

Quarterly Market Commentary

October 2022

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Market Review

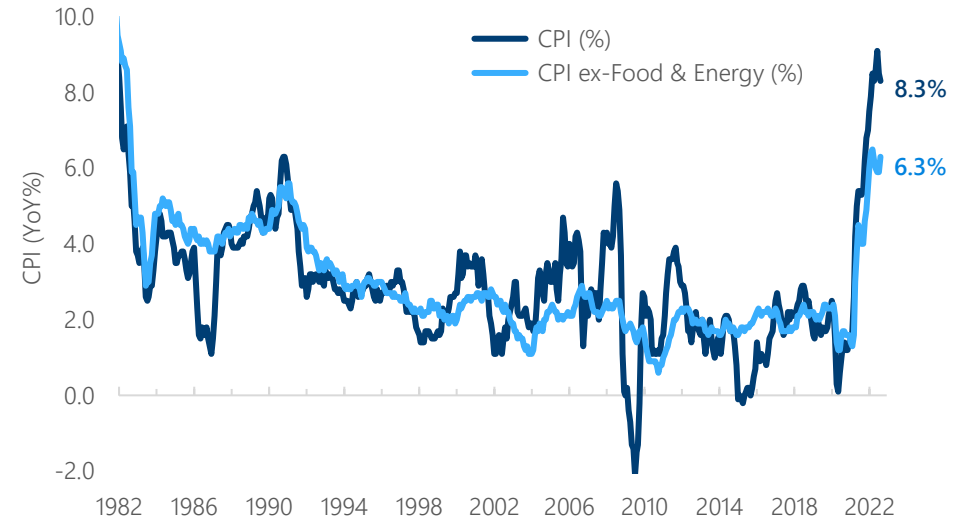
- › Capital markets struggled through another volatile quarter as investors worried about Fed tightening, inflation, recession, and geopolitical conflict. A mid-quarter rally raised hopes, only to give way to renewed turmoil when markets careened in the wake of worse-than-expected inflation data and the Federal Reserve's third consecutive 0.75% rate hike in September.
- › After two straight quarters of negative real U.S. Gross Domestic Product (GDP) growth to start the year, economists expect modest positive growth in the back half of 2022. However, certain segments of the economy (i.e., housing) are slowing considerably with surging interest rates, while business and consumer confidence remains quite subdued. As a result, the broader economy remains at risk of formally tipping into recession if the combination of persistent inflation and higher rates further crimps activity.
- › Inflation continues to be a major focus, as the Consumer Price Index (CPI) remains near 40-year highs despite some easing in gas prices. The latest reading showed CPI at 8.3% year-over-year. To bring prices under control, the Fed has raised rates aggressively, with more to come. However, many favor a Fed pause to assess the impact of actions taken to date, rather than risk overtightening.
- › With an unfavorable macro backdrop, all but one S&P 500 sector has declined YTD, with Energy the lone winner. Rising interest rates have weighed heavily on firms with high valuations and uncertain future cash flows. Stable companies with healthy current cash flows have held up better. International equities also posted declines, as they deal with similar issues, along with strong currency headwinds.

Market Outlook

- › U.S. equities will likely remain volatile in coming months, as investors await confirmation that inflation has slowed meaningfully enough to allow the Fed to ease up on rate hikes. The longer it takes for a Fed pivot, the lower the odds of a "soft landing". Global equities face similar uncertainties, with Europe perhaps at the greatest risk of recession with record home heating prices ahead.
- › Wall Street analysts still project S&P 500 earnings per share (EPS) will grow about 8% per year in 2022 and 2023. With the outlook weakening, this forecast may prove too optimistic. Companies have largely been able to pass through cost increases thus far, but that may become more difficult given the current backdrop. Estimates both here and abroad will likely come down at least modestly.
- › On the surface, equity valuations seem more attractive relative to earlier this year. The S&P 500 trades at a forward price-to-earnings (P/E) multiple of 15.2x. That is down sharply from 21.4x to start 2022 and lower than the average of 16.0x since 1990. This could help provide support for equity prices in the near term, but the current P/E could be overstated if 2023 EPS estimates are cut significantly.
- › Investing through periods of rapid change is never easy, but it is important to maintain long-term perspective in times like this. Global markets have more challenges ahead, but there are pockets of opportunities across equities and fixed income as certain high-quality holdings have been unduly swept up in this wave of selling. Our teams are committed to finding and exploiting such opportunities.

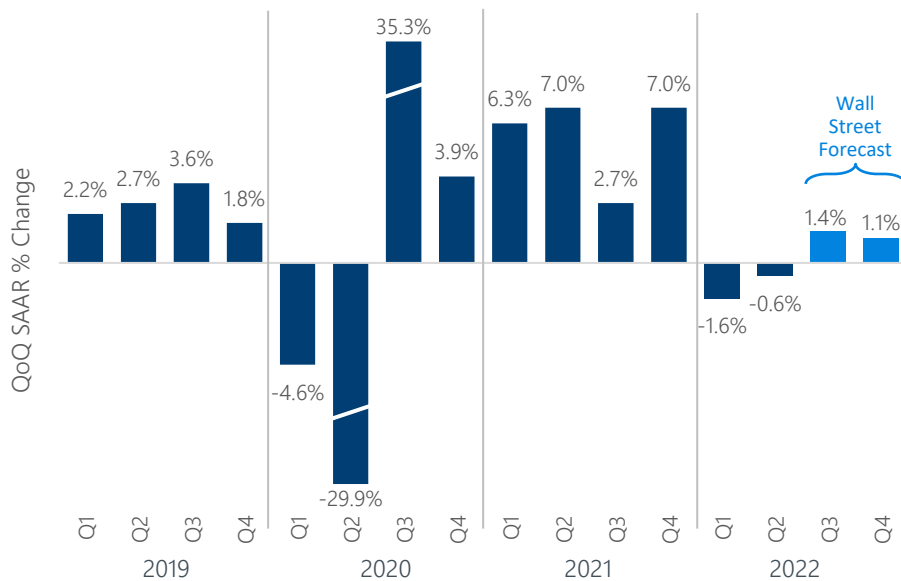
- › The U.S. economy continues to send mixed signals about its overall health. After two consecutive quarters of negative real GDP growth to start the year, economists expect modest positive growth in the back half of 2022.
- › Inflation continues to be a focal point for investors. The consumer price index (CPI) eased a bit during the quarter to 8.3% year-over-year, but excluding the impact from food & energy prices, core CPI actually ticked up slightly in August to 6.3%, renewing concerns that inflation will be stickier than feared.
- › To combat inflation, the Federal Reserve maintained its hawkish policy with two additional 75bps interest rate hikes in July and September, bringing the Federal Funds target rate to 3.25%. The Fed plans additional rate hikes over the next several months to likely reach 4.5% by year-end.
- › The labor market remains a bright spot, with steady employment growth and an unemployment rate of just 3.5%. While that is good news, a tight labor market adds pressure to wage growth, a key component of inflation.

