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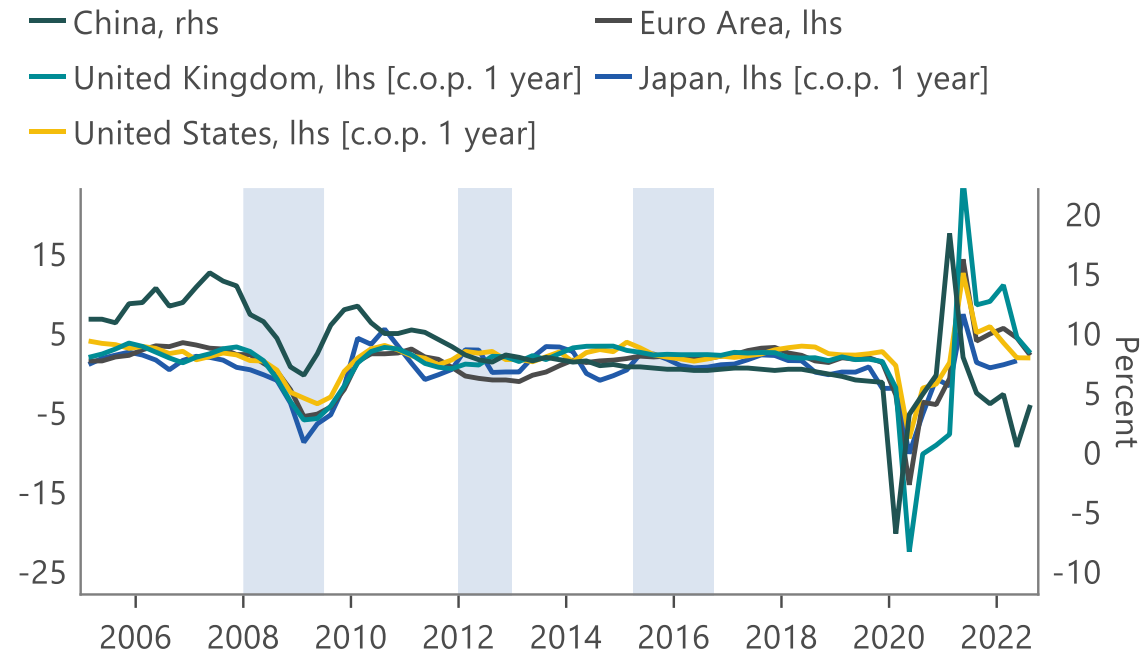


Global Macro Outlook for 2023

Lale Akoner, Senior Market Strategist

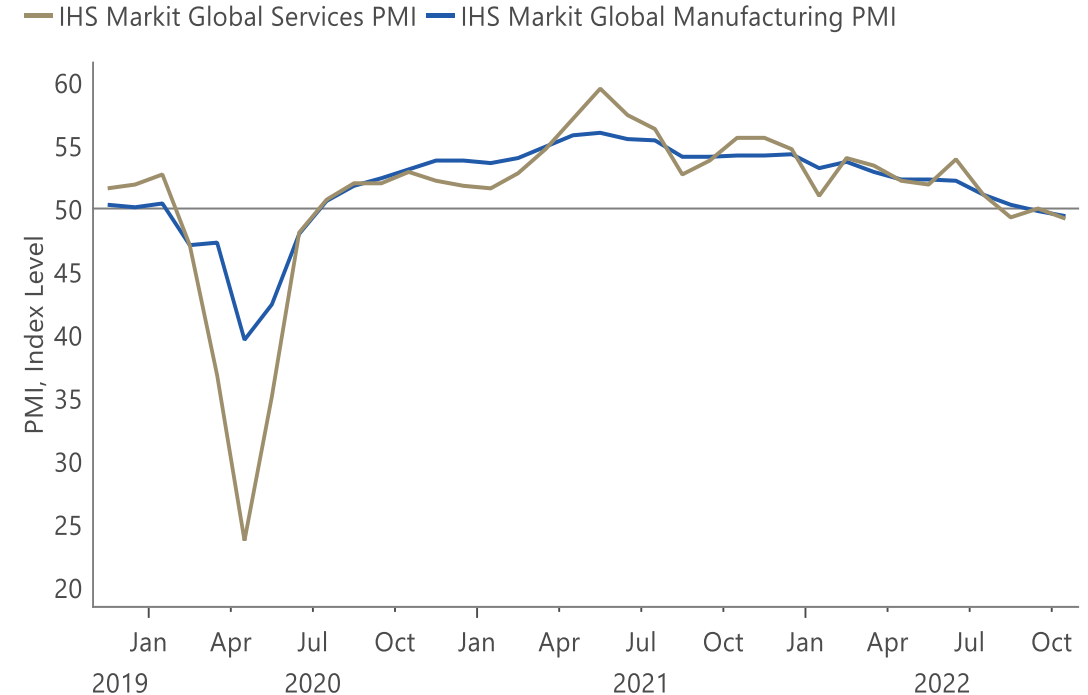
World economic activity continues to slowdown

GDP-growth: US, EA, JP, UK, CN



Source: Macrobond, BNY Mellon Investment Management

Global PMIs



Source: BNY Mellon IM, Macrobond, IHS Markit
Data as of 11/13/2022

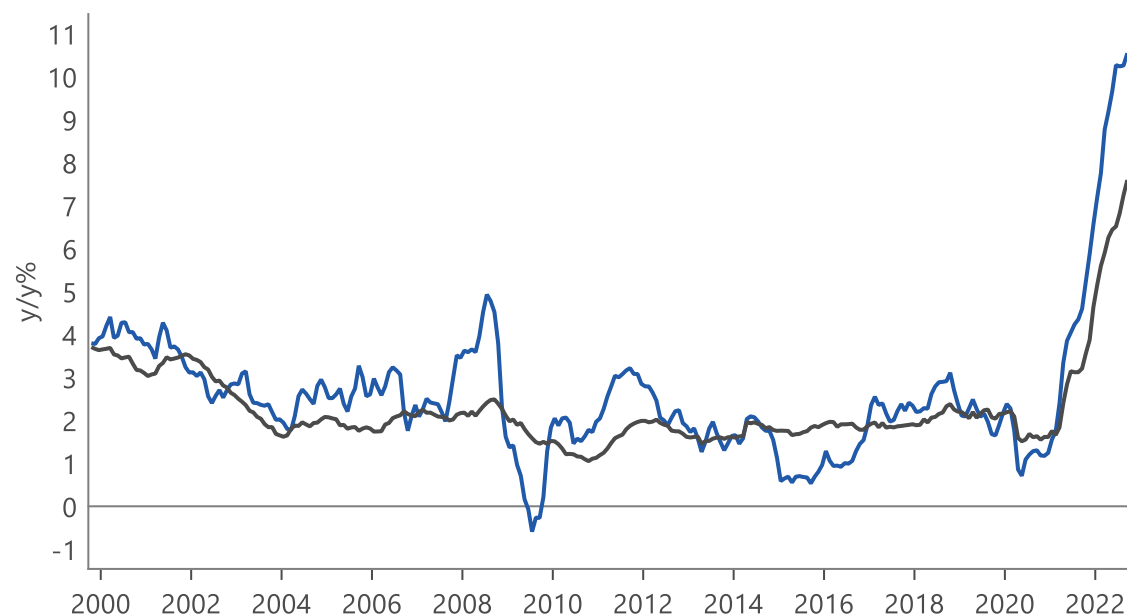
Latest data available as of November 2022. Source: Macrobond.

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Headline inflation close to peak in most DM, but core inflation an issue

OECD inflation

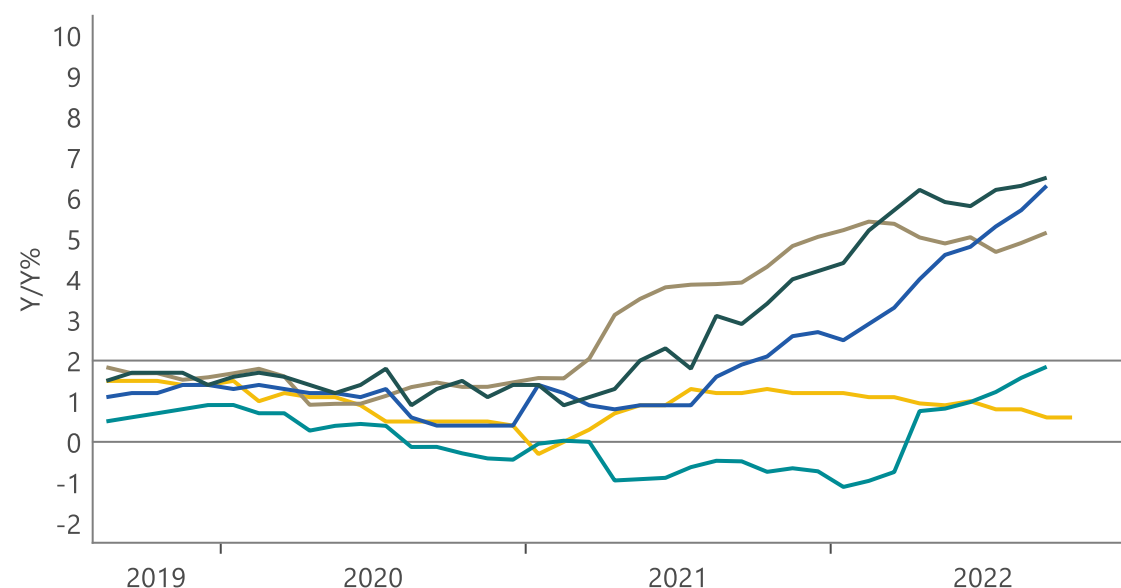
— OECD all items, core [c.o.p. 1 year] — OECD all items, total [c.o.p. 1 year]



