MARKET PULSE

MACRO VIEWS

GLOBAL GROWTH: We expect energy supply to be a key feature of economic uncertainty in Europe, significantly pressuring the region's growth-inflation mix. In our view, the energy crisis may contribute to aggregate demand destruction, materially increasing the odds of a Euro area recession and weighing on US growth through trade spillovers. Consequently, we revised our 2022 US and Euro area growth to 1.6% and 2.9%, respectively.

INFLATION: We believe Euro area headline inflation will peak at 10.3% YoY in September on four key drivers: 1) elevated energy prices, 2) continued food price pressure, 3) prolonged euro weakness, and 4) re-intensified supply chain bottlenecks. US inflation is also likely to remain elevated on strong wage growth and firm shelter inflation, though early signs of relief are apparent—inflation expectations have softened, gas prices have eased, and core inflation has trended lower.

MONETARY POLICY: The ECB has joined the Fed in resorting to data-dependent guidance. However, the hurdle to seeing a steeper ECB hiking path remains high given a deteriorating growth outlook and weak euro. We expect a terminal rate of 1.50% by 1Q 2023. While the ECB's anti-fragmentation tool may be powerful, uncertain activation conditions may still necessitate a fiscal solution to contain fundamental sovereign risk.

US CONSUMER: Consumer wallet shares have shifted from discretionary to essential spending. Though saving buffers exist, financial cushions remain uneven. We expect 2022 cash flows to fall -3% in aggregate and -25% for low earners who rely on fiscal stimulus. Still, high absolute wealth and strong debt service capacity should keep households resilient.

MARKET VIEWS

EARNINGS: Preliminary 2Q S&P 500 earnings growth has printed near expectations, with a strong US dollar weighing on revenues. We estimate that a 10% appreciation of the trade-weighted US dollar reduces index-level earnings by 2-3%. Additional focus resides on companies indicating hiring freezes or slowdowns, which we expect may moderate a hot labor market and cool wage pressures. Overall, we favor profitability over revenue in a world of higher inflation and rates.

CREDIT: We believe recent credit spread widening may already reflect slowing macro activity. In the US, ratings migration remains net positive, albeit with slowing momentum. While the fundamental picture is likely slightly weaker in Europe, we think carry may be appealing as overall yields are higher. Still, the withdrawal of ECB support keeps us cautious.

COMMODITIES: The recent selloff across commodity markets reflects heightened recession risk and US dollar strength, despite continued supply fears. Considering our below-consensus expectation for Chinese growth, we think copper demand may soften, moderating our near-term outlook. We revised our 12m forecast from $12,000/ton to $9,000/ton.

FX: The US dollar has continued to appreciate, reaching parity against the euro last month. As US monetary policy tightening continues and risk-off sentiment deepens, we believe it can find additional strength near-term. More specifically, the greenback may perform well especially relative to the Chinese renminbi in the next year as renewed COVID-19 cases soften near-term Chinese economic growth.

ASSET CLASS OUTLOOK[1]

Less Favorable — More Favorable

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

ASSET CLASS FORECASTS[2]

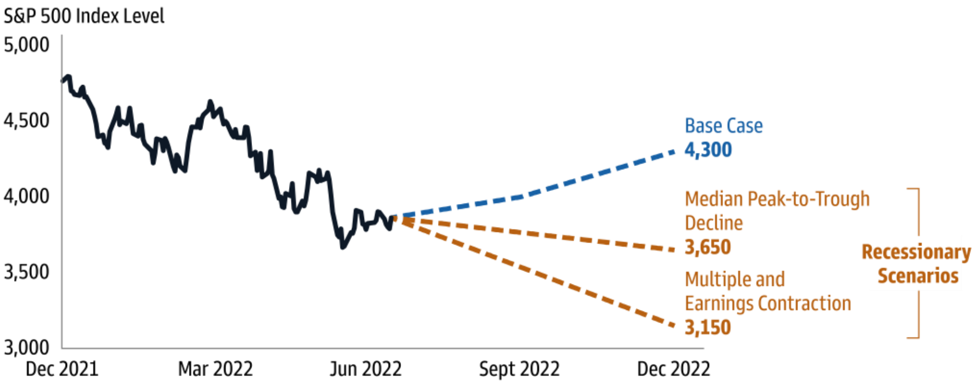
	Current	3m	12m	% Δ to 12m
S&P 500 ($)	4130	4000	4500	9.0
STOXX Europe (€)	438	390	460	5.0
MSCI Asia-Pacific Ex-Japan ($)	522	530	585	12.0
TOPIX (¥)	1940	1900	2100	8.2
10-Year Treasury	2.6	3.3	3.1	49 Bp
10-Year Bund	0.8	1.2	1.6	79 Bp
10-Year JGB	0.2	0.3	0.3	14 bp
Euro (€/$)	1.02	0.99	1.15	12.7
Pound (£/$)	1.22	1.19	1.25	2.6
Yen ($/¥)	133	125	123	(7.7)
Brent Crude Oil ($/bbl)	110	140	130	18.2
London Gold ($/troy oz)	1764	2100	2500	41.7