U.S. Consumer Price Index (YoY%)



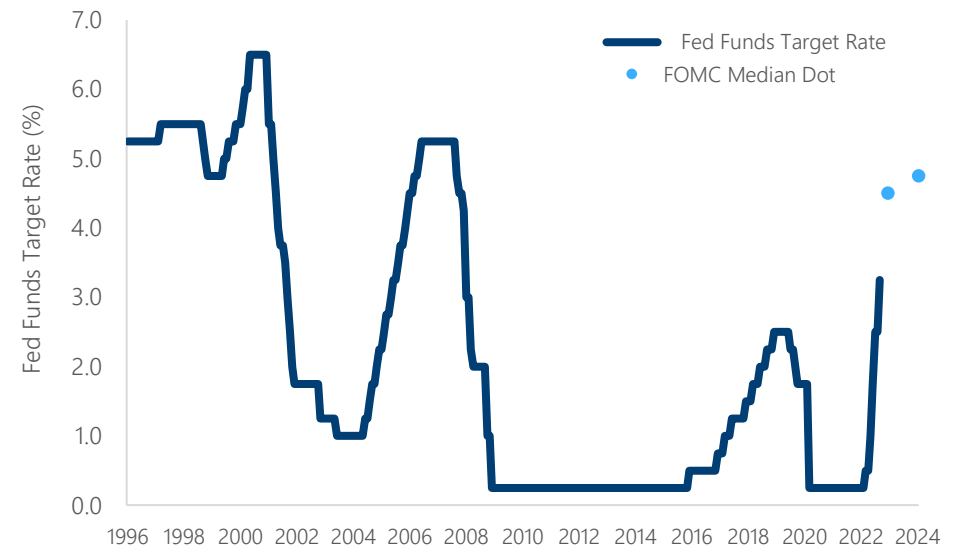
Source: Bloomberg, Bureau of Labor Statistics

U.S. Real GDP Quarter-Over-Quarter Percent Change



Source: Bloomberg, Bureau of Economic Analysis.

Fed Funds Target Rate



Source: Bloomberg, Federal Open Market Committee

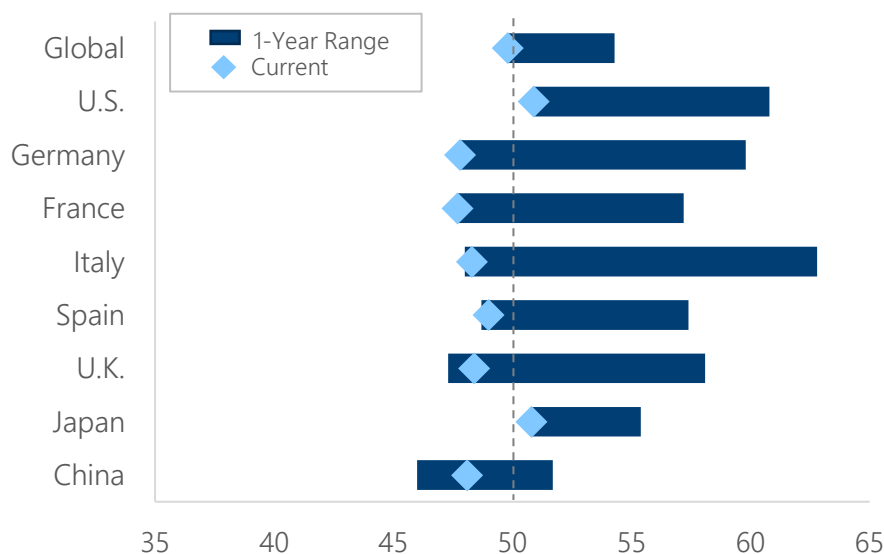
- › The global economy is expected to slow across both advanced and emerging countries. The latest Organisation for Economic Cooperation and Development (OECD) projections sees global GDP growth slowing from 5.8% in 2021 to just 3.0% and 2.2% in 2022 and 2023, respectively.
- › Manufacturing activity has moderated across most, if not all, major countries. The latest Purchasing Manager Index (PMI) survey data indicates the global index right at the critical 50-level mark, with several major economies below that level, traditionally an indicator of economic contraction.
- › The Citi Economic Surprise Index, which measures data surprises relative to expectations, indicates that global data is currently coming in-line with expectations, likely due to reduced forecasts rather than strengthening data.
- › The looming energy crisis in Europe, driven by drastically higher natural gas prices stemming from the Russia-Ukraine conflict, threatens to further derail growth and push the Eurozone into recession. One recent study warned that household electricity bills in Europe could surge by 2 trillion euros next year.

OECD Global GDP Projections

	2021	2022	2023
World	5.8%	3.0%	2.2%
Advanced Economies			
United States	5.7%	1.5%	0.5%
Euro Area	5.2%	3.1%	0.3%
U.K.	7.4%	3.4%	0.0%
Japan	1.7%	1.6%	1.4%
Emerging Economies			
China	8.1%	3.2%	4.7%
India	8.7%	6.9%	5.7%
Brazil	4.9%	2.5%	0.8%
Russia	4.7%	-5.5%	-4.5%

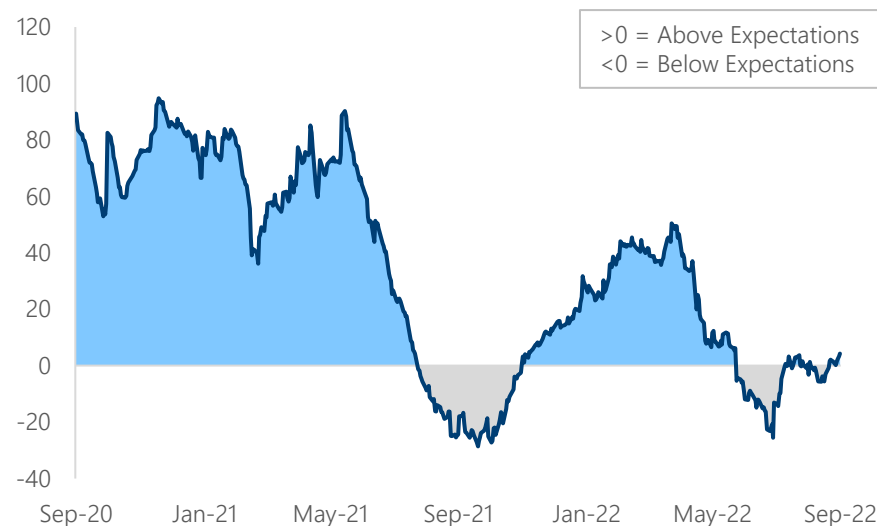
Source: Organisation for Economic Cooperation and Development

Manufacturing PMI by Country



Source: Bloomberg, Institute of Supply Management, Caixin, IHS Markit.

