial Conditions Index" refers to a Goldman Sachs Global Investment Research Index designed to gauge the overall looseness or tightness of financial conditions across the world's major economies. **Past performance does not guarantee future results, which may vary.**

Sources of Stability

BANKING

0.72%

Total loans and leases that are past due, vs. long-term average of 1.9%

CORPORATES

3%

Of US high yield debt maturing in 2023

HOUSING

5%

Of households have an adjustable-rate mortgage, compared to 25% in 2006

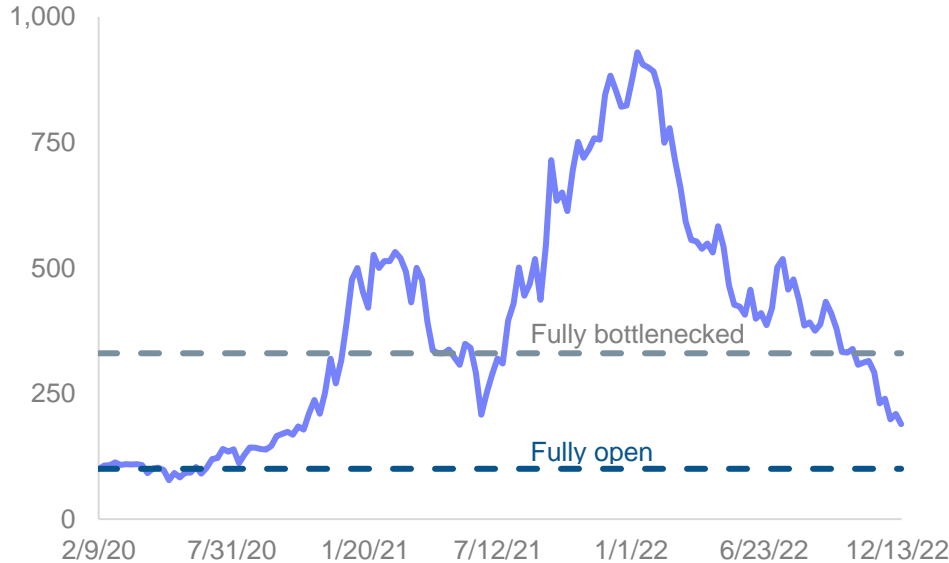
LABOR

4.3mn

US jobs-workers gap, providing a potential buffer to reduce labor demand

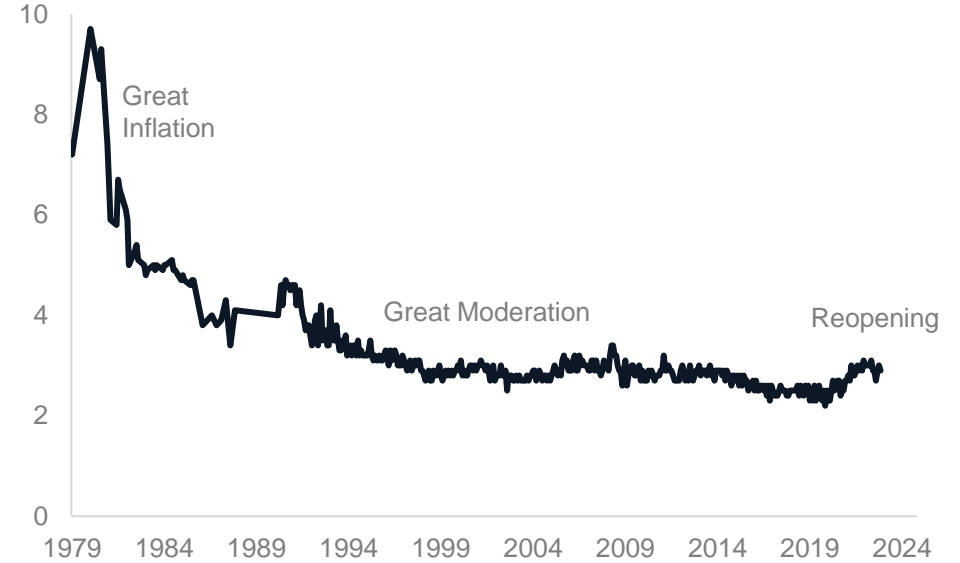
ROOM FOR IMPROVEMENT

GS Supply Chain Congestion Scale



INFLATION EXPECTATIONS

US Long-Run Inflation Expectations (%)



