Principal Morley

Economic and market review

Principal Asset Allocation Viewpoints

As of December 31, 2022

Key themes for Q1 2023

- **The global economy has avoided recession so far, but now must confront severe challenges.**
  Strains are building, and the U.S. will likely enter recession in the second half of 2023. By then, Europe will likely be emerging from recession, while China and Emerging Asia may be enjoying a COVID-reopening-inspired recovery.
- **Inflation is slowing only gradually and will remain above target in 2023, despite recession.**
  Segments of the inflation basket will likely soften rapidly, but tight labor markets and strong wage pressures imply that core segments of inflation will remain uncomfortably elevated, resulting in an incomplete disinflation process.
- **Central banks will hike further this year and will not provide any relief.**
  Major central banks have now decelerated their tightening, but this isn't a precursor to a less hawkish stance. The stubborn inflation story means that policy rates are likely rising further and will not be cut, even as recession takes hold.
- **First rate hikes, now earnings weakness.**
  The struggling macro backdrop signals a meaningful fall in earnings that is generally unaccounted for by markets.
- **Fixed income, once again, can offer stability and income in a challenging economic backdrop.**
  Central banks are likely nearing the completion of their tightening cycle, implying that bonds will be able to support portfolios both as recession approaches and during forthcoming periods of volatility and risk.

Both bonds and most equities were down more than 10% in 2022

2022 was only the fifth year since 1926 that both U.S. bonds and U.S. stocks delivered negative returns in the same year

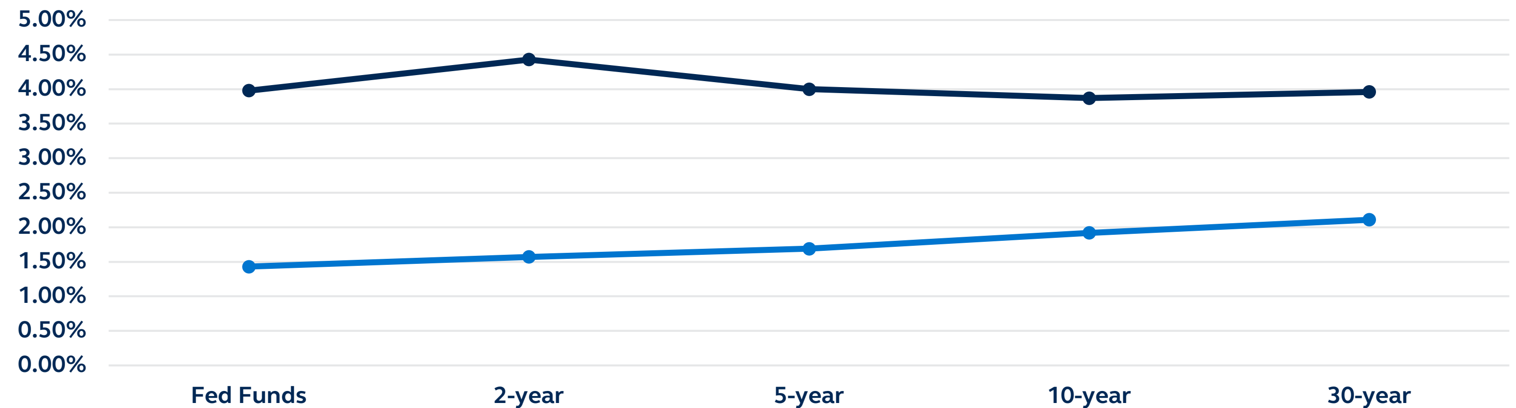
	3-months	YTD	1-year	3-year	5-year	10-year
Fixed Income						
ICE BofA U.S. Treasury Bill 3-month Index	0.84%	1.46%	1.46%	0.72%	1.26%	0.76%
Bloomberg Aggregate Bond Index	1.87%	-13.01%	-13.01%	-2.71%	0.02%	1.06%
Bloomberg U.S. Corp High Yld 2% Issuer Capped Index	4.17%	-11.18%	-11.18%	-0.03%	2.30%	4.03%
Bloomberg Long-Term Govt/Credit Index	2.61%	-27.09%	-27.09%	-6.20%	-1.21%	1.57%
U.S. Equities						
Russell 1000 Value Index	12.42%	-7.54%	-7.54%	5.96%	6.67%	10.29%
S&P 500 Index	7.56%	-18.11%	-18.11%	7.66%	9.42%	12.56%
Russell 1000 Growth Index	2.20%	-29.14%	-29.14%	7.79%	10.96%	14.10%
Russell Midcap Index	9.18%	-17.32%	-17.32%	5.88%	7.10%	10.96%
Russell 2000 Index	6.23%	-20.44%	-20.44%	3.10%	4.13%	9.01%
Non-U.S. Equities						
MSCI EAFE NTR Index	17.34%	-14.45%	-14.45%	0.87%	1.54%	4.67%
MSCI ACWI ex-USA Index	14.29%	-16.00%	-16.00%	0.07%	0.88%	3.80%
MSCI Emerging Markets Index	9.70%	-20.09%	-20.09%	-2.69%	-1.40%	1.44%
Other						
MSCI U.S. REIT Index	4.90%	-25.37%	-25.37%	-1.16%	2.48%	5.20%
S&P GSCI® Index	3.44%	25.99%	25.99%	10.49%	6.46%	-3.30%
U.S. Dollar Index	-6.79%	6.23%	6.23%	1.71%	1.46%	2.37%

As of 12/31/2022.
Source: FactSet Global. Benchmark Review-Ned Davis Research 4Q2022, Jan. 3, 2023. Returns are annualized. **Past performance does not guarantee future results.** Index performance information reflects no deduction for fees, expenses, or taxes. Indices are unmanaged and individuals cannot invest directly in an index. See Important Information for index descriptions.

The history of interest rates

How have interest rates changed in recent years?

	Dec. 31, 2019	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2022
Fed Funds	1.43	0.03	0.02	3.98
2-year	1.57	0.12	0.73	4.43
5-year	1.69	0.36	1.26	4.00
10-year	1.92	0.91	1.51	3.87
2- to 10-year spread	0.35	0.79	0.78	-0.55
30-year	2.39	1.64	1.90	3.96



	Fed Funds	2-year	5-year	10-year	30-year
Dec. 31, 2022	3.98%	4.43%	4.00%	3.87%	3.96%
Dec. 31, 2019	1.43%	1.57%	1.69%	1.92%	2.39%

