

Quarterly Market Commentary

January 2023

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Market Review

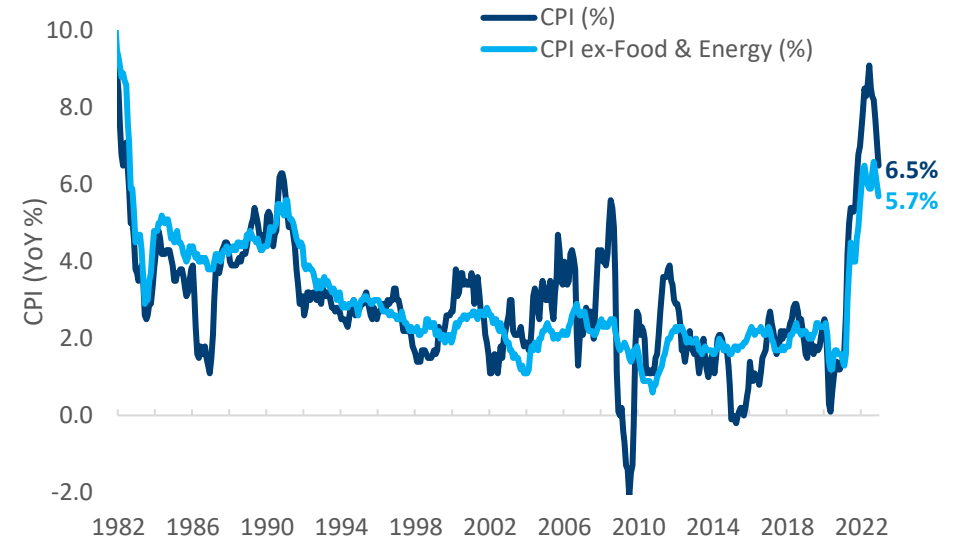
- › Global equity markets closed out a tumultuous year with a partial rebound in Q4, as investors were buoyed by cooling inflation data and a growing sentiment that central banks could pause rate hikes in early 2023. In the U.S., the S&P 500 rose 7.5% in the quarter but finished 2022 down -18.1%. Asian and European markets were stronger during the period, with similar signs of a peak in inflation.
- › Short-term interest rates continued to move higher, as the Federal Reserve raised its target to 4.5%. However, it reduced the size of its Dec rate hike to 0.50% after four straight “mega hikes” and signaled future hikes could come to an end after hitting 5.0%. With an imminent “Fed pause” and an eventual pivot towards rate cuts in late 2023 or 2024, long-term yields have moved considerably lower.
- › Economic data remains relatively stable in the U.S., with positive real GDP growth for the back half of 2022 and continued strength in the labor market. Unemployment dipped to 3.5%, as 223,000 jobs were added in Dec. While wage growth remains strong, it did moderate to 4.6% from a peak of 5.6% last March. Further moderation is key to bringing inflation back to the Fed’s 2% target.
- › Inflation has finally started to trend lower on a sustained basis. The Consumer Price Index (CPI) softened to 6.5% to end the year, after reaching a 40-year high of 9.1% in June. Core prices, excluding more volatile food and energy categories, were up 5.7% in Dec, the smallest advance in a year. While goods inflation begin abating this summer, trends in services inflation are now normalizing as well.

Market Outlook

- › U.S. equities will likely remain volatile, but somewhat rangebound, in the first half of 2023. Investors await further clarity on how much the Fed’s aggressive monetary policy has slowed the economy and corporate earnings. Many economists expect a mild recession this year or next, but we believe a “soft landing” is still possible if inflation continues to moderate and the Fed pauses rate hikes in March.
- › Equity valuations declined sharply over the course of 2022, with the S&P 500’s forward price-to-earnings (P/E) multiple now 16.7x vs. 21.4x one year ago. The current multiple is close to the long-term average since 1990, which could provide support for equity prices in the near term. However, if corporate earnings estimates continue to trend lower, the current P/E could prove understated.
- › Corporate earnings estimates have adjusted meaningfully lower since last summer. Wall Street analysts now project S&P 500 earnings per share (EPS) of \$230 for 2023. This equates to a growth rate of under 5% vs. initial expectations for 10%. If these projections hold as we get further into the year, we believe investor sentiment will improve and equities could move higher on a more sustained basis.
- › Macro themes will remain important in 2023, but we anticipate markets to expand their focus on company fundamentals (e.g., growth prospects). This increased attention to fundamentals should provide tailwinds for our research-driven approach. We remain focused on understanding the macro picture, as well as identifying themes that can propel individual industries and companies forward.

