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# Market Perspectives

## Are We There Yet?

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**MARKET STRATEGY | STRATEGIC ADVISORY SOLUTIONS**

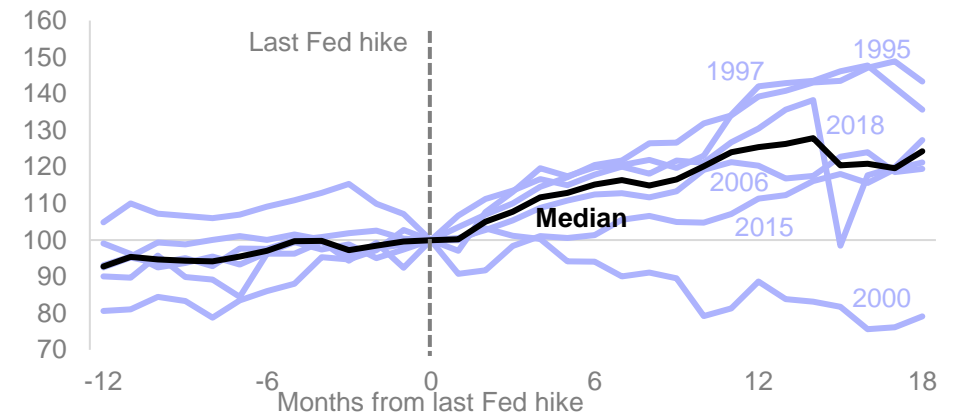
NOVEMBER 2022

# Executive Summary

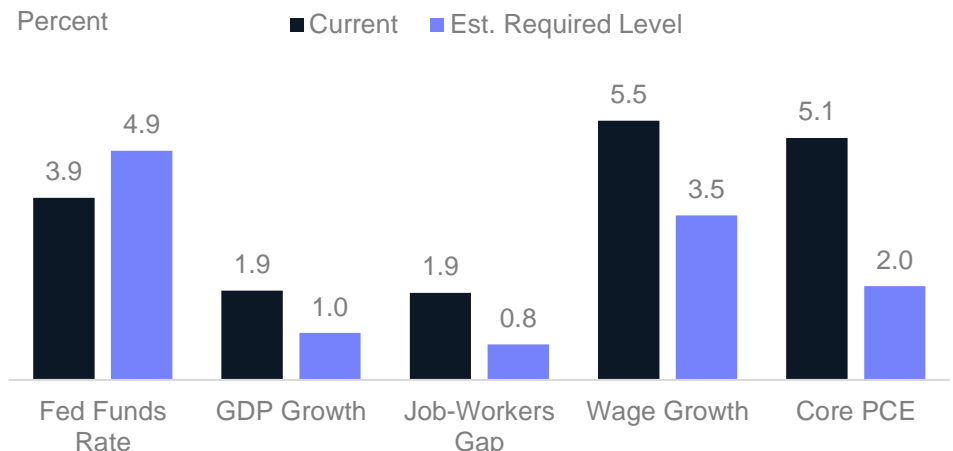
## Are We There Yet?

- **US Growth:** We believe that the US economy will continue to grow at a below-trend pace, which is likely necessary to alleviate price pressures. Still, strong starting private sector balance sheets can offset some degree of fiscal and monetary policy tightening. We forecast growth of 1.9% in 2022 relative to potential of 1.8%.
- **Inflation:** The inflation overshoot has been startling, though supply chains have modestly improved. More persistent shelter, wage, and commodity impulses may nudge trend inflation higher, with CPI and Core PCE ending 2022 at 6.6% and 4.6%, respectively.
- **Monetary Policy:** The Federal Reserve (Fed) continues to prioritize taming inflation. As such, we believe they will hike through March 2023, potentially reaching a terminal rate of (4.75%-5.00%). We think that markets are likely to see a potential pause in hikes, with past instances of Fed-induced market corrections being cured by a stoppage of tightening, if not easing.
- **Risks:** The risks of recession have increased as policy impacts take effect. Additionally, prolonged inflation, higher interest rates, and an array of unknowns exist. Still, strategic discipline trumps tactical uncertainty.
- **Bottom Line:** Volatility may persist as inflation holds and recession risks grow, meaning the path forward may not be linear. That said, we still believe the fundamental backdrop remains supported by 1) positive GDP growth and steadying interest rate levels; 2) earnings growth; 3) limited structural damage; 4) receding inflation; and 5) well-telegraphed monetary normalization.

INDEXED S&P 500 RETURNS AROUND THE END OF FED HIKING CYCLE



THE FED'S PLAYBOOK TO TAMING INFLATION



Top Right Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. Includes all Federal Reserve hiking cycles since 1995. "Hike" refers to an increase in the Federal Funds Target Rate. Bottom Right Source: Goldman Sachs Global Investment Research (GIR), Goldman Sachs Global Markets Division, and Goldman Sachs Asset Management. As of October 31, 2022. "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. All forecasts refer to Goldman Sachs Global Investment Research. 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

**4.88%**

Forecasted Fed terminal rate, reached by March 2023

## INFLATION

**4.6%**

Forecasted YE 2022 Core PCE, accelerating monetary tightening

## LIQUIDITY

**\$8.0mn**

Five-day average S&P 500 Futures Top-of-Book Depth, well below average

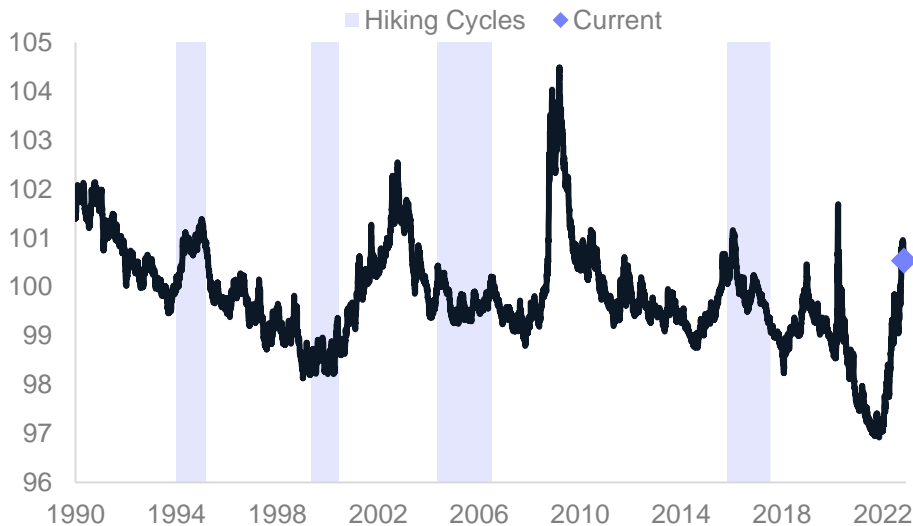
## HOUSING

**-28%**

Change in housing affordability, year-over-year

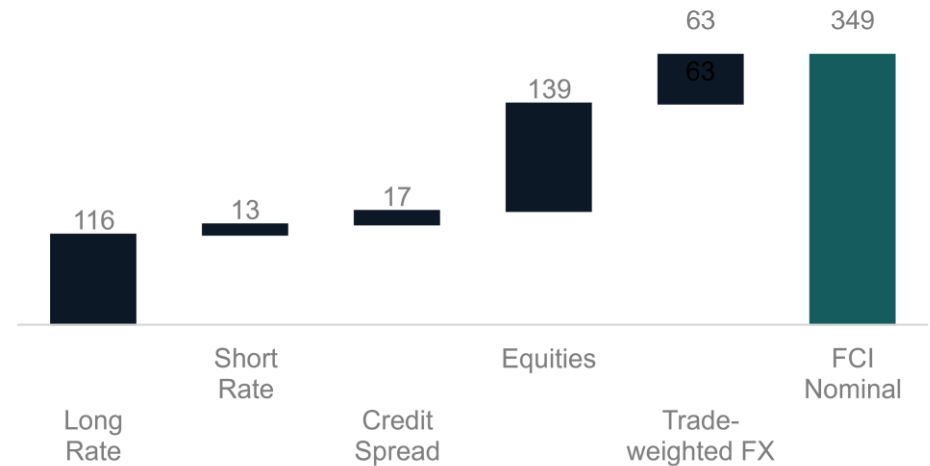
## US FINANCIAL CONDITIONS INDEX

US Financial Conditions Index



## TIGHTENING ACROSS COMPONENTS

US Financial Conditions Index Movement YTD (bps)



Source: Goldman Sachs Global Investment Research, Bloomberg, National Association of Realtors, and Goldman Sachs Asset Management. All as of October 31, 2022. "Top-of-book liquidity" refers to the liquidity of the highest bid and the lowest ask in an order book. 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

**65%**

Loan-to-deposit ratio,  
below pre-pandemic levels

## CORPORATES

**3%**

Of US high yield debt  
maturing in 2022 or 2023

## EARNINGS

**71%**

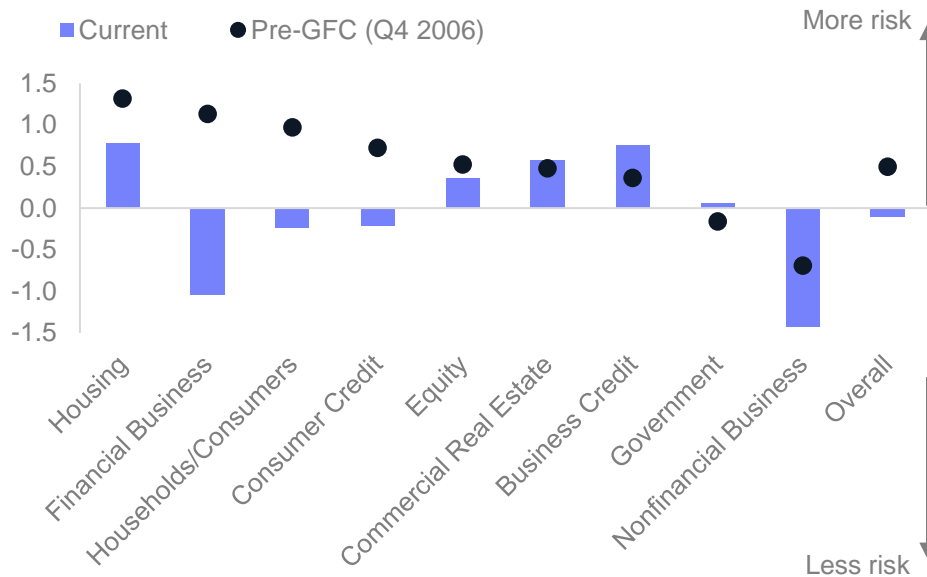
Share of S&P 500  
revenues from within US,  
insulating from strong USD

## HOUSING

**5%**

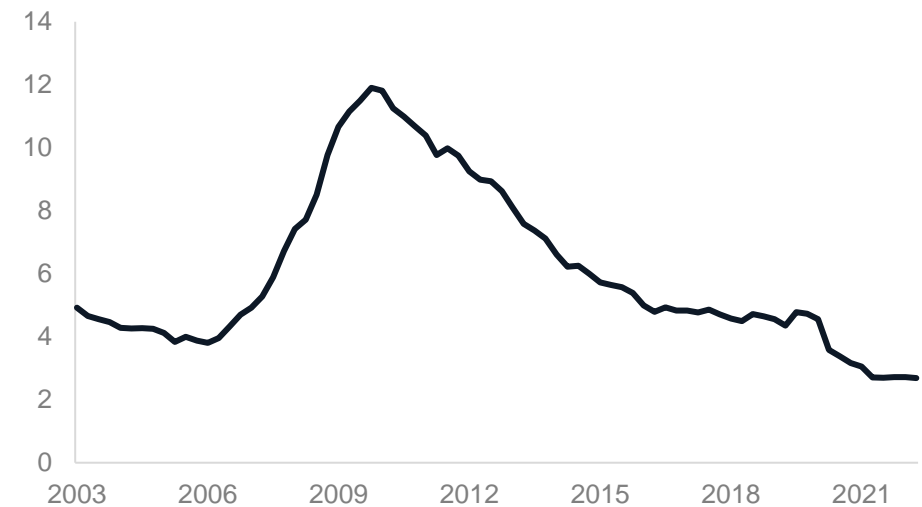
Of households have an  
adjustable-rate mortgage,  
compared to 25% in 2006

## FINANCIAL EXCESS (Z-SCORE)



## DELINQUENCY RATES

Total Share of Loan Balance Delinquency by 30+ Days (%)



Top Source: S&P Global Market Intelligence, Goldman Sachs Global Investment Research, New York Federal Reserve, and Goldman Sachs Asset Management. All as of October 31, 2022 or latest available. "Loan-to-deposit ratio" refers to the ratio of loans extended to net deposits held at US national banks. Bottom Left Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of December 31, 2021. "GFC" refers to the global financial crisis. "Z-score" refers to a standardized number of standard deviations by which the value of a raw score is above or below the average. Bottom Right Source: Federal Reserve Economic Data and Goldman Sachs Asset Management. As of June 30, 2022. **Past performance does not guarantee future results, which may vary.**

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# Macro

- **Growth:** We expect below-trend growth, which would be welcome to ease demand and inflationary pressures
- **Inflation:** Inflation has broadened in its persistence, further accelerating policy tightening
- **Monetary Policy:** While data-dependent, the pace of US monetary policy tightening may have peaked
- **Geopolitics:** Geopolitical risks tend to recede over time, but the current level of uncertainty is elevated
- **Recession:** Market signals may imply rising recession risk, but we think any recession would be mild in nature

Source: Goldman Sachs Asset Management. As of October 31, 2022. 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.**

# Growth

Below-trend growth, with a moderate 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	1.9	1.7	1.0	0.4	1.8
Euro Area	5.3	3.1	3.0	-0.5	-0.1	1.0
Japan	1.7	1.6	1.6	1.6	1.4	1.1
UK	7.5	4.1	4.1	-1.0	-0.4	1.4
China	8.1	3.2	3.3	4.5	5.0	5.0
India	8.3	7.0	8.7	6.4	7.0	6.0
Brazil	4.6	2.9	2.7	0.9	0.8	1.9
Russia	4.7	-4.0	-5.0	-2.6	-3.0	2.1
<b>Developed Markets</b>	<b>5.3</b>	<b>2.5</b>	<b>2.5</b>	<b>0.6</b>	<b>0.6</b>	-
<b>Emerging Markets</b>	<b>7.0</b>	<b>3.8</b>	<b>3.0</b>	<b>3.7</b>	<b>4.2</b>	-
<b>World</b>	<b>6.3</b>	<b>3.3</b>	<b>2.9</b>	<b>2.4</b>	<b>2.3</b>	<b>3.1</b>

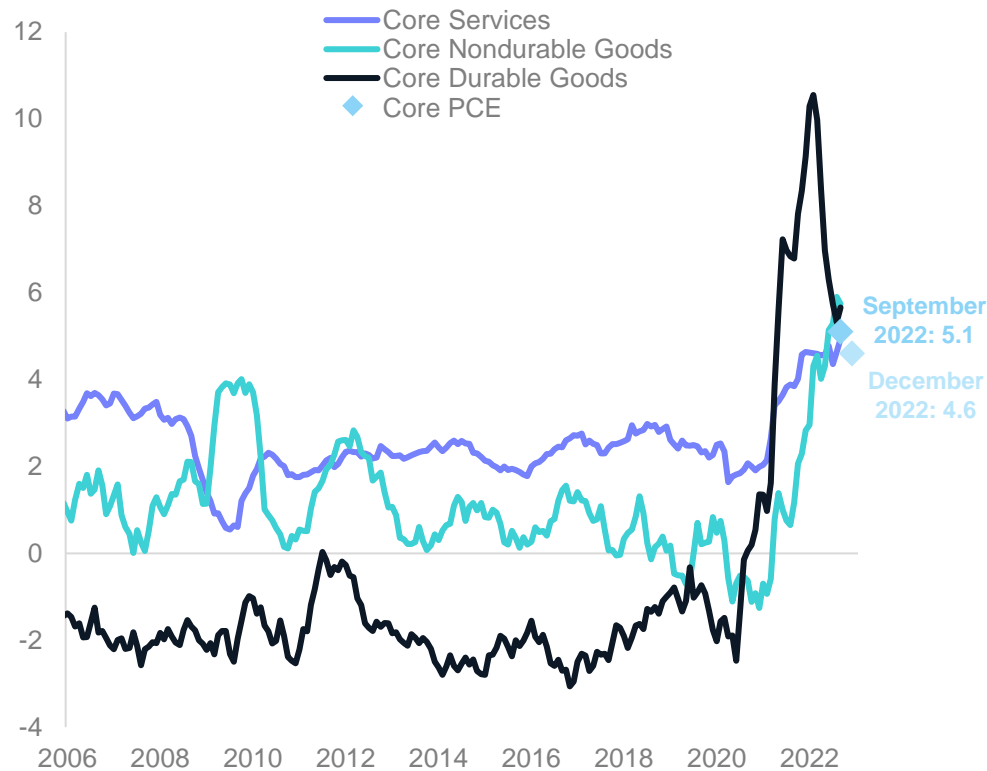
Source: Bloomberg, Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. As of October 31, 2022. "GDP" refers to gross domestic product. "f" refers to forecast. "Cons." refers to consensus expectations. "YoY" refers to year over year. All forecasts refer to Goldman Sachs Global Investment Research. 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.**

# Inflation

Supply chain issues may resolve themselves given time, but shelter, wages, and climate transition may lift the inflation baseline

## DEMAND MAY DRIVE SUSTAINED INFLATION

Core PCE Inflation by Sector (% change YoY)



## BUT SUPPLY DISRUPTIONS MAY HAVE PEAKED

GS Weekly Congestion Index

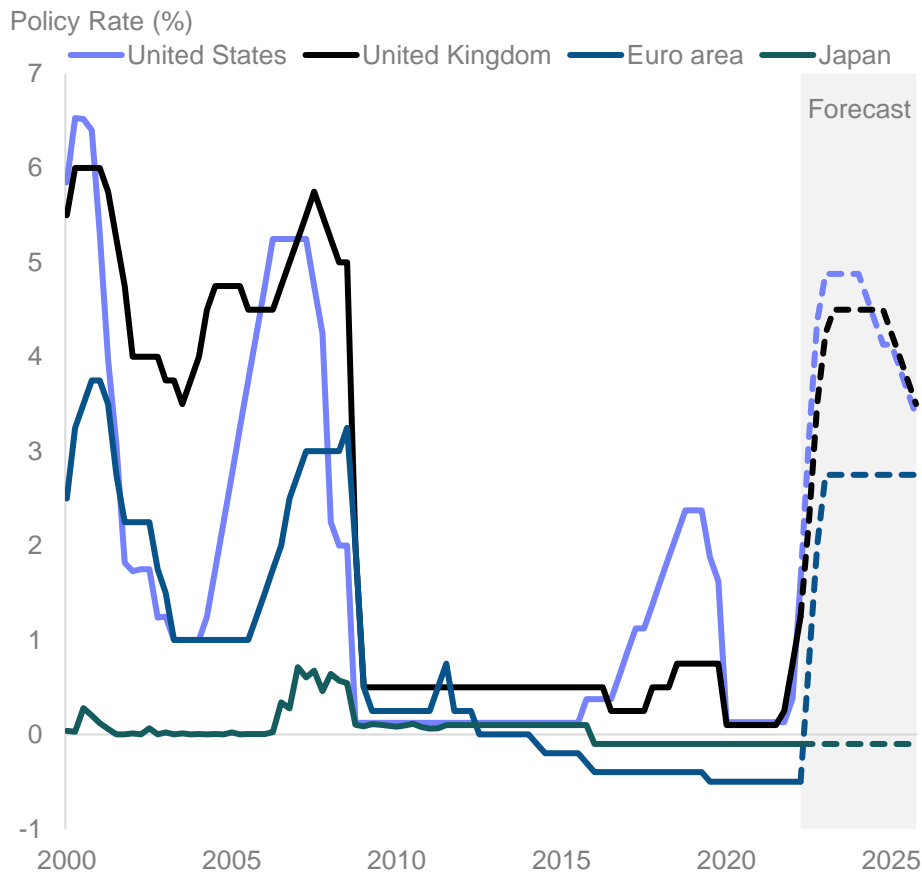


Left Chart Source: US Census, FRED, NBER, Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. As of September 30, 2022. Right Chart Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. Index reflects data on ships at anchor, 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. **Past performance does not guarantee future results, which may vary.**