Source: FactSet. **Past performance does not guarantee future results.**

ASSET CLASS RETURNS AS OF DEC.31, 2022

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Best	Government Treasury 29.93%	Emerging Markets 18.23%	Small Cap 38.82%	Real Estate 31.78%	Real Estate 4.23%	Small Cap 21.31%	Emerging Markets 37.28%	Cash 1.86%	Large Cap 31.49%	Small Cap 19.96%	Real Estate 46.18%	Commodities 16.09%
	Real Estate 9.24%	Mid Cap 17.88%	Mid Cap 33.50%	Government Treasury 25.07%	Large Cap 1.38%	Mid Cap 20.74%	Intl Stocks 25.03%	Intermediate Bond 0.01%	Mid Cap 26.20%	Large Cap 18.40%	Large Cap 28.71%	Cash 1.50%
	Intermediate Bond 7.84%	Real Estate 17.59%	Large Cap 32.39%	Large Cap 13.69%	Asset Allocation 1.28%	High Yield 17.34%	Large Cap 21.83%	Intl Bonds -1.66%	Real Estate 25.76%	Emerging Markets 18.31 %	Commodities 27.11%	High Yield -11.11%
	Intl Bonds 5.93%	Intl Stocks 17.32%	Intl Stocks 22.78%	Asset Allocation 10.62%	Intermediate Bond 0.55%	Large Cap 11.96%	Mid Cap 16.24%	Government Treasury -1.84%	Small Cap 25.53%	Government Treasury 17.70%	Mid Cap 24.76%	Intermediate Bond -13.01%
	Asset Allocation 4.69%	Small Cap 16.35%	Asset Allocation 17.56%	Mid Cap 9.77%	Cash 0.03%	Commodities 11.77%	Small Cap 14.65%	High Yield -2.26%	Asset Allocation 22.18%	Asset Allocation 14.73%	Asset Allocation 15.86%	Mid Cap -13.06%
	High Yield 4.50%	Large Cap 16.00%	High Yield 7.38%	Intermediate Bond 5.97%	Intl Stocks -0.81%	Emerging Markets 11.19%	Asset Allocation 14.21%	Asset Allocation -2.35%	Intl Stocks 22.01%	Mid Cap 13.66%	Small Cap 14.82%	Intl Stocks -14.45%
	Large Cap 2.11%	High Yield 15.44%	Real Estate 1.86%	Small Cap 4.89%	Government Treasury -1.21%	Asset Allocation 8.31%	Intl Bonds 9.92%	Large Cap -4.38%	Emerging Markets 18.44 %	Intl Bonds 10.52%	Intl Stocks 11.26%	Asset Allocation -15.79%
	Cash 0.06%	Asset Allocation 11.31%	Cash 0.06%	High Yield 2.44%	Mid Cap -2.18%	Real Estate 7.24%	Government Treasury 8.53%	Real Estate -4.84%	Government Treasury 14.83%	Intl Stocks 7.82%	High Yield 5.29%	Large Cap -18.11%
	Mid Cap -1.73%	Intermediate Bond 4.21%	Intermediate Bond -2.02%	Cash 0.02%	Small Cap -4.41%	Intermediate Bond 2.65%	High Yield 7.48%	Small Cap -11.01%	High Yield 14.40%	Intermediate Bond 7.51%	Cash 0.05%	Emerging Markets -20.09%
	Small Cap -4.18%	Government Treasury 3.56%	Emerging Markets -2.60%	Emerging Markets -2.19%	High Yield -4.55%	Intl Bonds 1.86%	Real Estate 4.18%	Mid Cap -11.08%	Intermediate Bond 8.72%	High Yield 6.20%	Intermediate Bond -1.54%	Small Cap -20.44%
	Intl Stocks -12.14%	Intl Bonds 0.85%	Intl Bonds -5.06%	Intl Bonds -2.53%	Intl Bonds -4.84%	Government Treasury 1.33%	Intermediate Bond 3.54%	Commodities -11.25%	Commodities 7.69%	Cash 0.58%	Emerging Markets -2.54%	Intl Bonds -21.87%
	Commodities -13.32%	Cash 0.09%	Commodities -9.52%	Intl Stocks -4.90%	Emerging Markets -14.92%	Intl Stocks 1.00%	Commodities 1.70%	Intl Stocks -13.79%	Intl Bonds 5.23%	Commodities -3.12%	Government Treasury -4.65%	Real Estate -26.81%
Worst	Emerging Markets -18.42%	Commodities -1.06%	Government Treasury -12.66%	Commodities -17.01%	Commodities -24.66%	Cash 0.27%	Cash 0.84%	Emerging Markets -14.58%	Cash 2.25%	Real Estate -7.90%	Intl Bonds -9.51%	Government Treasury -29.26%

The returns reflect performance of certain indexes as defined below. This information is general in nature and is not intended to be reflective of any specific plan.

Cash- FTSE 3-month T-bill ,Government Treasury-Bloomberg Long Treasury, Commodities-Bloomberg Commodity Idx, Intermediate Bond-Bloomberg US Agg Bond Idx, High Yield Bond-ICE BofAML High Yield Idx, Intl Bonds-JPMorgan GBI Global ex U.S., Asset Allocation-portfolio assumes the following weights: 60% S&P 500 and 40% Bloomberg US Agg, Large Cap-S&P 500, Mid Cap - S&P Midcap 400, Small Cap-Russell 2000, Intl Stocks-MSCI EAFE (net), Emerging Markets-MSCI EM (net), Real Estate-Wilshire U.S. REIT.

Past performance does not guarantee future results.

An unavoidable economic downturn

Despite the multiple headwinds that confronted the globe in 2022, most economies have so far avoided recession. Europe felt the economic brunt of the Russia/Ukraine conflict, yet growth has likely only just slid into contraction territory in 4Q. In the U.S., while manufacturing surveys have already fallen into recessionary territory, services sector activity remains more firm and the Atlanta Fed's GDPNow tracker estimates GDP growth of around 4% in 4Q22.

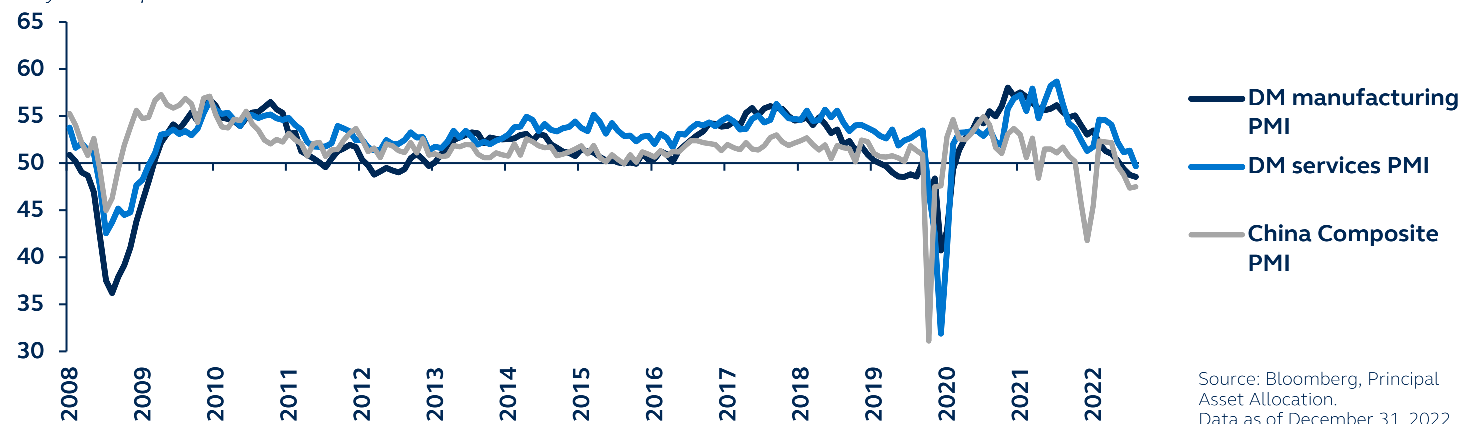
Yet, it's unlikely that the U.S. will evade recession in 2023. Strains are clearly building for consumers and corporates, while the Treasury yield curve has inverted—a historically reliable recession indicator. Not only is the 2s10s curve inversion material and sustained, but other segments of the yield curve are also inverted, including the 3-month10-year curve which is typically consistent with recession risk within a 12-month period.

By contrast, China faces a more constructive outlook. The recent easing of COVID restrictions has been chaotic, but it should eventually unleash pent-up consumer demand, improving confidence and investment. If policymakers combine reopening with effective stimulus measures, there will likely be positive impacts for emerging Asia.

Although U.S. growth has been remarkably resilient so far, recession will likely hit in the second half of 2023, while Europe is likely already in recession. Once the COVID dust settles, China may face a more constructive outlook.