Top Source: Goldman Sachs Global Investment Research, Federal Reserve Economic Data, and Goldman Sachs Asset Management. All as of December 31, 2022 or latest available. "Past due" refers to loans and leases that are 90 days or more past due or in a nonaccrual status. Bottom Left Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of December 18, 2022. Index reflects data on ships at anchor, days to deliver, various dwell times, intermodal volume and velocity statistics, amongst others. Bottleneck refers to a lack of transport fluidity and an inability to properly re-stock and replenish inventory. Bottom Right Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2022. "US Long-Run Inflation Expectations" refers to University of Michigan 5-10 Year Inflation Expectations. **Past performance does not guarantee future results, which may vary.**

Macro Drivers

Below-trend growth, with a recession in the Euro area and UK

REAL GDP GROWTH

Percent Change YoY	2021	2022 (f)		2023 (f)		Potential
		GS	Cons	GS	Cons	GS
US	5.9	2.0	1.8	1.3	0.4	1.8
Euro Area	5.3	3.3	3.2	-0.1	-0.1	1.1
Japan	1.6	1.2	1.4	1.4	1.3	0.8
UK	7.5	4.4	4.3	-1.2	-1.0	1.4
China	8.1	2.6	3.0	5.2	4.9	4.2
Russia	4.7	-3.3	-3.3	-1.3	-3.0	1.2
Developed Markets	5.3	2.5	2.6	0.8	0.5	-
Emerging Markets	7.1	3.4	3.1	3.6	4.0	-
World	6.1	2.9	3.0	2.0	2.2	2.6

Our views:

- **Globally**, we see decelerating growth, elevated inflation, and higher policy rates
- The **US** has an excess demand issue, with more jobs than workers fueling strong wage growth
- The **Euro area** has an energy supply shock issue, which is pushing up inflation and weighing on growth
- The **UK** economy faces both issues
- Still, **this cycle may be different**: Labor market rebalancing, room for supply chain and shelter inflation normalization, and anchored long-term inflation expectations act as macro buffers

Source: Bloomberg, Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. As of December 19, 2022. "GDP" refers to gross domestic product. "f" refers to forecast. "Cons." refers to consensus expectations. "YoY" refers to year over year. Some forecasts may be shaded to highlight data points. All forecasts refer to Goldman Sachs Global Investment Research. "Our views" refers to Strategic Advisory Solutions, Goldman Sachs Asset Management. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. **Past performance does not guarantee future results, which may vary.**

Capital Market Forecasts

Current macro conditions reflect a broadening opportunity set across asset classes

	Forecast				Upside / Downside to 12m TP (%)
	Current	3m	6m	12m	
Equities					
S&P 500	3,852	3,600	3,900	4,000	3.8
STOXX Europe 600	425	390	410	450	5.9
MSCI Asia-Pacific Ex-Japan	508	510	525	550	8.2
Topix (FY Basis)	1,950	2,000	2,050	2,200	12.8
10Y Rate (%)					
US	3.5	3.6	4.0	4.2	73
Euro area (Germany)	2.2	2.7	2.8	2.8	59
Japan	0.3	0.3	0.3	0.3	0
Currencies					
€/\$	1.06	0.94	0.97	1.05	-1.0
£/\$	1.22	1.07	1.11	1.22	0.3
\$/¥	137	155	155	140	2.5
Commodities					
Brent Crude Oil (\$/bbl)	79.0	90.0	95.0	105.0	32.8
NYMEX Nat. Gas (\$/mmBtu)	6.60	6.20	4.15	4.15	-37.1
London Gold (\$/troy oz)	1,790	1,850	1,950	1,950	9.0
LME Copper (\$/mt)	8,234	9,500	10,000	11,000	33.6



We believe that equities are likely to be **resilient over the long-term**, though **volatility may persist near-term**. Still, demand may moderate from historically high levels as other asset classes compete



We forecast **global rates to level off** reflecting the impacts of past rate hikes, though the path of further adjustment remains data-dependent



Global uncertainty and policy differentials may support a **strong US dollar**, though high valuation and cyclical may be long-term headwinds



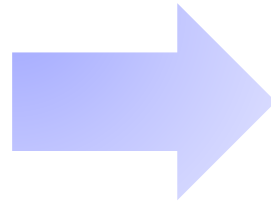
Supply-demand imbalances may partially offset recessionary risks and keep **commodity prices firm**, albeit with wide tails

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of December 19, 2022. "TP" refers to Target Price. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation.