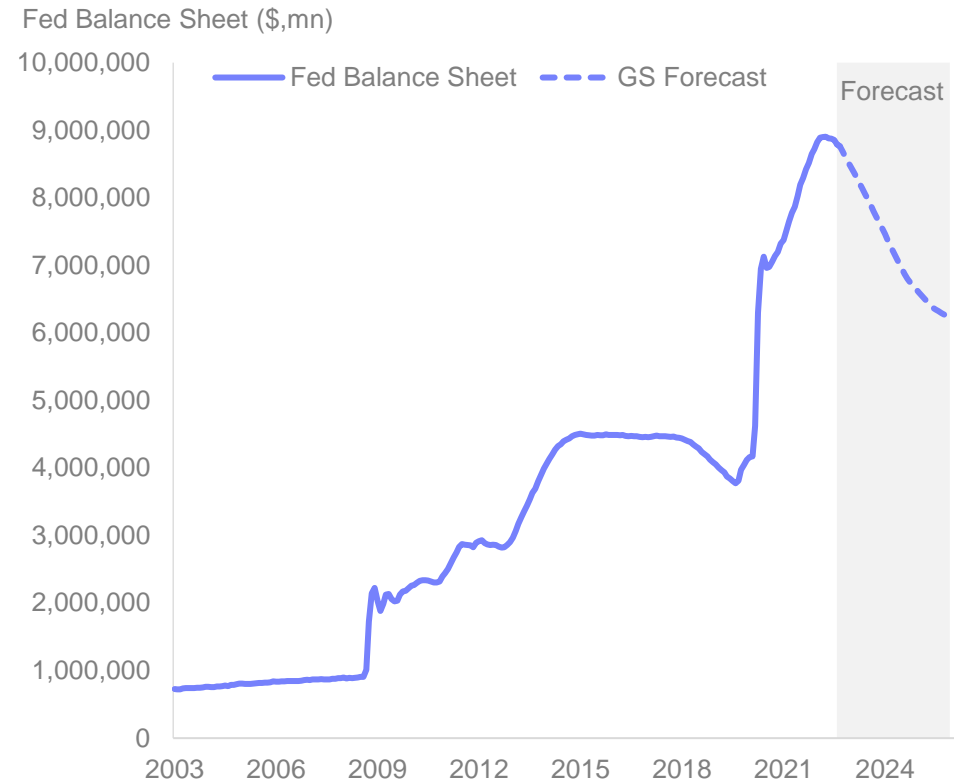
# Monetary Normalization

Well-telegraphed monetary policy normalization including steady rate hikes and balance sheet runoff

## POTENTIAL POLICY RATE PATH



## FED BALANCE SHEET RUNOFF IN CONTEXT



Left Section Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. Chart shows each central bank's historical policy rate and respective GIR forecast for the future. The forecast period is October 2022 through December 2025. Right Section Source: Federal Reserve Economic Data, Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. As of September 30, 2022. "Balance sheet runoff" refers to reduction in the size of the Federal Reserve's balance sheet. 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.**

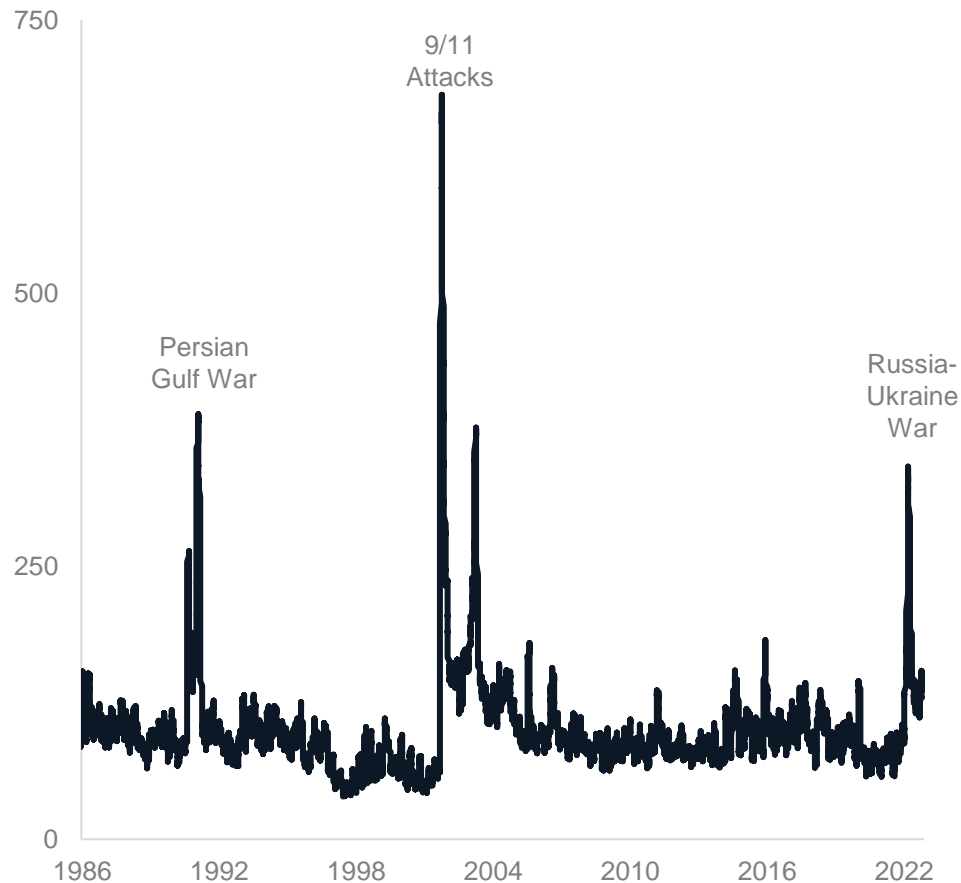


# Geopolitics

## Geopolitical tensions may continue driving market volatility

### GEOPOLITICAL RISKS ARE ELEVATED

Geopolitical Risk Index



Left Chart Source: Dario Caldara and Matteo Iacoviello and Goldman Sachs Asset Management. As of October 31, 2022. "Volatility" is a measure for variation of price of a financial instrument over time. Left Notes: Data downloaded from <https://www.matteoiacoviello.com/gpr.htm> on October 31, 2022. The index is a thirty-day moving average of the daily Geopolitical Risk index, based on 100 for the average index value from 1985-2019. Right Chart Source: Bloomberg, and Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. As of October 31, 2022. 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. **Past performance does not guarantee future results, which may vary.**

### BUT MARKETS HAVE HISTORICALLY RECOVERED

Price Return by Geopolitical Events (%)

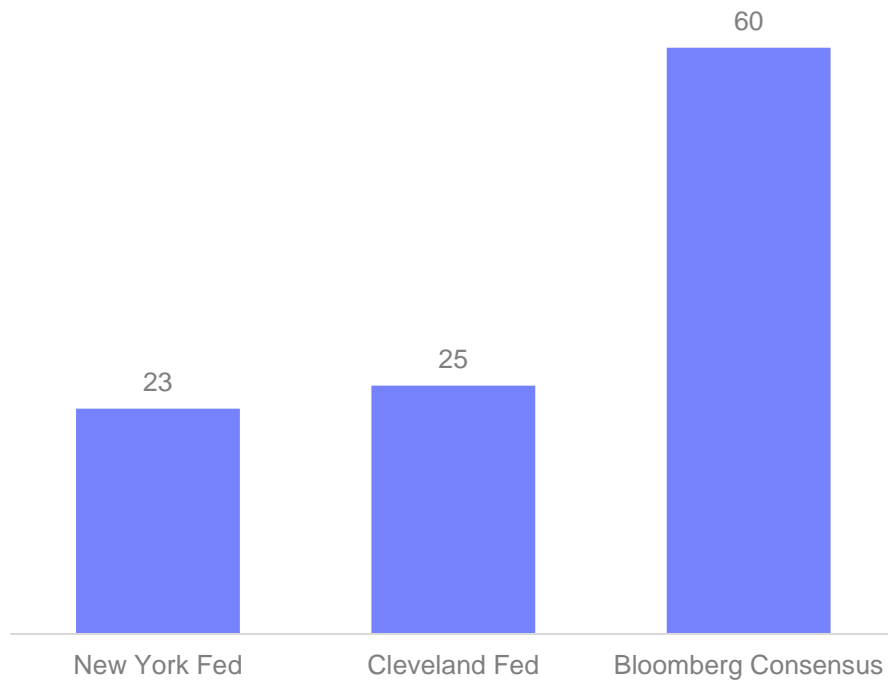
Start	End	Event	S&P 500		Stoxx Euro 600		MSCI EM	
			During	3m After	During	3m After	During	3m After
Aug '90	Feb '91	The Gulf War	4.4	6.2	(7.5)	6.8	(10.5)	11.9
Sep '01	Sep '01	September 2001	(4.7)	10.3	(4.5)	12.2	(12.6)	26.3
Mar '03	May '03	US Invasion of Iraq	4.6	7.0	4.2	7.5	5.1	19.6
Dec '10	Jan '11	Tunisian Revolution	4.0	2.0	2.7	(2.1)	4.0	1.9
Jul '11	Sep '11	European Debt Crisis Peaks	(16.5)	12.0	(22.1)	12.6	(24.6)	5.3
Feb '14	Mar '14	Annexation of Crimea	0.7	5.6	(1.2)	3.3	1.9	8.1
Jun '16	Jul '16	Brexit Referendum	(0.6)	2.9	(8.0)	7.5	(1.9)	11.9
Aug '21	Aug '21	Taliban Takeover of Kabul	1.4	0.8	(0.7)	(2.1)	0.4	(5.7)
Median			1.0	5.9	(2.8)	7.1	(0.8)	10.0

# US Recession Risk

Potential recession depth and duration may be partially offset by a strong private sector

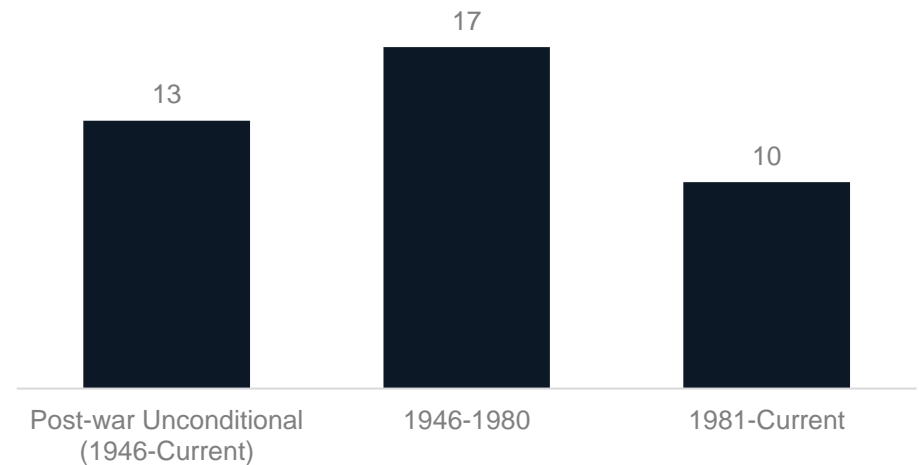
## RECESSION RISK HAS RISEN

Recession Probability in Next Year (%)



## RECESSIONS HAVE BECOME LESS LIKELY

Percent of Time the US is in Recession (%)



Left Chart Source: New York Fed, Cleveland Fed, Bloomberg, and Goldman Sachs Asset Management. New York Fed as of September 30, 2022. Cleveland Fed as of September 30, 2022. Bloomberg Consensus as of October 31, 2022. Right Chart Source: National Bureau of Economic Research and Goldman Sachs Asset Management. As of October 31, 2022. 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. **Past performance does not guarantee future results, which may vary.**

# US Recessionary Drivers

The current environment lacks the usual financial or structural imbalances present for recessions

## KEY CONTRIBUTORS TO PAST US RECESSIONS

Recession	Fiscal	Industrial	Oil	Monetary	Financial	Medical
Aug 1918						
Jan 1920						
May 1923						
Oct 1926						
Aug 1929						
May 1937						
Feb 1945						
Nov 1948						
Jul 1953						
Aug 1957						
Apr 1960						
Dec 1969						
Nov 1973						
Jan 1980						
Jul 1981						
Jul 1990						
Mar 2001						
Dec 2007						
Mar 2020						

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. For illustrative purposes only. Blue shading refers to key contributors to past recessions. **Past performance does not guarantee future results, which may vary.**

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# Capital Markets

- **Equities:** Equities are likely to outperform strategically, while volatility may persist near-term
- **Rates:** Rising rates pose a risk but are offset by carry at the front end and hedging benefits at the back end
- **Credit:** Moderate spread widening is likely, making carry the source of returns going forward
- **FX:** Flows, demand for safe-haven assets, and policy normalization may drive currency movements
- **Commodities:** Micro imbalances may balance with demand concerns as growth slows

Source: Goldman Sachs Asset Management. As of October 31, 2022. 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. "Volatility" is a measure for variation of price of a financial instrument over time. **Past performance does not guarantee future results, which may vary.**

# Asset Class Views

We believe the macro backdrop has broadened the opportunity set

## EQUITIES:

Headwinds: Tighter financial conditions, fading T.I.N.A. momentum  
Tailwinds: Recent market selloff, resilient earnings

## RATES:

Headwinds: Policy uncertainty, continued market volatility  
Tailwinds: Improving yield to duration, hedging ability

## MUNIS:

Headwinds: Declining flows, spillover from rates market  
Tailwinds: Strong credit quality, discounted valuations

## CREDIT:



Headwinds: Slowing growth, tight starting spreads  
Tailwinds: Limited default risk, improving carry

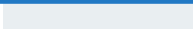


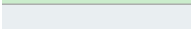

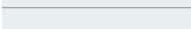
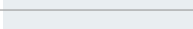
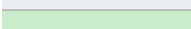


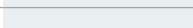
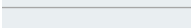
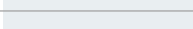
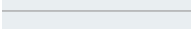
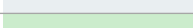
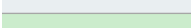




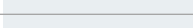
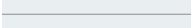

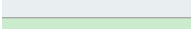
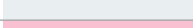



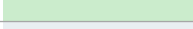
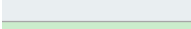
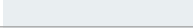

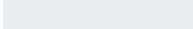
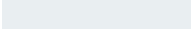


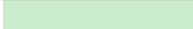

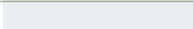
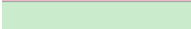

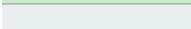
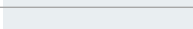
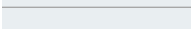
## COMMODITIES:

Headwinds: Rising rates, demand risk as growth slows  
Tailwinds: Structural deficits driven by underinvestment

## FX:

Headwinds: Dollar counter-cyclicality, structural weakness  
Tailwinds: Monetary policy tightening, geopolitical hedge

Less Favorable    More Favorable

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

Source: Goldman Sachs Asset Management. As of October 31, 2022. For illustrative purposes only. "Headwinds" refer to conditions less favorable for an asset class. "Tailwinds" refer to conditions more favorable for an asset class. "T.I.N.A." refers to "there is no alternative." 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.

# Capital Market Forecasts

Equity market price searching may suggest positioning has shifted from T.I.N.A to T.A.R.A. sentiment

	Forecast				Upside / Downside to 12m TP (%)
	Current	3m	6m	12m	
<b>Equities</b>					
S&P 500	3,901	3,600	3,600	4,000	2.5
STOXX Europe 600	411	360	380	410	-0.2
MSCI Asia-Pacific Ex-Japan	433	460	480	515	19.1
Topix (FY Basis)	1,899	1,900	2,020	2,100	10.6
<b>10Y Rate (%)</b>					(bp)
US	4.0	3.8	4.0	4.0	3
Euro area (Germany)	2.1	2.5	2.7	2.7	63
Japan	0.2	0.2	0.2	0.5	23
<b>Currencies</b>					
€/\$	0.99	0.97	0.97	1.05	5.7
£/\$	1.16	1.10	1.11	1.22	5.5
\$/¥	148	150	135	125	-15.4
<b>Commodities</b>					
Brent Crude Oil (\$/bbl)	95.8	115.0	105.0	110.0	14.9
NYMEX Nat. Gas (\$/mmBtu )	5.7	7.95	4.15	4.15	-27.0
London Gold (\$/troy oz)	1,641	1,850	1,950	1,950	18.8
LME Copper (\$/mt)	7,619	6,700	7,600	9,000	18.1

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. "T.I.N.A." refers to "there is no alternative." "T.A.R.A." refers to "there are reasonable alternatives." 12m TP" refers to twelve-month 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.