Developed market(DM) and China Purchasing Managers' Index (PMI)

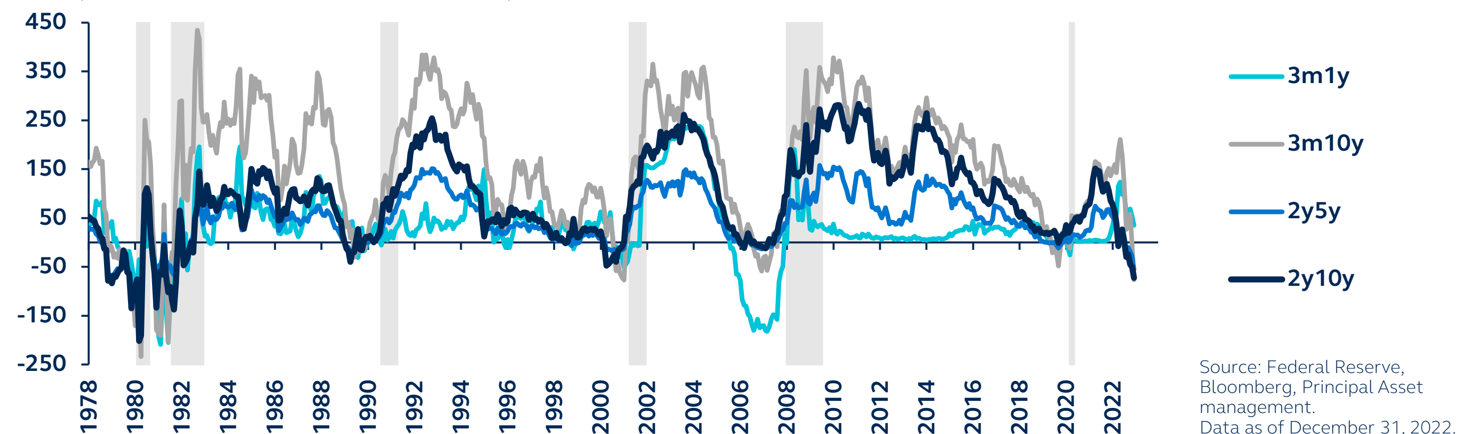
May 2008–present



Source: Bloomberg, Principal Asset Allocation.
Data as of December 31, 2022.

U.S. Treasury yield term spreads and economic recessions

Basis points, recessions are shaded, 1978–present



Source: Federal Reserve, Bloomberg, Principal Asset management.
Data as of December 31, 2022.

Consumer and labor market resilience is unsustainable

Despite U.S. consumer spending remaining strong, personal savings are dwindling and are well below the post-Global Financial Crisis (GFC) trend, resulting in consumers tapping into credit. New York Fed data shows that credit card balances saw a 15% year-over-year increase in 3Q 2022—the largest rise in more than 20 years. These strains will ultimately weigh on consumer spending.

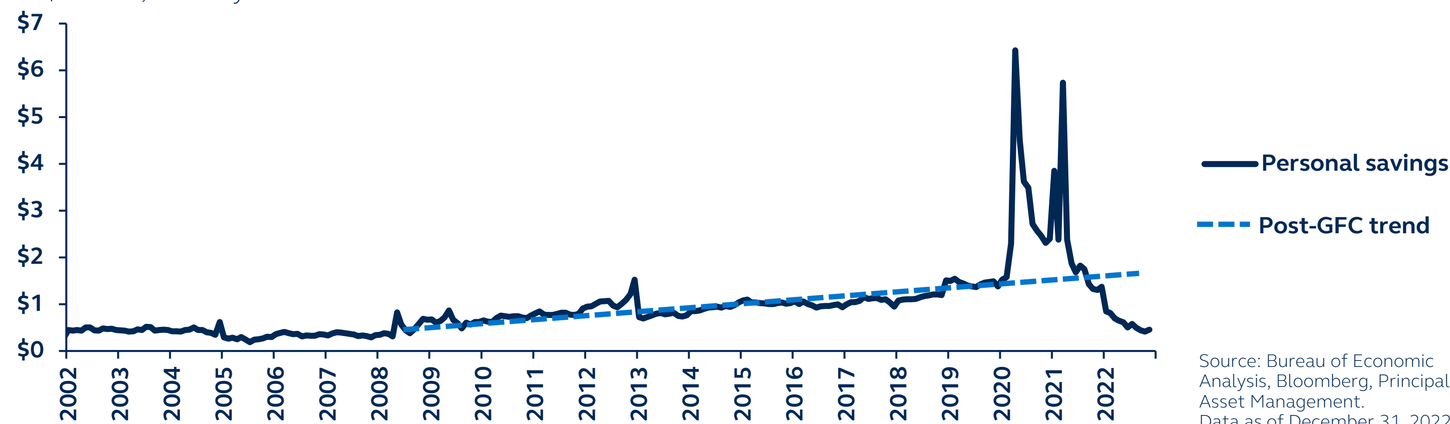
The labor market has cooled slightly, but remains historically strong. Unemployment, at 3.5% as of December's reading, remains very close to record lows and monthly payrolls are hovering around 275,000—a level consistent with very strong labor demand. But as a labor supply shortfall has opened up since the pandemic, there is now a clear imbalance between labor demand and supply. In fact, there are around 4 million more job openings than there are unemployed workers, and employers continue to report considerable difficulty in filling available positions.

This imbalance is synonymous with wage pressures. The employment cost index, the Fed's preferred measure of wages, is at a series high and is entirely inconsistent with the 2% inflation target. As such, the Fed needs to drive a moderation in labor demand to soften wage pressures.

The labor market remains historically strong, but this is contributing to inflation concerns. The Fed will need to weaken labor demand in order to relieve wage pressures.

United States personal savings

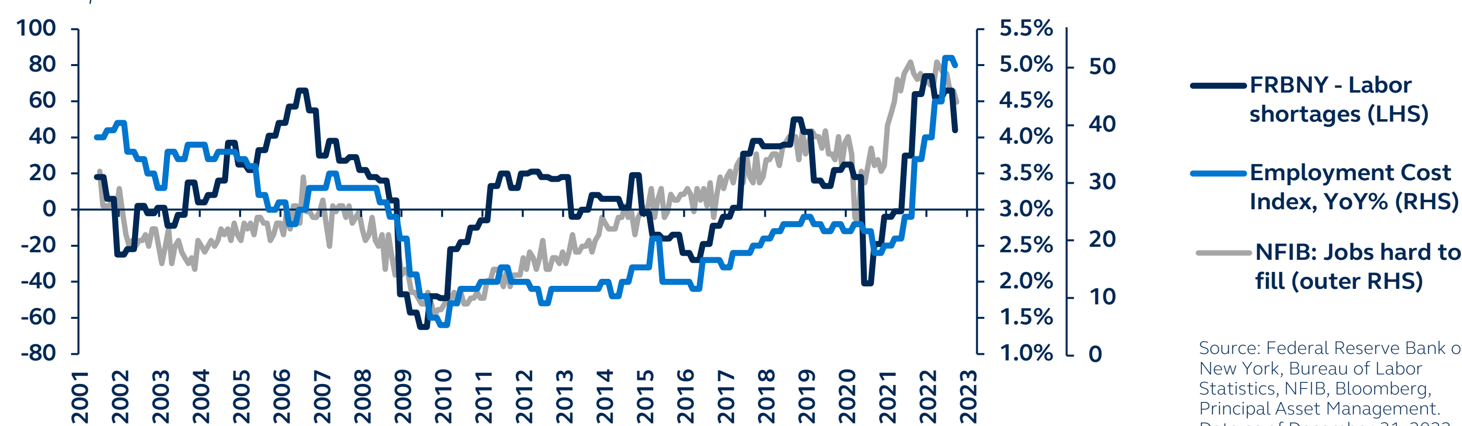
US$ trillion, January 2002–November 2022



Source: Bureau of Economic Analysis, Bloomberg, Principal Asset Management.
Data as of December 31, 2022.