Investing in the Next Cycle

Last Cycle

- Very Strong Growth
- Falling Interest Rates
- Rising Profit Margins
- Low Starting Valuations
- Limited Market Volatility

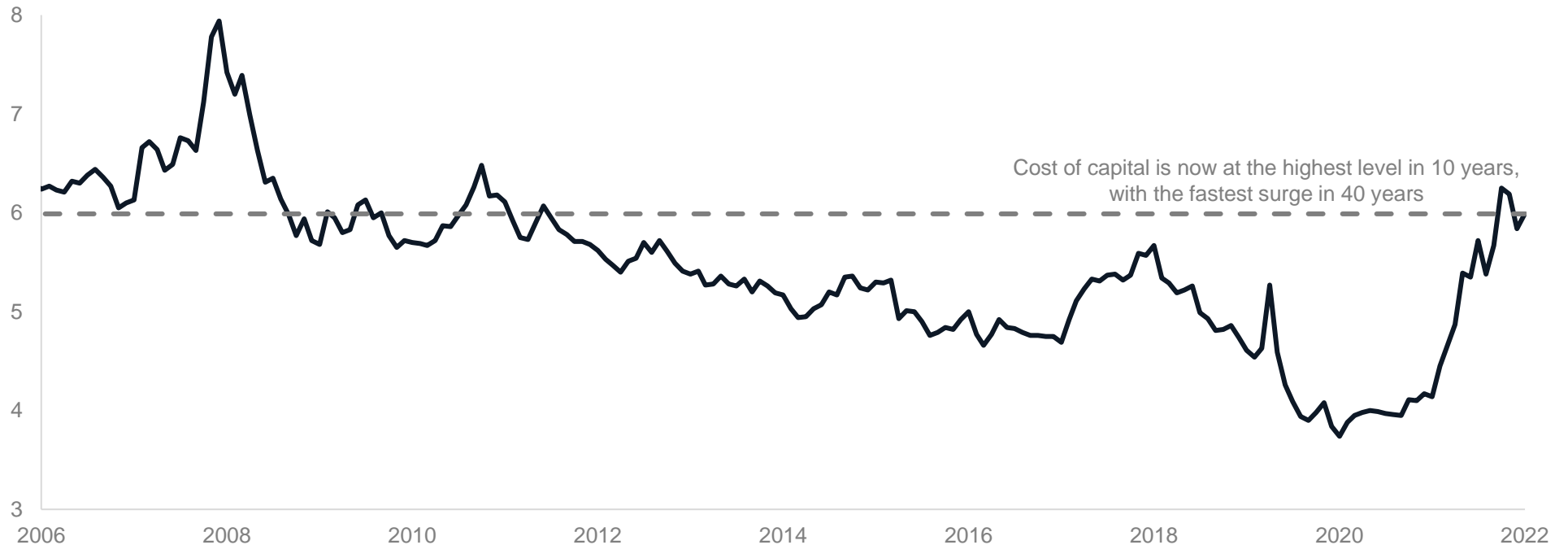


This Cycle

- Decelerating Growth
- Rising Interest Rates
- Stable Profit Margins
- Falling Valuations
- More Episodic Volatility

A NEW REGIME

S&P 500 WACC (%)



Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of December 31, 2022. "WACC" refers to the weighted average cost of capital. **Past performance does not guarantee future results, which may vary.**