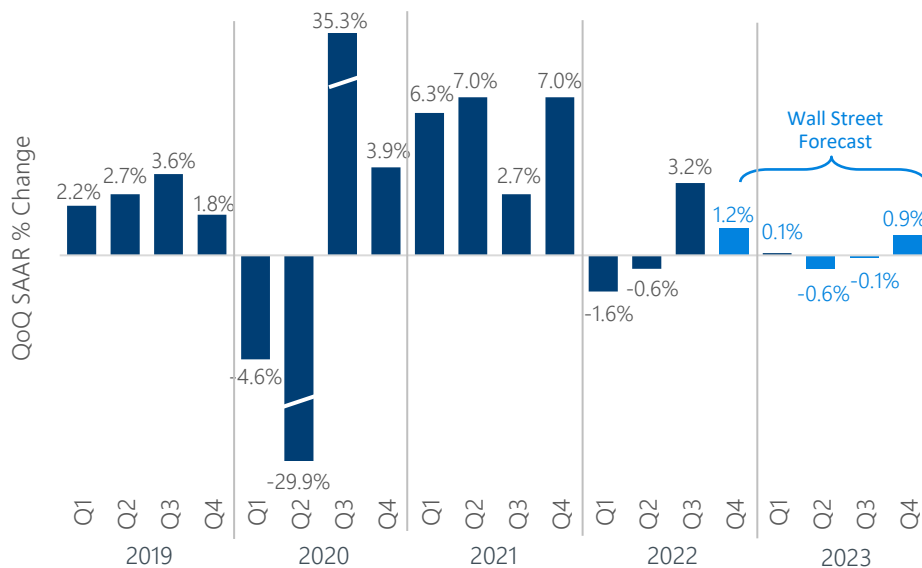
- › The U.S. economy remains fairly stable. After two quarters of negative real GDP growth to start 2022, the economy resumed expansion in Q3 and the macro data supports continued growth in Q4. Economists have more mixed views for what's ahead in 2023, with many expecting at least a mild recession.
- › Labor market conditions remain strong. The unemployment rate is now 3.5%, as 223,000 jobs were added in Dec. While the pace of job gains has gradually softened, we have now had 24 straight months of payroll expansion.
- › Inflation has finally started to trend lower on a sustained basis. The Consumer Price Index (CPI) softened to 6.5% to end the year, after reaching a 40-year high of 9.1% in June. While goods inflation begin abating this summer, trends in services inflation are now normalizing as well.
- › Wage growth remains strong, though it did moderate to 4.6% from a peak of 5.6% last March. Further moderation in average hourly earnings growth is key to bringing inflation back to the Fed's 2% target.

U.S. Consumer Price Index (YoY%)



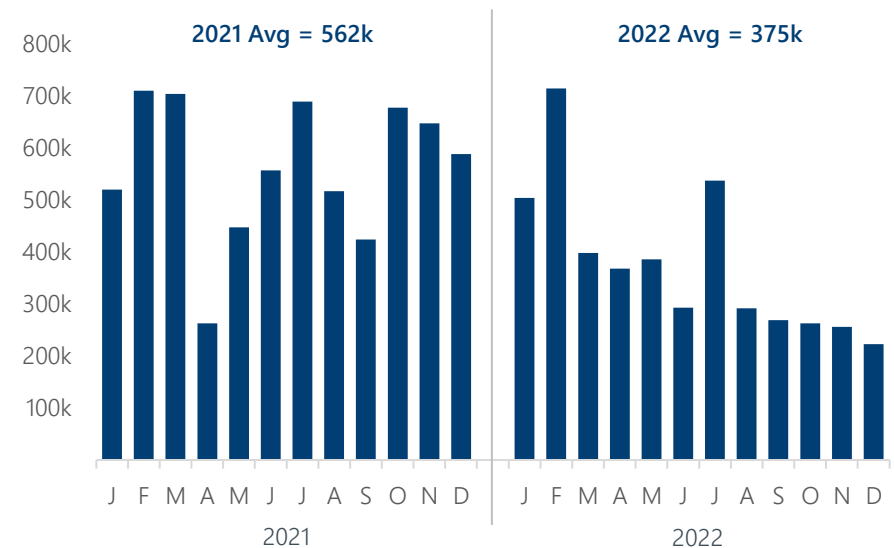
Source: Bloomberg, Bureau of Labor Statistics

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



Source: Bloomberg, Bureau of Economic Analysis.