Labor shortages and wage costs

2001–present



Source: Federal Reserve Bank of New York, Bureau of Labor Statistics, NFIB, Bloomberg, Principal Asset Management.
Data as of December 31, 2022.

An incomplete disinflationary trend

Investor questions have shifted from whether inflation has peaked, to where it will settle. The broad contour of recent declines suggests inflation will fall short of global central bank targets, continuing to trigger angst in policymakers. Indeed, the Fed expects personal consumption expenditures (PCE) inflation to only fall to 3.1% by the end of 2023, the Bank of England (BOE) forecasts inflation at 5.2%, and the European Central Bank (ECB) is projecting 6.3%—all uncomfortably above their 2% targets.

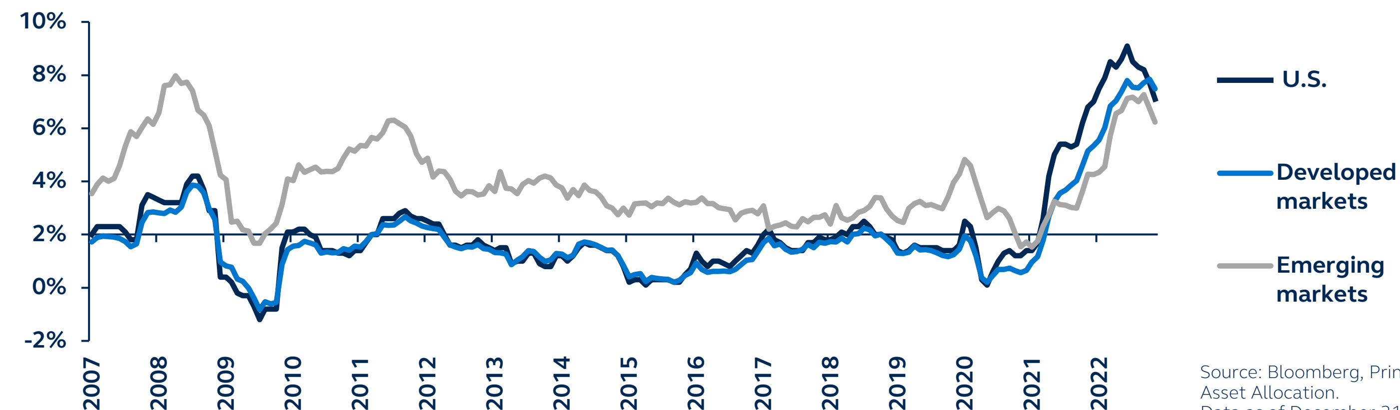
In the U.S., there are segments of the inflation basket that will soften rapidly. Food and energy prices, for example, have fallen sharply, while the supply chain recovery is finally yielding relief for core commodities inflation.

For services, however, disinflation will be a slow process. Shelter services inflation typically responds to the slowing housing market with a long lag—but should start to decelerate in the coming months. Core services inflation accounts for 57% of the CPI basket and is the most important category for understanding the future path for inflation. As wages make up the largest cost in delivering these services, loosening in the labor market is required to push inflation toward 2%. Unfortunately, the resulting rise in job losses will almost inevitably lead to recession.

Although inflation is declining, the tight jobs market implies progress will be slow. Recession risk is high because it is a necessary condition for price stability.

Principal Asset Allocation GDP-weighted inflation

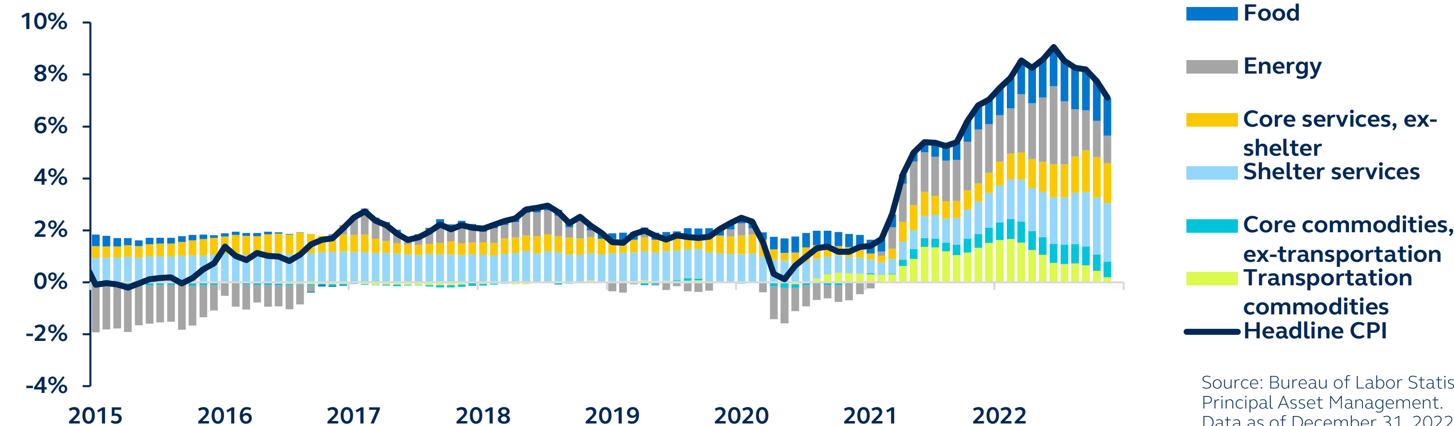
January 2007–November 2022



Source: Bloomberg, Principal Asset Allocation. Data as of December 31, 2022.

Contribution to headline U.S. inflation

Year-over-year, January 2015–November 2022



Source: Bureau of Labor Statistics, Principal Asset Management. Data as of December 31, 2022.

Monetary tightening: Slower, but higher, for longer

2022 experienced one of the most aggressive global tightening episodes in history, with the vast majority of global central banks hiking rates.

Today, most major central banks have decelerated their blistering pace of tightening. However, this isn't a precursor to a less hawkish stance. With inflation expected to remain stubbornly above target, central banks have pledged to take rates even further into restrictive territory in 2023.