Source: Goldman Sachs Global Investment Research (GIR) and Goldman Sachs Asset Management as of August 2022. GDP growth forecasts reflect year-over-year figures. "YE" refers to year-end. 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. 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.**

Bear Bottom or Bounce

The US equity market has traded at levels suggesting significant macro weakness. While the path remains broad, two historical episodes where the S&P 500 contracted -20% in the first half of the year were followed by median forward returns of +33% in the year ahead. At today's price, we believe risks ahead are becoming more balanced with market confidence likely to be restored once 1) inflation is past peak and 2) Fed policy trajectory shifts. While de-risking may make sense for select investors, those with time horizon and sufficient risk appetite may benefit from staying the course, especially after already realizing bear market losses.

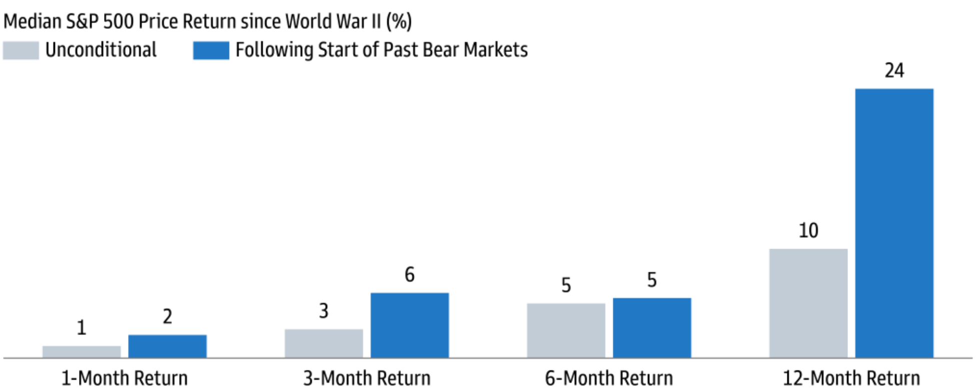
EQUITY OUTCOMES ARE WIDE RANGING, BUT MORE BALANCED



US equity levels have priced in a mild recessionary outcome, with market expectations running ahead of economic signals. While there are multiple potential paths for equities, we believe risks have started to become more symmetrical today. We expect any evidence of receding inflation, shifting Fed policy tone, and limited earnings impact to register as catalysts for higher prices and lower volatility.

Source: Goldman Sachs GIR and Goldman Sachs Asset Management.

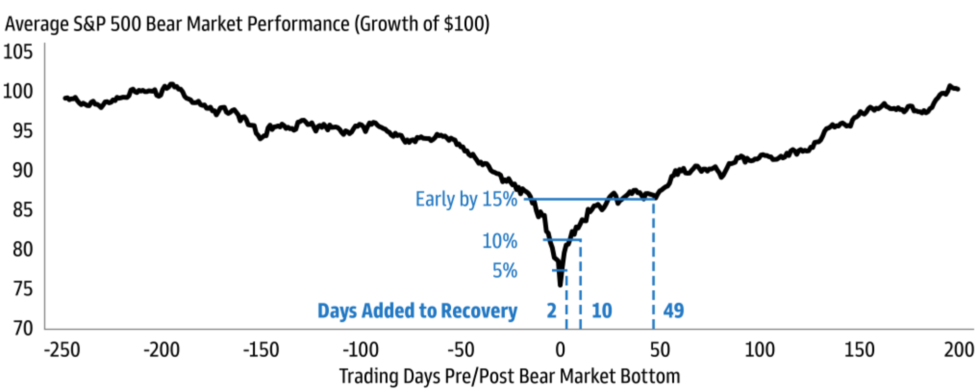
BUYING BEARS HAVE HISTORICALLY DELIVERED FAVORABLE RETURNS



The math has also become more favorable for investors, in our view. In past periods where equity markets have priced in a -20% pullback, buying into a bear market has generated +24% return over the next 12 months, with a positive hit rate of 75%. Similarly, equities have gained on median +33% in the 12-month ahead even after being down -20% in the 1H of the year. As the fundamental picture remains intact, we believe tough starts do not always mean bad finishes.

Source: Goldman Sachs Asset Management.

THE COST OF BEING EARLY TO THE RECOVERY IS OFTEN SMALL



For investors who have already endured today's bear market losses, we believe staying the course may be the best way to benefit from the potential positive skew of equity returns, especially if time horizon and risk tolerance is on one's side. An analysis of past bear markets suggests that the potential cost of being early to a recovery has been small—being 15% early to a bottom has added only 49 days to the recovery timeline.

Source: Bloomberg and Goldman Sachs Asset Management.