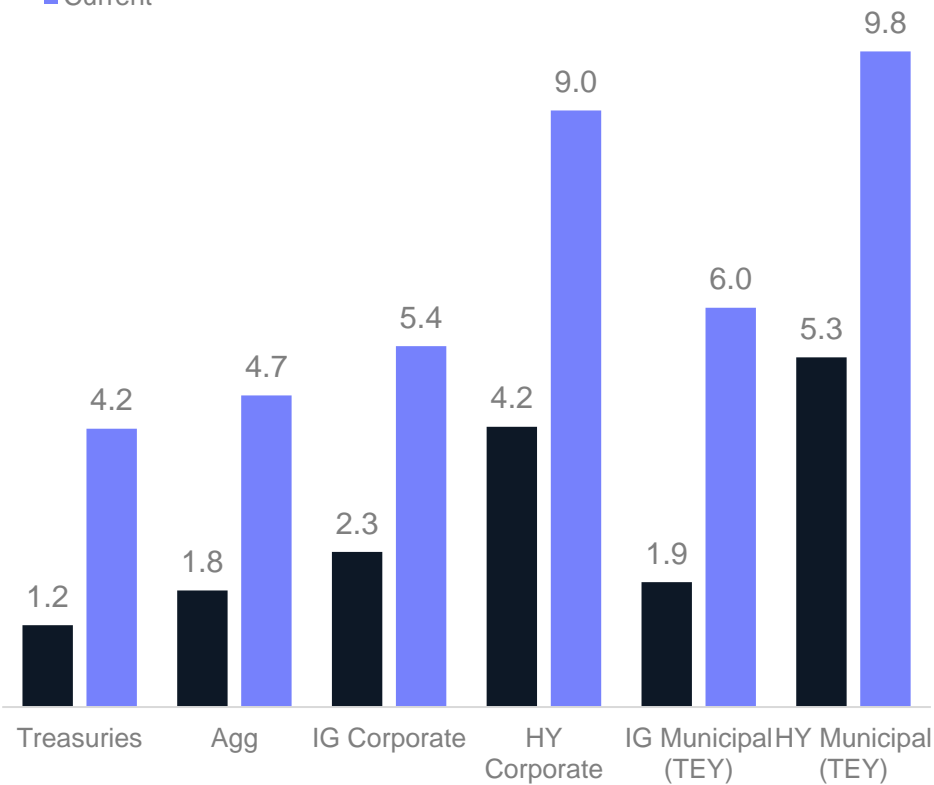
Investing in the Next Cycle

Generating alpha may require more idiosyncratic and global portfolios, given cross-asset competition

CROSS-ASSET COMPETITION

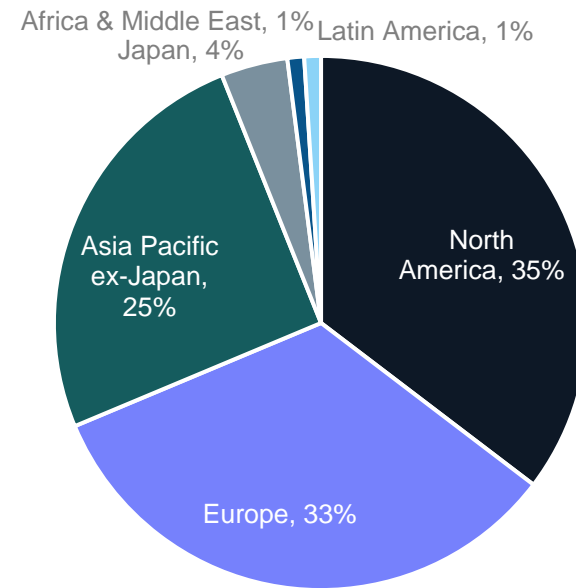
Yield (%)

■ December 2021
■ Current



POTENTIAL WEALTH CREATORS OF THE FUTURE

Companies by Region



Characteristics of Potential Future Wealth Creators

Innovators	Disruptors	Enablers	Adapters
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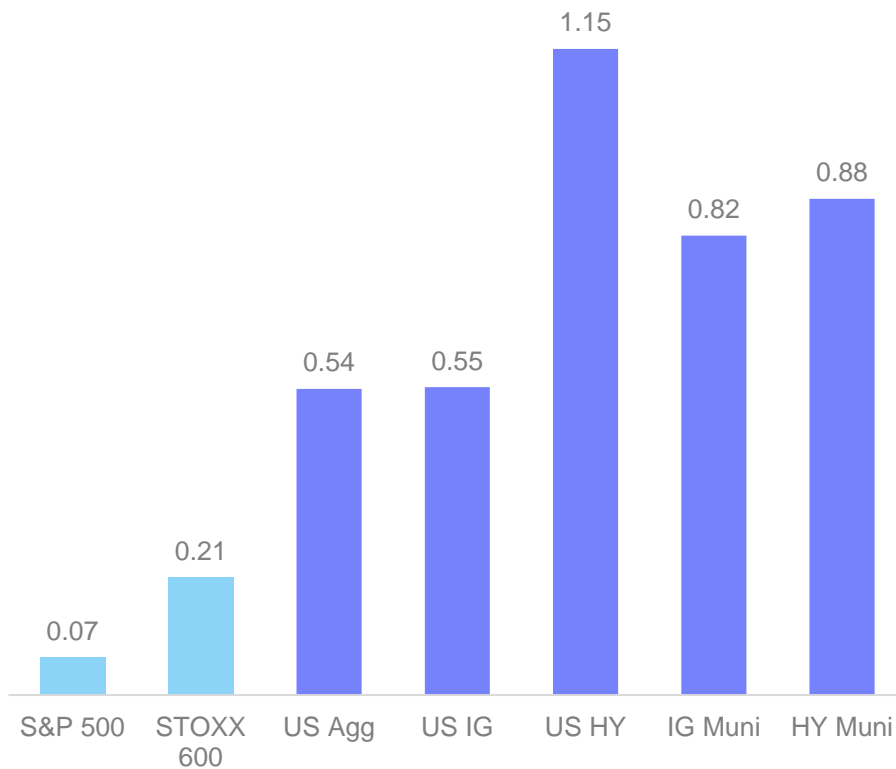
Left Chart Source: Barclays Live and Goldman Sachs Asset Management. As of December 31, 2022. Please see definitions for the abbreviations in the disclosures at the end of this presentation. Right Chart Source: Bloomberg, FactSet, Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. As of October 13, 2021. "Alpha" is the portion of the total return on the portfolio not attributable to the portfolio's exposure to its benchmark or index. **Past performance does not guarantee future results, which may vary.**