Source: Macrobond, BNY Mellon Investment Management,
OECD (Organisation for Economic Co-operation & Development)
Data as of 11/14/2022

Core Inflation: US, UK, Euro Area, China & Japan --Yearly % Change

— UK — Japan (Nationwide) — Euro Area (HICP) — U.S. (PCE) — China

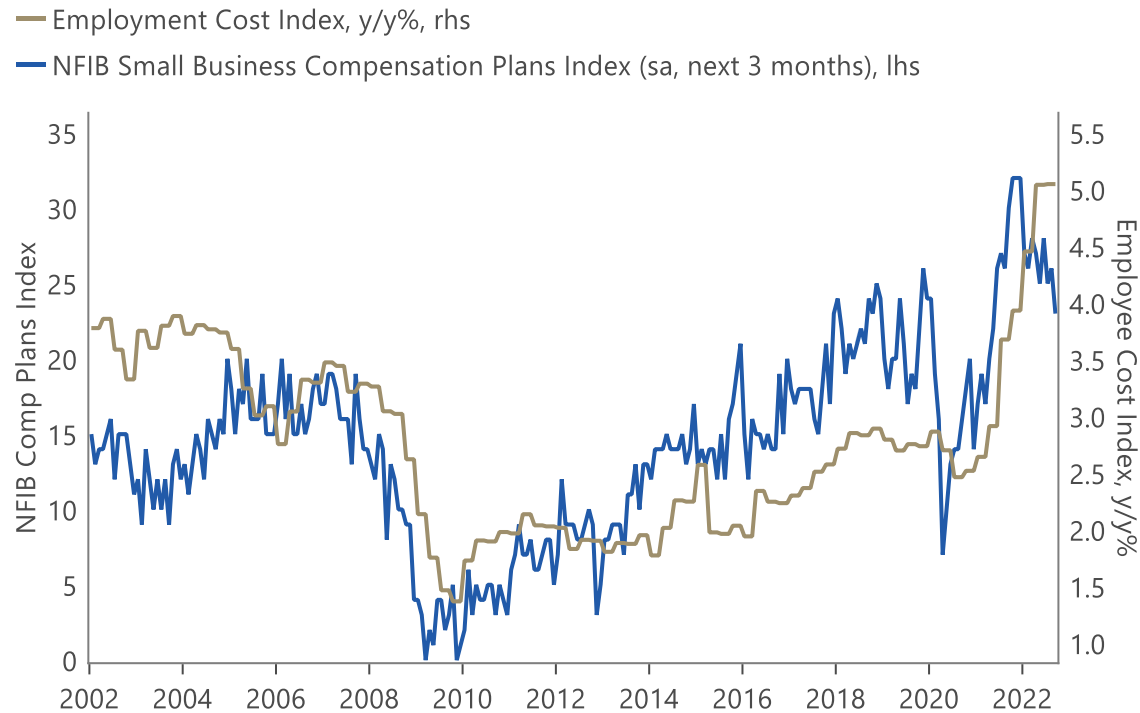


Source: Macrobond, BNY Mellon Investment Management, National Sources
Data as of 11/13/2022

Latest data available as of November 2022. Source: Macrobond.

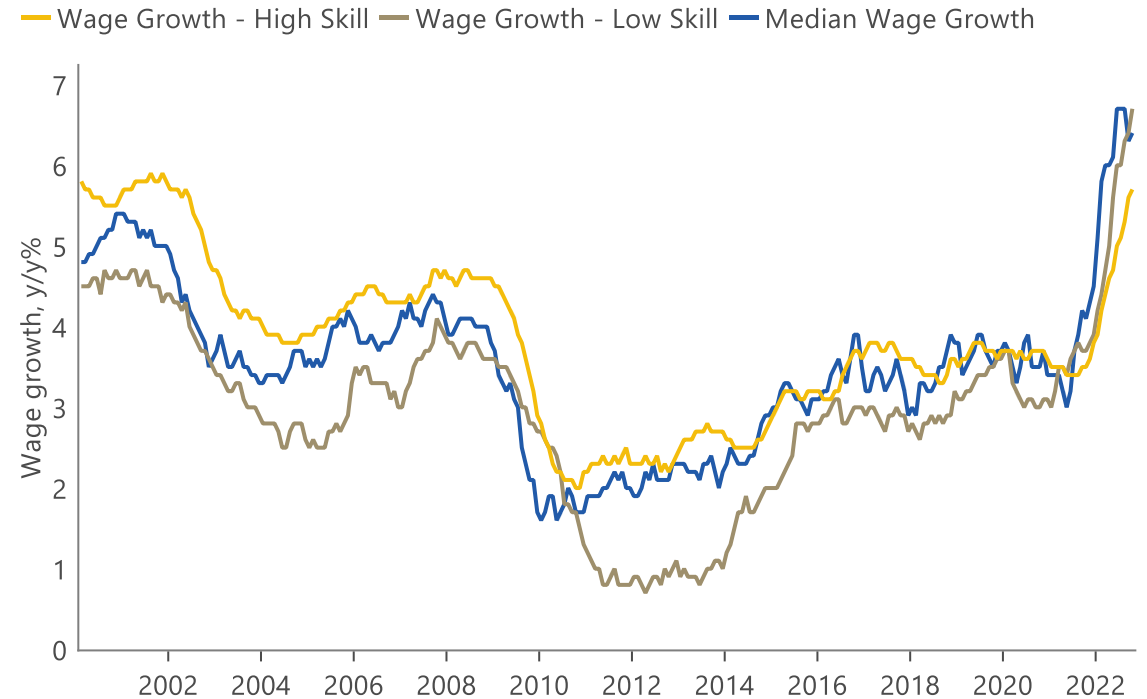
Wage inflation remains high and sticky –above the Fed’s comfort level

U.S. Employee Cost Index & Compensation Plans



Source: BNY Mellon IM, Macrobond
Data as of 11/14/2022

Atlanta Fed Wage Growth Tracker



Source: BNY Mellon IM, Macrobond, Federal Reserve Bank of Atlanta
Data as of 11/14/2022

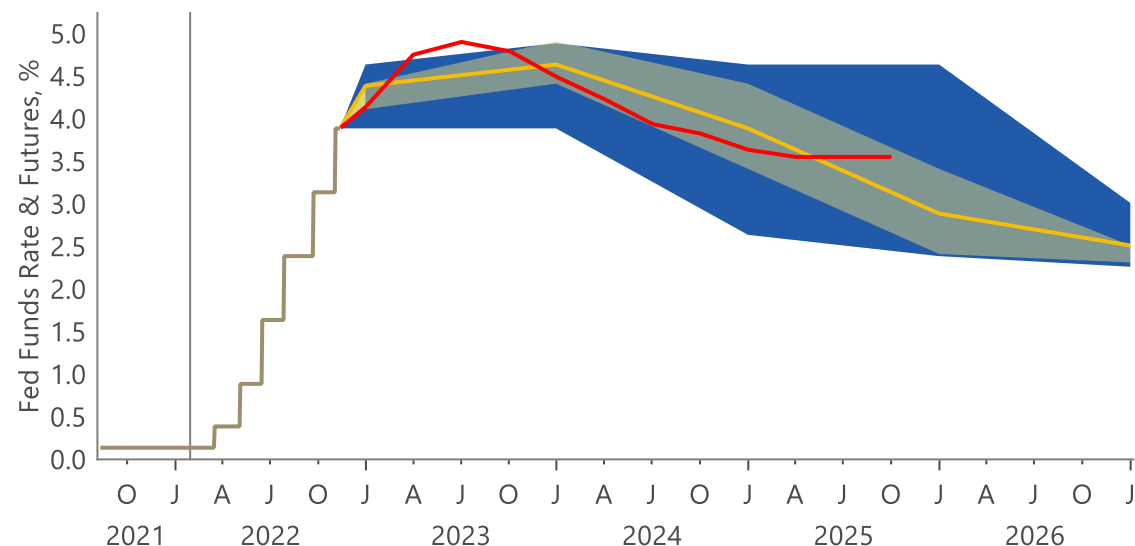
Latest data available as of November 2022. Source: Macrobond.