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# Equities

- **Forecasts:** Macro conditions can still support equities, though tighter financial conditions may drive volatility
- **Valuations:** Elevated valuations can still mean positive future returns, even if driven by earnings growth
- **Factors:** Large factor trades may be less bifurcated going forward relative to the past
- **Post-Pandemic Investing:** Alpha may be found in more idiosyncratic companies and themes in the new cycle

Source: Goldman Sachs Asset Management. As of October 31, 2022. "Alpha" is the portion of the total return on the portfolio not attributable to the portfolio's exposure to its benchmark or index. "Volatility" is a measure for variation of price of a financial instrument over time. 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.**

# Price and Earnings Targets

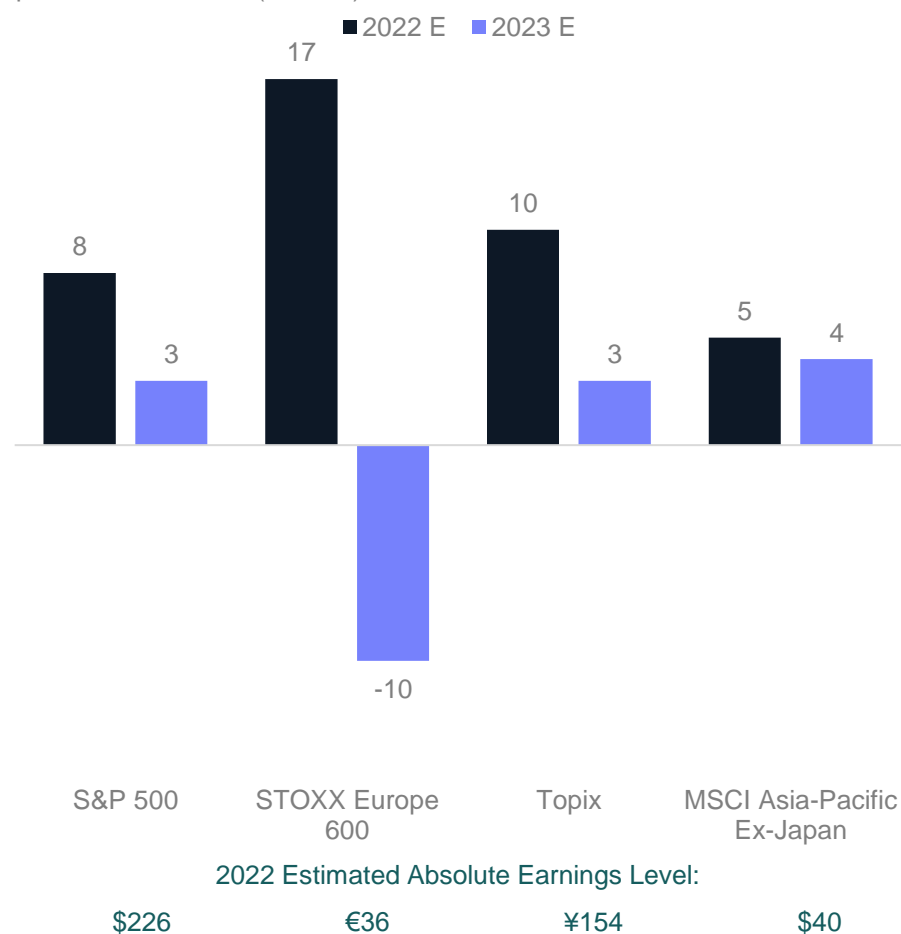
We estimate broad-based earnings growth to moderate but remain supportive longer-term

## GLOBAL EQUITY MARKET FORECASTS

	Forecast				Upside / Downside to 12m TP (%)
	Current	3m	6m	12m	
S&P 500	3,901	3,600	3,600	4,000	2.5
STOXX Europe 600	411	360	380	410	-0.2
MSCI Asia-Pacific Ex-Japan	433	460	480	515	19.1
Topix (FY Basis)	1,899	1,900	2,020	2,100	10.6

## WITH RETURNS DRIVEN BY EARNINGS

Expected EPS Growth (% YoY)



Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. "FY" refers to Fiscal Year. "EPS" refers to earnings per share. 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.

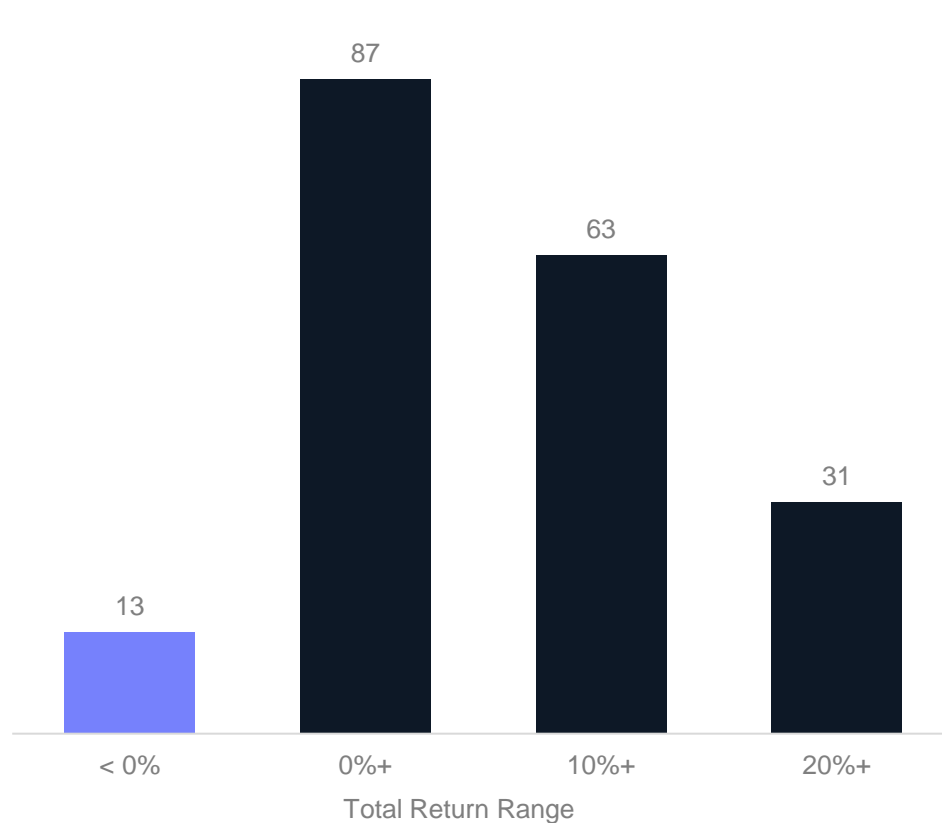


# Expansions

Our expectation for moderate returns is reinforced by the historical high probability of positive returns during increasingly lengthy expansions

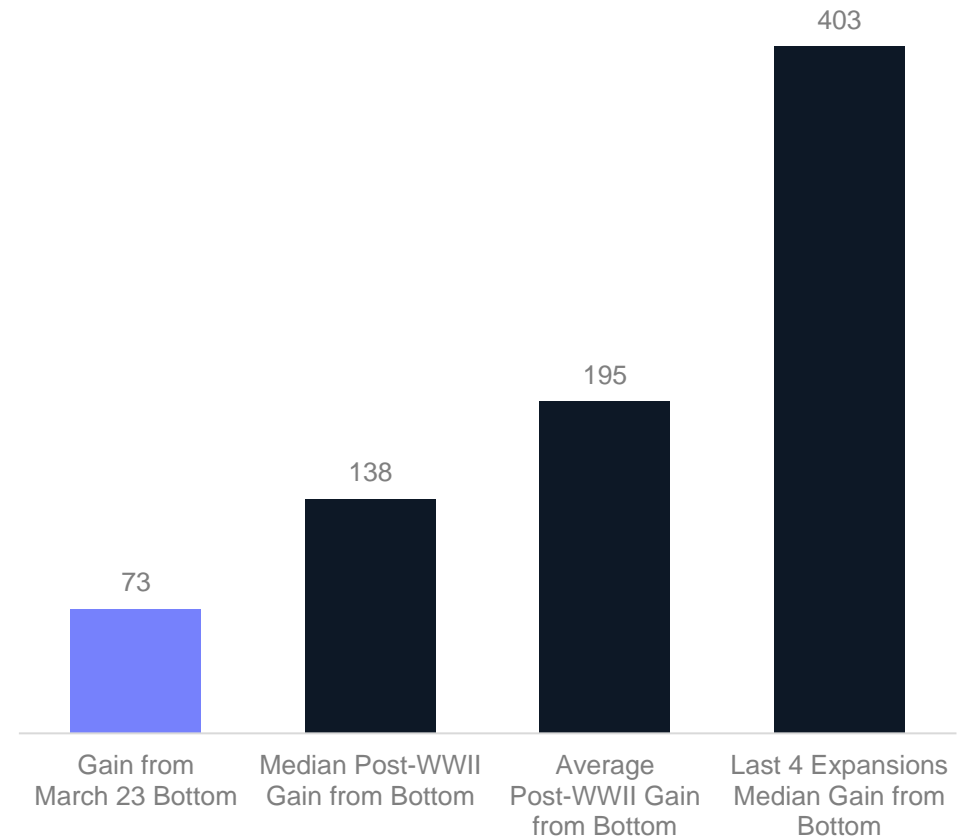
## EQUITY RETURNS DURING ECONOMIC EXPANSIONS

Probability of S&P 500 Index 1-Year Total Return During US Economic Expansion (%)



## TROUGH-TO-RECESSION EQUITY RETURNS

S&P 500 Index Total Return from Trough to Next Recession (%)

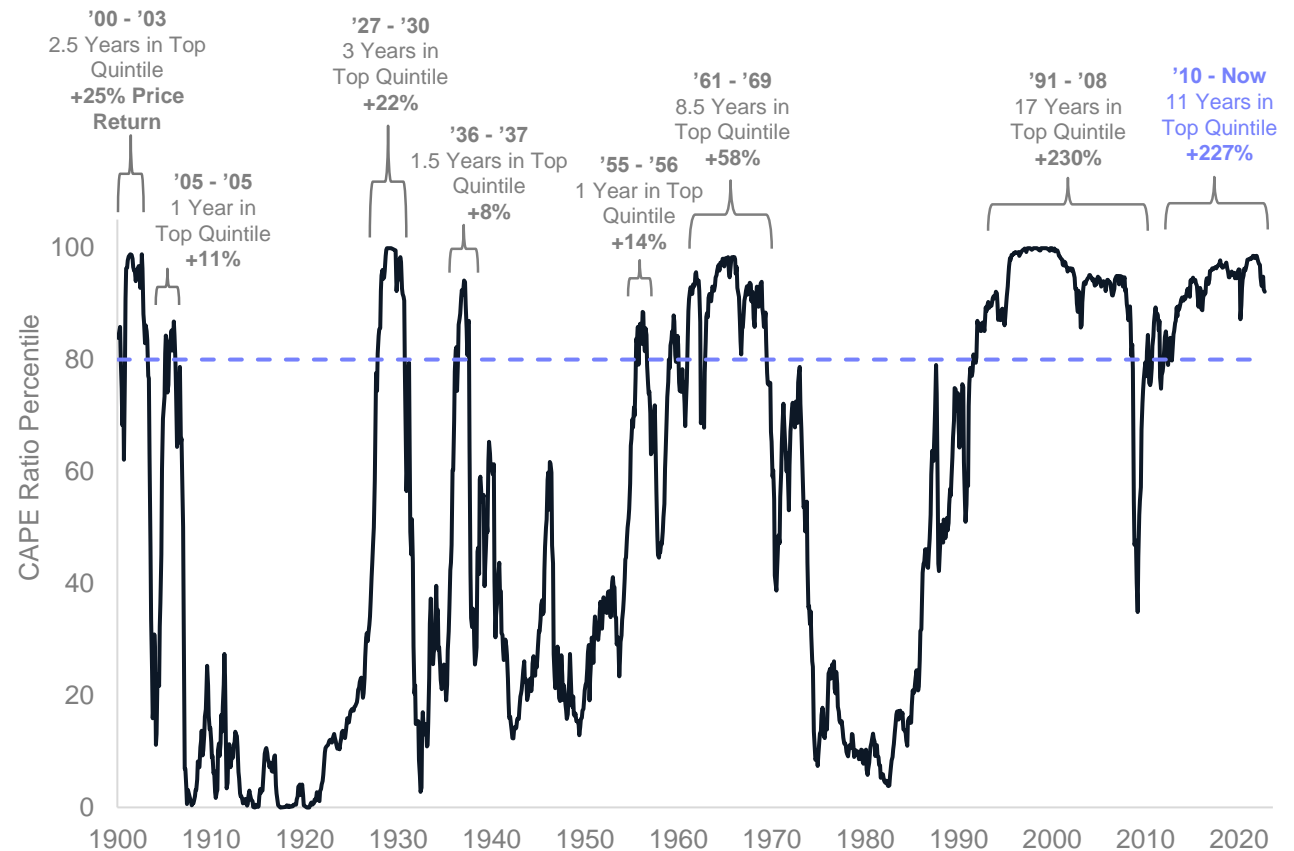


Source: Bloomberg, NBER, and Goldman Sachs Asset Management. As of October 31, 2022. Data from 1945 to 2022. Recession start date is defined as the first date of the National Bureau of Economic Research business cycle peak month. "Trough" refers to the market bottom during a market cycle.

# Valuations

High valuations have historically been sustainable, but earnings may drive returns going forward

S&P 500 Valuation	Percentile
US Market Cap/GDP	<b>95</b>
EV/Sales	<b>92</b>
EV/EBITDA	<b>79</b>
Price/Book	<b>87</b>
Cash Flow Yield (CFO)	<b>80</b>
Forward P/E	<b>66</b>
Free Cash Flow Yield	<b>31</b>
Yield Gap vs IG	<b>74</b>
Yield Gap vs 10Y UST	<b>50</b>



Left Chart Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of September 26, 2022, latest available data. Charts show different valuation measures of the S&P 500 Index. "GDP" refers to gross domestic product. "EV" refers to enterprise value. "EBITDA" refers to earnings before interest, taxes, depreciation, and amortization. "P/E" refers to the price-to-earnings ratio. "Cash flow yield" refers to the cash flow from operations per share divided by market price per share. "IG" refers to investment grade debt. "10Y UST" refers to the 10-year US Treasury. Right Chart Source: Shiller, Bloomberg, and Goldman Sachs Asset Management. As of October 31, 2022. "CAPE" refers to the cyclically adjusted price to earnings ratio. **Past performance does not guarantee future results, which may vary.** Please see additional disclosures at the end of this presentation.

# Sectors and Industries

Potential tactical tilts reflect a decelerating growth and high inflation/rates environment

Sectors		Tactical Rationale
Health Care Consumer Staples Energy Comm. Services – Telecom Cons. Discret. – Durables & Apparel	<b>OW</b>	<ul style="list-style-type: none"> <li>Health Care, Consumer Staples, and Telecom Services typically provide defensive exposure and exhibit relatively low vulnerability to the risk of higher real interest rates</li> <li>Energy sees upside in elevated commodity prices and represents a potential hedge against stagflation</li> <li>Consumer Durables &amp; Apparel offers a counter-balance of exposure to a group within a cyclical sector and trades at historically low valuations</li> </ul>
Info. Tech. – Software Financials Cons. Discret. – Excl. Durables & Autos. Real Estate Utilities	<b>N</b>	<ul style="list-style-type: none"> <li>Software currently has valuations that are too expensive to be attractive but earnings that are too stable to suggest an underweight</li> <li>Financials are at discounted valuations but are exposed to elevated recession risk and an inverted yield curve</li> <li>Other Consumer Discretionary categories face economic growth headwinds but have demonstrated earnings resilience</li> <li>Real Estate faces a rates and an economic growth dual-headwind yet is supported by inflation</li> <li>Utilities have typically outperformed during economic contractions but are not sufficiently discounted</li> </ul>
Info. Tech. – Tech Hardware Industrials Comm. Services – Media Info. Tech. – Semiconductors Cons. Discret. – Autos Materials	<b>UW</b>	<ul style="list-style-type: none"> <li>Industrials, Materials, Autos, Media, and Semiconductors have tended to underperform when economic growth slows</li> <li>Technology Hardware might struggle if rates rise further and currently trades at elevated valuations</li> </ul>

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. "OW" refers to overweight. "N" refers to neutral. "UW" refers to underweight. "Headwinds" refer to conditions less favorable for an asset class. "Tailwinds" refer to conditions more favorable for an asset class. **Past performance does not guarantee future results, which may vary.**

# Small Caps

The case for small caps relative to large caps is mixed, though alpha opportunities span the universe

## ACTIVE SELECTION MAY BECOME MORE DETERMINANT

Share of Russell 2000 Stocks with Negative NTM Net Income (%)



## WITH HEADWINDS AND TAILWINDS MORE BROADLY

Headwinds	Tailwinds
<ul style="list-style-type: none"> <li>Longer duration cash flows, so more exposed to higher rates</li> <li>Higher percentage of debt is floating compared to large caps, meaning cost of capital may increase more as rates rise</li> <li>May not be able to withstand inflation and wage pressures as well as larger companies</li> <li>Decelerating GDP growth, with risks to downside, may make it difficult for cyclicals to keep up</li> <li>Tightening financial conditions may limit profitability, especially for companies with lower margins</li> <li>Greater exposure to financials, which are likely to suffer from an inverted yield curve</li> </ul>	<ul style="list-style-type: none"> <li>Less concentration and regulatory scrutiny than large cap companies, most notably in tech</li> <li>Greater exposure to secular growth as larger companies tend to be more mature</li> <li>Low-yield and return environment may provide demand tailwinds for companies with the most upside, often in the small-cap space</li> <li>Fed tightening already priced in, so any softening on stance could boost small-caps</li> <li>Higher share of revenue comes domestically, so stronger US dollar does not weigh as heavily on sales</li> <li>Healthcare, a favorable sector for disruption, is highest weight in index</li> </ul>

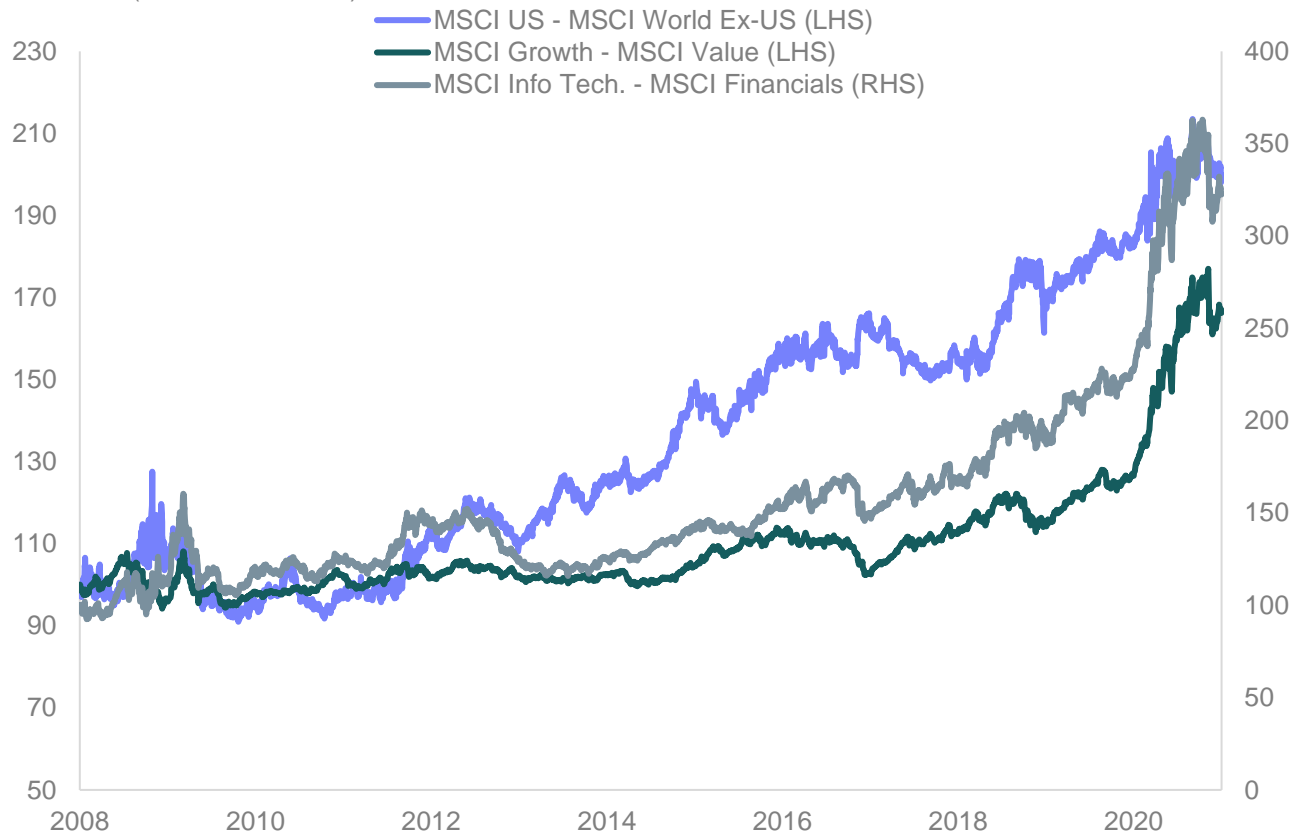
Left Chart Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of April 18, 2022. "NTM" refers to next twelve-months. Right Chart Source: Goldman Sachs Global Investment Research, Goldman Sachs Investment Strategy Group, and Goldman Sachs Asset Management. As of October 31, 2022. "Alpha" is the portion of the total return on the portfolio not attributable to the portfolio's exposure to its benchmark or index. "Headwinds" refer to conditions less favorable for an asset class. "Tailwinds" refer to conditions more favorable for an asset class. 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. **Past performance does not guarantee future results, which may vary.**

# Recapping the Past Cycle

In the last cycle, investors who exploited the right factor-driven strategies found alpha

## A MACRO STORY

Differential (\$, Chained to 100)



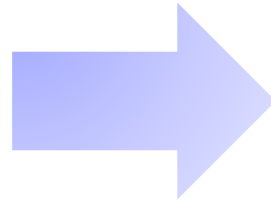
Factor	Past-Cycle Observation
Growth vs Value	Growth companies used their long duration and strong performance for multiple expansion, while value companies failed to keep up.
Info Tech. vs Financials	Tech capitalized on low rates and favorable government policies at the expense of financials.
US vs World Ex-US	US output and profitability led to outperformance relative to the rest of the world.