U.S. Employees on Nonfarm Payrolls (MoM Net Change)



Source: Bloomberg, Bureau of Labor Statistics

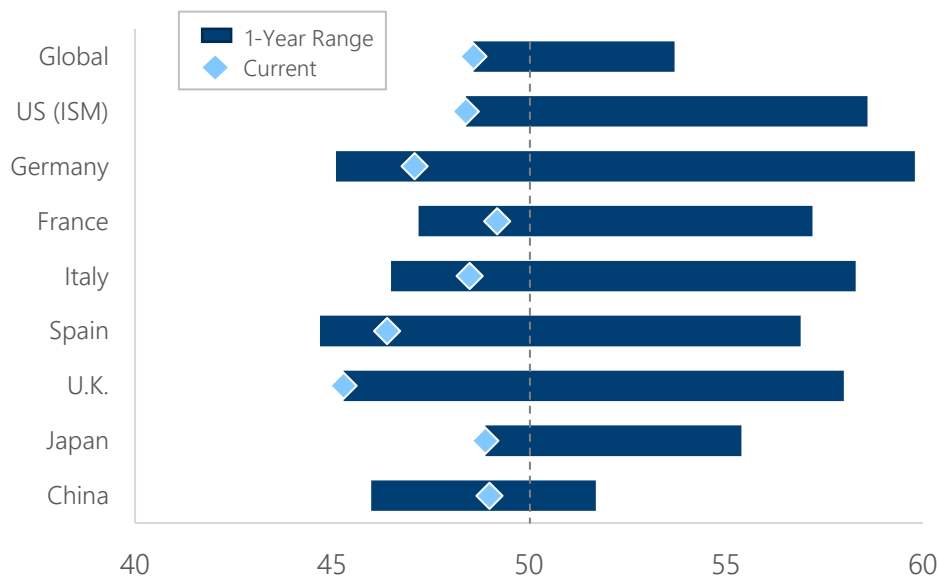
- › The global economy is expected to decelerate sharply this year, particularly in advanced economies. The World Bank recently cut its growth forecast to just 1.7% in 2023, which would mark the weakest pace in 30 years, outside of the pandemic and global financial crisis.
- › The highest inflation levels in decades has led central banks to aggressively tighten monetary policy to reestablish price stability. While these steps were necessary, they will likely prove to be a headwind to economic activity in the quarters to come, given a historic lag rate of monetary policy.
- › Manufacturing activity is signaling contraction across major countries, with Purchasing Manager Index (PMI) data below the critical 50-level. Supply chain pressures have eased, but signs of deteriorating global demand are growing.
- › 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.

Global Real GDP Forecast – World Bank

	2022	2023	2024
World	2.9%	1.7%	2.7%
Advanced Economies	2.5%	0.5%	1.6%
U.S.	1.9%	0.5%	1.6%
Euro Area	3.3%	0.0%	1.6%
Japan	1.2%	1.0%	0.7%
Emerging Economies	3.4%	3.4%	4.1%
China	2.7%	4.3%	5.0%
India	6.9%	6.6%	6.1%
Brazil	3.0%	0.8%	2.0%

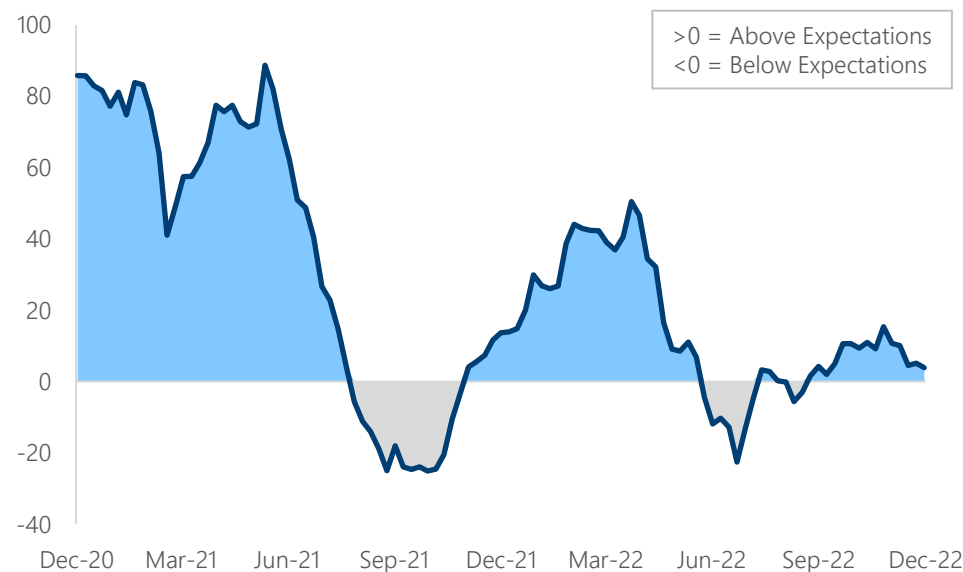
Source: The World Bank, January 2023 Global Economic Prospects report