Markets price in recession as policy expectations start flagging

Latest Fed vs Market

Dot Plot as of November 2022 Meeting

— FFR (Mid/Actual) — FFR Median (Dot Plot) ■ Range
— FF Futures — Central Tendency



Source: Macrobond, BNY Mellon Investment Management, CME Group, Federal Reserve
Data as of 11/13/2022

Number of (25 basis point) hikes priced in by the market

— U.S. 1y — Euro Area 1y (proxy) — U.K. 1y



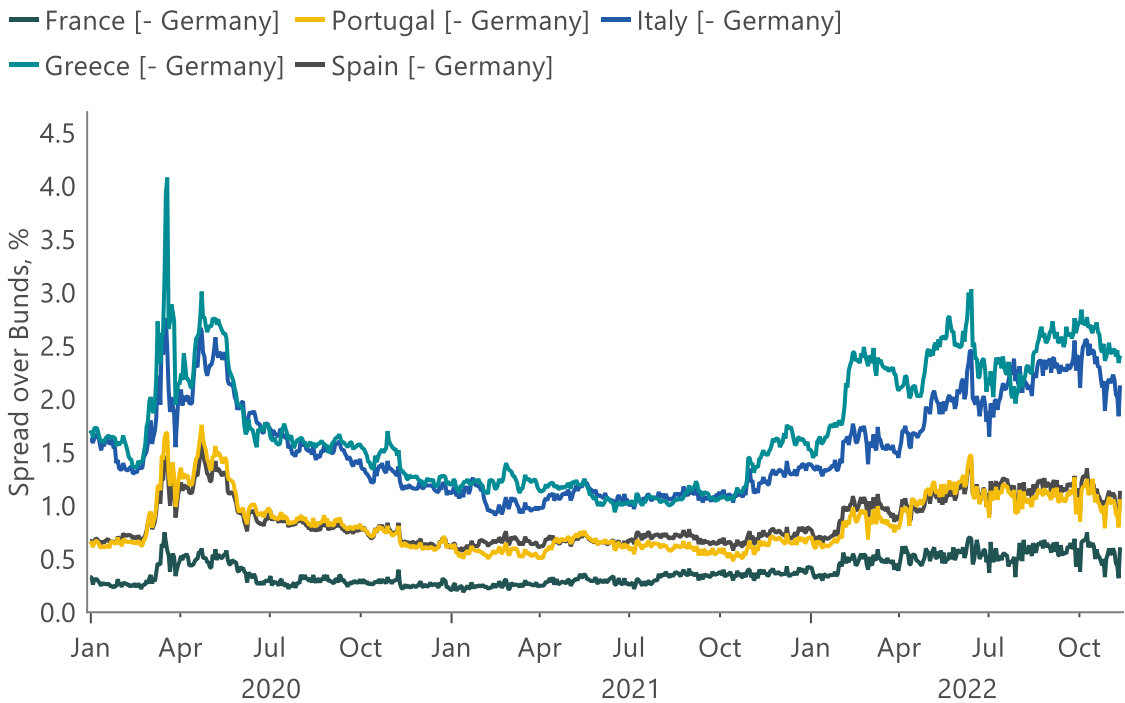
Source: Macrobond, BNY Mellon Investment Management,
Federal Reserve, Federal Reserve Bank of New York, Bank of England, ECB (European Central Bank)
Data as of 11/14/2022

Latest data available for both charts as of November 2022. Source: Macrobond.

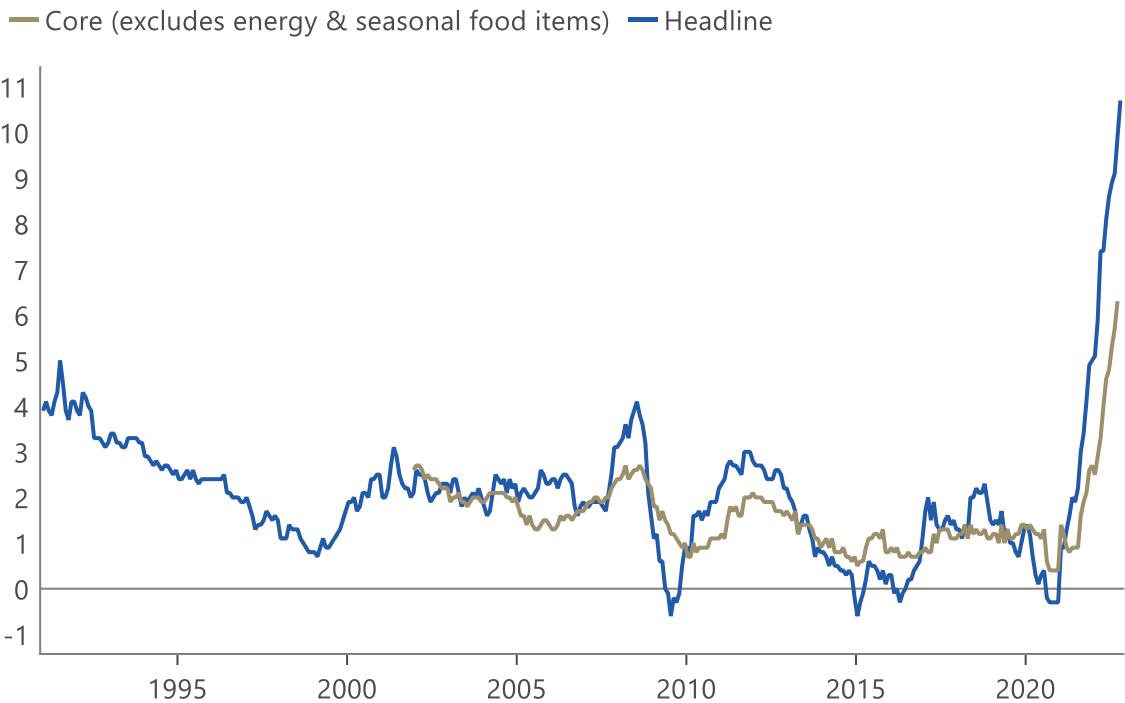
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Recession, fragmentation risk & surging inflation places the ECB in a bind

Euro area 10-year sovereign spreads to bunds



Euro-Area Inflation: Headline & Core, y/y%



Source: Macrobond, BNY Mellon Investment Management, Macrobond Financial AB
Data as of 11/14/2022

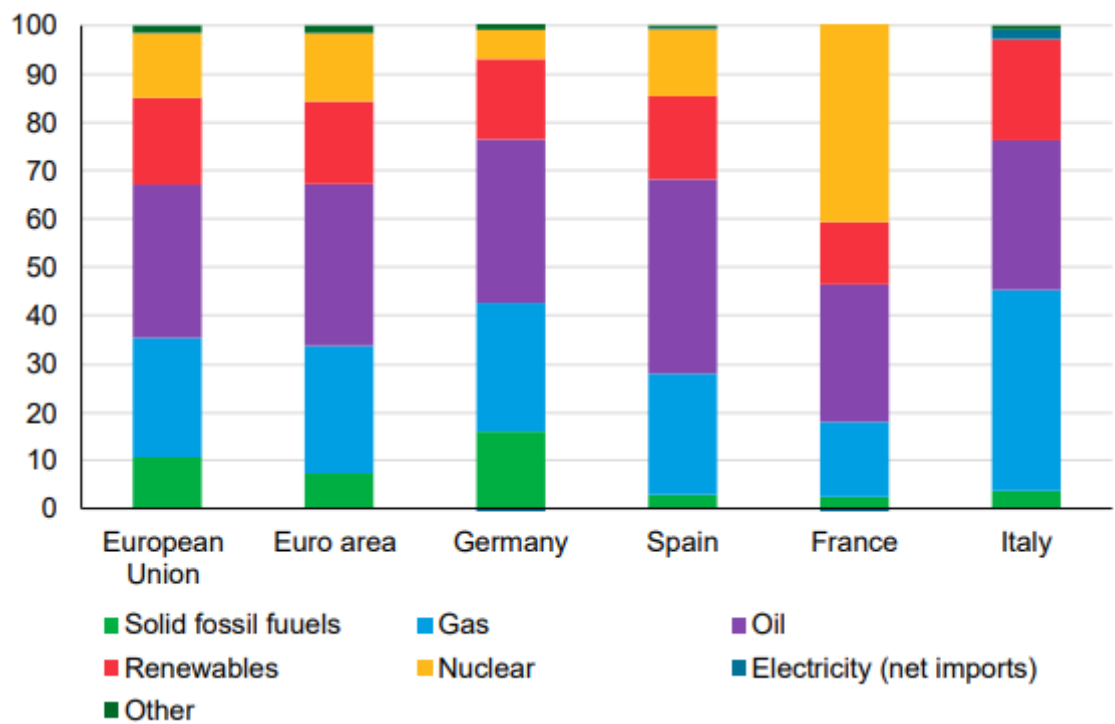
Source: Macrobond, BNY Mellon Investment Management, Eurostat
Data as of 11/14/2022

ECB stands for European Central Bank. Data as of November 2022. Source: Macrobond.

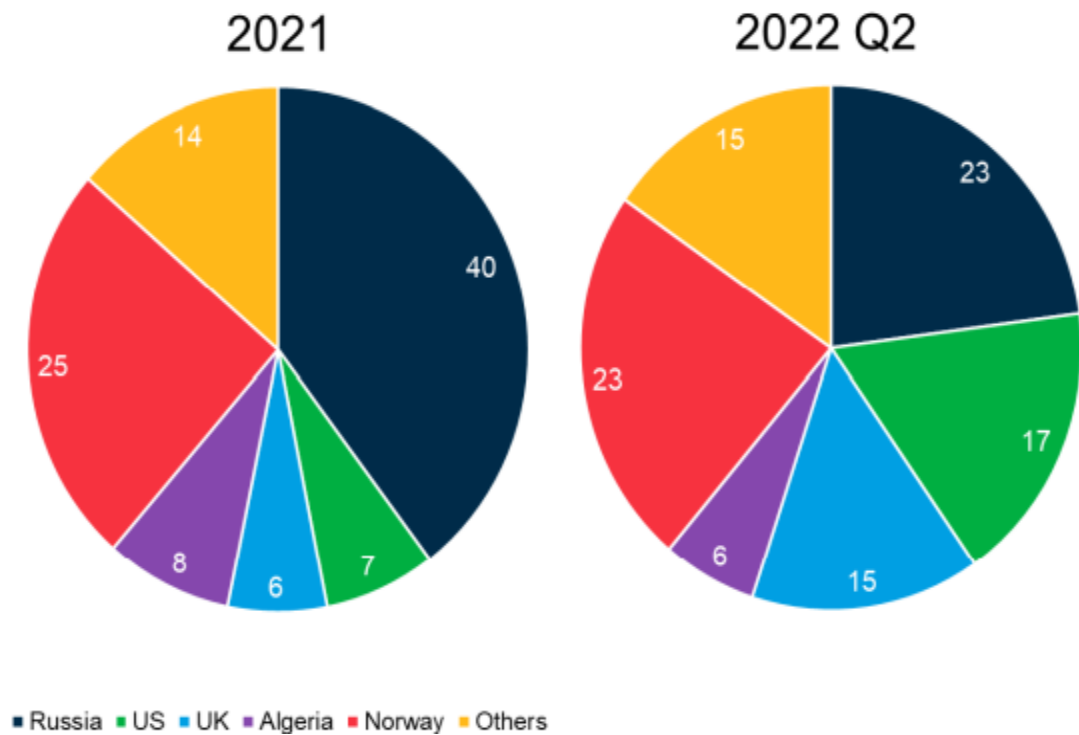
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Europe's energy substitution is impressive