Source: Bloomberg and Goldman Sachs Asset Management. As of October 31, 2022. Chart ends on December 31, 2020; end of pre-pandemic cycle. "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.**

# Transitioning into the Post-Pandemic Cycle

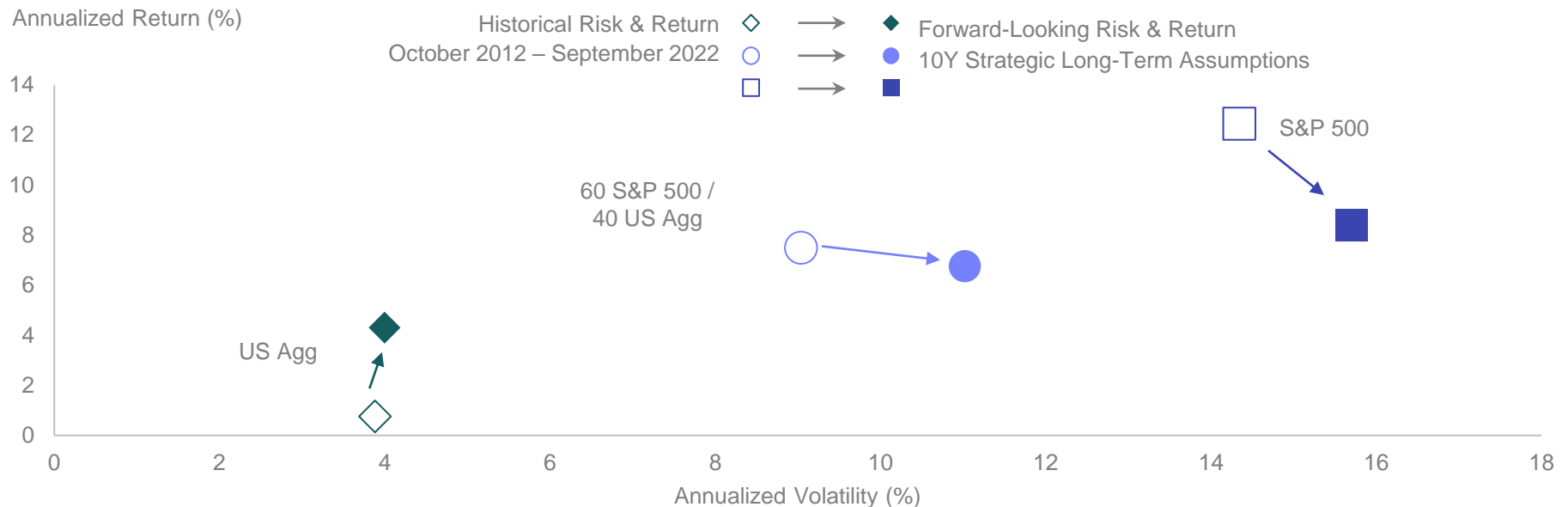
## Pre-Pandemic Cycle Ingredients

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



## Post-Pandemic Cycle Ingredients

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



In the new cycle, alpha may be better found in more  
 1) idiosyncratic, 2) focused, 3) global portfolios, and 4) tax-aware portfolios

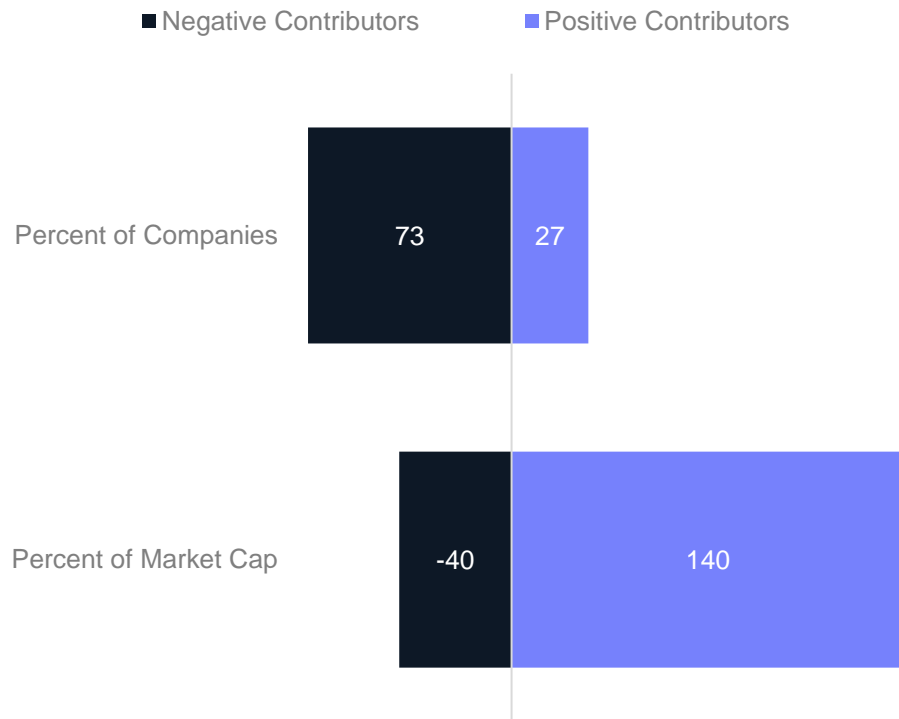
Source: Goldman Sachs Asset Management. As of September 30, 2022. "US Agg" refers to the Bloomberg US Aggregate Bond Index. The Bloomberg US Aggregate Bond Index represents an unmanaged diversified portfolio of fixed income securities, including US Treasuries, investment grade corporate bonds, and mortgage backed and asset-backed securities. "S&P 500" refers to the S&P 500 Index. 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. "Alpha" refers to excess returns. Expected returns are estimates of hypothetical average returns of asset classes derived from statistical models. Volatility is measured by standard deviation. There can be no assurance that these returns can be achieved. Actual returns are likely to vary. For illustrative purposes only. **Past performance does not guarantee future results, which may vary.** GS Multi-Asset Solutions Group (MAS). For illustrative purposes only. All numbers reflect MAS strategic assumptions as of September 30, 2022. Strategic long-term assumptions are subject to high levels of uncertainty regarding future economic and market factors that may affect future performance. They are hypothetical indications of a broad range of possible returns. Please see appendix for Strategic Long-Term Assumptions.

# Global Alpha

Wealth creation has been concentrated, and we think it will be selective and global going forward

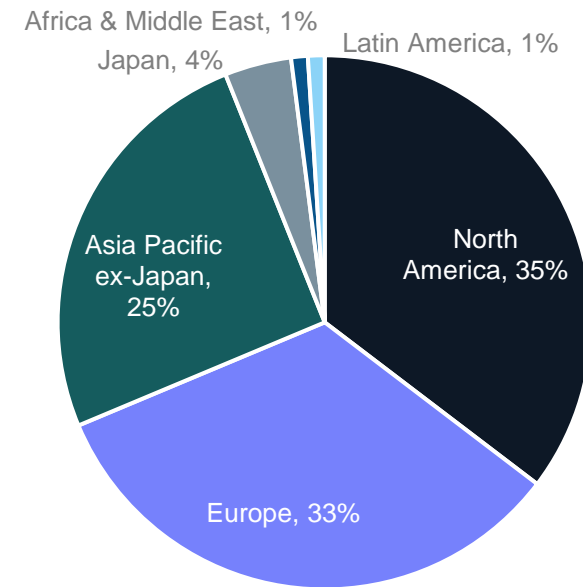
## CONCENTRATION OF WEALTH CREATION

Contribution to Russell 3000 Market Cap Change (1999-2021, %)



## POTENTIAL WEALTH CREATORS OF THE FUTURE

Companies by Region



### Characteristics of Potential Future Wealth Creators

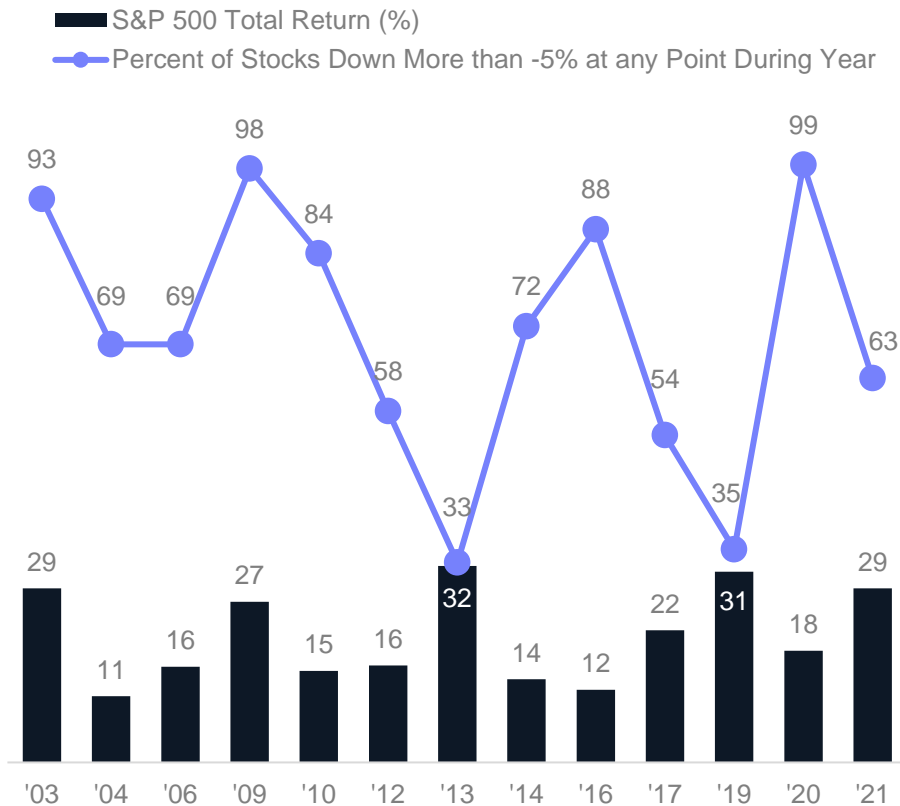
Innovators	Disruptors	Enablers	Adapters
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Left Chart Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2021. Chart analyzes all companies in the Russell 3000 index from December 31, 1999 to December 31, 2021, by starting with market cap as of year-end from the first year in the index. 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. 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. **Past performance does not guarantee future results, which may vary.**

# Capitalizing on Market Volatility

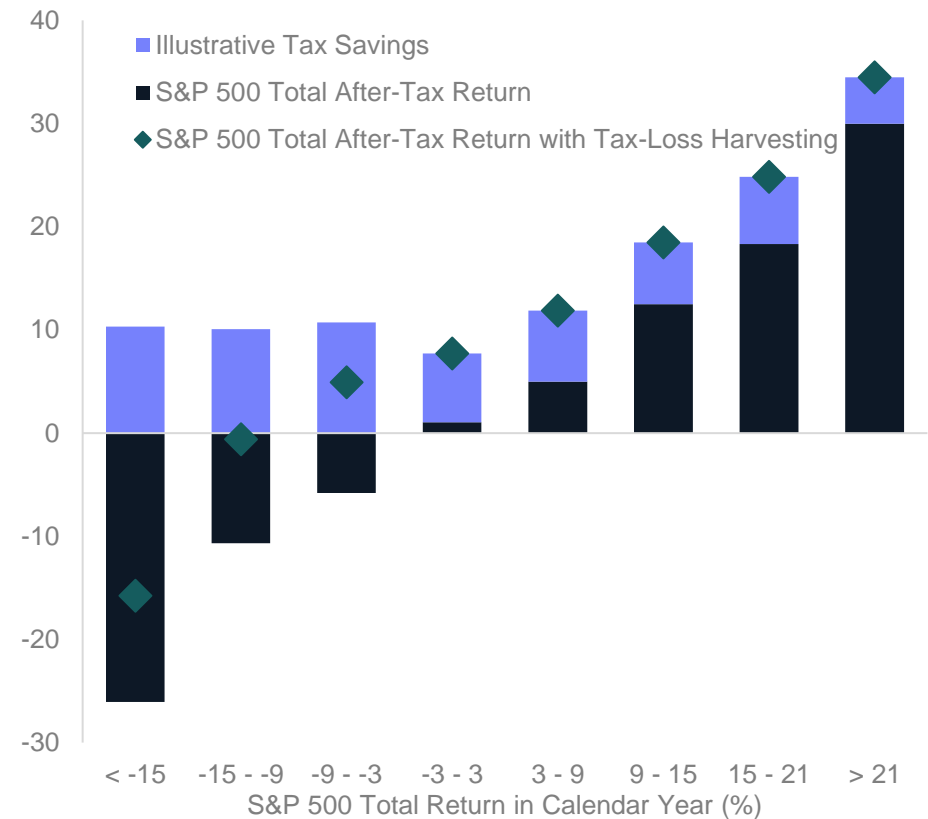
## RISING TIDE DOES NOT LIFT ALL BOATS

Years in which the S&P 500 Total Return is Greater than 10%



## POTENTIAL TAX-LOSS HARVESTING GAINS

Calendar Year Total Return (Average, %)



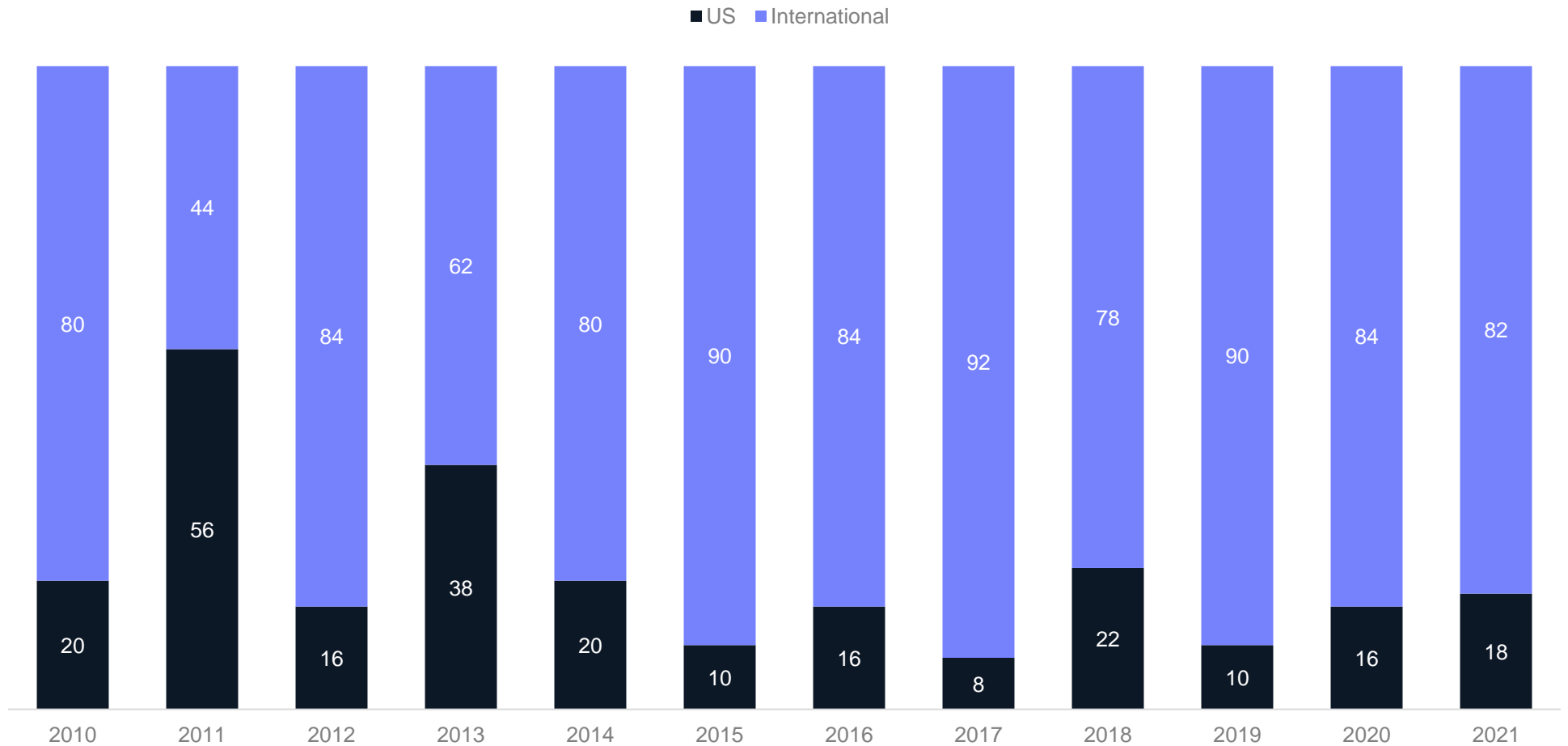
Left Chart Source: S&P, Goldman Sachs Quantitative Investment Strategies Group, Goldman Sachs Asset Management. As of December 31, 2021. Chart isolates years in which S&P 500 total return exceeded 10%. Right Chart Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2021. Chart shows 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 on analysis found on page 47. 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.**



# Global ex-US

Strong performance has not been limited to the US, and there is good potential for idiosyncratic outperformance in international markets

DOMICILE OF TOP 50 MSCI ACWI COMPANIES BY PERFORMANCE (%)

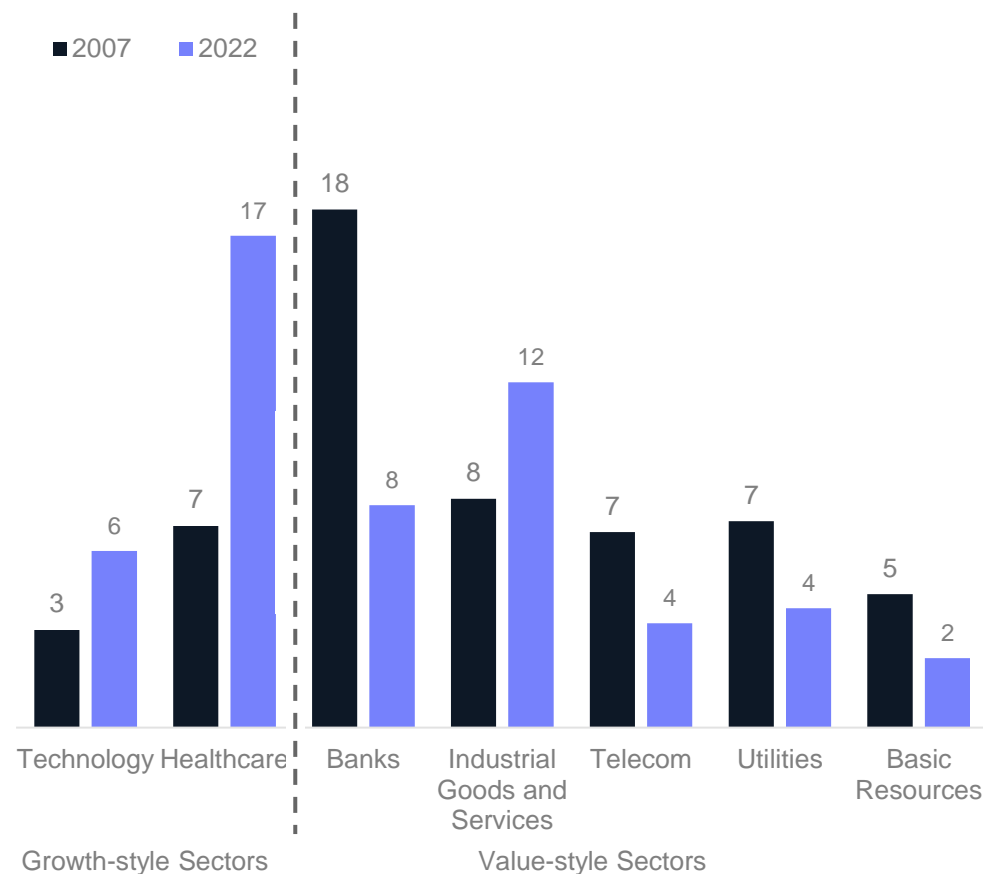


Source: Bloomberg and Goldman Sachs Asset Management. As of December 31, 2021. Past performance does not guarantee future results, which may vary.