Manufacturing PMI by Country



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

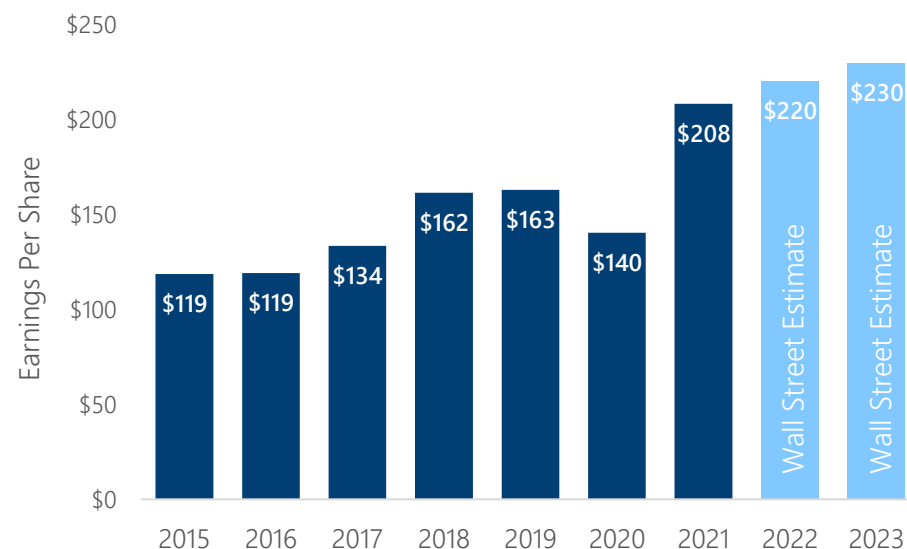
Citi Economic Surprise Index - Global



Source: Bloomberg, Citigroup

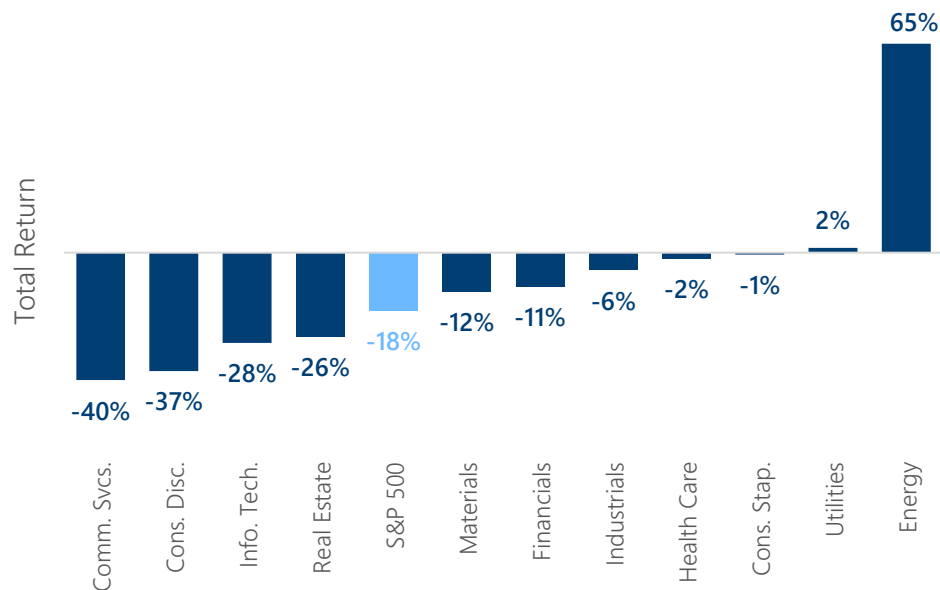
- › Almost all S&P 500 sectors had negative returns for 2022, with Energy the major exception due to soaring oil prices. Growth-oriented sectors came under the most pressure due to their outsized sensitivity to higher interest rates and their rich valuations coming into the year.
- › Value stocks significantly outperformed growth stocks all year, as surging interest rates disproportionately hurt firms with high valuations. The Russell 1000 Value index declined -7.6% vs. the Russell 1000 Growth index -29.1%.
- › S&P 500 earnings are now projected to grow less than 5% to \$230 per share in 2023, as Wall St. estimates continue to get adjusted lower on expectations for softening demand and profit margin pressures.
- › Based on current EPS forecasts, the forward P/E multiple on the S&P 500 was 16.7x at year-end, fairly in-line with longer-term averages. 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 Earnings Per Share