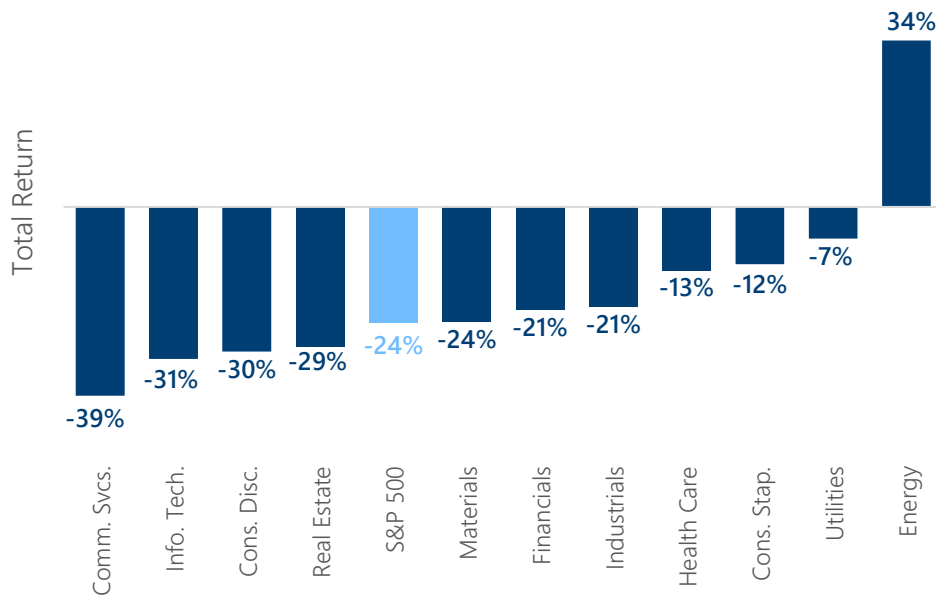
Citi Economic Surprise Index - Global



Source: Bloomberg, Citigroup

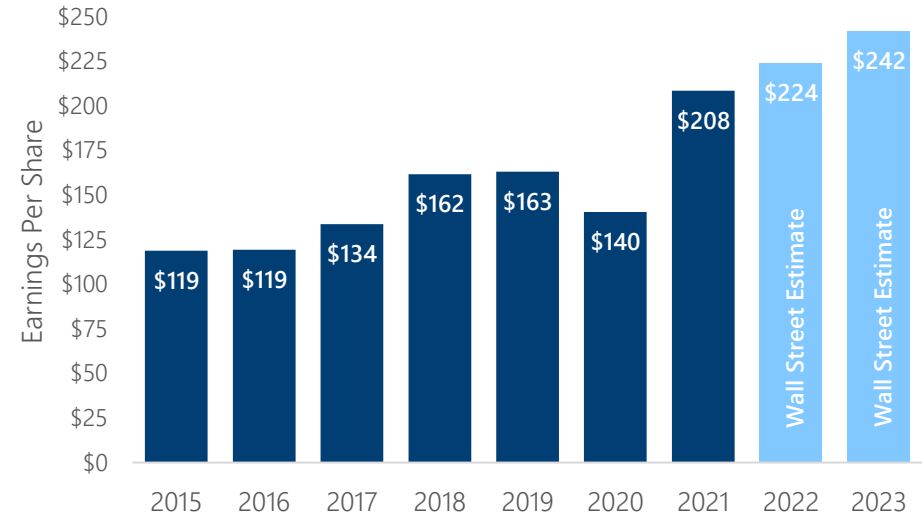
- All but one S&P 500 sector has negative YTD returns, with Energy the lone holdout due to soaring oil prices. The worst performers are growth-oriented sectors: Communication Services, Technology & Consumer Discretionary.
- Soaring interest rates have weighed heavily on firms with high valuations and the bulk of projected cash flow generation in the distant future. Conversely, more stable companies with healthy current cash flows have held up better.
- S&P 500 earnings are projected to grow about 8% in 2022, driven by strong revenue growth, as most companies were able to pass through cost increase earlier in the year. Current forecasts imply another year of 8% growth in 2023, but with outlooks weakening, that may prove too optimistic.
- Based on current earnings per share (EPS) forecasts, the forward price-to-earnings (P/E) multiple on the S&P 500 is now 15.2x, lower than the average of 16x since 1990. To the extent 2023 EPS forecasts are reduced materially, the current P/E would be understated, and valuations become less attractive relative to history.