Investing in the Next Cycle

More episodic equity market volatility may mean renewed opportunities for income and tax-alpha

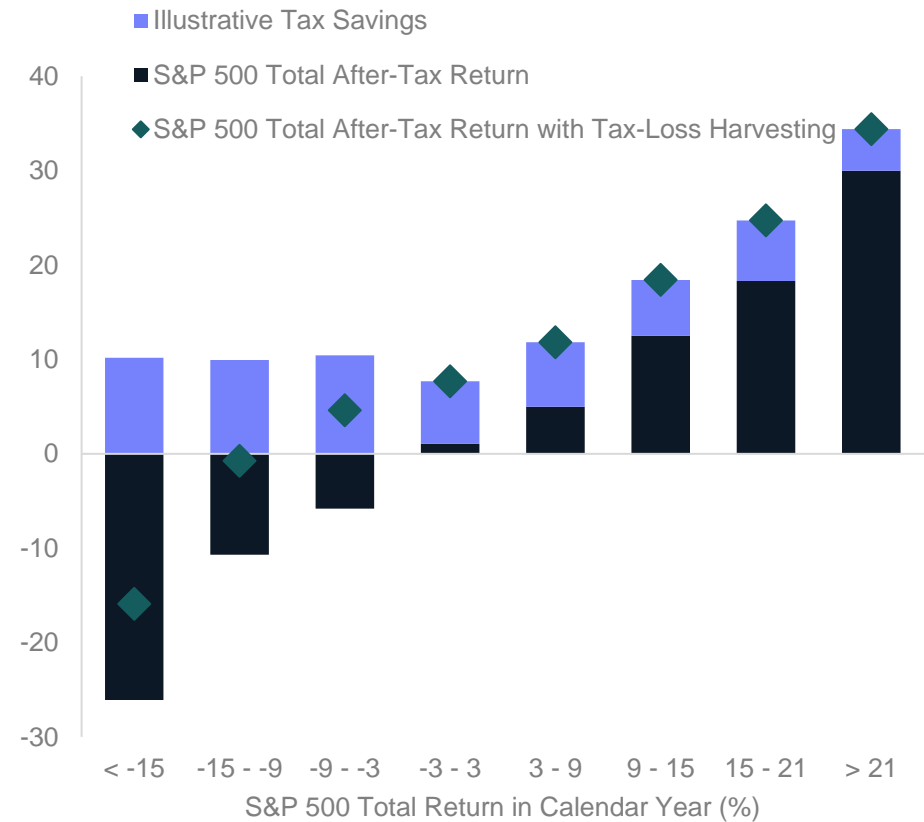
FROM YIELD SCARCITY TO YIELD SURPLUS

Yield / Volatility



CAPITALIZING ON MARKET VOLATILITY

Calendar Year Total Return (Average, %)