European gross available energy by source



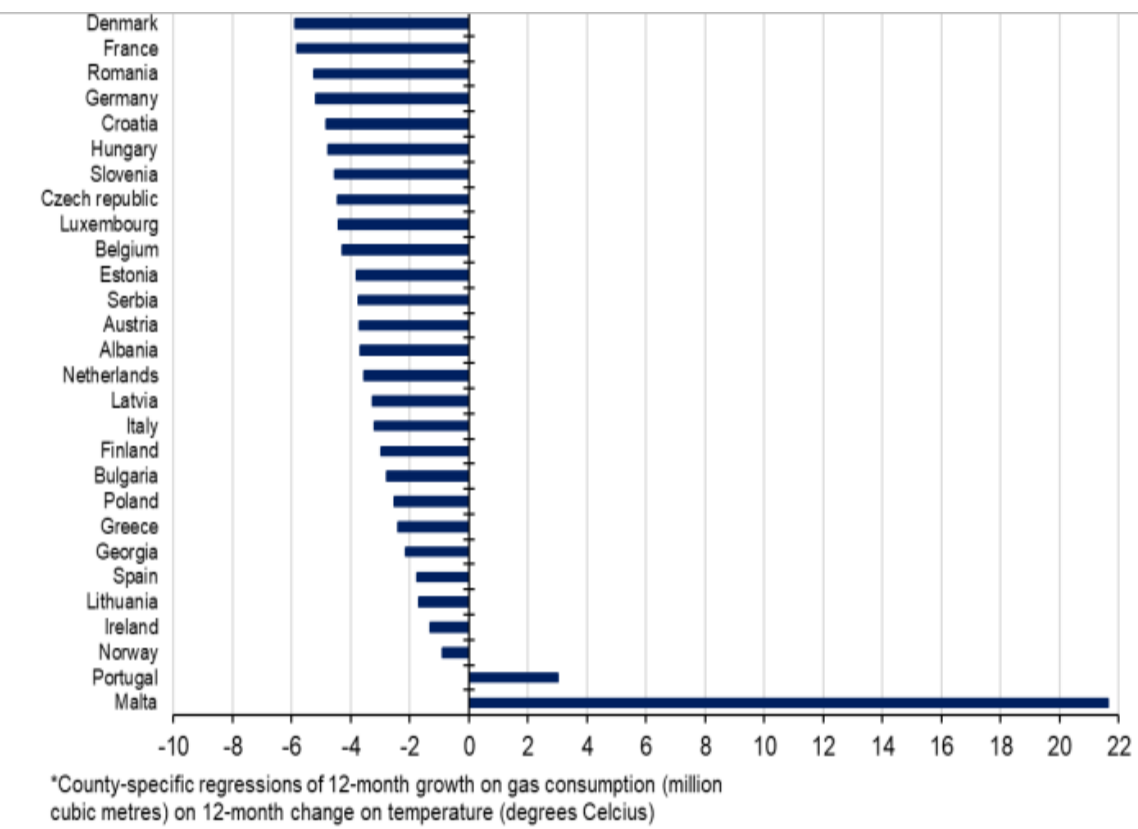
European gas imports



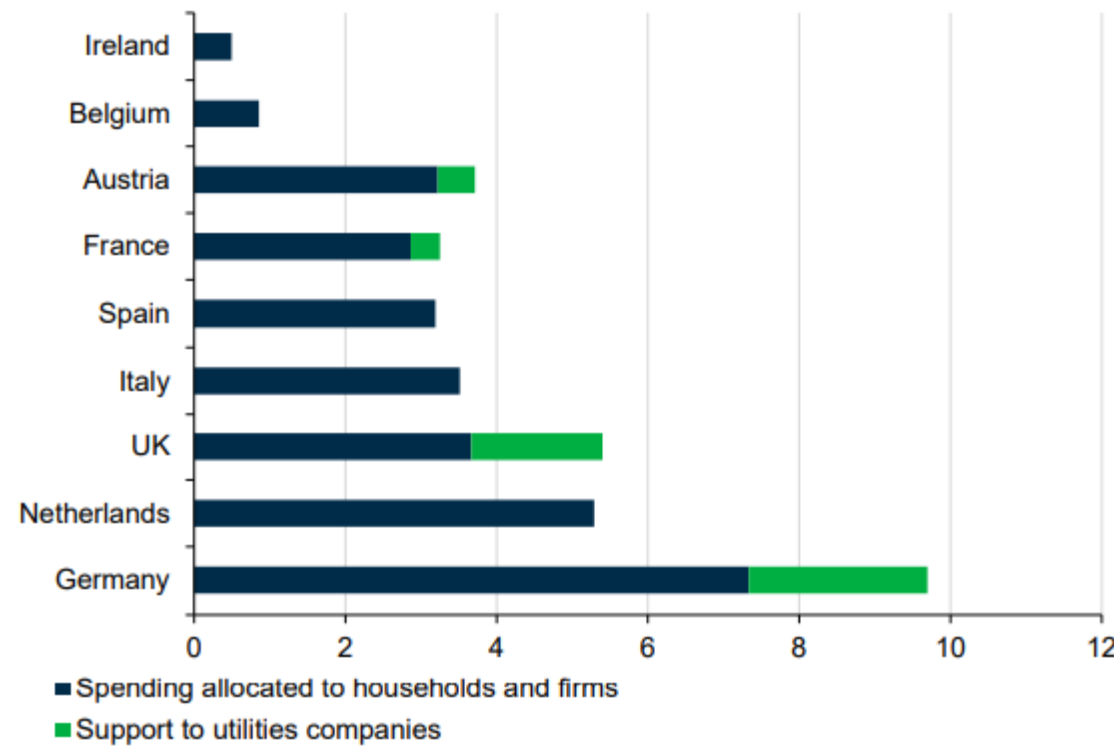
Data as of November 2022. Source: Macrobond.

But winter is coming- consumption depends heavily on temperature

Sensitivity of gas consumption on temperature changes



European energy support measures (% of GDP)



Data as of November 2022. Source: Macrobond.

Our scenarios

Global 'Softish' Landing — 30%

- Inflation pressures recede without the need for further material tightening
- The major advanced economies avoid a recession
- A risk-on mood prevails in financial markets
- The dollar weakens more than expected

Global Recession — 60%

- Inflation persistence moves towards levels last seen during the 1970s, 80s and 90s. With a good part of their credibility gone, central banks are forced to tighten aggressively to wrestle down inflation
- Large monetary policy-led recessions occur in the US and euro area with China's growth dragged down too
- Equities fall further and the dollar strengthens further before falling back

Something breaks — 10%

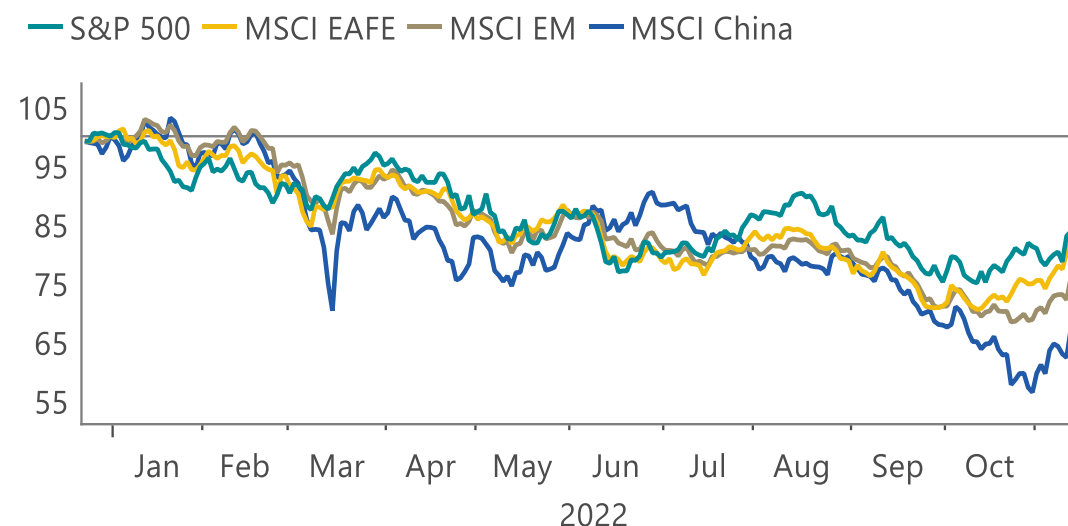
- There has been some increase in inflation persistence, but the main trigger for this scenario is a persistent rise in r^*
- A substantial tightening causes something to break and there is a severe recession; policy is forced to ease in response
- Equities collapse and the dollar strengthens in a risk-off environment



Market pricing and performance

Market breadth shows signs of stabilization, still early to call the market bottom