S&P 500 Sectors – YTD % Return



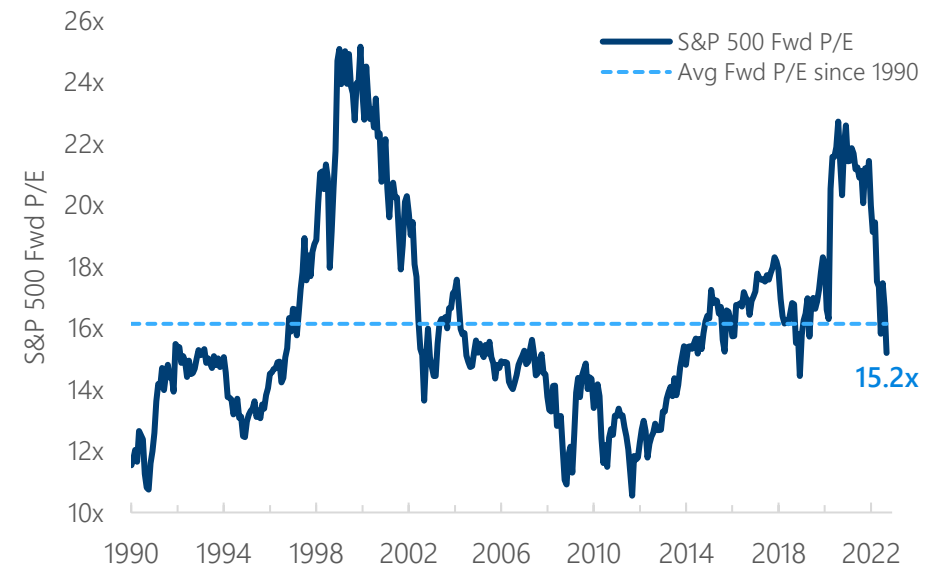
Source: Bloomberg

S&P 500 Earnings Per Share



Source: Factset

S&P 500 Forward Price-to-Earnings



Source: Bloomberg

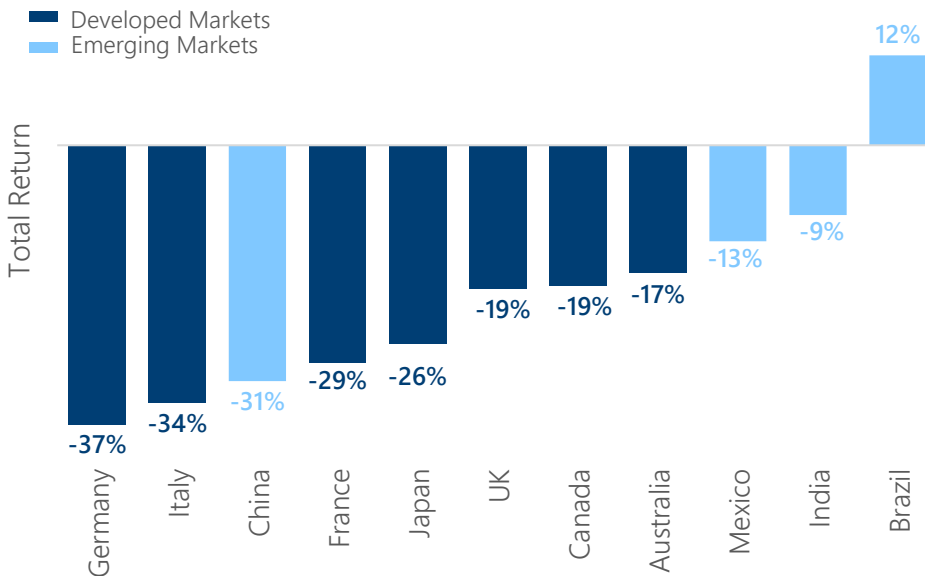
- › Nearly all major countries have negative returns for their equity markets. As shown below, in USD terms, losses are significant across both developed and emerging equities, with the exception of Brazil.
- › The U.S. dollar has soared against foreign currencies in 2022, largely due to aggressive rate hikes by the Fed relative to other central banks. As a result, the euro is back to parity with the USD, while the Japanese yen and British pound are at their lowest levels since 1998 and 1985, respectively.
- › Forward P/E multiples for both international developed and emerging markets have declined significantly, even more than what has occurred in the U.S. this past year. However, similar to the U.S., these P/E ratios could be overstated if earnings estimates get revised lower.
- › With central banks hiking interest rates much like the Federal Reserve, international equities face continued headwinds both from hawkish monetary policy and a potential recession on the horizon in Europe.

U.S. Dollar Index



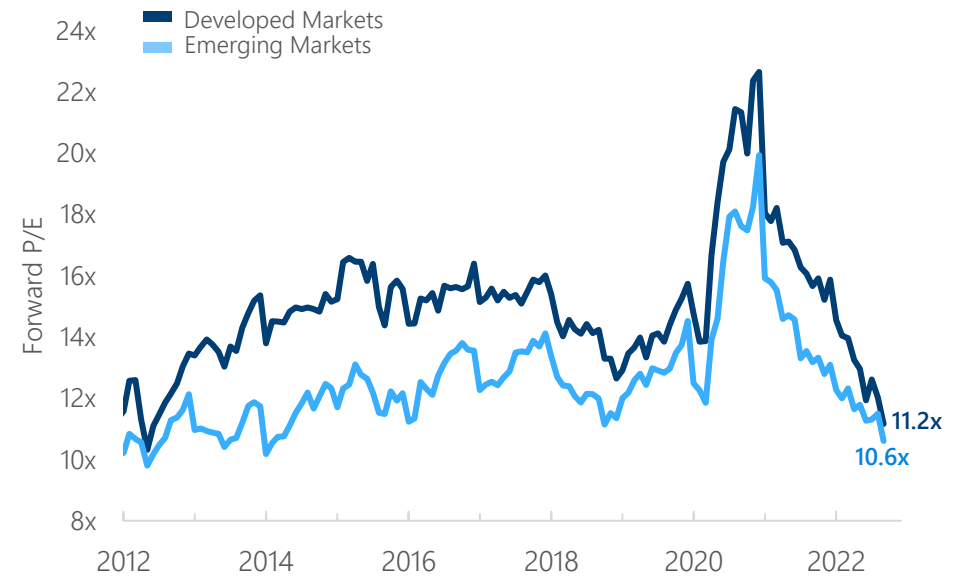
Source: Bloomberg

International Equity Markets – YTD % Returns (in USD)



Source: Bloomberg

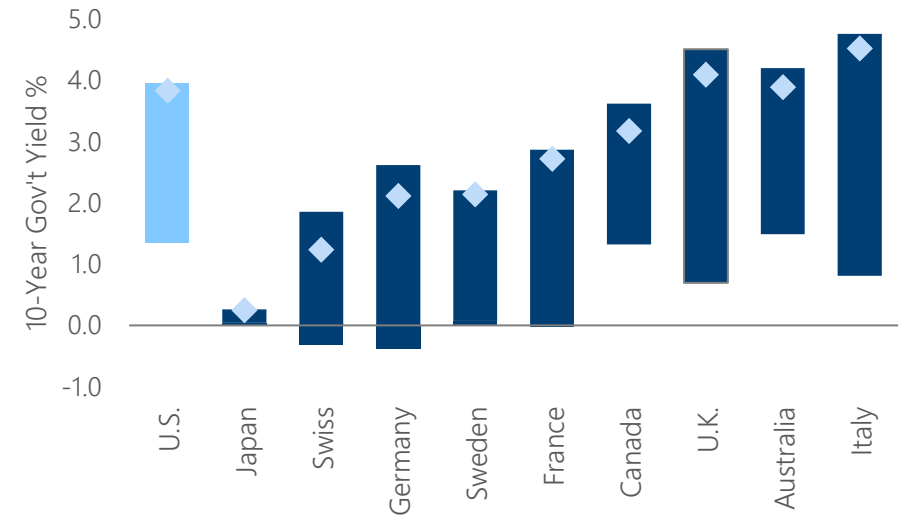
International Equities Forward Price-to-Earnings