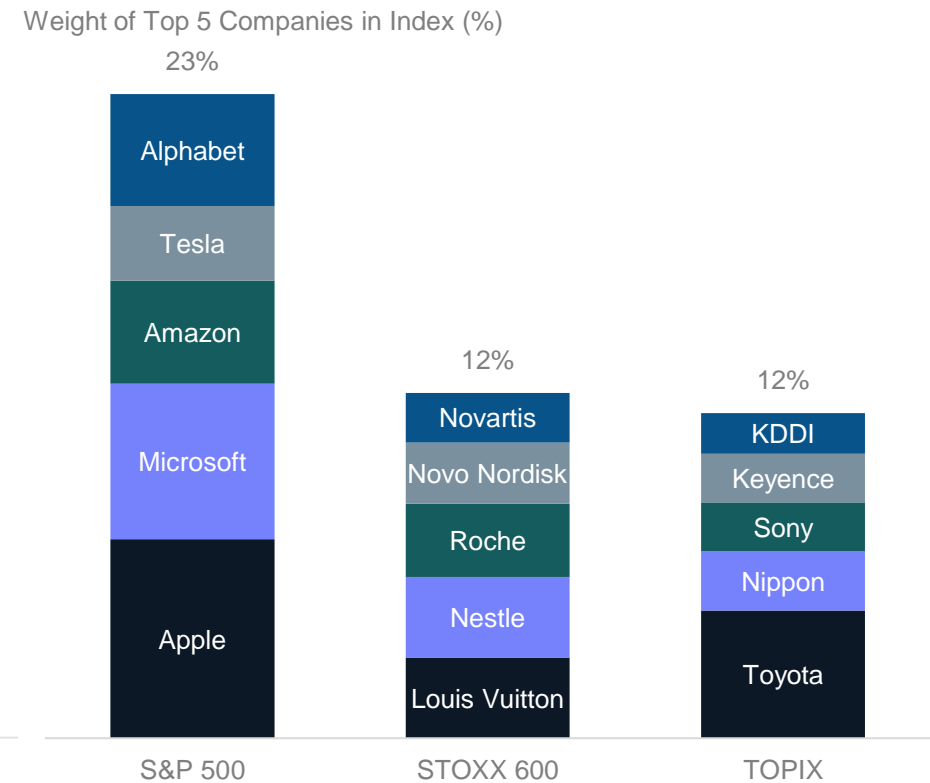
# Developed Markets ex-US

European and Japanese equities may offer diverse returns amid a different index composition

## SECTOR WEIGHT SHIFTS IN EUROPEAN EQUITIES



## WITH LESS CONCENTRATION RISK



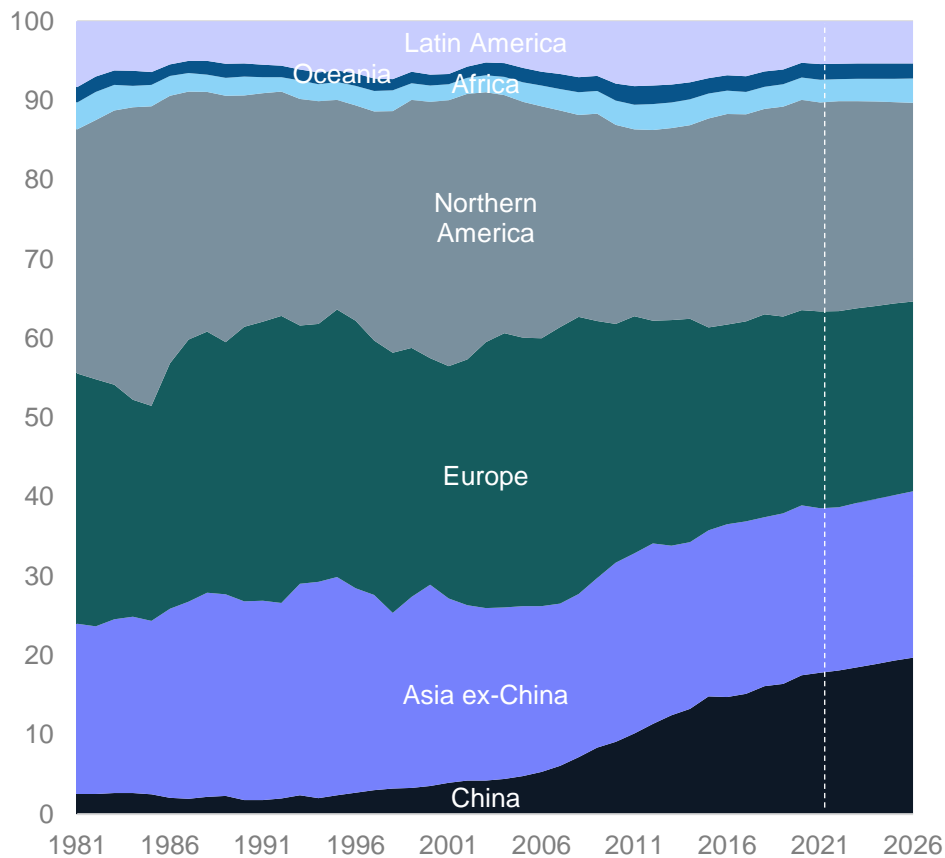
Left Chart Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of September 30, 2022. Notes: 2007 data as of December 31, 2007. 2022 data as of September 30, 2022. The sectors included were based off the Industry Classification Benchmark (ICB) and were chosen to highlight the change in growth-style sectors and value-style sectors. Not all sectors in the ICB are shown. Right Chart Source: Bloomberg and Goldman Sachs Asset Management. Stoxx 600 refers to the Euro Stoxx 600 Index, S&P 500 refers to the S&P 500 Index, TOPIX refers to the Japanese TOPIX Index. As of September 30, 2022. 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. **Past performance does not guarantee future results, which may vary.**

# Emerging Markets

Emerging markets are buoyed by a long-term growth story, while stock selection remains paramount

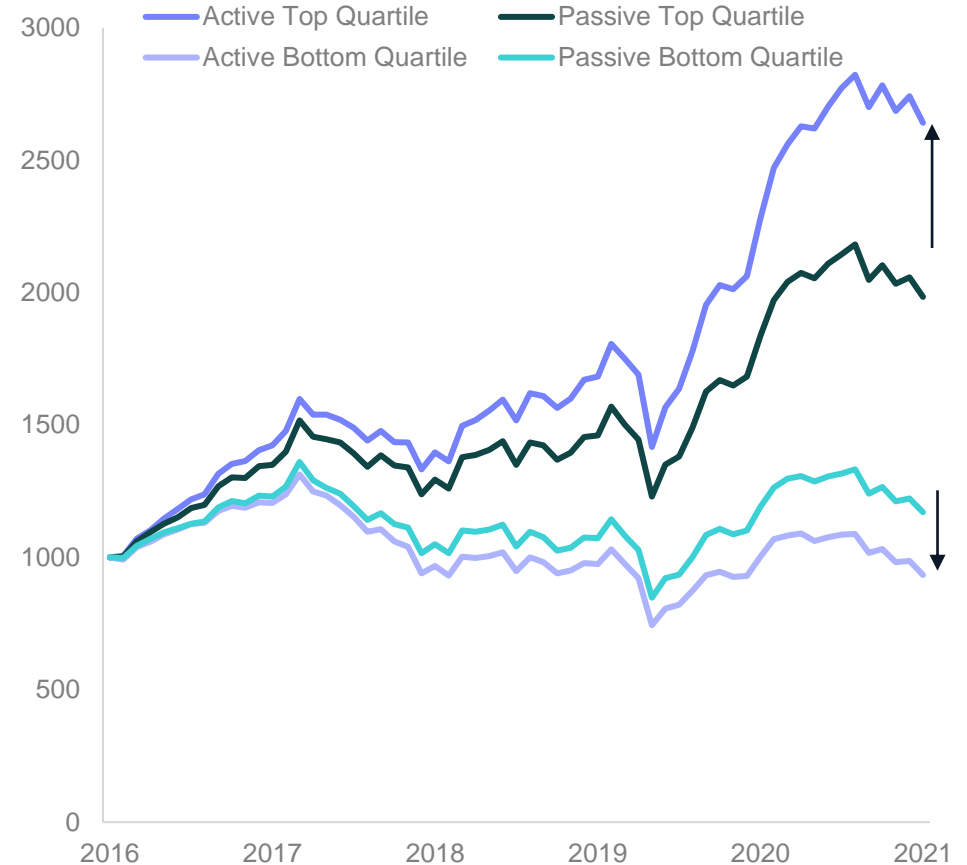
## LONG-TERM ECONOMIC GROWTH POTENTIAL

Global GDP Share (%)



## ACTIVE MANAGEMENT CAPITALIZING ON UPSIDE

Illustrative EM Equity Manager Performance (Growth of \$1,000)



Left Chart Source: IMF and Goldman Sachs Asset Management. As of December 31, 2021. Right Chart Source: Morningstar and Goldman Sachs Asset Management. As of November 30, 2021. Chart calculates the performance of Active and Passive funds in the "US Fund Diversified Emerging Markets" Morningstar category. 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. **Past performance does not guarantee future results, which may vary.**

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# Fixed Income

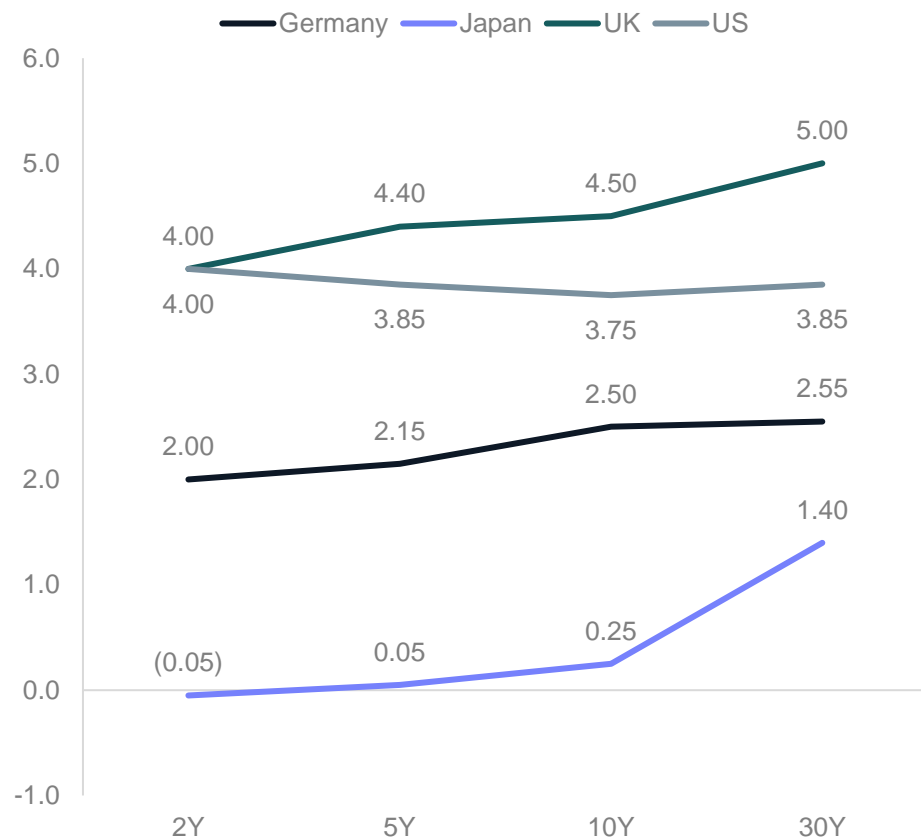
- **Rates:** Yields movements may begin moderating, with an emphasis on the front-end of the curve
- **Credit:** Corporate fundamentals are strong, though spreads may moderately widen from current levels
- **Munis:** The technical backdrop has cooled off, but munis can outperform with historically high starting yields

# Rates

Short duration offers favorable yield to duration now, but longer-duration yields may stay stickier

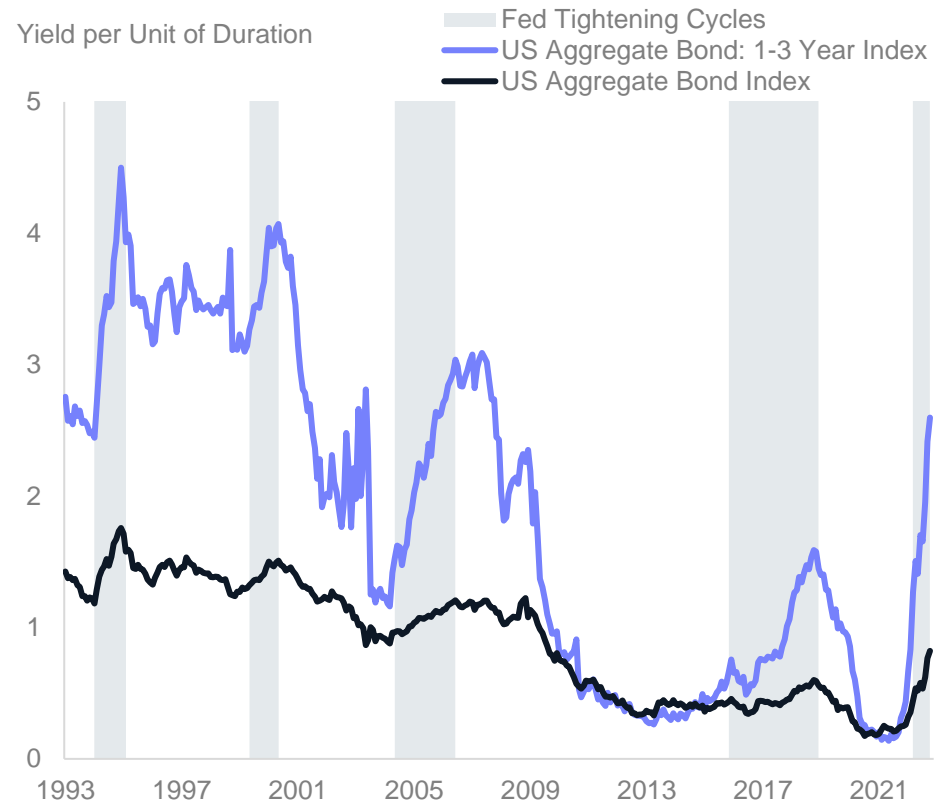
## FLAT YIELD CURVES ACROSS ECONOMIES BY YE 2022

2022 Government Bond Yield (%)



## SHORT DURATION PICKED UP YIELD IN PAST FED HIKING CYCLES

Yield per Unit of Duration



Left Chart Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. Right Chart Source: Bloomberg and Goldman Sachs Asset Management. As of October 31, 2022. Yield per unit of duration equals yield to worst divided by duration. 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. **Past performance does not guarantee future results, which may vary.**

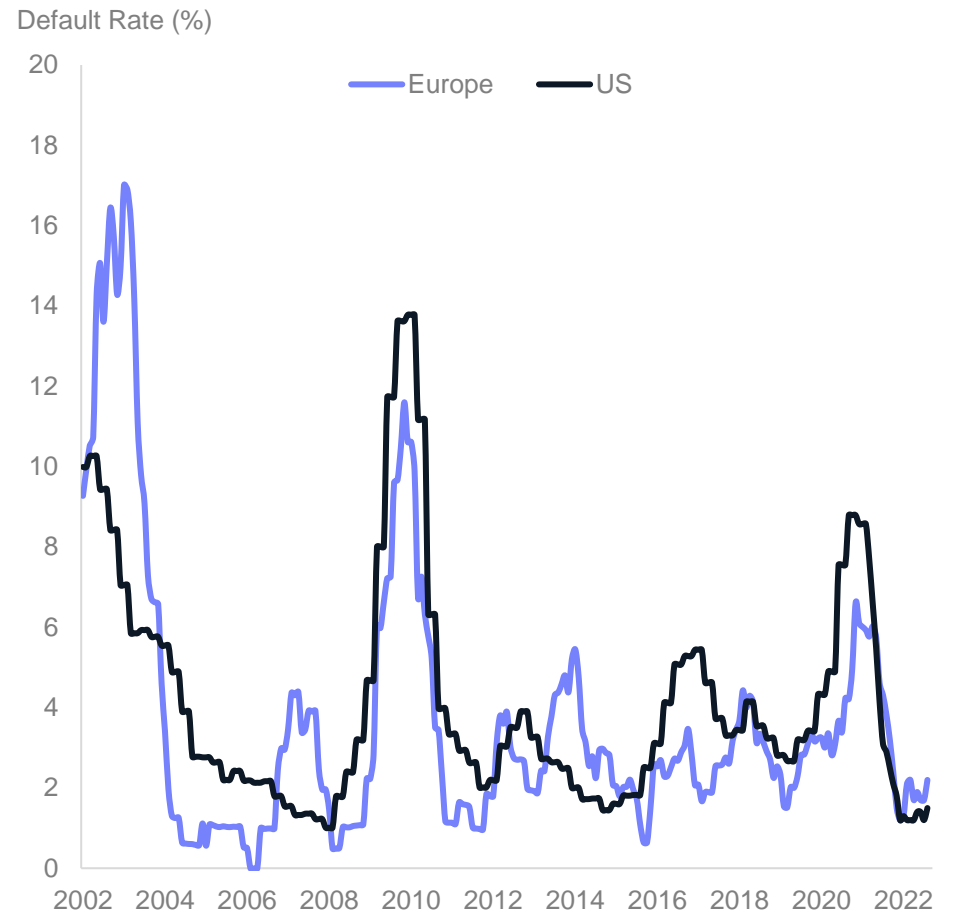
# Credit

Resilient corporate fundamentals will likely support credit risk appetite as carry opportunities improve