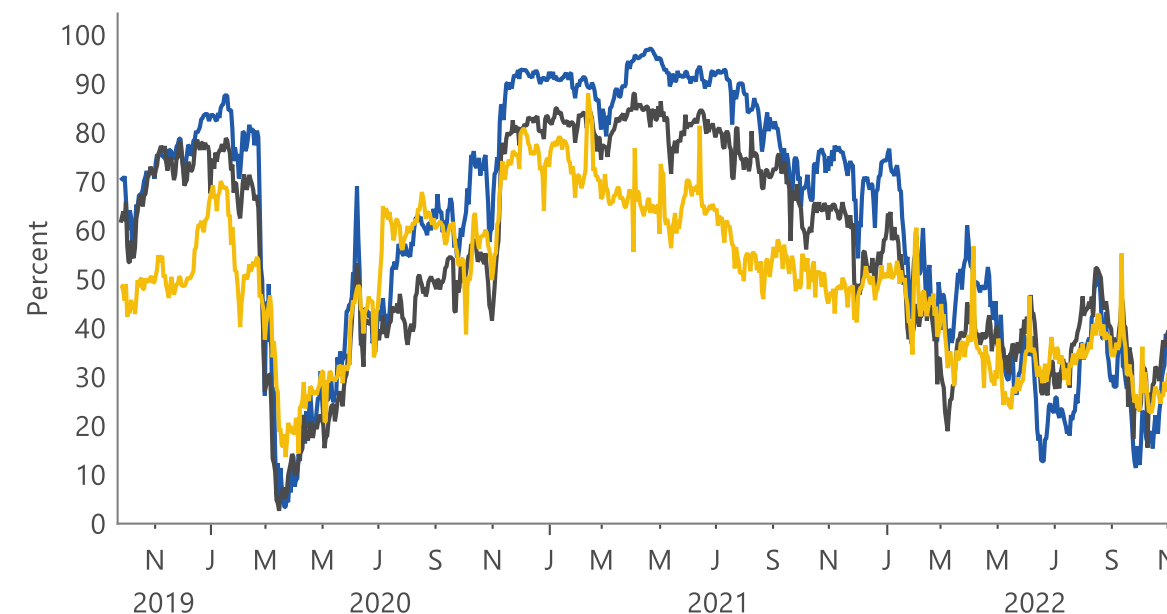
Global Equities YTD performance (rebased to 100, January 2021)



Source: Macrobond, BNY Mellon Investment Management,
Data as of 11/13/2022

% of stocks above 200-day moving average

— MSCI EMs — MSCI EAFE — S&P 500



Source: Macrobond, BNY Mellon Investment Management,
Data as of 11/13/2022

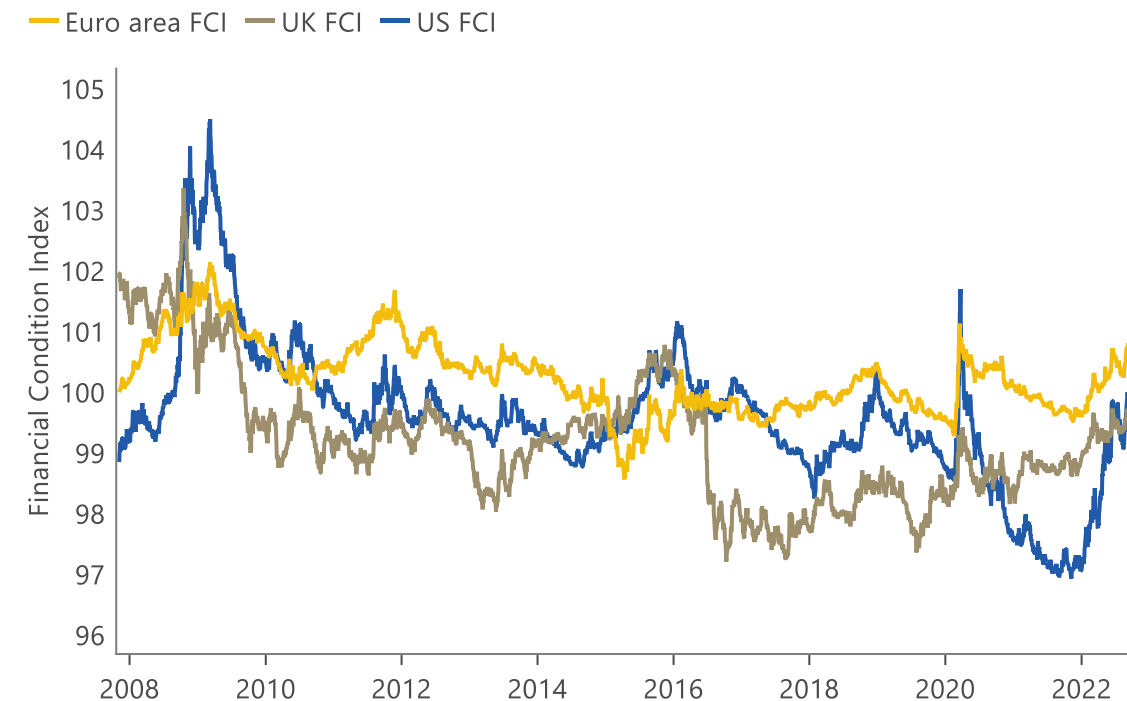
Financial conditions tightened most rapidly in a decade, pressing equity valuations

MSCI Equity Indices - Forward Price-Earnings Ratios



Source: Macrobond, BNY Mellon Investment Management, Bloomberg
Data as of 11/14/2022

Major Developed Markets Financial Conditions



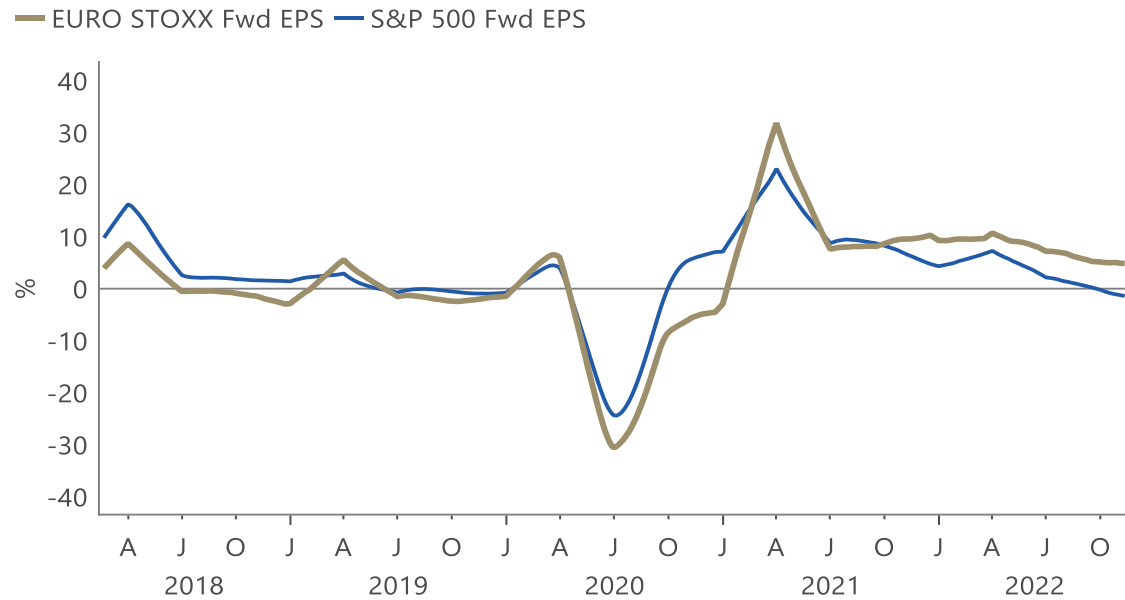
Source: Macrobond, BNY Mellon Investment Management,
Data as of 11/13/2022

PE: price to earnings ratio. Data as of November 2022. Source: JP Morgan and Macrobond.

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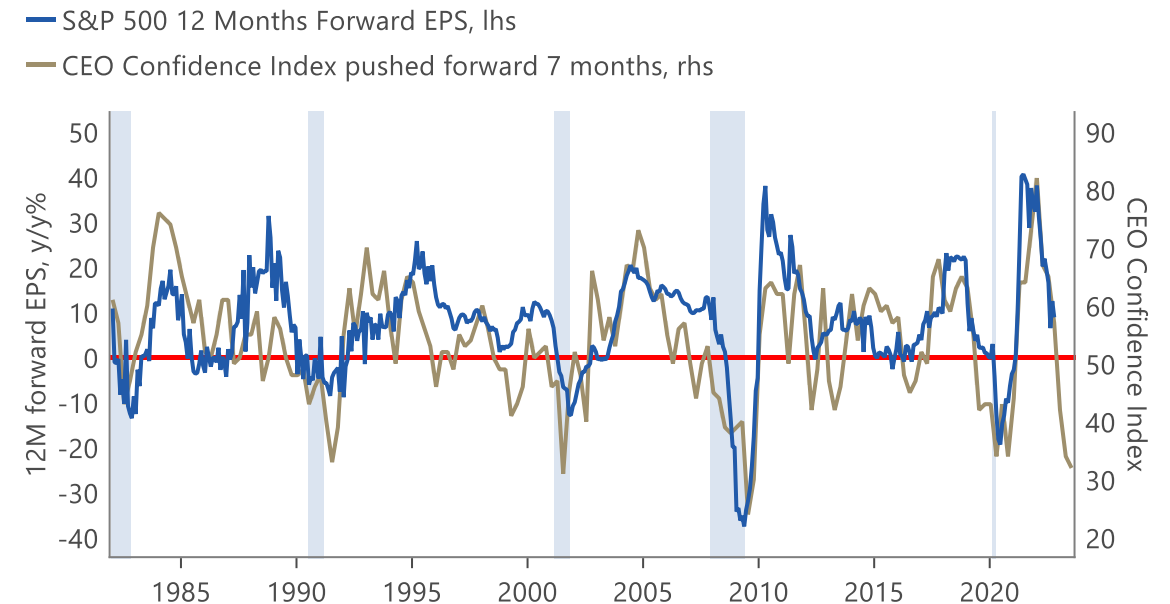
Earnings estimates have more room to soften