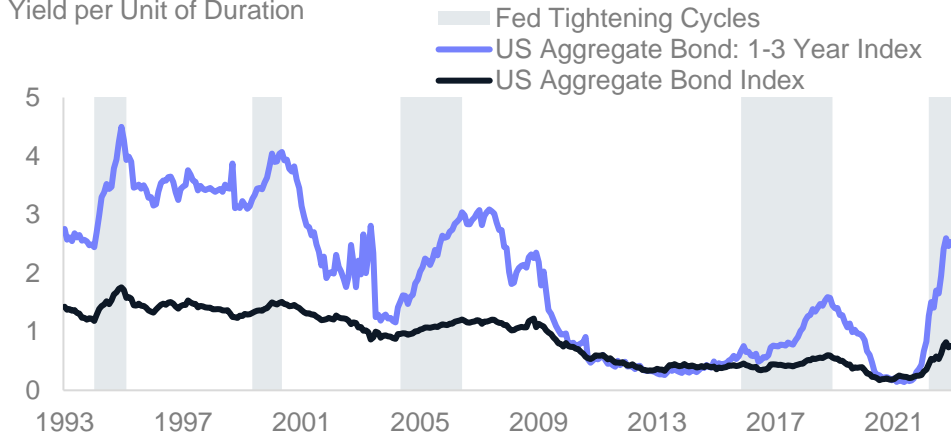


Left Chart Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of December 31, 2022. "Agg" refers to aggregate. "IG" refers to investment grade. "HY" refers to high yield. Right Chart Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2021. Chart shows the bucketed averages of the S&P 500 calendar year after-tax total return, the illustrative tax savings generated by monthly tax-loss harvesting, and the S&P 500 calendar year after-tax total return with monthly tax-loss harvesting. Data are from January 1, 1945 to December 31, 2021. Additional assumptions can be found in the disclosures at the end of this presentation. These examples are for illustrative purposes only and are not actual results. If any assumptions used do not prove to be true, results may vary substantially. Goldman Sachs does not provide accounting, tax, or legal advice. Please see additional disclosures at the end of this presentation. **Past performance does not guarantee future results, which may vary.**

Risks in Context

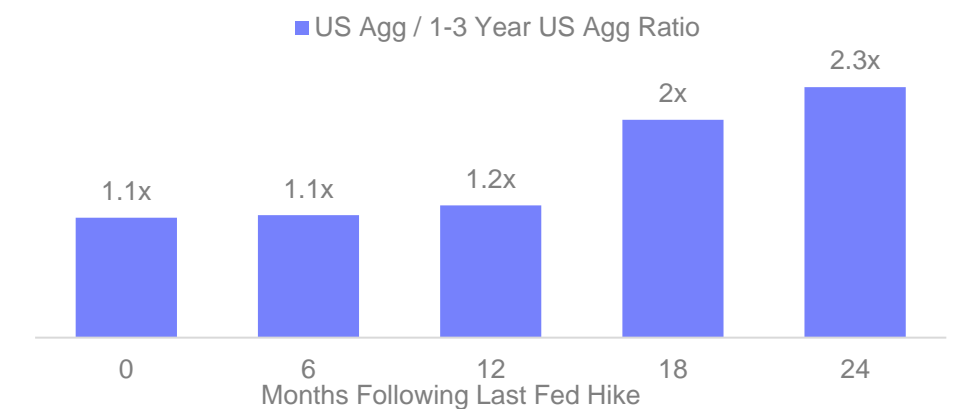
TIGHTENING

Yield per Unit of Duration



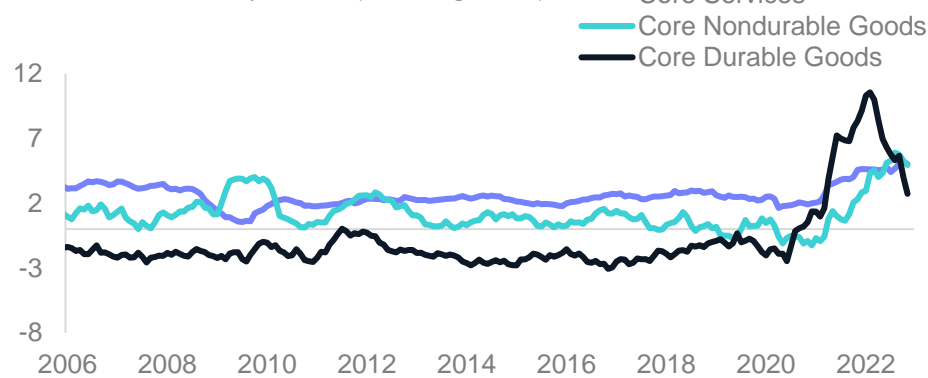
POST-TIGHTENING

Average Relative Yields following Conclusion of Fed Hiking Cycle (Multiple)



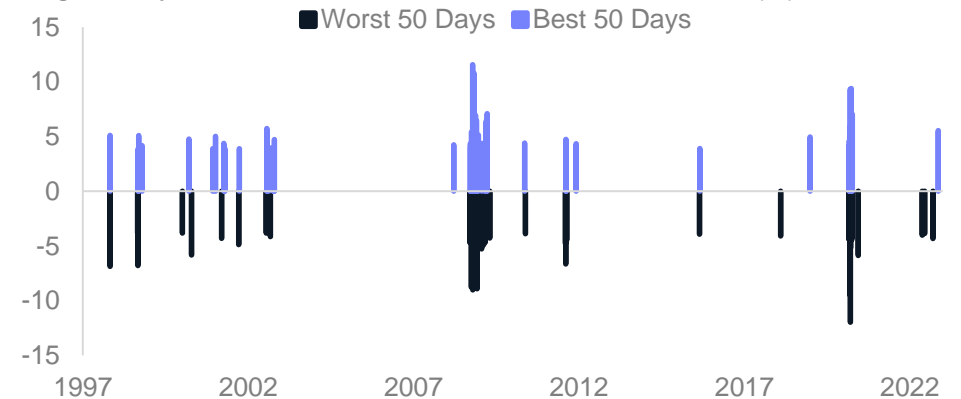
INFLATION

Core PCE Inflation by Sector (% change YoY)