## CONTINUED SPREAD NORMALIZATION

Sector	Current	2022 Q4	Δbps
<b>USD Spreads (bps)</b>			
IG	160	175	+15
IG Fin	178	170	-8
IG Non-Fin	150	180	+30
HY	502	625	+123
<b>EUR Spreads (bps)</b>			
IG	243	229	-14
IG Fin	299	260	-39
IG Non-Fin	211	205	-6
HY	601	655	+54

## CONTAINED DEFAULT RISK



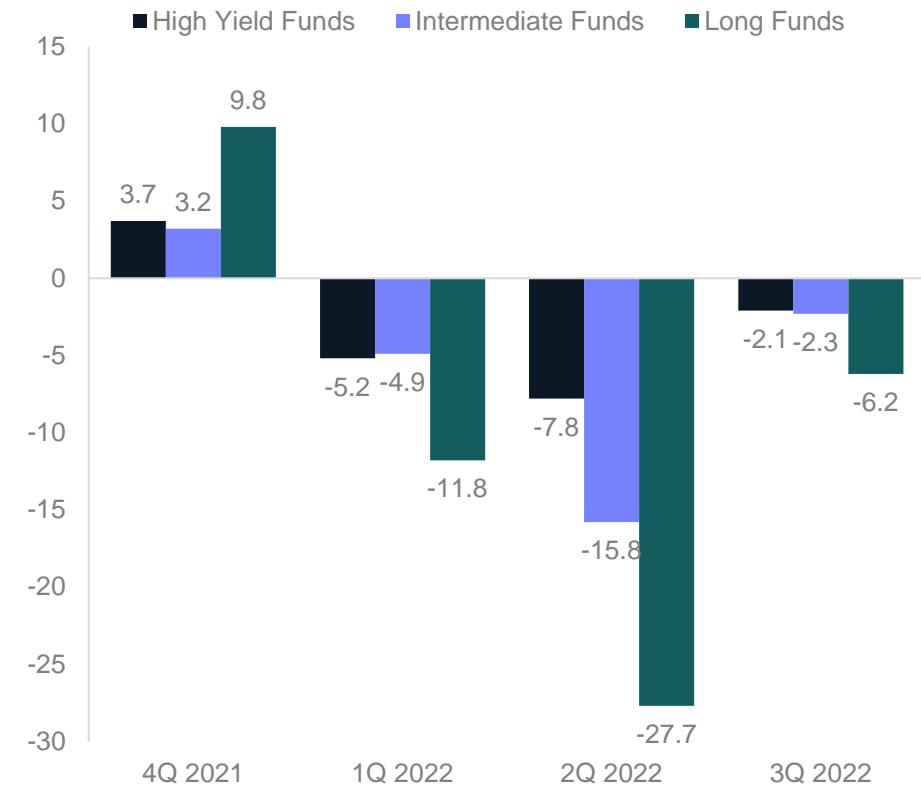
Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. Left Chart: As of October 27, 2022. Right Chart: As of August 31, 2022. Chart shows the rolling 12-month default rate for high yields bonds in Europe and the US. **Past performance does not guarantee future results, which may vary.** 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.

# Municipal Bonds

## Challenging technical backdrop in the last year

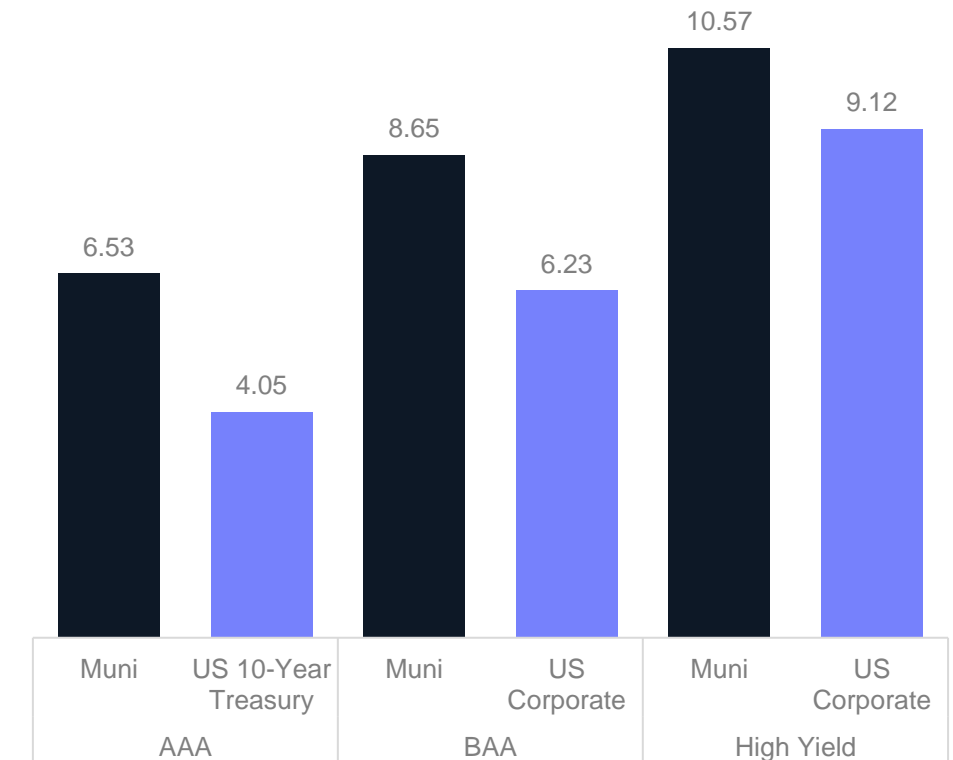
### DEMAND FOR MUNICIPAL BONDS MAY RECOVER

Municipal Bond Flows (\$ billion)



### YIELDS ARE ATTRACTIVE ON A TAX EQUIVALENT BASIS

Tax-Equivalent Yields (%)



Left Chart Source: Morningstar and Goldman Sachs Asset Management. As of September 30, 2022. Right Chart Source: Bloomberg and Goldman Sachs Asset Management. As of October 31, 2022, latest available. A 40.8% tax rate is used to calculate tax-equivalent yield. "AAA" refers to the AAA-rated portion of the Bloomberg Municipal Index. "BAA" refers to the BAA-rated portion of the Bloomberg Municipal Index. Yields do not reflect the performance for any Goldman Sachs product. 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.**

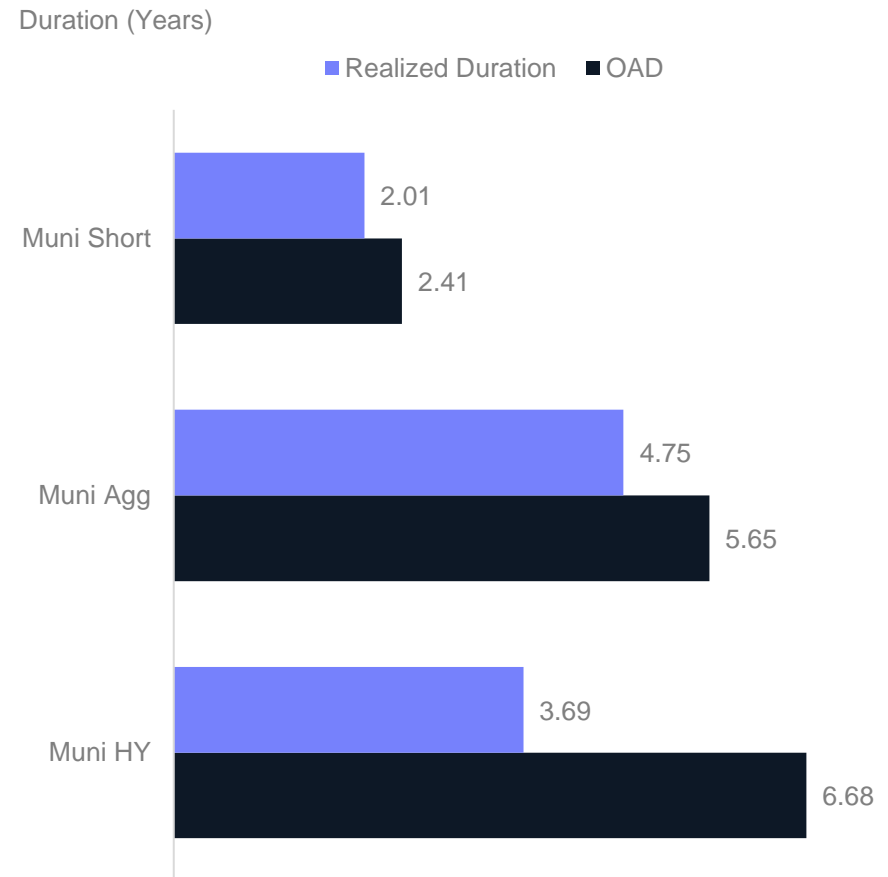
# Municipal Bonds

Municipal debt remains attractive across the spectrum as it has historically performed well during past Fed hiking cycles, with lower realized duration

## MUNI YIELDS DURING PAST HIKING CYCLES

Returns of Municipal Bond Indices (%)					
Year	# of Fed Hikes	Bloomberg 3-Year	Bloomberg 1-10-Year	Municipal Bond Index	HY Municipal
2018	4	1.76	1.64	1.28	4.76
2017	3	1.56	3.49	5.45	9.69
2006	4	3.04	3.74	4.84	10.74
2005	8	0.87	1.67	3.51	8.58
2004	5	1.78	2.92	4.48	10.52
2000	3	6.23	8.17	11.68	6.09
1999	3	1.96	0.55	-2.06	-1.8
1994	6	0.68	-2.41	-5.17	N/A
Avg.	4.5	2.24	2.47	3.00	6.94

## RATE SENSITIVITY IMPACTS MUNICIPAL DEBT DIFFERENTLY



Left Chart Source: Federal Reserve, Bloomberg, and Goldman Sachs Asset Management. As of December 31, 2021. Right Chart Source: Bloomberg and Goldman Sachs Asset Management. As of September 30, 2022. Chart shows the duration across different municipal bond indices. "Option-Adjusted Duration (OAD)" is a measure of the sensitivity of bond price to interest rate changes, assuming that the expected cash flows of the bond may change with interest rates. "Realized Duration" refers to the actual price sensitivity of a bond based on historical market-based data. "Muni HY" refers to the Bloomberg Municipal Bond: High Yield Total Return Index. "Muni Agg" refers to the Bloomberg Municipal Bond Total Return Index. "Muni Short" refers to the Bloomberg Municipal Bond: Muni Short (1-5) Total Return Index. Durations shown reflect the two-year average as of September 30, 2022. **Past performance does not guarantee future results, which may vary.**



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# Currencies & Commodities

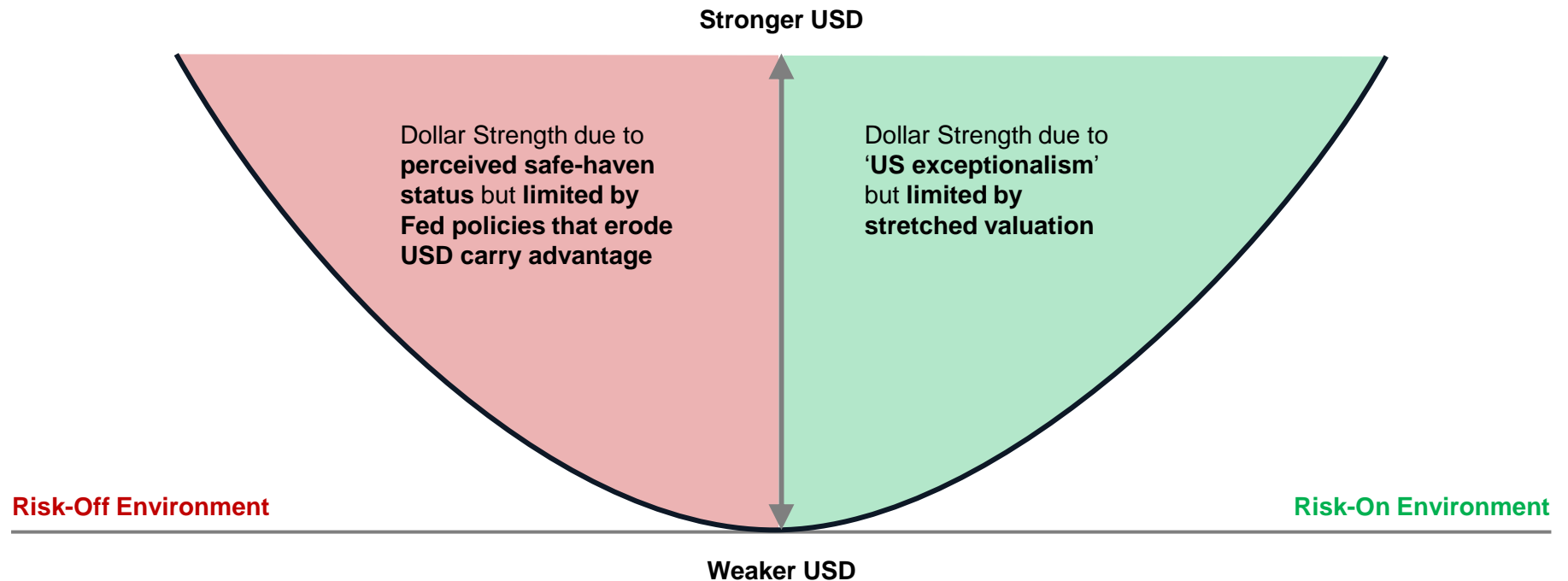
- **US Dollar:** While structural headwinds limit upside, tighter monetary policy may drive near-term strength
- **Commodities:** Near-term recession risk drives demand concern, but longer-term fundamental tailwinds hold

Source: Goldman Sachs Asset Management. As of October 31, 2022. "Headwinds" refer to conditions less favorable for an asset class. "Tailwinds" refer to conditions more favorable for an asset class. 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.**

# Currency

Central bank policy decisions will likely drive foreign exchange markets, with new Fed policy raising the prospect for near-term USD appreciation despite our expectation for longer-term weakness

## ILLUSTRATIVE DOLLAR DYNAMICS



FX Forecasts	'21	6m	12m	'24	'25
EUR/\$	0.99	0.97	1.05	1.10	1.15
GBP/\$	1.19	1.11	1.22	1.29	1.34
\$/JPY	125	135	125	115	105

Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. "Fed" refers to Federal Reserve. For illustrative purposes only. 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.

# Commodities

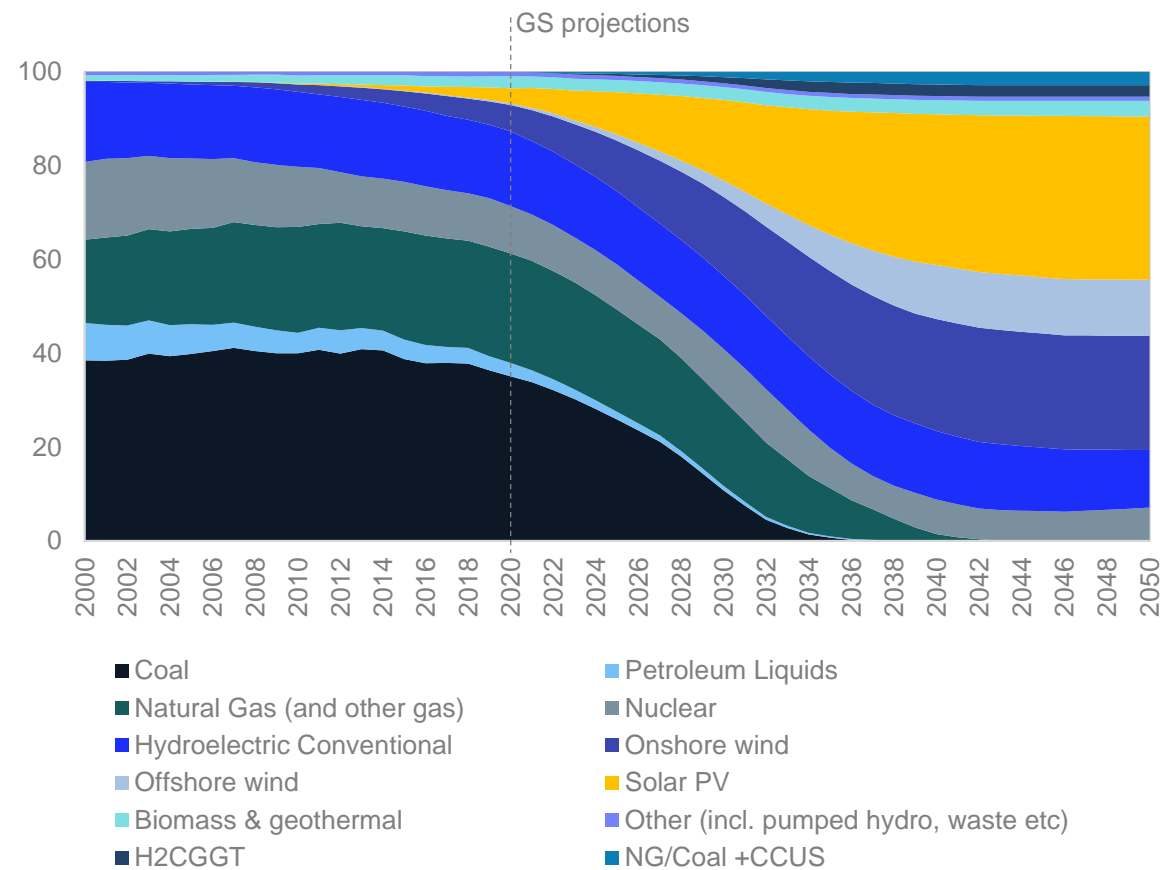
Commodity strength may continue, though economic deceleration may tame demand growth

## COMMODITY FORECASTS

	Current	2022 4Q	Δ \$
<b>WTI Crude Oil (\$/bbl)</b>	88	99	+11
<b>Brent Crude Oil (\$/bbl)</b>	96	104	+8
<b>LME Copper (\$/mt)</b>	7,619	6,700	-919
<b>COMEX Gold (\$/troy)</b>	1,641	1,850	+209
<b>COMEX Silver (\$/troy)</b>	19	21	+2

## POLICY OBJECTIVES FUELING COMMODITY DEMAND

Energy Share of Electricity Generation (%)



Source: Goldman Sachs Global Investment Research and Goldman Sachs Asset Management. As of October 31, 2022. 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. **Past performance does not guarantee future results, which may vary.**

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# Risk & Volatility

- **Drawdowns:** Bear market risks are elevated, but balanced by pillars of stability
- **Liquidity:** Low liquidity may persist, driving large daily swings near-term
- **Clusters:** The best days have come near the worst days, meaning time in the market beats timing the market

Source: Goldman Sachs Asset Management. As of October 31, 2022. 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. "Volatility" is a measure for variation of price of a financial instrument over time. **Past performance does not guarantee future results, which may vary.**