S&P500 & EURO STOXX Change in Quarterly Earnings (%)



CEO Confidence and Forward Earnings

Waning CEO confidence signals weaker earnings ahead (they should know); shaded areas are recessions

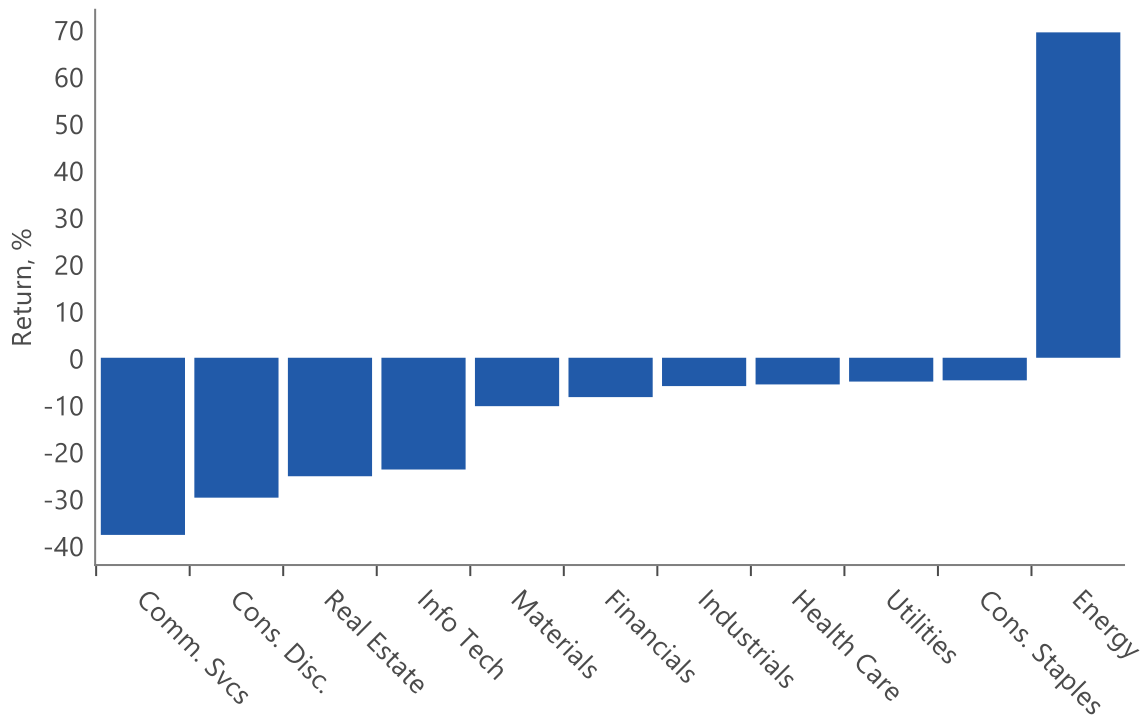


Latest data available as of November 2022. Source: Macrobond.

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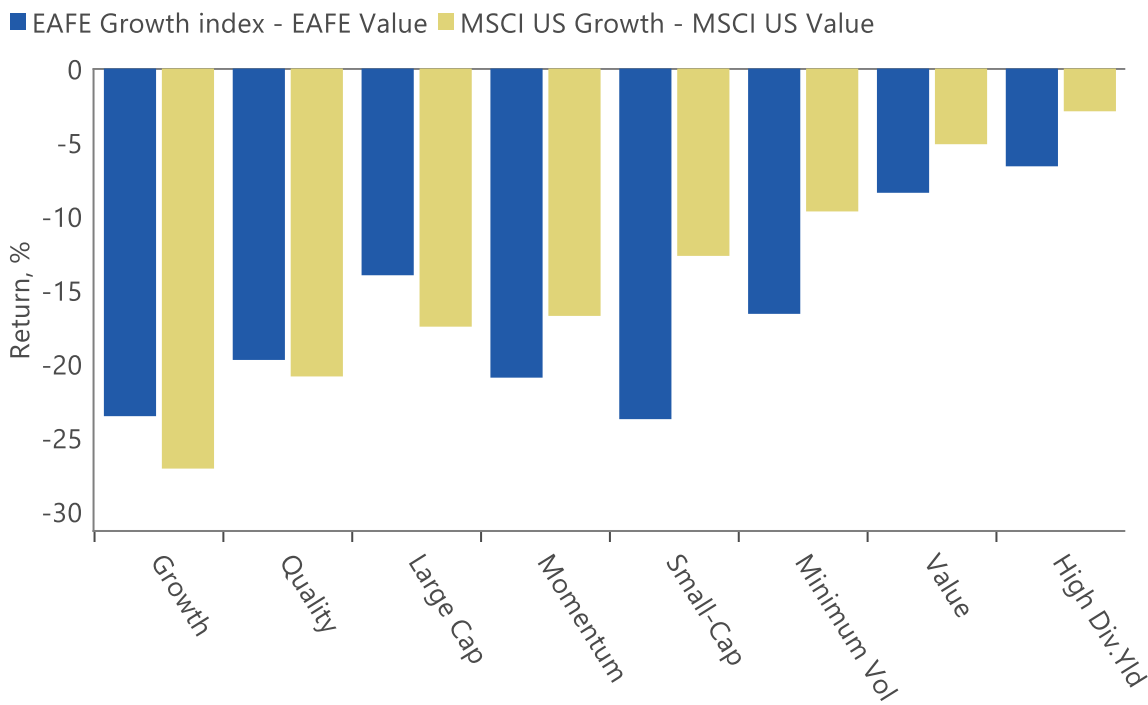
Defensive sectors still a safer bet

S&P 500 YTD Sector Returns (%)



Source: BNY Mellon, Macrobond, Bloomberg
Data as of 11/13/2022

MSCI US Vs. EAFE: Year-to-date Factor Returns (%)



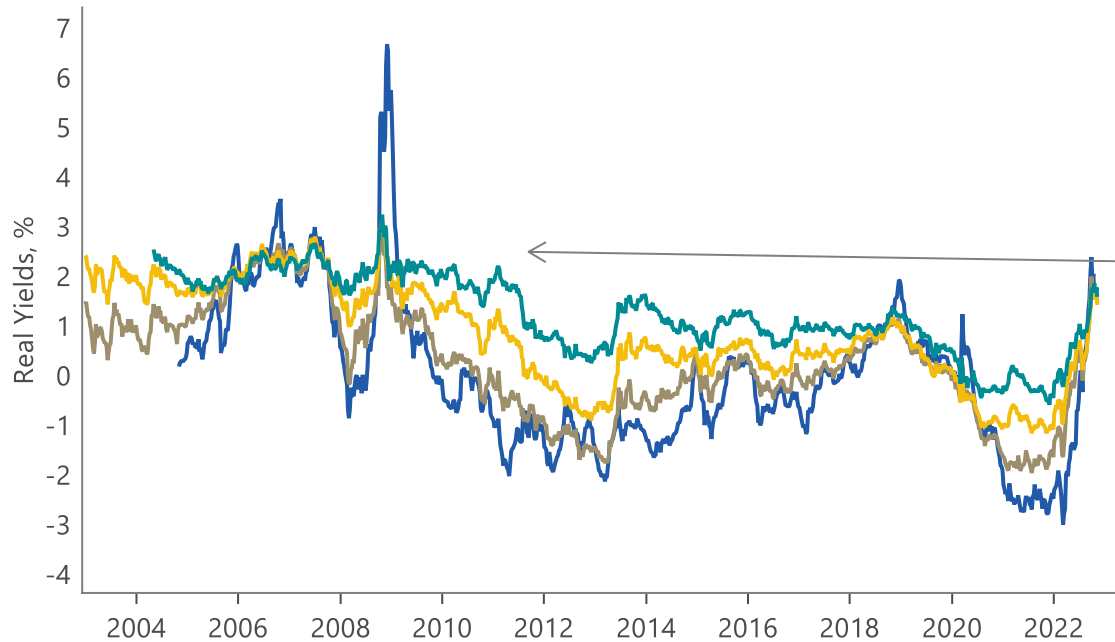
Source: BNY Mellon IM, Macrobond, MSCI
Data as of 11/13/2022

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Fed hawkishness & US exceptionalism drove the USD to decadal highs