Source: Factset

S&P 500 Sectors – YTD % Return



Source: Bloomberg

S&P 500 Forward Price-to-Earnings



Source: Bloomberg

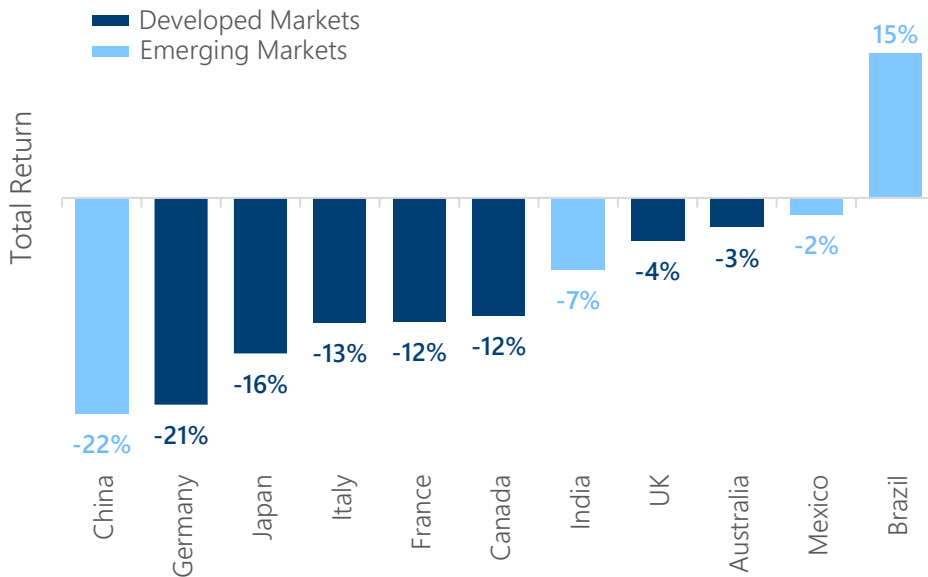
- › Strong performance across most international equity markets during Q4 helped offset significant losses earlier in the year. For 2022, there was a wide range of outcomes, with China and Germany as notable underperformers.
- › The U.S. dollar, which soared against foreign currencies for most of the year (due to more aggressive monetary policy moves by the Fed relative to peers), retreated somewhat in the final quarter of 2022. This partial reversal acted as a significant tailwind to non-U.S. performance for Q4.
- › Forward P/E multiples for both int'l developed and emerging markets have declined significantly in 2022, though they increased marginally during the quarter. Both regions now trade below their average P/E since 2010, though these multiples could be understated if earnings estimates get revised lower.
- › Given the aggressive monetary policy tightening by the European Central Bank and the ongoing conflict in Ukraine, economic conditions in the Euro area remains tenuous. The region remains at risk of a potential recession.

U.S. Dollar Index



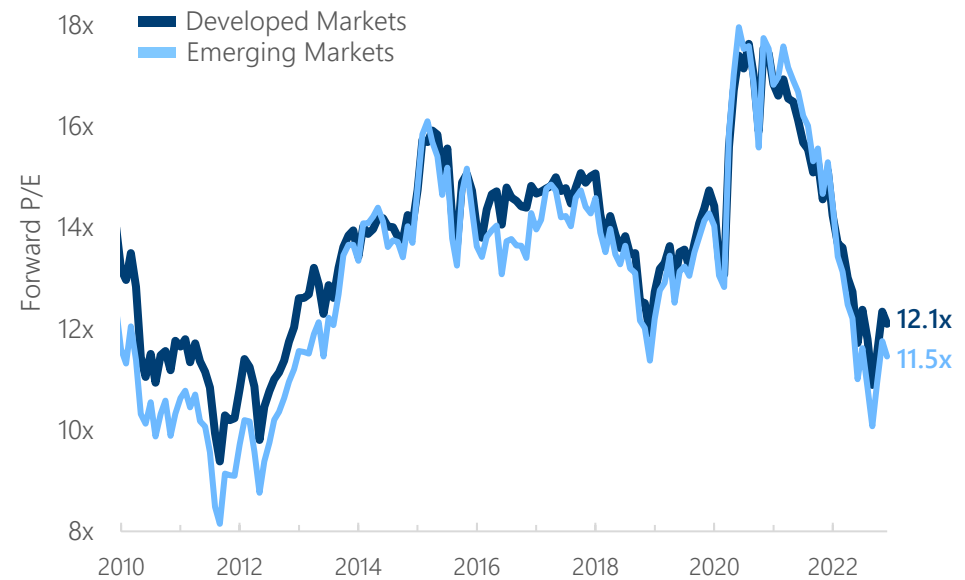
Source: Bloomberg

International Equity Markets – YTD % Returns (in USD)