# Bear Market Risks

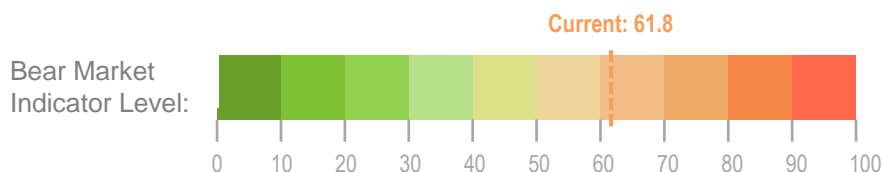
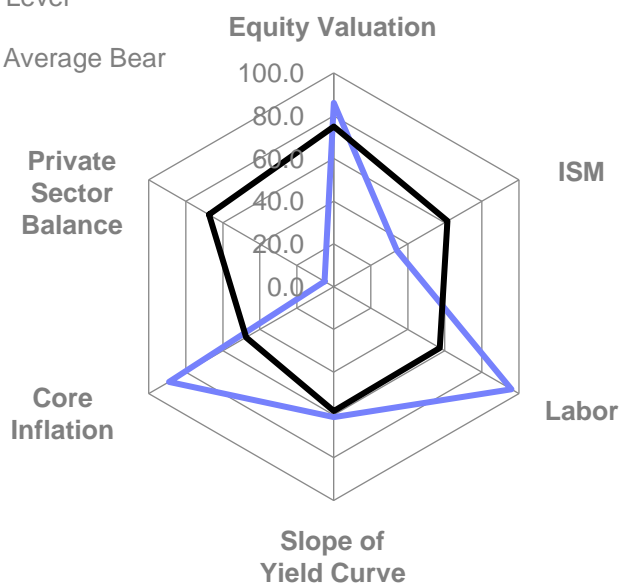
Bear market risks continue to be present, with anticipated tensions evident

## COMPONENTS FOR BEAR MARKET RISK

Risk Level of Indicator (100 = High, 0 = Low)

— Current Level

— Start of Average Bear Market



## UNPACKING THE COMPONENTS

Component	Signals to Watch	%tile	Risk Level
<b>Equity Valuation</b>	<b>High valuation</b> is a feature of most bear markets, but rarely a trigger for market decline	86	High
<b>ISM</b>	<b>Cooling ISM</b> suggests moderating growth and lower equity returns	34	Medium
<b>Labor</b>	<b>Unemployment rate trough</b> precedes most bear markets, but a decline in labor demand may be needed	96	High
<b>Slope of Yield Curve</b>	<b>Flat yield curve</b> precedes inversion; rates are likely to depend on the path of monetary policy	61	Medium
<b>Core Inflation</b>	<b>Peaking inflation</b> suggests late cycle condition; exceeding expectations in breadth and persistence	89	High
<b>Private Sector Balance</b>	<b>Elevated imbalances</b> imply excess corporate spending; limited leverage and stable corporate balance sheets lessen risks today	5	Low

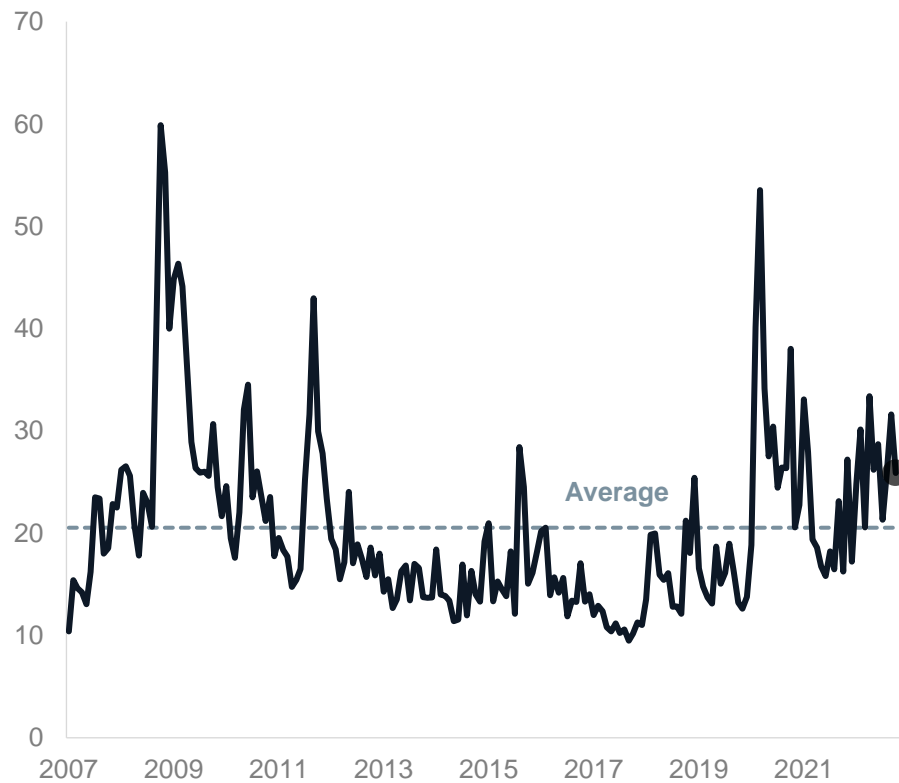
Source: Bloomberg, Robert Shiller, FRED, Goldman Sachs Global Investment Research, and Goldman Sachs Asset Management. As of October 31, 2022. Risk Level indicates historical percentile from 1st to 100th for each indicator, where 100 is the highest the indicator has ever been in history and 0 is the lowest. "Bear market" refers to a peak-to-trough S&P 500 price decline of at least -20%. Data analyzed from common inception from January 1949 to present. Core Inflation refers to Core CPI, Equity Valuation refers to Shiller Cyclically Adjusted PE Ratio, ISM refers to ISM Manufacturing Index, Labor refers to Unemployment Rate, Slope of Yield Curve refers to the spread between the 3 Month Treasury yield and the 6 Quarter Forward interpolated yield, Private Sector Balance refers to total saving minus total investment of all US households and businesses. For illustrative purposes only. **Past performance does not guarantee future results, which may vary.**

# Volatility

Peak levels of volatility may be behind us, though episodic spikes seem likely

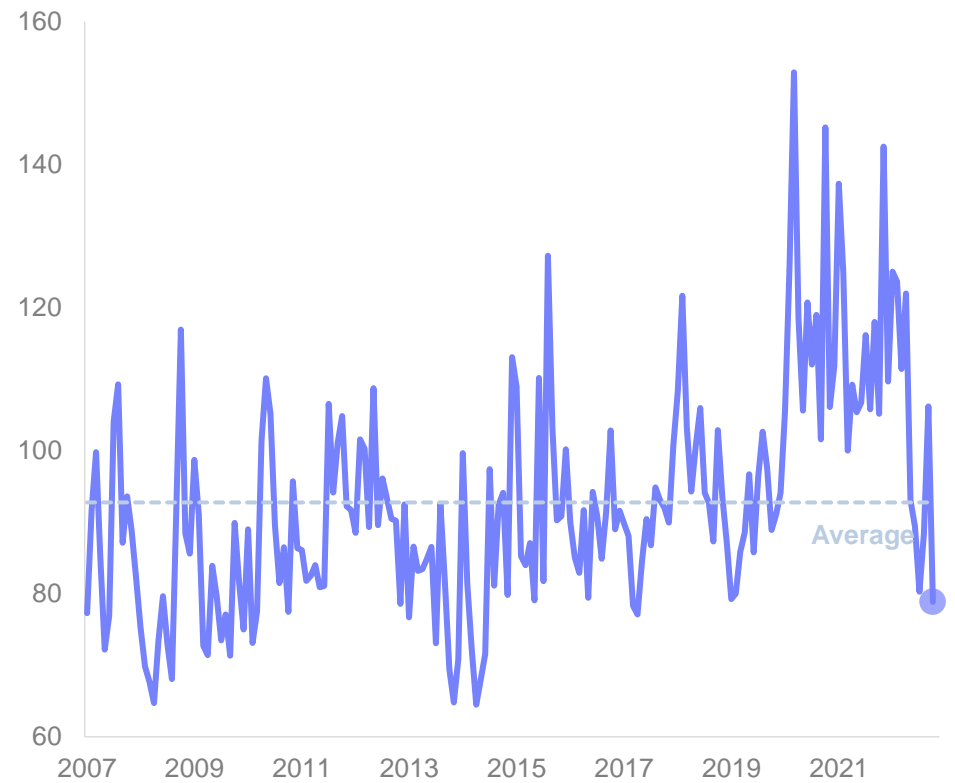
## VIX (LEVEL)

Implied Volatility Level



## VVIX (SPEED)

Implied Volatility of Volatility Level



Left Chart Source: Bloomberg and Goldman Sachs Asset Management. From January 31, 2007 to October 31, 2022. Chart shows the CBOE Volatility (VIX) index, a common measure of implied S&P 500 Index volatility, and the average during this period. Right Chart Source: Bloomberg and Goldman Sachs Asset Management. From January 31, 2007 to October 31, 2022. Chart shows the CBOE VIX Volatility (VVIX) index, a common measure of implied volatility of implied S&P 500 Index volatility and the average during this period. "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

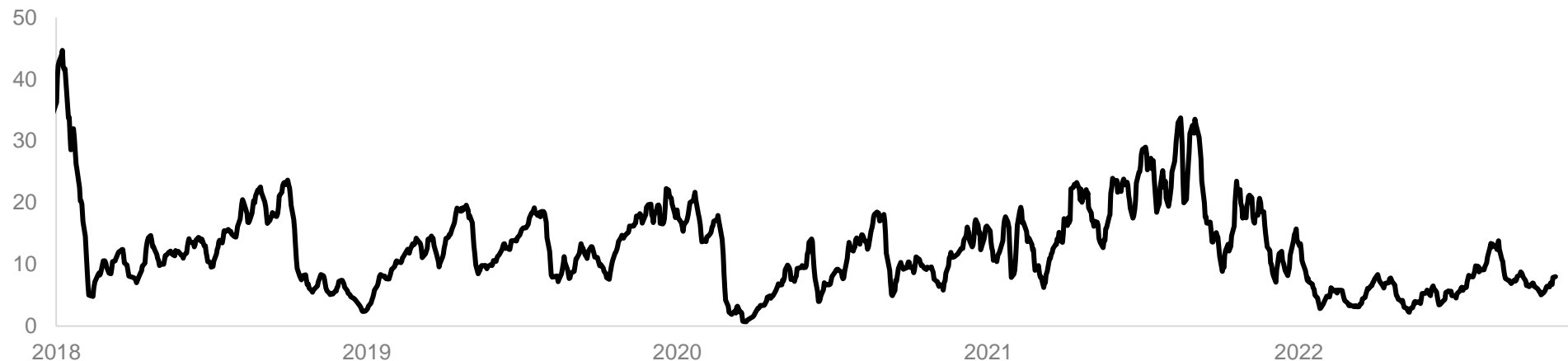
Volatility may be amplified by low liquidity

## FREQUENCY

S&P 500 Daily Price $\Delta$ (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	105	41	10	2	0

## TOP-OF-BOOK LIQUIDITY

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



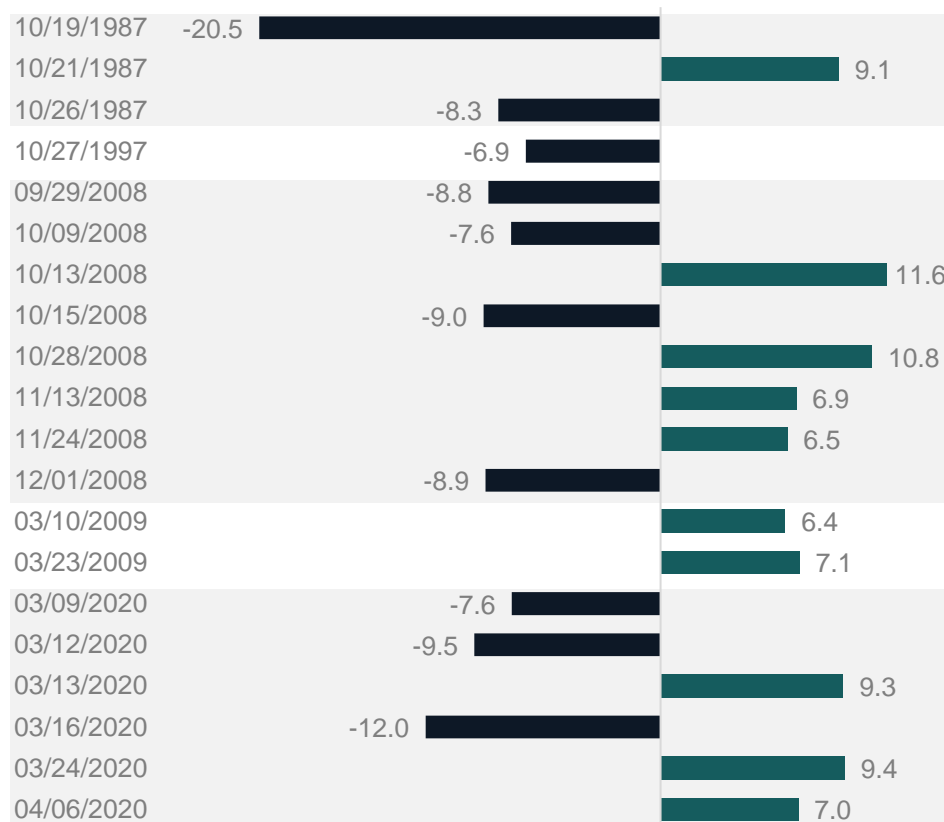
Top Source: Bloomberg and Goldman Sachs Asset Management. As of October 31, 2022. "Bear market" refers to a period when a market experiences prolonged price declines. Bottom Source: Goldman Sachs Global Investment Research. As of October 31, 2022. "Top-of-book liquidity" refers to the liquidity of the 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.**

# Perspectives on Volatility

The best and worst market days appear in clusters, and the cost of being early is low

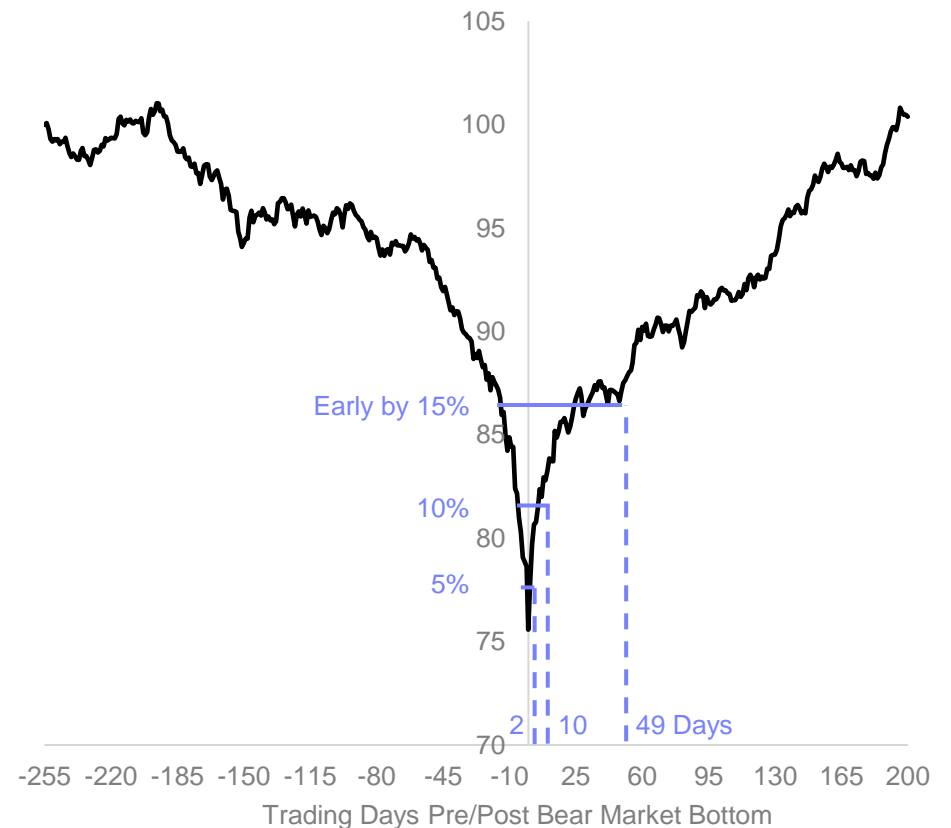
## CLUSTERING OF VOLATILITY

Top 10 Largest Single Day Moves in the S&P 500 Index (%)



## COST OF BEING EARLY (DAYS TO RECOUP LOSSES)

Average S&P 500 Bear Market Performance (Growth of \$100)



Source: Bloomberg and Goldman Sachs Asset Management. As of March 16, 2022. Left notes: Chart shows the magnitude of the 10 worst and best days in the S&P 500 index since 1980, as measured by the percentage daily price move. Right notes: Analysis based on bear markets post-World War II. "Bear Market" refers to a S&P 500 Index peak-to-trough decline of 20% or greater. "Volatility" is a measure for variation of price of a financial instrument over time. **Past performance does not guarantee future results, which may vary.**



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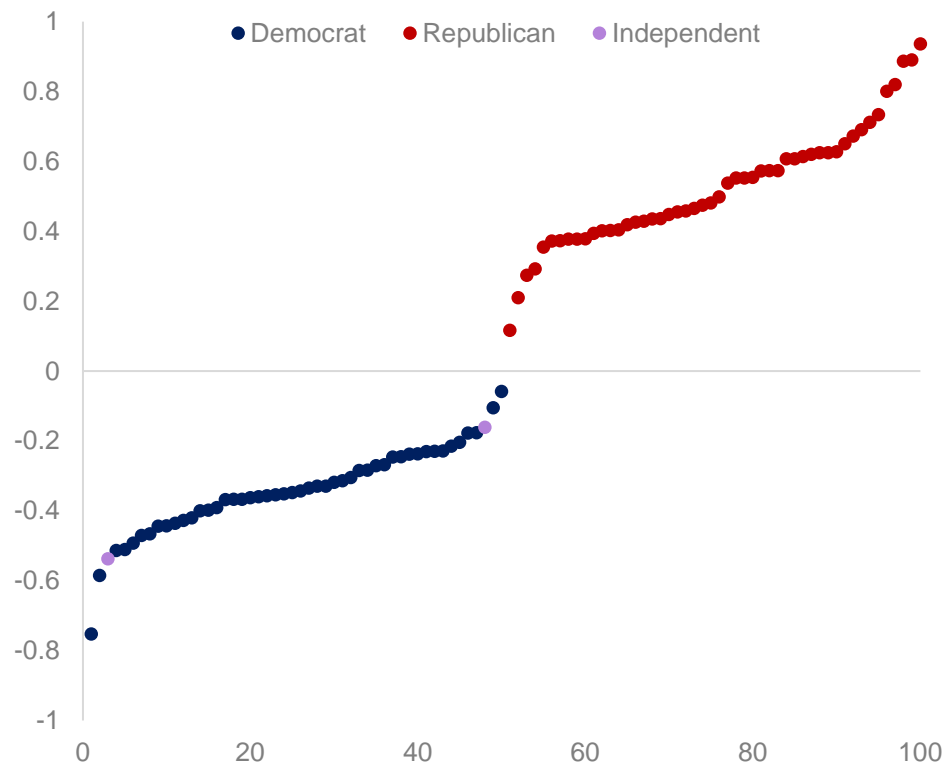
# Market and Political Outlook