VOLATILITY

Largest Daily Total Returns for the S&P 500 from 1997 – 2022 (%)



Top Left Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2022. "Yield per unit of Duration" represents yield to worst divided by duration. Top Right Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2022. 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. Bottom Left Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of November 30, 2022. Bottom Right Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2022. "Volatility" is a measure for variation of price of a financial instrument over time. **Past performance does not guarantee future results, which may vary.**

Volatility & Liquidity

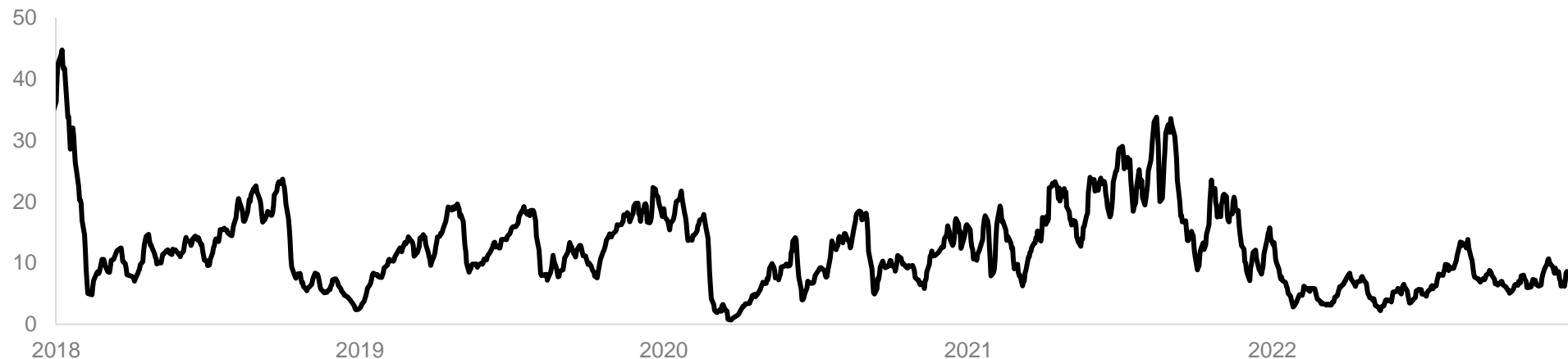
Volatility may be amplified by low liquidity

FREQUENCY

S&P 500 Daily Price Δ (days)	$\pm 1\%$	$\pm 2\%$	$\pm 3\%$	$\pm 4\%$	$\pm 5\%$
Avg	62	18	7	3	2
Bear Market Avg	87	31	13	7	3
2021	55	7	0	0	0
2022	122	46	12	3	1

TOP-OF-BOOK LIQUIDITY

E-Mini S&P 500 Future Top-of-Book Depth (5-day average, \$mn)



Top Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2022. "Bear market" refers to a period when a market experiences prolonged price declines. Bottom Source: Goldman Sachs Global Investment Research. As of December 31, 2022. "Top-of-book liquidity" refers to the liquidity of the highest bid and the lowest ask in an order book. "Volatility" is a measure for variation of price of a financial instrument over time. **Past performance does not guarantee future results, which may vary.**

Market Solutions

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

POTENTIAL SOLUTION SET FOR PREVAILING INVESTOR CONCERNS

		Fixed Income			Equities			Satellites / Alternatives		
		Ultra-Short Duration	Core	Municipal	Value	Buy-Write	Direct Indexing	Real Assets	Private Credit	Absolute Return Strategies
NOW	Sticky Inflation	X			X			X		
	Elevated Rates	X	X	X	X			X	X	X
	Recession Risk	X	X	X	X	X				X
ALWAYS	Market Volatility	X	X	X	X	X	X	X	X	X
	Income Generation	X	X	X	X	X		X	X	
	Tax Efficiency	X		X			X	X		

Source: Goldman Sachs Asset Management. As of December 31, 2022. Goldman Sachs does not provide accounting, tax, or legal advice. Please see additional disclosures at the end of this presentation. A Buy-Write strategy refers to an investment that receives call premium on an underlying equity position to generate income. **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.**

Key Takeaways

We believe:

- Slower economic growth is driven by tighter financial conditions and necessary to tame inflation
- Cross-asset competition may keep equity valuations capped, limiting return potential to earnings growth
- A surge in the cost of capital has created focus on profitability and income
- Generating alpha may require portfolios to be increasingly idiosyncratic, global, and tax-aware

Source: Goldman Sachs Asset Management. As of December 31, 2022. The portfolio risk management process includes an effort to monitor and manage risk, but does not imply low risk. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation.