Source: Bloomberg

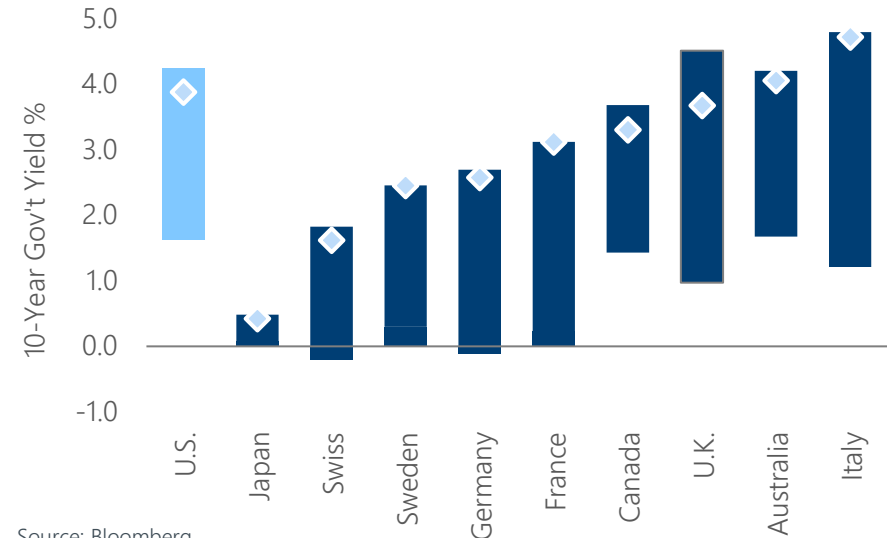
International Equities Forward Price-to-Earnings



Source: Bloomberg

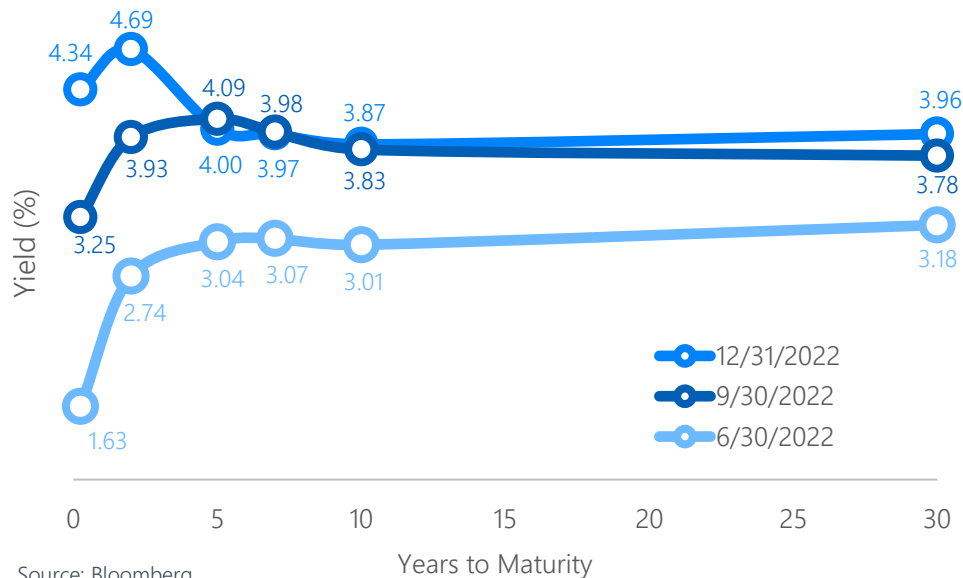
- Short-term U.S. Treasury yields continued to move higher throughout the quarter, as the Federal Reserve raised short-term rates an additional 1.25%. Longer-term yields, however, initially moved higher and then fell precipitously in the back half of the quarter, finishing the period relatively unchanged.
- Gov't yields moved higher across the globe, particularly in the Euro area, as the European Central Bank, also continued to aggressively institute rate hikes. Japan remains a holdout, as it keeps in place its more dovish monetary policy.
- The upper bound of Federal Funds Target Rate reached 4.5%, though the Fed reduced its Dec rate hike to 0.50% after four straight "mega-hikes" of 0.75%. The FOMC members are guiding towards at least another 0.50% move higher in Q1, with active debate over what happens in the second half of 2023.
- U.S. corporate credit spreads narrowed for both investment grade and high-yield bonds during Q4, as bond investors repriced risk under more favorable conditions. As a result, both segments had positive returns for the period.