- **Current State:** Partisan lines remain deeply polarized, making legislative accomplishments challenging
- **Electoral Outlook:** The likelihood of divided government may be higher going forward
- **Market Implications:** Markets are likely to follow fundamentals regardless of election outcome

# Ideology & Outcomes

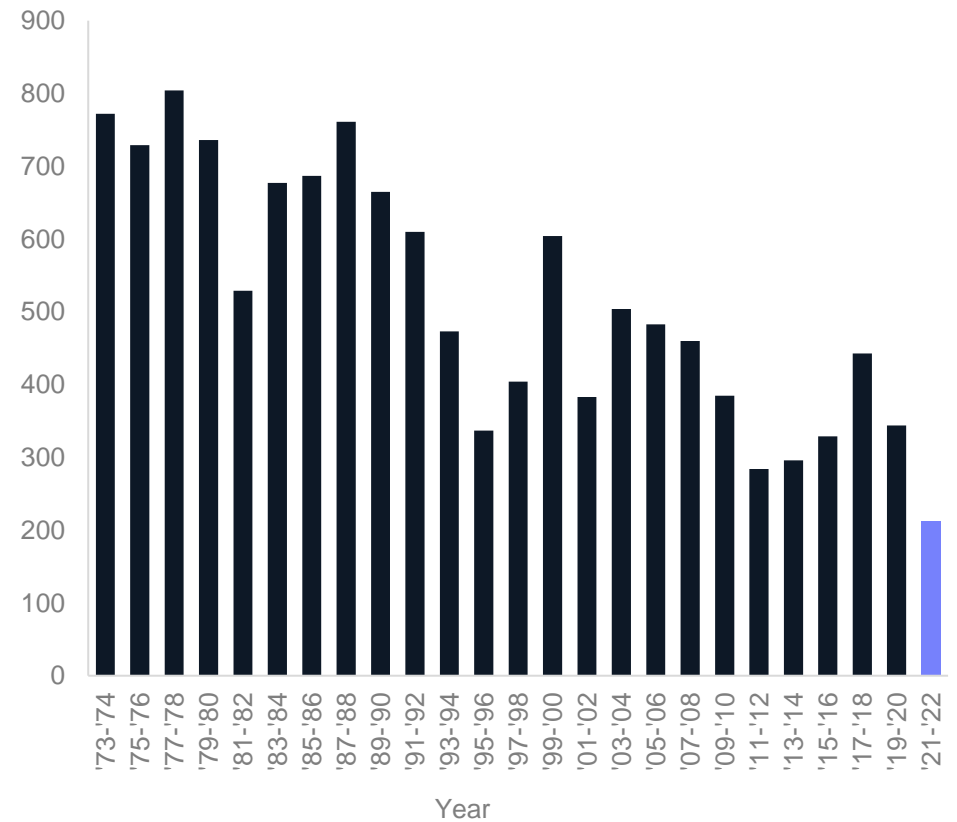
## SENATE POLARIZATION

Senator Political Ideology (DW-Nominate Score)



## LAWS PASSED

Enacted Legislation



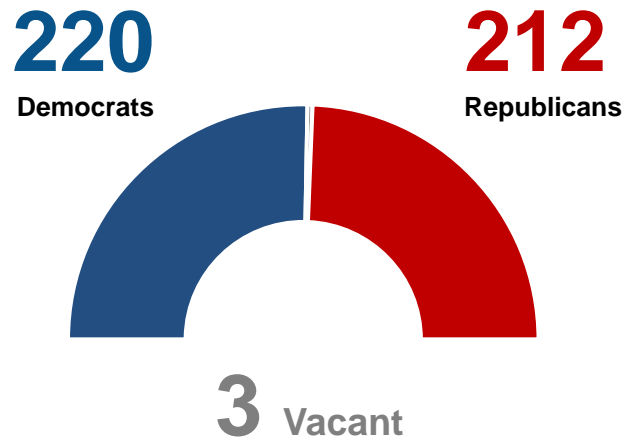
Left Chart Source: Source: VoteView and Goldman Sachs Asset Management. As of September 30, 2022. Chart shows the ideology of members of the 2020-2022 Senate based on their voting history, with -1 being more liberal and 1 being more conservative. Right Chart Source: GovTrack and Goldman Sachs Asset Management. As of October 31, 2022. **Past performance does not guarantee future results, which may vary. For illustrative purposes only.**

# Congressional Composition

With such narrow margins in both chambers, each seat could tip the majority in the next Congress

## HOUSE OF REPRESENTATIVES

### Current House

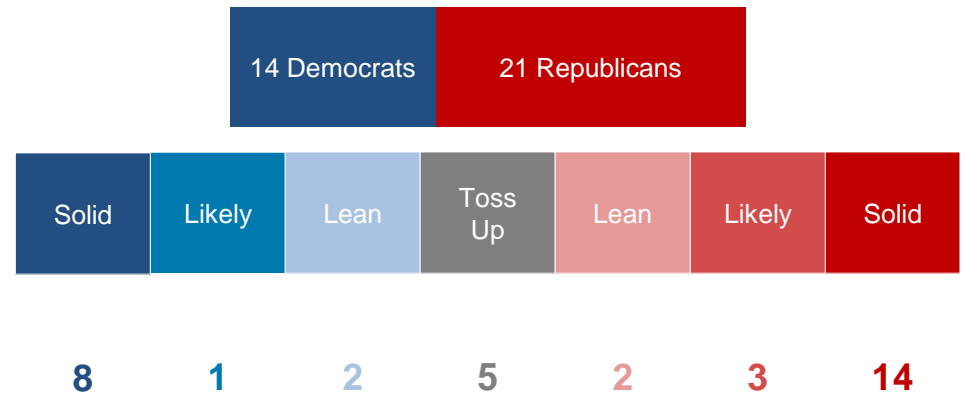


## SENATE

### Current Senate



### Seats for Re-election & Ratings



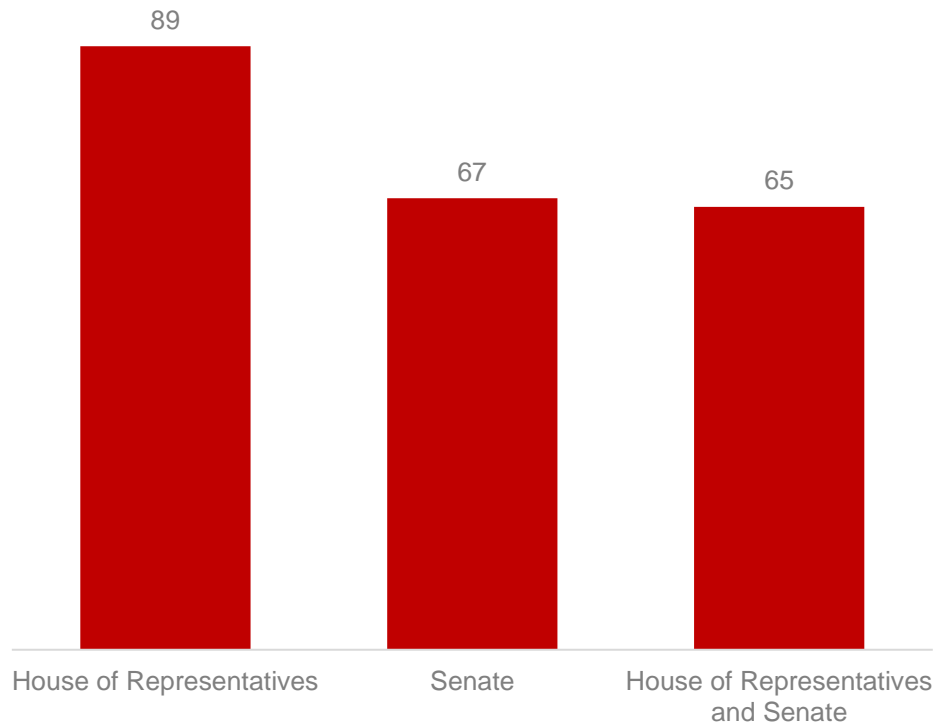
Left Chart Source: Goldman Sachs Asset Management. As of October 31, 2022. Right Chart Source: Cook Political Report and Goldman Sachs Asset Management. As of October 31, 2022, latest available. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation.

# Electoral Outlook

Electoral possibilities remain fluid, but a unified government has proven to be rare

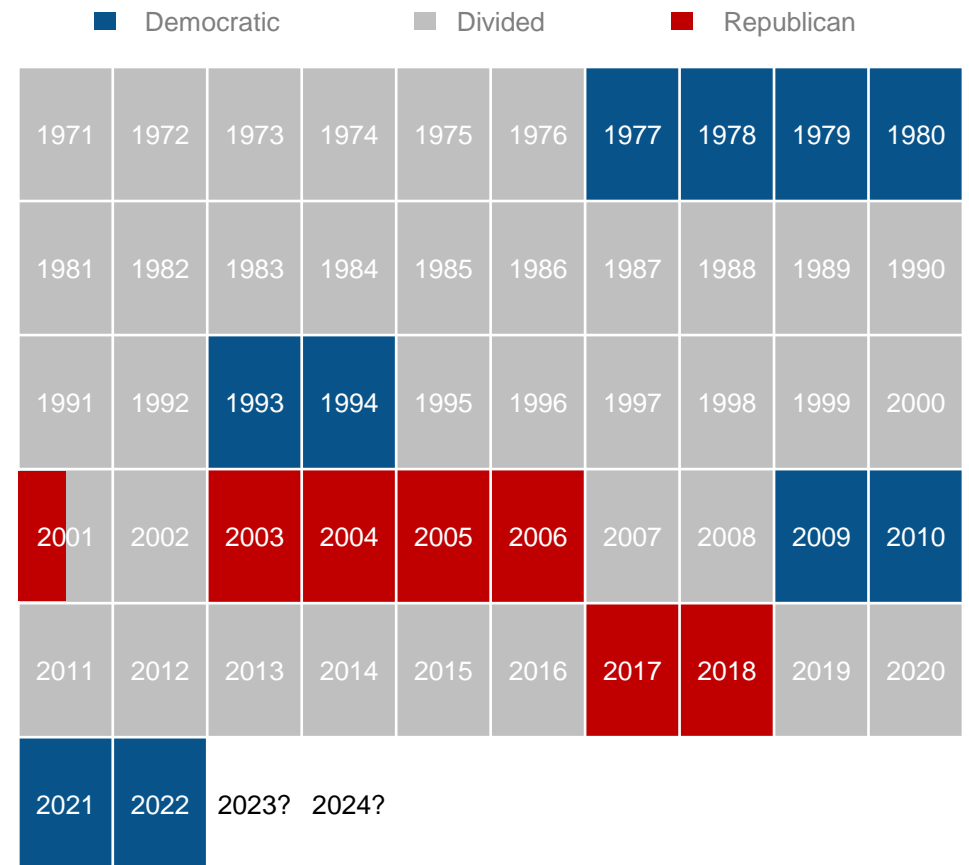
## EVOLVING LANDSCAPE

Betting Market Implied Probability of Republicans Winning in 2022 (%)



## CHALLENGE OF HOLDING A UNIFIED GOVERNMENT

Historical Control of US Government



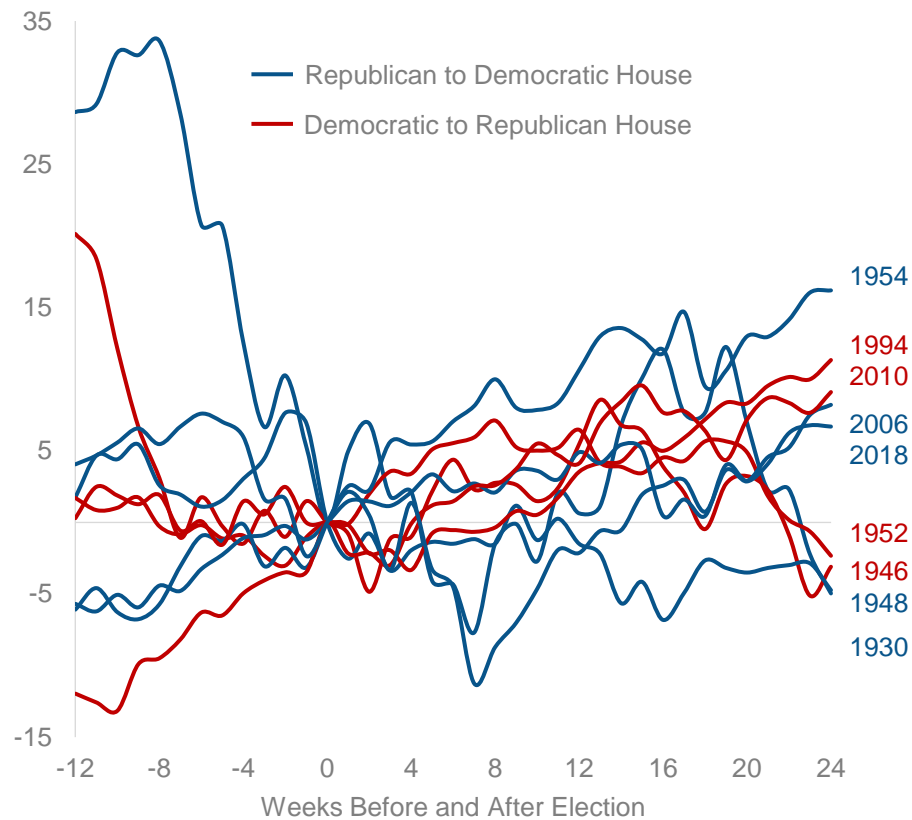
Left Chart Source: Predictit and Goldman Sachs Asset Management. As of October 31, 2022. Right Chart Source: Goldman Sachs Asset Management. As of October 31, 2022. Control of Government refers to party majorities in the House of Representatives, Senate, and Presidency. These examples are for illustrative purposes only and are not actual results. If any assumptions used do not prove to be true, results may vary substantially. **Past performance does not guarantee future results, which may vary.**

# Market Implications

Politics impacts policy, but long-term market performance is likely to be determined by fundamentals

## DISPARATE OUTCOMES

Change in S&P 500 Price Returns Around House Flipping (%)



## RESILIENT MARKETS

Variable	R <sup>2</sup> (%)	T-Statistic	Statistically Significant?
Party of President	0.02	1.08	No
Party of Senate Majority	0.00	-0.24	No
Party of House Majority	0.00	-0.08	No
Unification of Congress	0.01	0.82	No
Unification of Government	0.00	0.26	No

Source: Bloomberg and Goldman Sachs Asset Management. As of October 31, 2022. R<sup>2</sup> refers to the proportion of the variance for market returns that is explained by the relevant factor on the leftmost factor. A t-statistic is one of the measures that determines statistical significance of a null hypothesis. A t-statistic of 1.96 or greater means that the null hypothesis is able to be rejected with 95% statistical confidence. For illustrative purposes only. **Past performance does not guarantee future results, which may vary**

# Key Takeaways

We believe:

- Slower economic growth is driven by tighter financial conditions and necessary to tame inflation
- Each central bank is in a different spot, likely pointing to disperse tightening paths and greater market volatility
- Potential risk asset opportunities ahead may be increasingly idiosyncratic, concentrated, global, and tax-aware
- Years of T.I.N.A. sentiment may be transitioning to a world of T.A.R.A.

Source: Goldman Sachs Asset Management. As of October 31, 2022. "T.I.N.A." refers to "there is no alternative." "T.A.R.A." refers to "there are reasonable alternatives." 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.

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# Appendix

# Glossary

## Additional Notes

Page 23 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.

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 2,000 of the smallest securities based on a combination of their market cap and current index membership.

The Russell 3000® Index measures the performance of the largest 3,000 US companies representing approximately 97% of the investable US equity market.

The MSCI World Index is a broad global equity index that represents large and mid-cap equity performance across all 23 developed markets countries. It covers approximately 85% of the free float-adjusted market capitalization in each country.

The MSCI World ex USA Index captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries\*-- excluding the United States. With 913 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

The MSCI World Growth Index captures large and mid cap securities exhibiting overall growth style characteristics across 23 Developed Markets (DM) countries\*. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.

The MSCI World Value Index captures large and mid cap securities exhibiting overall value style characteristics across 23 Developed Markets (DM) countries\*. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.

The MSCI World Information Technology Index is designed to capture the large and mid cap segments across 23 Developed Markets (DM) countries\*. All securities in the index are classified in the Information Technology sector as per the Global Industry Classification Standard (GICS®).

The MSCI World Financials Index captures large and mid cap representation across 23 Developed Markets countries\*. All securities in the index are classified in the Financials sector as per the Global Industry Classification Standard (GICS®).

The Chicago Board Options Exchange Volatility Index (VIX) reflects a market estimate of future volatility, based on the weighted average of the implied volatilities for a wide range of strikes.

The Chicago Board Options Exchange VIX Volatility Index (VVIX) reflects implied volatility of implied S&P 500 Index volatility and the average during the referenced period.



# Glossary and Risk Considerations

## **Fixed Income**

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

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

The Bloomberg Global Aggregate - Corporate Index is a flagship measure of global investment grade, fixed-rate corporate debt. This multi-currency benchmark includes bonds from developed and emerging markets issuers within the industrial, utility and financial sectors.

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.

## **Other**

Cash flow yield (CFO) refers to the cash flow from operations as a percentage of market capitalization, representing the income created by an investment.

EBITDA refers to earnings before interest, taxes, depreciation, and amortization, and is a measure of a company's overall financial performance.

EPS refers to earnings per share.

Euro area refers to the Eurozone. The Eurozone is comprised of Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.

EV refers to enterprise value, the total value of a firm as calculated by the total market capitalization, plus total debt, less cash.

P/E refers to the price to earnings ratio.

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

Yield gap is the ratio of the dividend yield of the S&P 500 to a denominator of the yield of the 10-Year US Treasury.

## **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.

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

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.

Bonds are subject to interest rate, price and credit risks. Prices tend to be inversely affected by changes in interest rates.

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).

# General Disclosures

## **Risk Considerations**

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.

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

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

## **Strategic Long-Term Assumptions**

Alpha and tracking error assumptions reflect Multi-Asset Solutions' estimates for above-average active managers and are based on a historical study of the results of active management. Expected returns are estimates of hypothetical average returns of economic asset classes derived from statistical models. There can be no assurance that these returns can be achieved. Actual returns are likely to vary. Please see additional end disclosures. The data regarding strategic assumptions has been generated by MAS for informational purposes. As such data is estimated and based on a number of assumptions; it is subject to significant revision and may change materially with changes in the underlying assumptions. MAS has no obligation to provide updates or changes. The strategic long-term assumptions shown are largely based on proprietary models and do not provide any assurance as to future returns. They are not representative of how we will manage any portfolios or allocate funds to the asset classes.

Expected return portfolios apply statistical methods and a series of fixed assumptions to derive estimates of hypothetical average asset class performance. Reasonable people may disagree about the appropriate statistical portfolios and assumptions. These portfolios have limitations, as the assumptions may not be consensus views, or the portfolio may not be updated to reflect current economic or market conditions. These portfolios should not be relied upon to make predictions of actual future account performance. Goldman Sachs Asset Management has no obligation to provide updates or changes to such data.

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