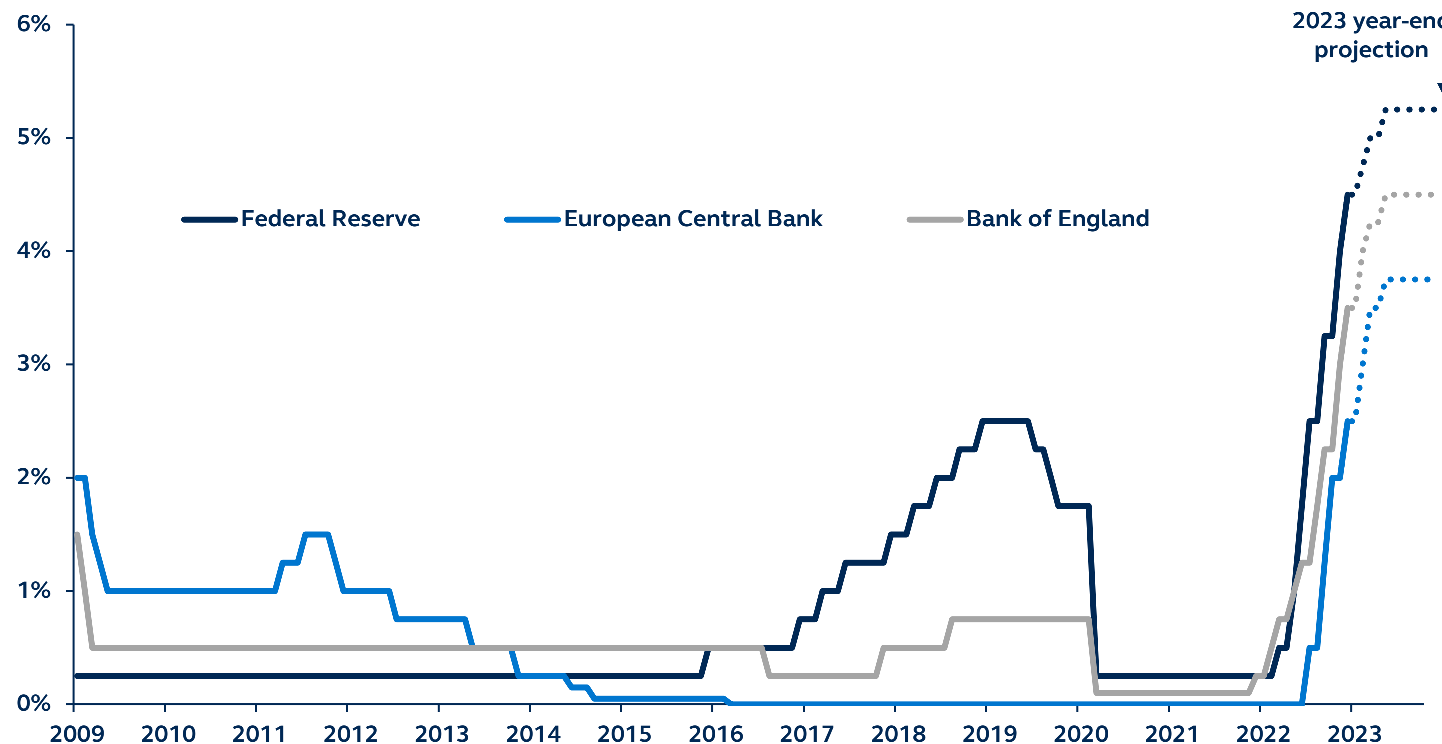
What's more, rate cuts in most developed markets are unlikely next year—despite elevated recession risk. Not only does history warn against prematurely calling victory over inflation, but recession is a necessary step in the path towards price stability for many economies. For the Fed, this implies policy rates rising above 5% in early 2023, and remaining there throughout the year. Market pricing for Fed policy still sees rate cuts in 2023—setting up an uncomfortable reality check later in the year.

Even the Bank of Japan (BoJ) has made early moves to tighten policy. By effectively raising the cap on yields, the central bank has not only moved away from ultra-loose monetary policy, but it raises the prospect of a rate hike in 2023—the first such move for Japan since 2007.

Policy rates in most major central banks will likely move further into restrictive territory in 2023 and will not be cut, even in the face of rising recession risk.

Global central bank policy rates and projections

Upper bound, Federal Reserve, European Central Bank, Bank of England



Source: Bloomberg, Principal Asset Management. Data as of December 31, 2022.

Relief from the U.S. dollar bull run is on its way

Despite its recent sharp pullback, U.S. dollar fundamentals remain supportive near-term. With the Fed hiking rates further and remaining the most hawkish of all major central banks—the U.S. dollar may still enjoy near-term strength.

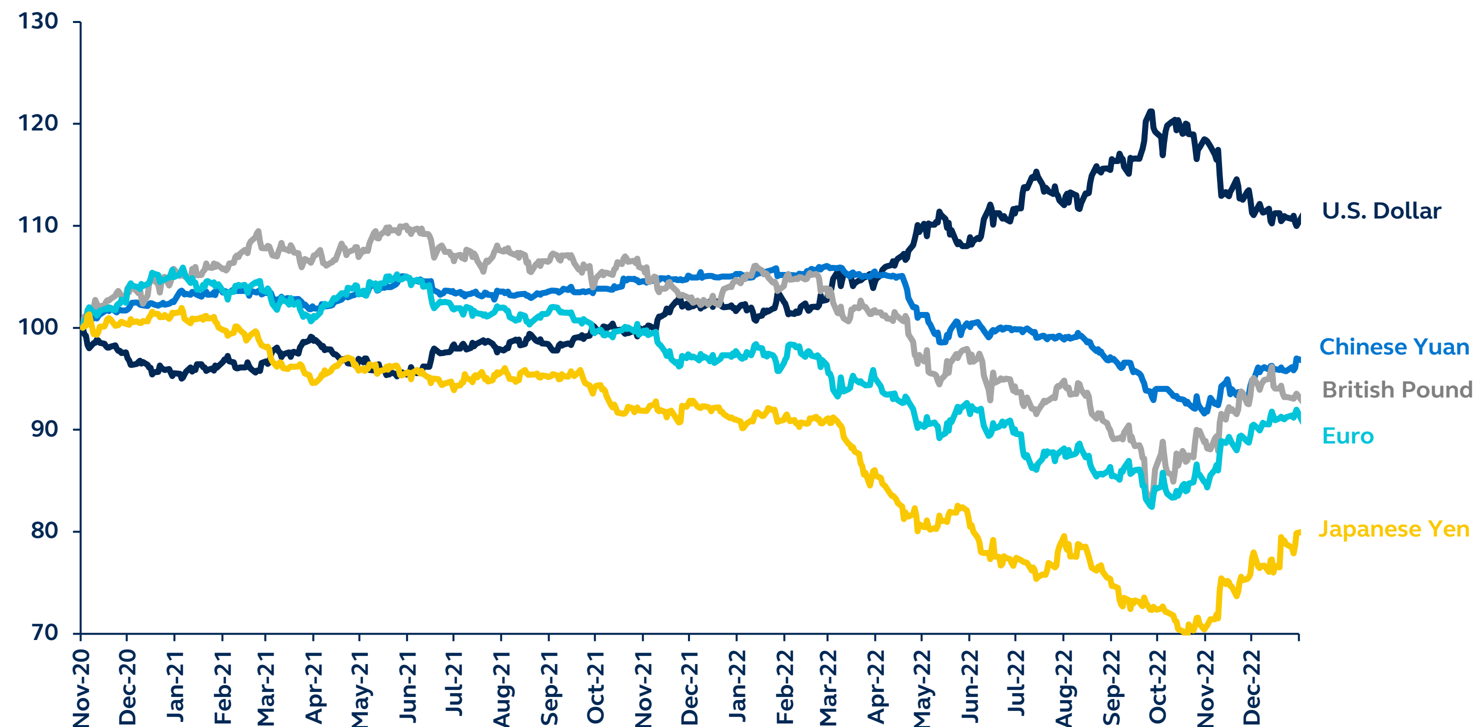
However, after a few more rate increases, a Fed pause should lead to a sustainably weaker U.S. dollar. This dollar-negative development should likely be supplemented by China ending its zero-COVID policy, as well as the end of the BoJ's yield curve control monetary policy.

Such a precipitous ascent in the dollar often results in a crisis type scenario—one that did not arise in 2022. Instead, many emerging market economies fared relatively well compared to history, helped by fiscal discipline and precautionary monetary policy. Therefore, once conditions improve, their recoveries could be fairly swift.

In addition, with a weaker dollar, many developed market central banks will have the space to recalibrate from currency defence and fighting inflation via demand destruction, to more growth-supportive policies. Overall, U.S. dollar weakening should be an incremental positive for global growth, but is unlikely to develop until later in 2023.

The U.S. dollar may still see near-term strength given the Fed's more hawkish resolve. Yet with rates nearing their peak, dollar weakness is likely waiting in the pipeline.

Major currencies
Rebased to 100 on November 1, 2020



Source: Bloomberg, Principal Asset Management. Data as of December 31, 2022.

Financial conditions set the stage for another tough year

Financial conditions describe the way in which policy influences the economy through the intermediation of a wide range of market rates, risk premia, and spreads as well as the exchange rate. Unsurprisingly, given the breadth of central bank tightening, last year saw a sharp tightening in global financial conditions, driving a broad risk reversal.