US TIPS (Real) Yields, %

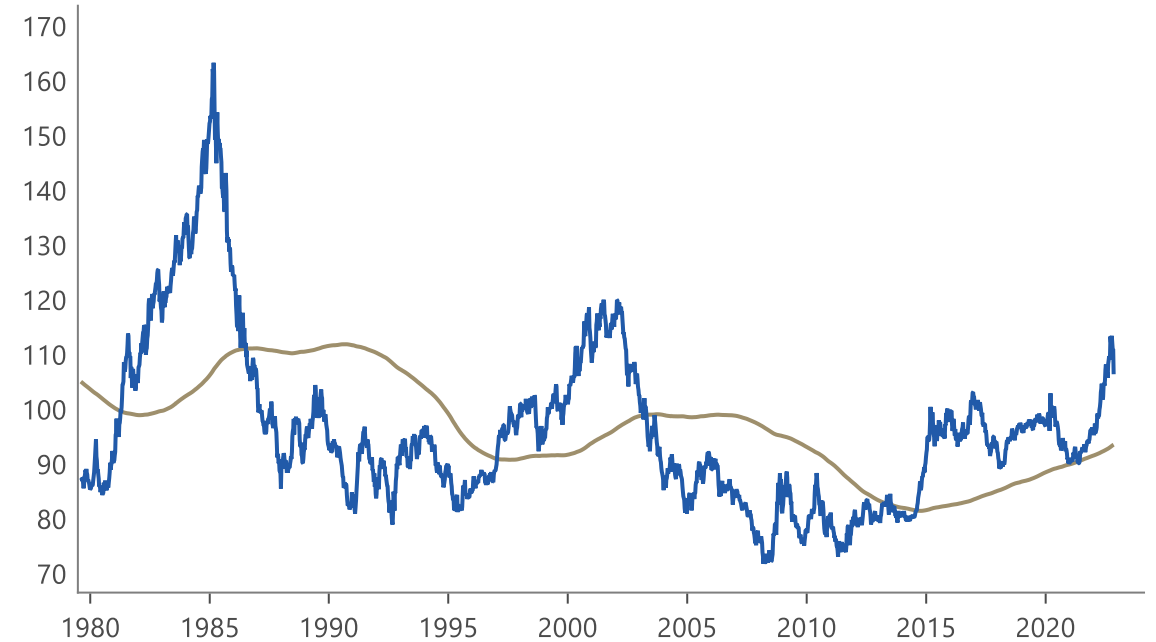
— TIPS 30Y Yield — TIPS 10Y Yield — TIPS 5Y Yield — TIPS 2Y Yield



Source: Macrobond, BNY Mellon Investment Management, Bloomberg
Data as of 11/13/2022

USD (DXY) Index and its long-term trend

— USD Index — 10 year moving average

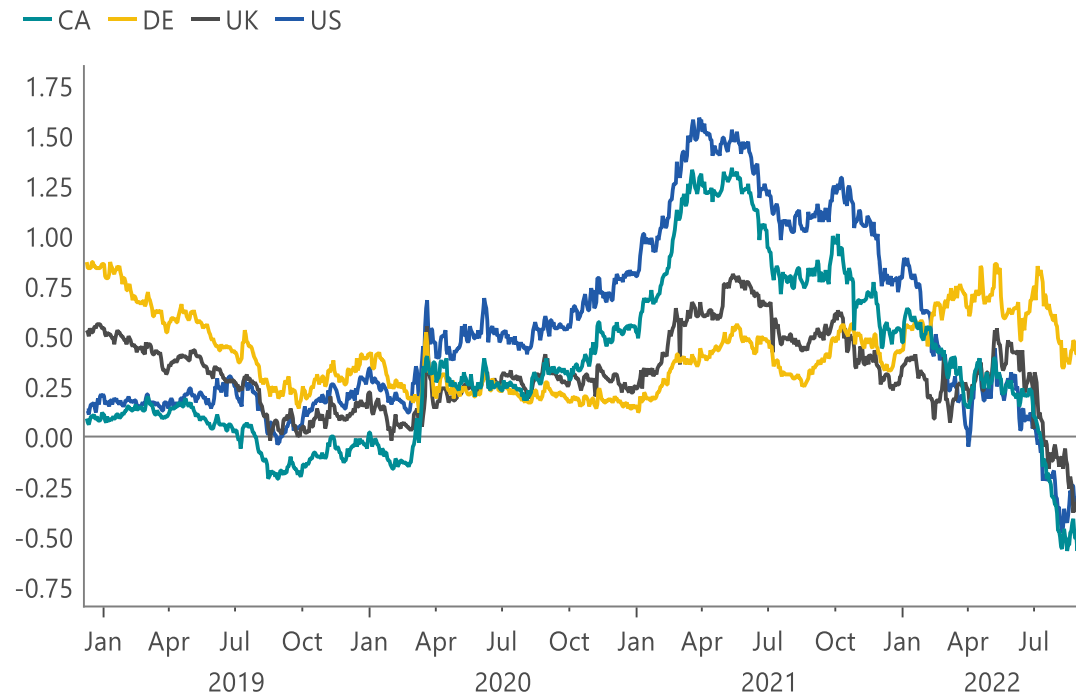


Source: Macrobond, BNY Mellon Investment Management, Intercontinental Exchange (ICE)
Data as of 11/13/2022

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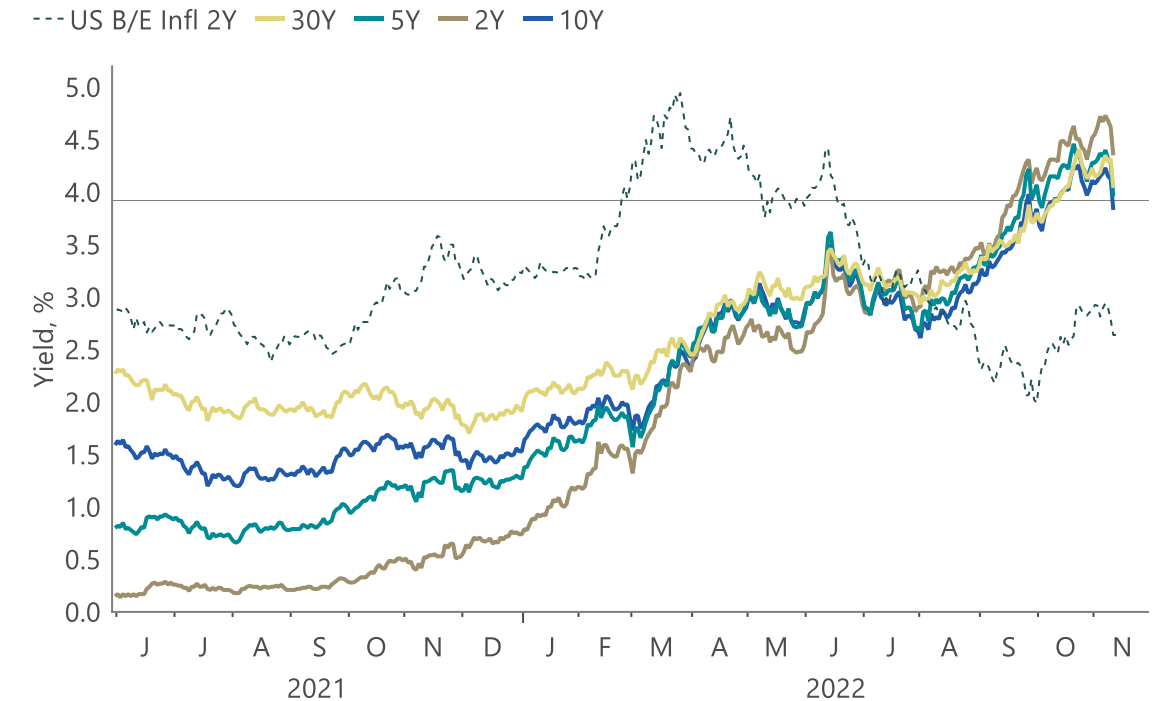
Yield curves remain inverted, signaling recession in major DMs

Government Benchmarks, 10y - 2y Yield Spread



Source: Macrobond, BNY Mellon Investment Management, Bloomberg
Data as of 11/13/2022

United States, Government Benchmarks Yield



Source: Macrobond, BNY Mellon Investment Management, Bloomberg
Data as of 11/13/2022

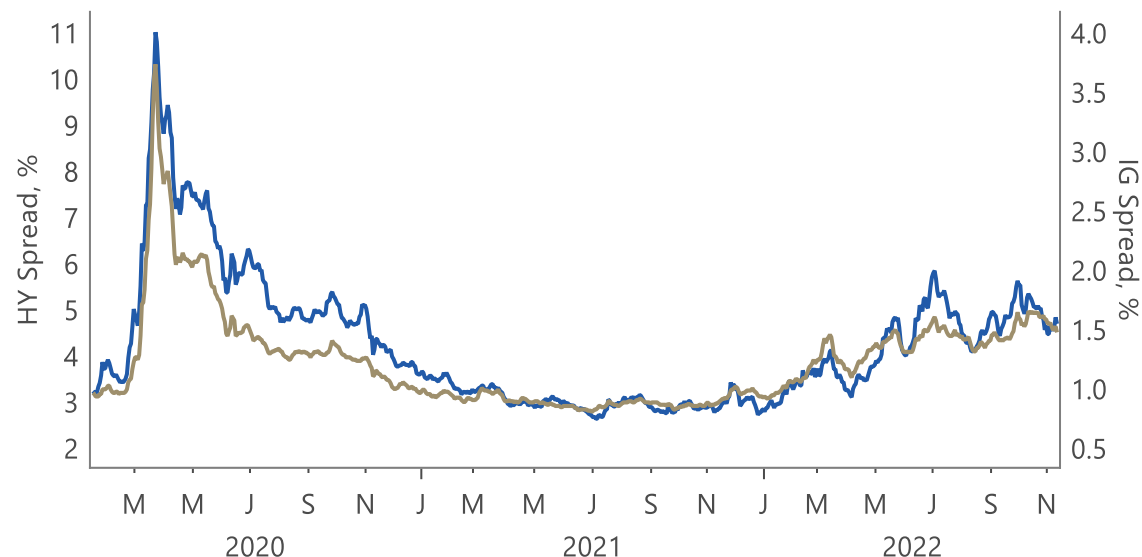
Latest data available as of November 2022. Source: Macrobond.