Source: Bloomberg

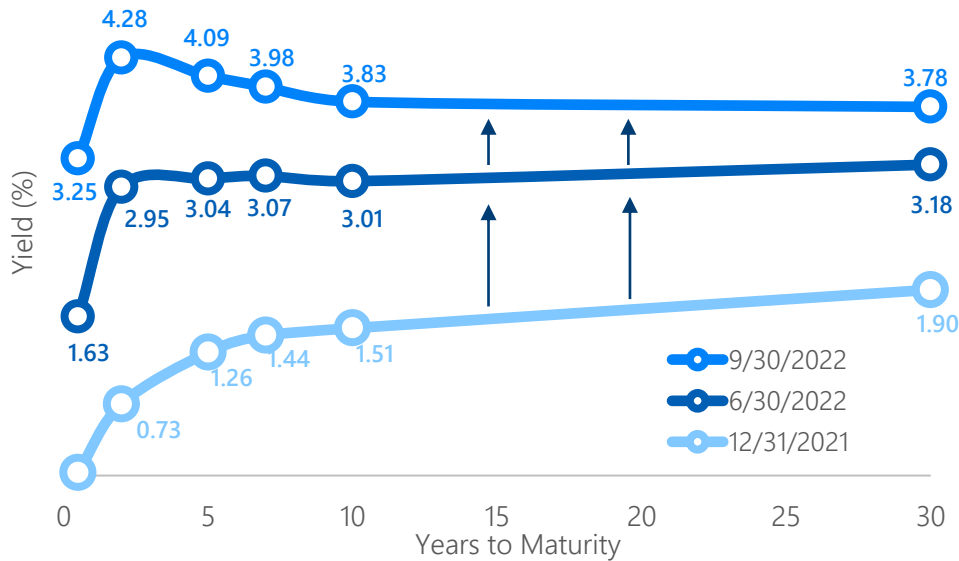
- U.S. Treasury yields continued to move higher across all maturities during the third quarter. The yield on the two-year Treasury, the part of the curve most sensitive to Fed policy, rose to its highest level since the 2008 financial crisis.
- The Federal Reserve has been raising rates aggressively with three straight mega-hikes of 0.75% to reach a Fed Funds target rate of 3.25%. The Fed has signaled it intends to reach an end point of 4.6% in 2023, all in an effort to bring inflation firmly under control, even at the risk of causing a recession.
- Gov't yields moved higher across the globe, particularly in the Euro area and U.K., as their central banks also turned hawkish and instituted aggressive rate hikes. Japan remains the lone holdout with its ultra-loose monetary policy.
- U.S. corporate credit spreads widened materially over the course of 2022, on top of the increase in underlying Treasury rates. As of quarter-end, the yields on the Bloomberg U.S. Corporate Bond Index and Bloomberg U.S. Corporate High Yield Index were 5.7% and 9.7%, respectively.

10-Year Government Yields



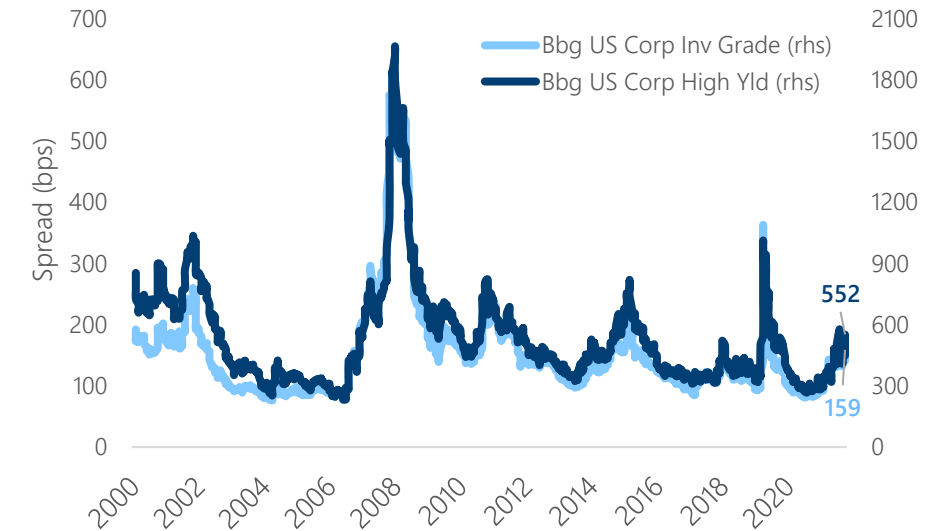
Source: Bloomberg

U.S. Treasury Yield Curve



Source: Bloomberg

U.S. Corporate Credit Spread vs. Treasuries



Source: Bloomberg

As of September 30, 2022

	QTD	1st Half	2022	Annualized	
				3Yr	5Yr
U.S. Equity					
U.S. Large Cap	-4.9%	-20.0%	-23.9%	8.1%	9.2%
U.S. Mid Cap	-3.4%	-21.6%	-24.3%	5.2%	6.5%
U.S. Small Cap	-2.2%	-23.4%	-25.1%	4.3%	3.5%
U.S. Growth	-3.6%	-28.1%	-30.7%	10.7%	12.2%
U.S. Value	-5.6%	-12.9%	-17.8%	4.3%	5.3%
U.S. Sectors			2022	3Yr	5Yr
Technology	-6.2%	-26.9%	-31.4%	14.9%	16.7%
Health Care	-5.2%	-8.3%	-13.1%	12.5%	10.2%
Financials	-3.1%	-18.7%	-21.2%	4.8%	5.4%
Communication Svcs	-12.7%	-30.2%	-39.0%	-0.1%	2.0%
Consumer Discretion	4.4%	-32.8%	-29.9%	6.7%	10.5%
Industrials	-4.7%	-16.8%	-20.7%	4.0%	4.8%
Consumer Staples	-6.6%	-5.6%	-11.8%	6.2%	7.6%
Energy	2.2%	31.6%	34.5%	13.2%	6.0%
Utilities	-6.0%	-0.6%	-6.5%	3.7%	7.8%
Real Estate	-11.0%	-20.1%	-28.9%	0.4%	5.8%
Materials	-7.1%	-17.9%	-23.7%	7.6%	5.9%
Non-U.S. (in USD)			2022	3Yr	5Yr
Int'l Developed	-9.3%	-19.2%	-26.7%	-1.3%	-0.3%
Emerging Markets	-11.5%	-17.5%	-27.0%	-1.8%	-1.5%
Europe	-10.4%	-20.3%	-28.6%	-1.2%	-0.7%
Japan	-7.8%	-20.0%	-26.2%	-2.3%	-0.3%
China	-22.4%	-11.2%	-31.1%	-7.1%	-5.4%
Latin America	3.7%	-0.3%	3.4%	-3.0%	-2.3%
Convertibles			2022	3Yr	5Yr
U.S. Convertibles	-0.3%	-19.9%	-20.2%	10.4%	9.0%
Global Convertibles	-1.9%	-19.9%	-21.4%	5.9%	5.0%