10-Year Government Yields



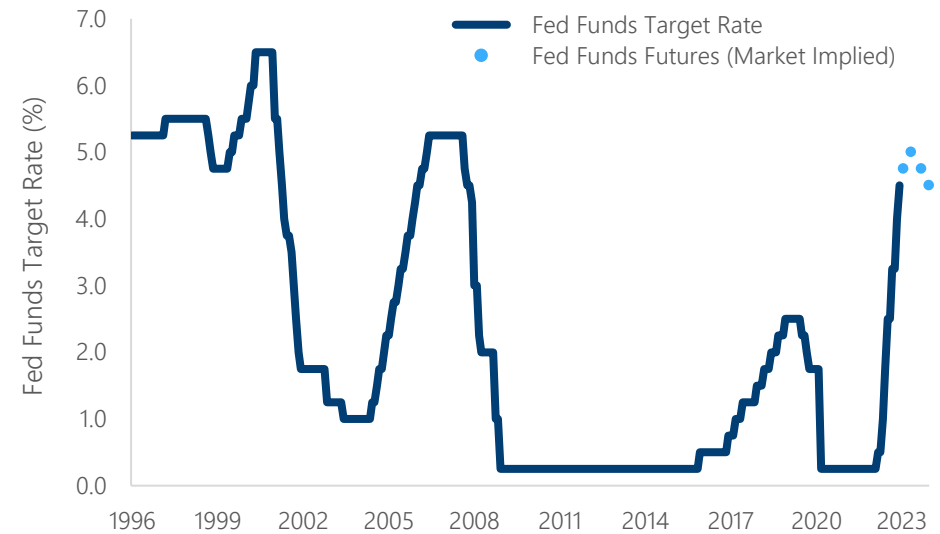
Source: Bloomberg

U.S. Treasury Yield Curve



Source: Bloomberg

Federal Funds Target Rate (%)



Source: Bloomberg, Federal Open Market Committee

As of December 31, 2022

	Q4	Q1-Q3	2022	Annualized	
				3Yr	5Yr
U.S. Equity					
U.S. Large Cap	7.5%	-23.9%	-18.1%	7.6%	9.4%
U.S. Mid Cap	9.2%	-24.3%	-17.3%	5.9%	7.1%
U.S. Small Cap	6.2%	-25.1%	-20.5%	3.1%	4.1%
U.S. Growth	2.2%	-30.7%	-29.1%	7.8%	11.0%
U.S. Value	12.4%	-17.8%	-7.6%	5.9%	6.6%
U.S. Sectors			2022	3Yr	5Yr
Technology	4.7%	-31.4%	-28.2%	11.6%	15.8%
Health Care	12.8%	-13.1%	-2.0%	11.9%	12.5%
Financials	13.6%	-21.2%	-10.6%	5.8%	6.4%
Communication Svcs	-1.4%	-39.0%	-39.9%	-3.3%	1.0%
Consumer Discretion	-10.2%	-29.9%	-37.0%	1.5%	6.1%
Industrials	19.2%	-20.7%	-5.5%	8.3%	7.3%
Consumer Staples	12.7%	-11.8%	-0.6%	9.3%	8.8%
Energy	22.7%	34.8%	65.4%	19.2%	9.2%
Utilities	8.6%	-6.5%	1.6%	6.3%	9.6%
Real Estate	3.8%	-28.9%	-26.2%	1.8%	5.9%
Materials	15.0%	-23.7%	-12.3%	10.5%	7.4%
Non-U.S. (in USD)			2022	3Yr	5Yr
Int'l Developed	17.4%	-26.7%	-13.9%	1.4%	2.1%
Emerging Markets	9.6%	-27.0%	-19.9%	-2.4%	-1.1%
Europe	19.9%	-28.6%	-14.3%	2.0%	2.5%
Japan	14.0%	-26.1%	-15.7%	-0.3%	0.7%
China	13.6%	-31.1%	-21.8%	-7.4%	-4.4%
Latin America	5.9%	3.4%	9.6%	-4.4%	-0.7%
Convertibles			2022	3Yr	5Yr
U.S. Convertibles	1.6%	-20.2%	-18.9%	8.3%	8.9%
Global Convertibles	4.2%	-21.4%	-18.2%	5.1%	5.5%

EQUITY

	Q4	Q1-Q3	2022	Annualized	
				3Yr	5Yr
U.S. Fixed Income					
U.S. Aggregate	1.9%	-14.6%	-13.0%	-2.7%	0.0%
U.S. Treasury	0.7%	-13.1%	-12.5%	-2.6%	-0.1%
U.S. Corporate	3.6%	-18.7%	-15.8%	-2.9%	0.5%
U.S. Municipal	4.1%	-12.1%	-8.5%	-0.8%	1.2%
By Credit Quality			2022	3Yr	5Yr
U.S. Aggregate Aaa	1.3%	-13.1%	-12.0%	-2.7%	-0.2%
U.S. Aggregate Aa	2.0%	-16.6%	-14.9%	-3.0%	0.0%
U.S. Aggregate A	3.2%	-17.8%	-15.1%	-2.9%	0.2%
U.S. Aggregate Baa	4.2%	-19.3%	-15.9%	-2.9%	0.7%
U.S. High Yield	4.2%	-14.7%	-11.2%	0.0%	2.3%
By Maturity			2022	3Yr	5Yr
U.S. Agg 1-3 Year	0.9%	-4.6%	-3.7%	-0.4%	0.9%
U.S. Agg 3-5 Year	1.7%	-9.4%	-7.8%	-1.5%	0.6%
U.S. Agg 5-7 Year	2.1%	-12.6%	-10.8%	-2.0%	0.4%
U.S. Agg 7-10 Year	2.2%	-16.6%	-14.8%	-2.9%	0.1%
U.S. Agg 10+ Year	2.5%	-28.9%	-27.1%	-6.2%	-1.2%

FIXED INCOME

Source: Bloomberg. **Past performance is no guarantee of future results.** Unmanaged index returns, unlike portfolio returns, do not reflect fees, expenses or sales charges. Investors cannot invest directly in an index.