Admittedly, 4Q 2022 was marked by a loosening in financial conditions as markets questioned central banks' hawkish resolve. However, central banks' reiteration of their intention to continue raising policy rates and hold at the peak rate for a sustained period should result in a re-tightening of financial conditions in 1Q 2023. The Fed will not permit financial conditions to loosen materially until it feels confident that inflation is on safer ground.

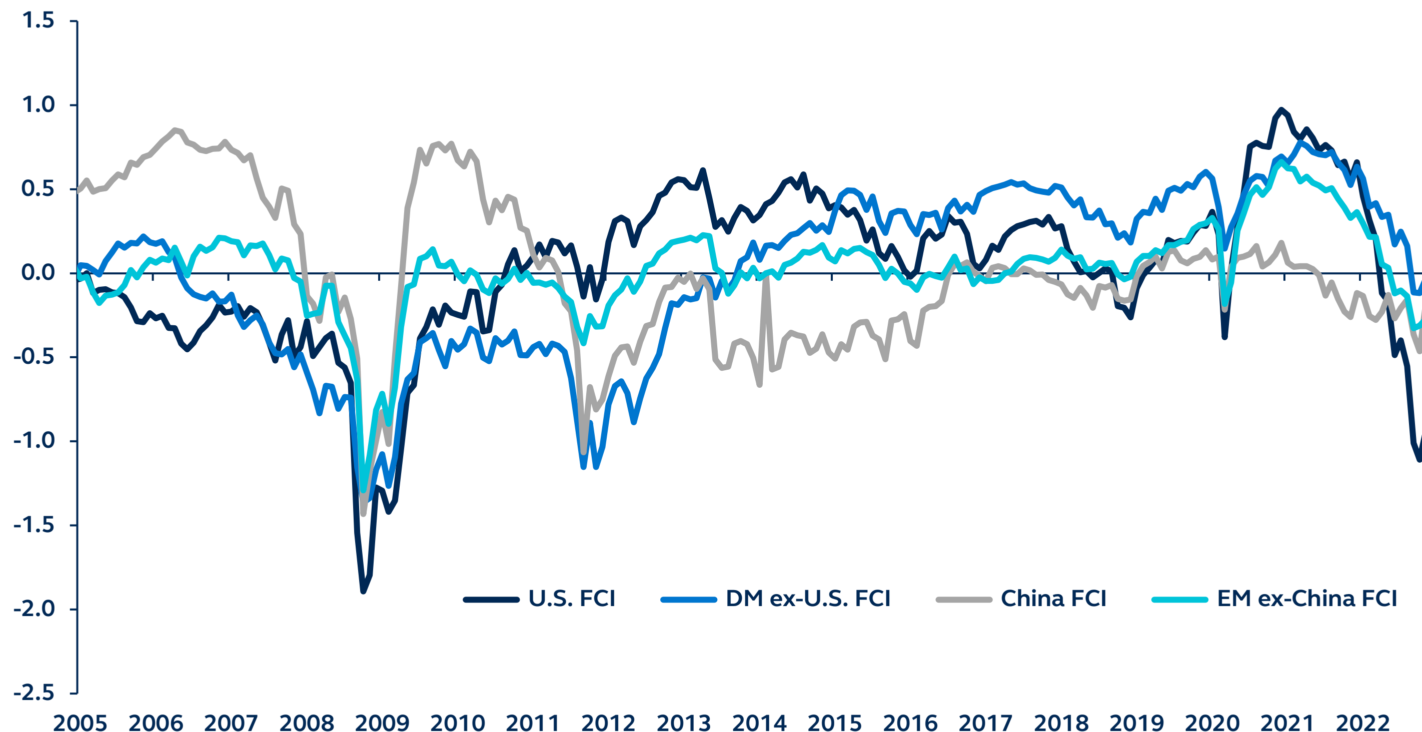
With financial conditions tightening, U.S. job losses set to increase, economic growth entering a clear downtrend, and earnings growth likely weakening, 2023 will likely see an even more unhospitable environment for risk assets.

The clear outlier may be China, where, once the post-COVID reopening chaos has passed, stimulus measures should be more effective in loosening financial conditions.

Tightening financial conditions have created a hostile backdrop for risk assets, which will likely only become more inhospitable as recessionary conditions become widespread.

Developing market and emerging market financial conditions

Principal Asset Allocation Financial Conditions Index (FCI), Z-score, January 2005–present



Source: Bloomberg, Principal Asset Allocation. Data as of December 31, 2022.

Fixed income: Back in fashion

U.S. bonds suffered one of the deepest drawdowns in U.S. history in 2022. In fact, the Bloomberg U.S. Aggregate Index suffered its third, fourth, and fifth worst quarters since 1976. Fixed coupon rates, especially on longer-term bonds, failed to sufficiently compensate investors for raging inflation and a hawkish Fed, warranting a dramatic repricing and leading to painful capital losses for investors.

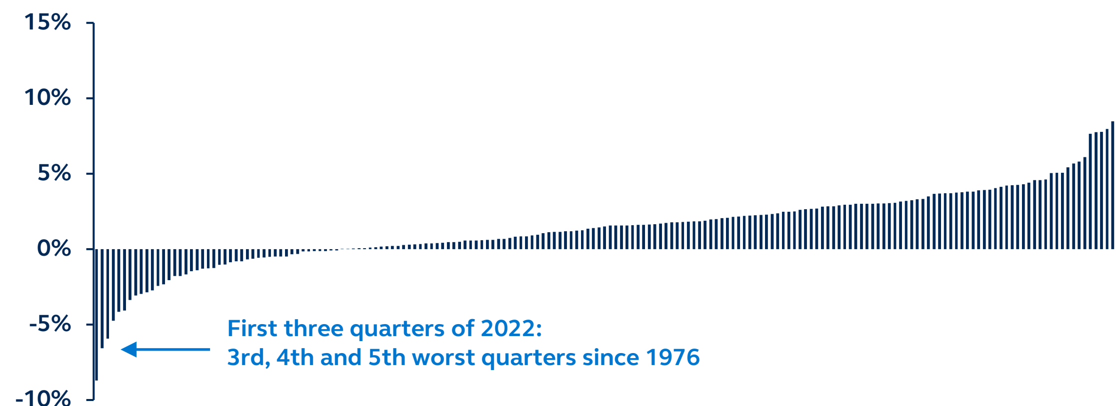
As markets adjusted to Fed hikes in 2022, the diversification benefits of bonds disappeared, with both stocks and bonds suffering significant declines. For the first time since the 19th century, U.S. equities and bonds simultaneously recorded double-digit yearly declines—a terrible year for 60/40 portfolios.

Entering 2023, U.S. 10-year Treasury bonds now yield more than twice the estimated dividend yield of the S&P 500 index. This presents investors with the opportunity to lock-in income with a less volatile asset. What's more, with yields having risen and inflation apparently slowing, bonds should provide risk mitigation during the coming economic slowdown. The negative correlation between stocks and bonds has reasserted itself, and the diversification benefit of bonds has generally been restored.

Having soared in 2022 as markets re-priced Fed expectations, bond yields finally present an investment opportunity, and have regained their diversification benefits.