	QTD	1st Half	2022	Annualized	
				3Yr	5Yr
U.S. Fixed Income					
U.S. Aggregate	-4.8%	-10.3%	-14.6%	-3.3%	-0.3%
U.S. Treasury	-4.3%	-9.1%	-13.1%	-3.1%	-0.2%
U.S. Corporate	-5.1%	-14.4%	-18.7%	-3.6%	0.0%
U.S. Municipal	-3.5%	-9.0%	-12.1%	-1.9%	0.6%
By Credit Quality			2022	3Yr	5Yr
U.S. Aggregate Aaa	-4.7%	-8.9%	-13.1%	-3.2%	-0.4%
U.S. Aggregate Aa	-4.9%	-12.3%	-16.6%	-3.7%	-0.3%
U.S. Aggregate A	-5.2%	-13.3%	-17.8%	-3.7%	-0.2%
U.S. Aggregate Baa	-4.8%	-15.2%	-19.3%	-3.6%	0.1%
U.S. High Yield	-0.6%	-14.2%	-14.7%	-0.5%	1.6%
By Maturity			2022	3Yr	5Yr
U.S. Agg 1-3 Year	-1.5%	-3.1%	-4.6%	-0.5%	0.6%
U.S. Agg 3-5 Year	-3.3%	-6.3%	-9.4%	-1.8%	0.2%
U.S. Agg 5-7 Year	-4.7%	-8.3%	-12.6%	-2.5%	-0.1%
U.S. Agg 7-10 Year	-5.6%	-11.7%	-16.6%	-3.6%	-0.2%
U.S. Agg 10+ Year	-9.0%	-21.8%	-28.9%	-7.3%	-1.1%

Source: Bloomberg. Past performance is no guarantee of future results.

As of September 30, 2022

	P/E Ratio			Div Yield			
	U.S. Equity	Sep	Dec	Chg	Sep	Dec	Chg
	U.S. Large Cap	15.2x	21.4x	-6.2x	1.8%	1.3%	0.5%
U.S. Mid Cap	14.2x	20.6x	-6.4x	1.8%	1.2%	0.6%	
U.S. Small Cap	17.6x	25.3x	-7.7x	1.5%	1.3%	0.2%	
U.S. Growth	20.0x	30.2x	-10.2x	1.1%	0.7%	0.4%	
U.S. Value	12.3x	16.5x	-4.2x	2.5%	1.9%	0.6%	
	P/E Ratio			Div Yield			
U.S. Sectors	Sep	Dec	Chg	Sep	Dec	Chg	
Technology	18.5x	28.2x	-9.7x	1.2%	0.8%	0.4%	
Financials	10.9x	14.8x	-3.9x	2.4%	1.7%	0.7%	
Health Care	15.0x	17.3x	-2.3x	1.8%	1.4%	0.4%	
Consumer Discretion	21.3x	30.0x	-8.7x	0.9%	0.6%	0.4%	
Communication Svcs	12.6x	19.7x	-7.1x	1.1%	0.9%	0.3%	
Consumer Staples	18.6x	21.9x	-3.3x	2.9%	2.4%	0.5%	
Industrials	15.1x	20.8x	-5.6x	2.0%	1.4%	0.7%	
Energy	7.7x	10.8x	-3.1x	3.5%	4.1%	-0.6%	
Materials	12.5x	17.0x	-4.5x	2.4%	1.7%	0.7%	
Utilities	17.9x	20.8x	-2.8x	3.3%	2.9%	0.3%	
Real Estate	29.9x	51.7x	-21.8x	3.6%	2.2%	1.4%	
	P/E Ratio			Div Yield			
Non-U.S. (in USD)	Sep	Dec	Chg	Sep	Dec	Chg	
Int'l Developed	10.9x	15.1x	-4.2x	3.8%	2.8%	0.9%	
Emerging Markets	10.3x	12.4x	-2.1x	3.6%	2.9%	0.8%	
Europe	10.4x	15.2x	-4.8x	4.0%	2.9%	1.0%	
Japan	11.5x	14.0x	-2.5x	2.8%	2.2%	0.6%	
Asia ex-Japan	11.2x	13.8x	-2.6x	3.0%	2.3%	0.8%	
China	9.7x	12.1x	-2.4x	2.7%	2.0%	0.7%	
Latin America	7.1x	8.8x	-1.6x	9.0%	6.4%	2.6%	

	Yield to Maturity			Spread			
	U.S. Fixed Income	Sep	Dec	Chg	Sep	Dec	Chg
	U.S. Aggregate	4.8%	1.8%	3.0%	0.6%	0.4%	0.3%
U.S. Treasury	4.1%	1.2%	2.9%	0.0%	0.0%	-	
U.S. Corporate	5.7%	2.3%	3.4%	1.6%	0.9%	0.7%	
U.S. Municipal	4.0%	1.1%	2.9%	na	na	-	
	Yield to Maturity			Spread			
By Credit Quality	Sep	Dec	Chg	Sep	Dec	Chg	
U.S. Aggregate Aaa	4.4%	1.5%	2.9%	0.3%	0.1%	0.1%	
U.S. Aggregate Aa	4.9%	1.9%	3.0%	0.8%	0.5%	0.3%	
U.S. Aggregate A	5.5%	2.1%	3.3%	1.3%	0.7%	0.6%	
U.S. Aggregate Baa	6.0%	2.6%	3.4%	1.9%	1.1%	0.8%	
U.S. High Yield	9.7%	4.2%	5.5%	5.5%	2.8%	2.7%	
	Yield to Maturity			Spread			
By Maturity	Sep	Dec	Chg	Sep	Dec	Chg	
U.S. Agg 1-3 Year	4.6%	0.8%	3.7%	0.2%	0.1%	0.1%	
U.S. Agg 3-5 Year	4.7%	1.5%	3.2%	0.5%	0.2%	0.2%	
U.S. Agg 5-7 Year	4.7%	1.9%	2.8%	0.6%	0.4%	0.2%	
U.S. Agg 7-10 Year	4.8%	2.0%	2.8%	0.8%	0.4%	0.4%	
U.S. Agg 10+ Year	5.0%	2.6%	2.4%	1.0%	0.7%	0.3%	

Source: Bloomberg. Past performance is no guarantee of future results.

DEFINITIONS: **Mkt Cap:** Total market value of all of a company's outstanding shares. **P/E Ratio :** Current stock's price over its predicted earnings per share. **Div Yield:** Current dividend as a percentage of the current share price. **Duration:** Measure of how sensitive a bond's value may be to interest rate changes. **Yield to Maturity:** Total return anticipated on a bond if the bond is held until it matures, expressed as an annual rate. **Spread:** Spread of a fixed-income security rate and the risk-free rate of return, which is adjusted to take into account an embedded option.