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More risk is now priced into credit markets and Europe periphery bonds

U.S. Investment Grade & High Yield Corporate Spreads, %

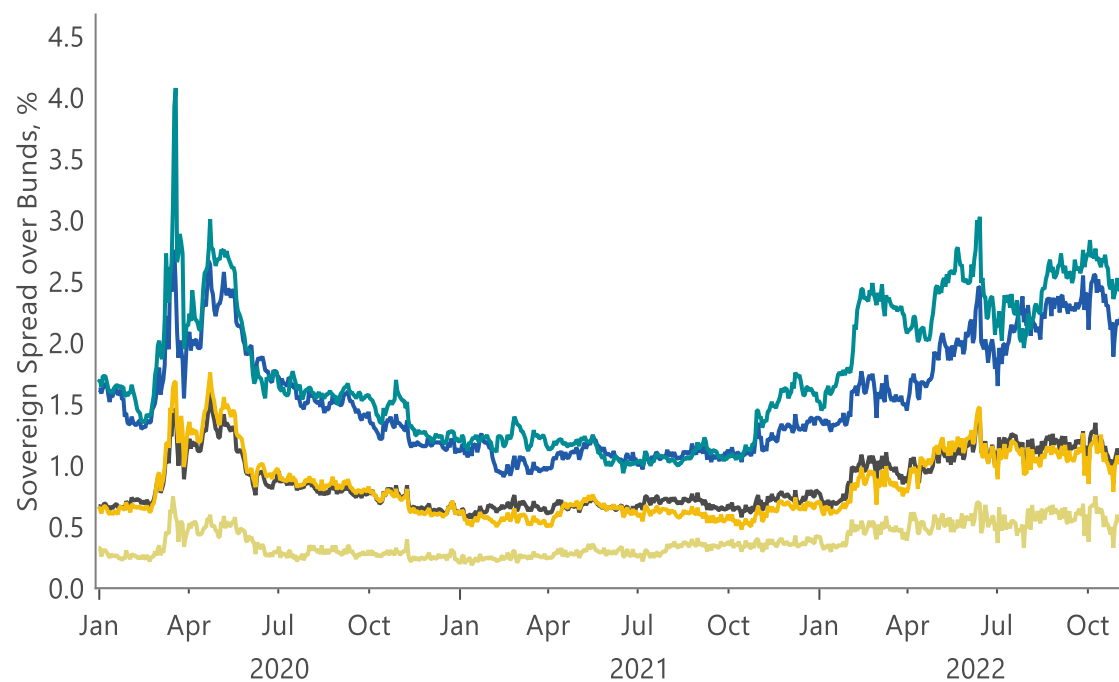
— Bloomberg US Agg Corporate Avg OAS, rhs
— Bloomberg US Corporate High Yield Average OAS, lhs



Source: Macrobond, BNY Mellon Investment Management,
Data as of 11/14/2022

Euro area 10-year sovereign spreads to bunds

— France — Greece — Portugal — Spain — Italy



Source: Macrobond, BNY Mellon Investment Management
Data as of 11/14/2022

HY: high yield. IG: investment grade. *OAS: option adjusted spread. **Bunds are another way to describe German 10-year government bond yields. Data as of November 2022. Source: Macrobond.

Investment Conclusions

Equities

- Major themes are: deglobalization, Fed tightening & QT, “sticky” inflation, and economic slowdown
- Within equities, we continue to prefer income equities (equities of companies that return cash to shareholders either through dividends or share buybacks) to non-income paying stocks
- Similarly, value stocks are favored to growth due to their lower duration in a rising rate environment and when multiples are at risk of compressing further
- We believe that it is prudent to trim cyclical exposures and position more defensively on a sector basis, favoring sectors such as consumer staples and healthcare

Fixed Income and Credit

- Time to meaningfully increase exposure to long duration sovereign fixed income is likely to come in 2023, as economic conditions deteriorate further, and the Fed and other major central banks are forced to reassess their policy stance
- If, as we expect, activity slows further (and meaningfully so), tightening financial conditions alongside slowing revenue, worsening operating margins, and eroding cash buffers will weigh on interest-coverage ratios, market liquidity and refinancing ability. This will especially hurt highly-levered firms that lack pricing power

US Dollar

- US Dollar continues to have upside but pace of appreciation may slow down. Still favorable interest rate differentials, a more resilient growth outlook, and entrenched safe haven properties provides the strengthening trend in the USD with further room to run.

Definitions

Purchasing Manger Indices (PMI)	An economic indicator derived from monthly surveys of private sector companies. A level above 50 indicates expansion compared to the prior month and below 50 contraction.
MSCI All-Country World	The MSCI All-Country World Index is an index that tracks the performance of both Developed and Emerging Market equities
MSCI World - DM	The MSCI World Index is an index that tracks the performance of Developed Market equities
MSCI EAFE	The MSCI EAFE Index is an index that tracks the performance of Developed Market equities across Europe, Australasia and the Far East excluding the US and Canada
MSCI EM	The MSCI EM index tracks the performance of Emerging Market Equities
US (S&P 500)	The S&P 500 is an index designed to track the performance of the largest 500 US companies
US (NASDAQ)	The Nasdaq Composite Index is the market capitalization-weighted index of approximately 3,000 common equities listed on the Nasdaq stock exchange
US (Russell 2000)	The Russell 2000 Index is a small-cap stock market index of the bottom 2,000 stocks in the Russell 3000 Index
Japan (Nikkei 225)	The NIKKEI 225 is an index that tracks the performance of the largest 225 companies traded in the Japanese market
EU (STOXX 50)	The EURO STOXX 50 Index, Europe's leading blue-chip index for the Eurozone, provides a blue-chip representation of supersector leaders in the region
UK (FTSE 100)	The STOXX 600 is an index that represents the performance of 600 large, mid and small capitalization companies across 18 countries in the European Union
France (CAC 40)	The CAC 40 is an index that tracks the performance of the largest 40 companies traded on the Paris Stock Exchange
Germany (DAX 30)	The DAX 30 is an index that tracks the performance of the largest 30 companies traded on the Frankfurt Stock Exchange
China (MSCI China)	The MSCI China Index captures large and mid cap representation across H shares, B shares, Red chips, P chips and foreign listings. With 459 constituents, the index covers about 85% of this China equity universe.
China Caixin Services PMI	In China, the Caixin Services Purchasing Managers' Index measures the performance of the services sector.
Global Treasury ex US	The Bloomberg Barclays Global Treasury ex US index tracks fixed-rate local currency government debt of investment grade countries excluding the US and represents the Treasury sector of the Global Aggregate Index
US Treasury	The Bloomberg Barclays US Treasury Index is the US Treasury component of the US Aggregate Index and uses public obligations of the US Treasury with a remaining maturity of one year or more
Global Investment Grade - Corp.	This Index reflects the Corporate component of the Bloomberg Bardays Global Aggregate Index which is designed to provide a broad-based measure of the global investment-grade fixed income markets
Global High Yield	The Bloomberg Barclays Global High Yield Index is a broad-based measure of the global high yield market
US Leveraged Loans	The S&P/LSTA Leveraged Loan Total Return Index is designed to measure the performance of the US leveraged loan market
S&P Municipal Bond IG Intermediate	The S&P Municipal Bond Investment Grade Intermediate Index consists of bonds in the S&P Municipal Bond Index that are rated at least BBB- by Standard & Poor's, Baa3 by Moody's or BBB- by Fitch Ratings. All bonds must also have a minimum maturity of three years and a maximum maturity of up to, but not including, fifteen years as measured from the rebalancing date.
EM USD Denominated	The Bloomberg Barclays EM USD Aggregate Index includes USD denominated debt from sovereign, quasi-sovereign, and corporate EM issuers
Bloomberg Commodity Index	The Dow Jones UBS Commodity index is designed to provide diversified commodity exposure with weightings based on the commodity's liquidity and economic significance
Oil (WTII, USD / Barrel)	Generic West Texas Intermediate crude oil spot price
Gold (USD / Troy Ounce)	Gold London Bullion Market spot price, quoted in USD per Troy Ounce
US Investment Grade Corporate	Bloomberg Barclays US Aggregate - Corporate Index is designed to measure the performance of the investment grade corporate sector in the US
US ISM manufacturing PMI	Based on a survey of purchasing managers at more than 300 manufacturing firms by the Institute for Supply Management (ISM), the index monitors changes in production levels from month to month.
US High Yield	The Bloomberg Barclays US High Yield Index covers the universe of fixed-rate, non-investment grade corporate debt in the US
3M US Libor	Average interest rate at which a selection of banks in London lend to one another in USD with a maturity of 3 months
2Y US Treasuries	Average yield of a range of Treasury securities all adjusted to the equivalent of a two-year maturity
10Y US Treasuries	Average yield of a range of Treasury securities all adjusted to the equivalent of a ten-year maturity
10Y UK Gilt	Average yield of a range of UK government bonds all adjusted to the equivalent of a ten-year maturity
10Y German Bund	Average yield of a range of German government bonds all adjusted to the equivalent of a ten-year maturity
10Y Japanese Bond	Average yield of a range of Japanese government bonds all adjusted to the equivalent of a ten-year maturity
CBOE VIX	Indicator of the implied volatility of S&P 500 index as calculated by the Chicago Board Options Exchange (CBOE)
US 30Y Fixed-Rate Mortgage	Bankrate.com 30-year US home mortgage fixed rate national average
S&P CoreLogic Case-Shiller 20-city Composite Home Price Index	Tracks the value of single-family housing within the United States
USD - Majors Dollar Index	A measure of the value of the US dollar relative to a basket of currencies of the US's most significant trading partners including the euro, Japanese yen, Canadian dollar, British pound, Swedish krona, and Swiss franc.
PMI (Purchasing Managers' Index)	The Purchasing Managers' Index (PMI) is an index of the prevailing direction of economic trends in the manufacturing and service sectors
Citi Economic Surprise Index (and Inflation Surprise Index)	Citi's Economic Surprise Index — which measures the degree to which economic data (and inflation) is either beating or missing expectations.

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