Bloomberg U.S. Aggregate Index

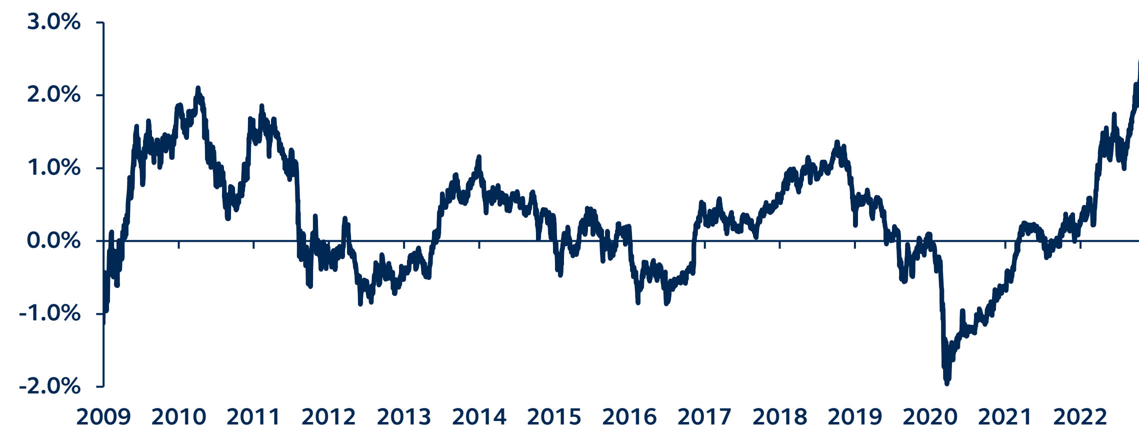
Ranked quarterly performance, 1976–present



Source: Bloomberg, Principal Asset Management.
Data as of December 31, 2022.

U.S. 10-year Treasury yield minus S&P 500 estimated dividend yield

Spread percentage, 2009–present



Source: Federal Reserve, S&P Dow Jones Indices, Bloomberg, Principal Asset Management.
Data as of December 31, 2022.

U.S. Treasurys: Playing an important role in portfolios

As global growth slows and yield curves invert, the stopwatch has been started on a likely recession. Many sectors of the economy have already begun to contract, especially the more rate-sensitive ones, such as manufacturing.

Notably, the rise in bond yields (and drawdown in bond values) seldom maintains amid such an economic slowdown. As such, it is highly likely that, as the economic slowdown continues, the real value of fixed income will be re-priced, permitting bonds to flourish in 2023. Indeed, there has rarely ever been a third year of declines in U.S. Treasurys. So, after two consecutive years of Treasury bond declines, 2023 is trending toward a year of recovery.

A focus on credit quality will also be important as the economy slows, where certainty of cashflows is increasingly valued. Agency mortgage-backed securities deliver favorable characteristics. Not only are they underwritten by the U.S. government and therefore considered high-quality credit, but agency MBS have a longer duration. These longer-dated, high-quality securities will likely be rewarded as the economy weakens and inflation slows.

Treasurys should perform well as recession approaches, while securitized debt typically shows a greater ability to withstand weakening growth than other credit segments.

10-year Treasury bond and the ISM Manufacturing Index

1991–present

Source: Institute for Supply Management, Standard & Poor's, Bloomberg, Principal Asset Management.
Data as of December 31, 2022.

Investment grade minus agency mortgage-backed securities spread

Option-adjusted-spread, basis points, 2003–present

Source: Bloomberg, Principal Asset Management.
Data as of December 31, 2022.

Investment grade: More than just a defense play

Traditional fixed income, particularly high-quality credit, may finally be an attractive investment proposition.

Firstly, with the days of cheap funding and abundant liquidity behind us, plus the elevated risk of corporate earnings recession in multiple regions, a growing premium will likely be placed on solid earnings performance. This will be reflected in disparate performance of high- versus low-quality credits.

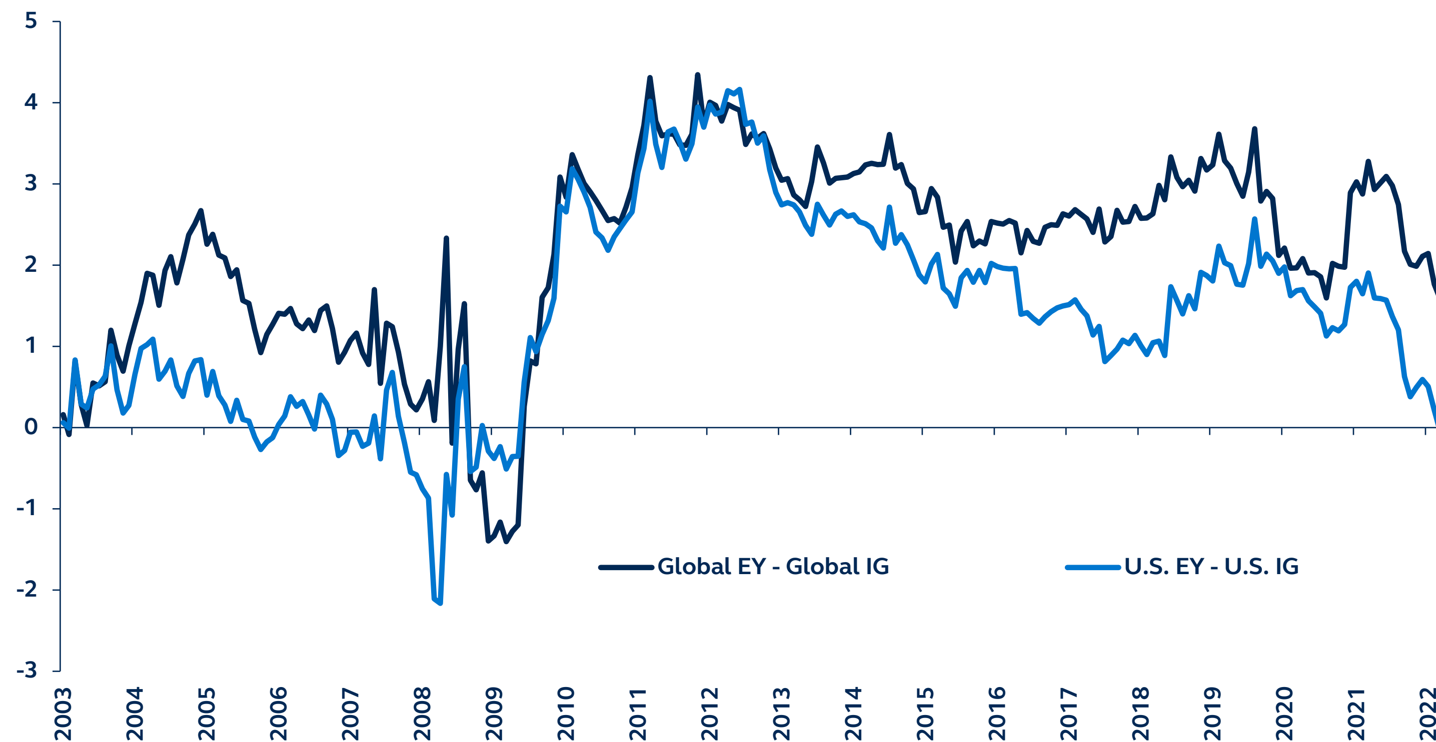
IG fundamentals are also broadly healthy with balance sheets still more cash rich than pre-COVID levels. So, providing recession is not too severe, IG credit should have sufficient buffer to weather the storm.

In addition, the case for high-quality credit is more than just defending portfolios from the difficult economic environment: Valuations are also attractive. After a sharp yield reset in 2022, U.S. investment grade yields have not been so competitive against equity earnings yield since the GFC. Global investment grade yields have also become relatively more attractive than equity yields, although not to the same extent as in the U.S.

Investment grade valuations have become more attractive, and higher quality exposure will be increasingly important as recession approaches.

Investment grade yields versus equity yields

2003–present



Source: Bloomberg, Principal Asset Management. Data as of December 31, 2022.