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Disclosures

Global Market Returns

U.S. Large Cap : S&P 500 – Index of the 500 largest corporations by market capitalization listed on the NYSE or NASDAQ. U.S. Small Cap: Russell 2000 – Index of approximately 2000 small-cap companies within the Russell 3000 index, which is made up of stocks of the largest 3000 U.S. companies. U.S. Growth: Russell 1000 Growth – A composite of large and mid-cap companies within the Russell 1000 Index that have higher price-to-book ratios and higher expected earnings growth rates. U.S. Value : Russell 1000 Value – A composite of large and mid-cap companies within the Russell 1000 Index that have lower price-to-book ratios and lower expected long-term earnings growth rates. Technology : S&P 500 Information Technology – A composite of Information Technology sector companies within the S&P 500 Index. Financials : S&P 500 Financials – A composite of Financial sector companies within the S&P 500 Index. Health Care : S&P 500 Health Care – A composite of Health Care sector companies within the S&P 500 Index. Consumer Discretionary : S&P 500 Consumer Discretionary – A composite of Consumer Discretionary sector companies within the S&P 500 Index. Consumer Staples : S&P 500 Consumer Staples – A composite of Consumer Staples-sector companies within the S&P 500 Index. Industrials : S&P 500 Industrials – A composite of Industrials sector companies within the S&P 500 Index. Energy : S&P 500 Energy – A composite of Energy sector companies within the S&P 500 Index. Materials : S&P 500 Materials – A composite of Materials sector companies within the S&P 500 Index. Utilities : S&P 500 Utilities – A composite of Utilities sector companies within the S&P 500 Index. Real Estate : S&P 500 Real Estate – A composite of Real Estate sector companies within the S&P 500 Index. Telecom Services : S&P 500 Telecom Services – A composite of Telecom Services sector companies within the S&P 500 Index. Int'l Developed : MSCI EAFE – Index designed to measure the equity market performance of 23 emerging economies selected by MSCI. Europe : MSCI Europe – Index of large and mid-cap companies across 15 developed countries within Europe. Japan : MSCI Japan – Index designed to measure the performance of large and mid-cap equities within the Japanese market. China : MSCI China – Index designed to capture large and mid-cap segments with H shares, B shares, red chips, P chips and ADRs of Chinese stocks. Latin America : MSCI Latin America – Index designed to measure the performance of large and mid-cap equities across 5 Emerging Market countries within Latin America. U.S. Convertibles : Bloomberg Barclays US Convertible Composite Total Return Unhedged USD – Index designed to represent the market of U.S. convertible securities, such as convertible bonds. Global Convertibles : Bloomberg Barclays Global Convertible Composite Total Return Unhedged USD – A global convertible index composed of companies representative of the market structure of countries in North America, Europe and the Asia/Pacific region. U.S. Aggregate : Bloomberg Barclays US Aggregate Bond Index – A broad-based index that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-through), ABS and CMBS (agency and non-agency). U.S. Treasury : Bloomberg Barclays US Treasury Index – Index that measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index. U.S. Corporate: Bloomberg Barclays US Corporate Bond Index – Index that measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD denominated securities publicly issued by US and non-US industrial, utility and financial issuers. U.S. Municipal: Bloomberg Barclays US Municipal Index – Index that 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. U.S. Aggregate Aaa : Bloomberg Barclays US Aggregate Aaa Bond Index – Composite of all Aaa-rated bonds in the Bloomberg Barclays US Aggregate Bond Index. U.S. Aggregate Aa : Bloomberg Barclays US Aggregate Aa Bond Index – Composite of all Aa-rated bonds in the Bloomberg Barclays US Aggregate Bond Index. U.S. Aggregate A: Bloomberg Barclays US Aggregate A Bond Index – Composite of all A-rated bonds in the Bloomberg Barclays US Aggregate Bond Index. U.S. Aggregate Baa: Bloomberg Barclays US Aggregate Baa Bond Index – Composite of all Baa-rated bonds in the Bloomberg Barclays US Aggregate Bond Index. U.S. High Yield : Bloomberg Barclays US Corporate High Yield Bond Index – Index that measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on Barclays EM country definition, are excluded. U.S. Aggregate 1-3 Year : Bloomberg Barclays US Aggregate 1-3 Year Bond Index – Composite of all bonds in the Bloomberg Barclays US Aggregate Bond Index with maturities of 1-3 Years. U.S. Aggregate 3-5 Year : Bloomberg Barclays US Aggregate 3-5 Year Bond Index – Composite of all bonds in the Bloomberg Barclays US Aggregate Bond Index with maturities of 3-5 Years. U.S. Aggregate 5-7 Year : Bloomberg Barclays US Aggregate 5-7 Year Bond Index – Composite of all bonds in the Bloomberg Barclays US Aggregate Bond Index with maturities of 5-7 Years. U.S. Aggregate 7-10 Year : Bloomberg Barclays US Aggregate 7-10 Year Bond Index – Composite of all bonds in the Bloomberg Barclays US Aggregate Bond Index with maturities of 7-10 Years. U.S. Aggregate 10+ Year : Bloomberg Barclays US Aggregate 10+ Year Bond Index – Composite of all bonds in the Bloomberg Barclays US Aggregate Bond Index with maturities of 10+ Years. Managed Futures : Credit Suisse Managed Futures Liquid Index – Aims to gain exposure to trend-following strategies on futures. Merger Arbitrage : Credit Suisse Merger Arbitrage Liquid Index – Aims to gain broad exposure to the merger arbitrage strategy using a pre-defined quantitative methodology to invest in a liquid, diversified and broadly representative set of announced merger deals. Long/Short : Credit Suisse Long/Short Liquid Index – Reflects the return of a dynamic basket of liquid, investable market factors selected and weighted in accordance with an algorithm that aims to approximate the aggregate returns of the universe of long/short equity hedge fund managers. Commodities : Bloomberg Commodities Index – Reflects the returns on a fully collateralized investment in the BCOM. MLPs: Alerian MLP Index – Cap-weighted index of energy MLPs. Global REITs: S&P Global REIT USD Index – Benchmark of publicly traded equity REITs listed in both developed and emerging markets. Global Infrastructure : S&P Global Infrastructure Index – Index that provides liquid and tradable exposure to 75 companies from around the world that represent the listed infrastructure universe. MSCI EAFE Forward Price-to-Earnings: A composite of the MSCI EAFE's underlying stocks' prices over their estimated earnings per share. MSCI EM Forward Price-to-Earnings: A composite of the MSCI EM's underlying stocks' prices over their estimated earnings per share.