Top Section Notes: As of July 15, 2022. The base case reflects S&P 500 index level forecast by Goldman Sachs Global Investment Research. "Recession scenarios" refer to the potential downside for S&P 500 index level if the US entered a recession. The first scenario, median peak-to-trough price decline (-24%), is based on the median S&P 500 price decline observed during the past 12 US recessions. The second scenario, multiple and earnings contraction, is based on the assumption that valuation compression on the S&P 500 index occurs alongside a moderate earnings contraction. Middle Section Notes: As of June 30, 2022. "1H" refers to first half of the year. "Unconditional" represents the return across all periods. Bottom Section Notes: As of June 30, 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. **Past performance does not guarantee future results, which may vary.**

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1. Asset Class Outlook for equities, credits, sovereigns, real assets, and currencies are informed by Goldman Sachs Asset Management, Goldman Sachs Global Investment Research, and Goldman Sachs Investment Strategy Group views. The views expressed herein are as of August 2022 and subject to change in the future. "Shorter Term" view refers to less than 1 year. "Longer Term" view refers to 1-5 years. Views within asset classes are ranked by the short-term outlook in the order of most favored to least favored. Individual portfolio management teams for Goldman Sachs Asset Management may have views and opinions and/or make investment decisions that, in certain instances, may not always be consistent with the views and opinions expressed herein.
2. Price targets of major asset classes are provided by Goldman Sachs Global Investment Research. Source: "Global equities continued to rise; Cyclicals underperform" – 08/01/2022.

Page 1 Definitions:

Anti-fragmentation tool refers to the ECB's monetary policy tool used to ensure that its monetary policy stance is transmitted smoothly across all Euro area countries. One implementation method includes having flexibility around reinvesting redemptions from the emergency bond-purchasing program.

Bear market refers to an S&P 500 index peak-to-trough price decline of 20% or greater.

Bbl refers to per barrel.

Bps refers to basis points.

Brent crude oil is a common international benchmark for oil prices.

Carry refers to the difference between the yield on a longer maturity bond and the cost of borrowing.

DM refers to developed markets.

ECB refers to the European Central Bank.

Fed refers to the Federal Reserve.

GDP refers to gross domestic product.

Median refers to the midpoint of a frequency distribution of observed values or quantities.

Pp refers to percentage point.

Peak-to-trough decline refers to the magnitude that asset or index prices fall from a local high to a local low.

Ratings migration refers to the change in credit rating on corporate debt.

Risk-off sentiment refers to an investor's appetite to increase exposure to risk assets.

Shelter inflation refers to the increase in housing costs based on rent.

Terminal rates refer to the neutral federal funds rate, or the rate that is consistent with full employment, capacity utilization, and growth.

Trade-weighted US dollar measures the value of the US dollar compared against certain foreign currencies.

US Core PCE refers to the US core personal consumption expenditure price index, excluding food and energy.

WTI crude oil refers to West Texas Intermediate crude oil, a common benchmark for oil prices representing oil produced in the US.

YoY refers to year over year change.

Page 2 Notes:

Middle Chart: S&P 500 index data sourced from Bloomberg. The chart isolates each time since 1945 that the S&P 500 has fallen 20% or more below its last high. This has occurred 12 times since 1945. The price returns are calculated over the following 1-, 3-, 6-, and 12-month horizons across each of those 12 instances. The exhibit shows the median outcome across all 12 historical events.

Bottom Chart: Bear market refers to an S&P 500 index peak-to-trough price decline of 20% or greater.

Glossary

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

The Dow Jones Equal Weight US Issued Corporate Bond Index is designed to track the total returns of 100 large and liquid investment-grade bonds issued by companies in the US corporate bond market.

The MSCI AC Asia Pacific ex Japan Index captures large and mid cap representation across 4 of 5 Developed Markets countries and 8 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 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 STOXX Europe 600 Index is derived from the STOXX Europe Total Market Index (TMI) and is a subset of the STOXX Global 1800 Index.

The Tokyo Price Index (TOPIX) is a metric for stock prices on the Tokyo Stock Exchange (TSE). A capitalization-weighted index, TOPIX lists all firms that have been determined to be part of the "first section" of the TSE.

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

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

Risk Considerations

Equity securities are more volatile than bonds and subject to greater risks. Foreign and emerging markets investments may be more volatile and less liquid than investments in US securities and are subject to the risks of currency fluctuations and adverse economic or political developments. 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. Currency fluctuations will also affect the value of an investment.

Investments in fixed income securities are subject to the risks associated with debt securities generally, including credit, liquidity, interest rate, call and extension risk.

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).

High yield fixed income securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities.

A 10-Year Treasury is a debt obligation backed by the United States government and its interest payments are exempt from state and local taxes. However, interest payments are not exempt from federal taxes.

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The above are not an exhaustive list of potential risks. There may be additional risks that should be considered before any investment decision.

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