As of December 31, 2022

EQUITY	P/E Ratio			Div Yield		
	Dec	Jan	Chg	Dec	Jan	Chg
	U.S. Equity					
U.S. Large Cap	16.7x	21.4x	-4.7x	1.7%	1.3%	0.4%
U.S. Mid Cap	15.9x	20.6x	-4.7x	1.7%	1.2%	0.5%
U.S. Small Cap	20.2x	25.1x	-4.9x	1.5%	1.2%	0.3%
U.S. Growth	20.9x	30.2x	-9.3x	1.1%	0.7%	0.4%
U.S. Value	14.2x	16.5x	-2.2x	2.3%	1.9%	0.4%
U.S. Sectors						
Technology	20.1x	28.6x	-8.5x	1.2%	0.8%	0.4%
Financials	12.2x	14.8x	-2.6x	2.1%	1.7%	0.4%
Health Care	17.4x	17.3x	+0.1x	1.6%	1.4%	0.2%
Consumer Discretion	19.8x	30.0x	-10.2x	1.1%	0.6%	0.5%
Communication Svcs	13.1x	19.7x	-6.6x	1.3%	0.9%	0.4%
Consumer Staples	20.8x	21.9x	-1.1x	2.6%	2.4%	0.2%
Industrials	18.2x	20.8x	-2.6x	1.7%	1.4%	0.3%
Energy	9.7x	10.8x	-1.1x	2.9%	4.1%	-1.1%
Materials	15.7x	17.0x	-1.3x	2.1%	1.7%	0.5%
Utilities	18.8x	20.8x	-1.9x	3.0%	2.9%	0.1%
Real Estate	32.8x	51.7x	-18.9x	3.7%	2.2%	1.5%
Non-U.S. (in USD)						
Int'l Developed	12.1x	15.1x	-3.0x	3.4%	2.8%	0.6%
Emerging Markets	11.4x	12.4x	-1.0x	3.4%	2.9%	0.6%
Europe	11.8x	15.2x	-3.4x	3.6%	2.9%	0.7%
Japan	11.9x	14.0x	-2.1x	2.7%	2.2%	0.5%
Asia ex-Japan	12.5x	13.8x	-1.3x	2.8%	2.3%	0.5%
China	10.6x	12.2x	-1.6x	2.4%	2.0%	0.5%
Latin America	7.4x	8.8x	-1.4x	9.7%	6.4%	3.3%

FIXED INCOME	Yield to Maturity			Spread		
	Dec	Jan	Chg	Dec	Jan	Chg
	U.S. Fixed Income					
U.S. Aggregate	4.7%	1.8%	2.9%	0.5%	0.4%	0.1%
U.S. Treasury	4.2%	1.2%	2.9%	0.0%	0.0%	-
U.S. Corporate	5.4%	2.3%	3.1%	1.3%	0.9%	0.4%
U.S. Municipal	3.5%	1.1%	2.4%	na	na	-
By Credit Quality						
U.S. Aggregate Aaa	4.4%	1.5%	2.9%	0.2%	0.1%	0.1%
U.S. Aggregate Aa	4.9%	1.9%	3.0%	0.7%	0.5%	0.2%
U.S. Aggregate A	5.2%	2.1%	3.1%	1.1%	0.7%	0.4%
U.S. Aggregate Baa	5.7%	2.6%	3.1%	1.6%	1.1%	0.4%
U.S. High Yield	9.0%	4.2%	4.7%	4.7%	2.8%	1.9%
By Maturity						
U.S. Agg 1-3 Year	4.7%	0.8%	3.9%	0.2%	0.1%	0.1%
U.S. Agg 3-5 Year	4.5%	1.5%	3.1%	0.4%	0.2%	0.2%
U.S. Agg 5-7 Year	4.6%	1.9%	2.7%	0.5%	0.4%	0.1%
U.S. Agg 7-10 Year	4.7%	2.0%	2.7%	0.6%	0.4%	0.3%
U.S. Agg 10+ Year	4.9%	2.6%	2.3%	0.8%	0.7%	0.1%

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. **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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