INDEX DESCRIPTIONS

Bloomberg Commodity Spot Index measures the price movements of commodities included in the Bloomberg CI and select subindexes. It does not account for the effects of rolling futures contracts or the costs associated with holding physical commodities and is quoted in USD.

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

Bloomberg Global Aggregate Bond Index comprises global investment grade debt including treasuries, government-related, corporate, and securitized fixed-rate bonds from developed and emerging market issuers. There are four regional aggregate benchmarks that largely comprise the Global Aggregate Index: the US Aggregate, the Pan-European Aggregate, the Asian-Pacific Aggregate, and the Canadian Aggregate Indices. The Index also includes Eurodollar, Euro-Yen, and 144A Index-eligible securities and debt from other local currency markets not tracked by regional aggregate benchmarks

Bloomberg U.S. Aggregate Bond Index is the most widely followed broad market U.S. bond index. It measures the investment grade, US dollar-denominated, fixed-rate taxable bond market.

Bloomberg U.S. Corp High Yield 2% Issuer Capped Index is an unmanaged index comprised of fixed rate, non-investment grade debt securities that are dollar denominated. The index limits the maximum exposure to any one issuer to 2%.

Bloomberg U.S. Corporate Investment Grade Index includes publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity and quality requirements. To qualify, bonds must be SEC-registered. The corporate sectors are industrial, utility and finance, which include both U.S. and non-U.S. corporations.

Bloomberg U.S. Floating Rate Note < 5 Years Index consists of debt instruments that pay a variable coupon rate, a majority of which are based on the 3-month SOFR, with a fixed spread.

Bloomberg U.S. Mortgage Backed Securities (MBS) Index tracks fixed-rate agency mortgage backed pass- through securities guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

Bloomberg U.S. Municipal Index covers the USD-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds and prerefunded bonds.

Bloomberg U.S. Treasury Index measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint. STRIPS are excluded from the index because their inclusion would result in double-counting.

Bloomberg U.S. Treasury Inflation Protected Securities (TIPS) Index is composed of inflation-protected U.S. Treasury bonds, commonly known as “TIPS”. TIPS are securities issued by the U.S. Treasury that are designed to provide inflation protection to investors.

FTSE Global Core Infrastructure 50/50 Total Return Index comprises securities in developed countries which provide exposure to core infrastructure businesses, namely transportation, energy and telecommunications, as defined by FTSE's International Benchmark Classification.

ICE BofA Contingent Capital Index tracks the performance of all contingent capital debt publicly issued in the major domestic and eurobond markets, including investment grade and sub investment grade issues.

ICE BofA Emerging Markets Corporate Plus Index, which tracks the performance of US dollar (USD) and Euro denominated emerging markets non-sovereign debt publicly issued within the major domestic and Eurobond markets.

ICE BofA U.S. All Capital Securities (i0cs) index of preferred securities represents investment grade and below investment grade instruments in both the retail $25par market and the institutional $1,000par market.

ICE BofA U.S. Corporate Index tracks the performance of U.S. dollar denominated investment grade rated corporate debt publicly issued in the U.S. domestic market.

ICE BofA U.S. High Yield Index tracks the performance of U.S. dollar denominated below investment grade rated corporate debt publicly issued in the U.S. domestic market.

JP Morgan EMBI Global Diversified Index is an unmanaged, market-capitalization weighted, total-return index tracking the traded market for U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

MSCI AC Asia ex Japan Index captures large and mid cap representation across 2 of 3 Developed Markets (DM) countries (excluding Japan) and 9 Emerging Markets (EM) countries in Asia.

MSCI AC Asia Pacific Index captures large and mid cap representation across 5 Developed Markets countries and 9 Emerging Markets countries in the Asia Pacific region.

MSCI ACWI Index includes large and mid cap stocks across developed and emerging market countries.

MSCI Brazil Index is designed to measure the performance of the large and mid cap segments of the Brazilian market.

MSCI China Index captures large and mid cap representation across China A shares, H shares, B shares, Red chips, P chips and foreign listings (e.g. ADRs).

MSCI EAFE Index is listed for foreign stock funds (EAFE refers to Europe, Australasia, and Far East). Widely accepted as a benchmark for international stock performance, the EAFE Index is an aggregate of 21 individual country indexes.

MSCI Emerging Markets Index consists of large and mid cap companies across 24 countries and represents 10% of the world market capitalization. The index covers approximately 85% of the free float-adjusted market capitalization in each country in each of the 24 countries.

INDEX DESCRIPTIONS

MSCI Europe Index captures large and mid cap representation across 15 Developed Markets (DM) countries in Europe.

MSCI Germany Index is designed to measure the performance of the large and mid cap segments of the German market.

MSCI India Index is designed to measure the performance of the large and mid cap segments of the Indian market.

MSCI Japan Index is designed to measure the performance of the large and mid cap segments of the Japanese market.

MSCI United Kingdom Index is designed to measure the performance of the large and mid cap segments of the UK market.

MSCI USA Growth Index captures large and mid cap securities exhibiting overall growth style characteristics in the U.S. 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.

MSCI USA Index is a market capitalization weighted index designed to measure the performance of equity securities in the top 85% by market capitalization of equity securities listed on stock exchanges in the United States.

MSCI USA Large Cap Index is designed to measure the performance of the large cap segments of the U.S. market.

MSCI USA Mid Cap Index is designed to measure the performance of the mid cap segments of the U.S. market.

MSCI USA Quality Index aims to capture the performance of quality growth stocks by identifying stocks with high quality scores based on three main fundamental variables: high return on equity (ROE), stable year-over-year earnings growth and low financial leverage. The MSCI Quality Indexes complement existing MSCI Factor Indexes and can provide an effective diversification role in a portfolio of factor strategies.

MSCI USA Small Cap Index is designed to measure the performance of the small cap segment of the U.S. equity market.

MSCI USA Value Index captures large and mid cap U.S. securities exhibiting overall value style characteristics. 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.

Standard & Poor's 500 Index is a market capitalization-weighted index of 500 widely held stocks often used as a proxy for the stock market.

Market indices have been provided for comparison purposes only. They are unmanaged and do not reflect any fees or expenses. Individuals cannot invest directly in an index.

Risk considerations

Investing involves risk, including possible loss of principal. Past performance is no guarantee of future results. Asset allocation and diversification do not ensure a profit or protect against a loss. Equity investments involve greater risk, including higher volatility, than fixed-income investments. **Fixed-income investments** are subject to interest rate risk; as interest rates rise their value will decline. International and global investing involves greater risks such as currency fluctuations, political/social instability and differing accounting standards. Potential investors should be aware of the risks inherent to **owning and investing in real estate**, including value fluctuations, capital market pricing volatility, liquidity risks, leverage, credit risk, occupancy risk and legal risk. **Non-investment grade securities** offer a potentially higher yield but carry a greater degree of risk. Risks of **preferred securities** differ from risks inherent in other investments. In particular, in a bankruptcy preferred securities are senior to common stock but subordinate to other corporate debt. Emerging market debt may be subject to heightened default and liquidity risk. Risk is magnified in **emerging markets**, which may lack established legal, political, business, or social structures to support securities markets. **Small and mid-cap** stocks may have additional risks including greater price volatility. **Treasury inflation-protected securities (TIPS)** are a type of Treasury security issued by the U.S. government. TIPS are indexed to inflation in order to help investors from a decline in the purchasing power of their money. As inflation rises, rather than their yield increasing, TIPS instead adjust in price (principal amount) in order to maintain their real value. Inflation and other economic cycles and conditions are difficult to predict and there Is no guarantee that any inflation mitigation/protection strategy will be successful. Contingent Capitals Securities may have substantially greater risk than other securities in times of financial stress. An issuer or regulator's decision to write down, write off or convert a CoCo may result in complete loss on an investment.

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