Definitions

The **MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. The index is calculated on a total return basis, which includes reinvestment of gross dividends before deduction of withholding taxes. The **MSCI ACWI Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets and emerging markets. The **MSCI ACWI ex US Growth Index** captures large and mid cap securities exhibiting overall growth style characteristics across 22 Developed Markets countries (excluding the US) and 26 Emerging Markets countries. The **Russell 1000® Index** measures the performance of the 1,000 largest companies in the Russell 3000 Index. The Russell 1000 Index is published and maintained by FTSE Russell. **Russell 1000® Value Index** measures the performance of those companies in the Russell 1000® Index with lower price-to-book ratios and lower forecasted growth values. **S&P 500 Index** is generally considered representative of the US stock market. **Bloomberg US Aggregate Bond Index** is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency). **Bloomberg US Corporate High Yield Index** measures the US corporate market of non-investment grade, fixed-rate corporate bonds. Securities are classified as high-yield if the middle rating of Moody's, Fitch, and S&P is Ba1/ BB+/BB+ or below. The **Bloomberg US Corporate High Yield 2% Issuer Capped Index** measures the performance of high yield corporate bonds with a maximum allocation of 2% to any one issuer. Unmanaged index returns assume reinvestment of any and all distributions and, unlike fund returns, do not reflect fees, expenses or sales charges. Investors cannot invest directly in an index. The **S&P SmallCap 600 Index** is a stock market index established by Standard & Poor's. It covers roughly the small-cap range of American stocks, using a capitalization-weighted index. To be included in the index, a stock must have a total market capitalization that ranges from \$850 million to \$3.6 billion. **S&P Global Infrastructure Index** provides liquid and tradable exposure to 75 companies from around the world that represent the listed infrastructure universe. In order to create diversified exposure across the global listed infrastructure market, the index has balanced weights a cross three distinct infrastructure clusters: Utilities, Transportation and Energy. The **Bloomberg Short Treasury 1-3 Month Index** is generally considered representative of the performance of short-term money market investments and compares performance to public obligations of the US Treasury with maturities of 1-3 months. **ICE BofA US Municipal Securities Index** which tracks the performance of US Dollar denominated Investment Grade tax-exempt debt publicly issued by US states and territories and their political subdivisions, in the US domestic market. **ICE BofA US High Yield Municipal Securities Index** which tracks the performance of US Dollar denominated High Yield tax-exempt debt publicly issued by US states and territories and their political subdivisions, in the US domestic market. The **Bloomberg USD Emerging Market Composite Bond Index** is a rules-based, market-value-weighted index engineered to measure USD fixed-rate sovereign and corporate securities issued from emerging markets. The index includes both investment-grade and below-investment-grade securities. **Bloomberg Global Aggregate ex USD Index** which measures investment grade debt from 24 local currency markets. This multi-currency benchmark includes Treasury, government-related, corporate and securitized fixed-rate bonds from both developed and Emerging Market issuers. Bonds issued in USD are excluded. **HFRI Fund Weighted Composite Index** it is a global, equal weighted index of the largest hedge fund that are open to new investments and offer quarterly liquidity or better. The index constituents are classified into Equity Hedge, Event Driven, Macro or Relative Value strategies. The index is rebalanced on a quarterly basis. **S&P Listed Private Equity Index** which comprises the leading listed private equity companies that meet specific size, liquidity, exposure and activity requirements. The index is designed to provide tradable exposure to the leading publicly listed companies that are active in the private equity space. **Bloomberg Global Convertibles Index** tracks the performance the Global Convertible securities and is unhedged. The **MSCI Europe Index** captures large and mid cap representation across 15 Developed Markets (DM) countries in Europe*. With 429 constituents, the index covers approximately 85% of the free float-adjusted market capitalization across the European Developed Markets equity universe. The **MSCI Japan Index** is designed to measure the performance of the large and mid cap segments of the Japanese market. The **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). With 742 constituents, the index covers about 85% of this China equity universe. Currently, the index includes Large Cap A and Mid Cap A shares represented at 20% of their free float adjusted market capitalization. The **Russell 2000® Growth Index** measures the performance of the small-cap growth segment of the US equity universe. It includes those Russell 2000® companies with higher price-to-value ratios and higher forecasted growth values. The Russell 2000® Growth Index is published and maintained by FTSE Russell. The **MSCI EAFE® Index** measures developed market equity performance (excluding the US and Canada). The **Bloomberg US Convertibles Liquid Bond Index** is designed to represent the market of US convertible securities, such as convertible bonds. Convertible bonds are bonds that can be exchanged, at the option of the holder, for a specific number of shares of the issuer's preferred stock ("Preferred Securities") or common stock. The Index components are a subset of issues in the Convertible Composite Index. The **Bloomberg US Corporate Bond Index** measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD-denominated securities publicly issued by US and non-US industrial, utility and financial issuers. The **Bloomberg Municipal Index** serves as a benchmark for the US municipal bond market. Investors will use this benchmark against portions of their portfolio that are allocated in fixed income securities. The **Dow Jones Industrial Average**, Dow Jones, or simply the Dow, is a price-weighted measurement stock market index of 30 prominent companies listed on stock exchanges in the United States. The **Nasdaq Composite** is a stock market index that includes almost all stocks listed on the Nasdaq stock exchange. **Purchasing Managers Index (PMI)** is a measure of the prevailing direction of economic trends in manufacturing. The PMI is based on a monthly survey of supply chain managers across 19 industries, covering both upstream and downstream activity.

Definitions

Gross Domestic Product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of the country's economic health. **Consumer Price Index (CPI)** measures the monthly change in prices paid by U.S. consumers and is one of the most popular measures of inflation and deflation. The **Purchasing Managers' Index (PMI)** is an index of the prevailing direction of economic trends in the manufacturing and service sectors. The PMI is based on a monthly survey of supply chain managers across 19 industries, covering both upstream and downstream activity. **Equity Risk Premium (ERP)** defined as the categories Fwd. Earnings Estimate / Price Yield subtract the risk-free rate (10yr Treasury rate). **Batting Average** reflects the number of positive outcomes as a percentage of the total. **Yield to Worst** is the lowest possible yield that can be received on a bond that fully operates within the terms of its contract without defaulting. It is a type of yield that is referenced when a bond has provisions that would allow the issuer to close it out before it matures. Early retirement of the bond could be forced through a few different provisions detailed in the bond's contract—most commonly callability. **Standard deviation** is a measure of volatility. **Sharpe ratio** is a calculation that reflects the reward per each unit of risk in a portfolio. The higher the ratio, the better the portfolio's risk-adjusted return is. **Upside capture ratio** measures a manager's performance in up markets relative to a named index. It is calculated by taking the security's upside capture return and dividing it by the benchmark's upside capture return. **Downside Capture Ratio** measures manager's performance in down markets as defined by the named index. A down-market is defined as those periods (months or quarters) in which named index return is less than 0. In essence, it tells you what percentage of the down-market was captured by the manager. For example, if the ratio is 110%, the manager has captured 110% of the down-market and therefore underperformed the market on the downside. **Beta** is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. **Correlation** is a statistic that measures the degree to which two variables move in relation to each other. An **annualized return** is the geometric average amount of money earned by an investment each year over a given time period.

Diversification and asset allocation does not guarantee a profit or protect against a loss.

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