Glossary

Additional Notes

Page 1 Top Right Chart Notes: "GDP Growth" refers to the annual change in real gross domestic product. "Job-Workers Gap" refers to the difference in labor supply to labor demand as a percent of the civilian noninstitutional population. "Core PCE" refers to personal consumption expenditures, excluding food and energy.

Page 7 Left Chart Notes: Potential Wealth Creators consist of 500 companies selected in a framework developed by Goldman Sachs Global Investment Research to identify companies considered to provide value creation and growth in a post-pandemic market cycle. Four categories exist in the framework: innovators, disruptors, enablers, and adapters. Innovators are broadly defined as companies using new technologies. Disruptors are broadly defined as utilizing technology to disrupt other industries. Enablers are broadly defined as companies facilitating social and economic change. Adapters are broadly defined as companies adapting business models to generate higher returns.

Page 7 Right Chart Notes: "Treasury" refers to the US Treasury component of the Bloomberg US Aggregate Bond Index. "Agg" refers to the Bloomberg US Aggregate Bond Index. "MBS" refers to the Mortgage-Backed Securities component of the Bloomberg US Aggregate Bond Index. "ABS" refers to the Asset-Backed Securities component of the Bloomberg US Aggregate Bond Index. "IG Corporate" refers to the Bloomberg US Corporate Investment Grade Index. "HY Corporate" refers to the Bloomberg US High Yield Corporate Index. "IG Municipal" refers to the Bloomberg Municipal Bond Index. "HY Municipal" refers to the Bloomberg Municipal High Yield Index. "TEY" refers to tax-equivalent yield.

Page 8 Right Chart Notes: 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. "Illustrative tax savings" refers to the hypothetical capital gains saved by realizing monthly losses at the combined long-term capital gains and net investment income tax rate of 23.8%. Index returns are used as a proxy for baskets of similar stocks. Analysis assumes reinvestment that avoids wash sales.

Equities

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 Euro Stoxx 600 Index represents the performance of 600 publicly-traded companies based in one of 18 EU countries.

The FTSE 100 Index is a capitalization-weighted index of the 100 most highly capitalized companies traded on the London Stock Exchange.

The TOPIX Index is a free-float adjusted market capitalization-weighted index that is calculated based on all the domestic common stocks listed on the Tokyo Stock Exchange First Section.

The MSCI Asia Pacific ex-Japan Index captures large and mid cap representation across 4 of 5 Developed Markets countries (excluding Japan) and 9 Emerging Markets countries in the Asia Pacific region.

Fixed Income

The 10-Year Treasury is a US Treasury debt obligation that has a maturity of 10 years.

The Bloomberg U.S. Aggregate Bond Index measures the performance of investment grade, U.S. dollar denominated, fixed rate taxable bond market, including Treasuries, government related and corporate securities, MBS (agency fixed rate and hybrid ARM pass throughs), ABS, and CMBS.

The Bloomberg U.S. Aggregate 1-3 Year Index measures the performance of investment grade, USD denominated, fixed rate taxable bond market securities with maturities of 1-3 years, including Treasuries, government related and corporate securities, mortgage backed securities (MBS; agency fixed rate and hybrid ARM pass throughs), asset backed securities, and commercial MBS.

Risk Considerations and General Disclosures

Risk Considerations

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.

Investments in foreign securities entail special risks such as currency, political, economic, and market risks. These risks are heightened in emerging markets.

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.

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).

Investments in commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity.

The currency market affords investors a substantial degree of leverage. This leverage presents the potential for substantial profits but also entails a high degree of risk including the risk that losses may be similarly substantial. Such transactions are considered suitable only for investors who are experienced in transactions of that kind. Currency fluctuations will also affect the value of an investment.

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.

The above are not an exhaustive list of potential risks. There may be additional risks that are not currently foreseen or considered.

General Disclosures

Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or its securities. It should not be assumed that investment decisions made in the future will be profitable or will equal the performance of the securities discussed in this document.

The portfolio risk management process includes an effort to monitor and manage risk, but does not imply low risk.

Index Benchmarks

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

The indices referenced herein have been selected because they are well known, easily recognized by investors, and reflect those indices that the Investment Manager believes, in part based on industry practice, provide a suitable benchmark against which to evaluate the investment or broader market described herein.

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