



QUARTERLY UPDATE

## Highlights

- **Equities declined for a third straight quarter, burdened by higher interest rates and high inflation, which has continued to be exacerbated by the Russia-Ukraine conflict and China's start-stop COVID policy.**
- **Economic growth likely remained positive but continued to slow down as consumers stayed pessimistic, interest rates increased and prices remained uncomfortably high; however, the labor market remains stable, for the time being.**
- **U.S. inflation fell from 9.1% in June to 8.3% in August, year over year, while the decline in inflation is welcome, it still remains well above the Federal Reserve's target and continues to weigh on consumer sentiment.**
- **The Federal Reserve hiked interest rates by 75 basis points in July and September and is prepared to continue rate hikes until inflation materially lowers near its 2% goal.**

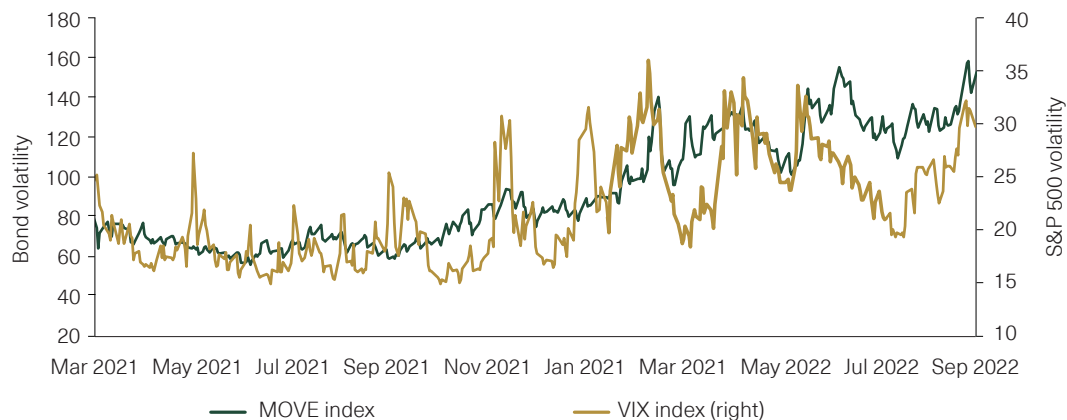
## Overview

U.S. equities ended lower for a third straight quarter as economic headwinds mounted. The S&P 500 declined, with a loss of 5.3% in the third quarter (Q3). Over the last three quarters, the S&P 500 fell 24.8%. Bond markets staged their worst performance in a century this quarter, falling 20% below their 2021 high, as measured by the Bloomberg U.S. Aggregate Bond Index. The U.S. Treasury yield curve endured pressure, reaching the most inverted level this century, as the Federal Reserve (the Fed) became more aggressive with rate hikes to restore price stability. The dollar index soared over 7%, its fifth consecutive quarterly gain and the largest since Q1 2015.

As the economic backdrop became more challenged, market volatility increased. Inflation remained persistently strong throughout the quarter, exacerbated by supply and demand imbalances and elevated commodity prices. These shocks continued to be exacerbated by the ongoing Russian invasion of Ukraine and China's start-stop COVID policy. Both headwinds have lowered consumer confidence and slowed economic growth.

Market volatility was largely driven by the Fed's reactions to high inflation data throughout the quarter, as the Fed continued to hike interest rates to restore price stability. The Fed grew more hawkish as inflation remained above its goal, emphasizing that it'll keep its foot on the gas until inflation materially lowers, prioritizing lowering inflation over economic growth. Higher rates continue to weaken consumer demand and consumer confidence. We expect these headwinds will continue to lower demand in Q4, slowing growth next year (see Figure 1).

**Figure 1 | Bond volatility vs. S&P 500 volatility**  
As of 09/30/2022



Sources: Bloomberg, First Republic Investment Management, as of September 30, 2022.

Nevertheless, there were still bright spots in the economy. The labor market remained stable with low unemployment. Consumer demand remained relatively strong as the shift from goods to services spending continued. This shift helped ease demand-side inflationary pressures on goods, for the time being. Services will face significant headwinds during the remainder of 2022, though we expect the sector will remain resilient.

Going forward, the focus will be on the transmission of tighter Fed policy on the real economy, as it continues to aggressively tighten to restore price stability. While policymakers would like to engineer a “soft landing,” their job has been made more difficult, with some data suggesting that growth is weakening while prices are still firm. Consumers have drawn down their pandemic savings, and credit is scarce; supply chain disruptions continue to cause delays and financial conditions will be less accommodative for growth. We expect equities will continue to experience volatility as corporate profit expectations adjust lower to reflect a slowdown. In fixed income markets, we expect continued interest rate volatility and credit spread widening.

## Economic Summary

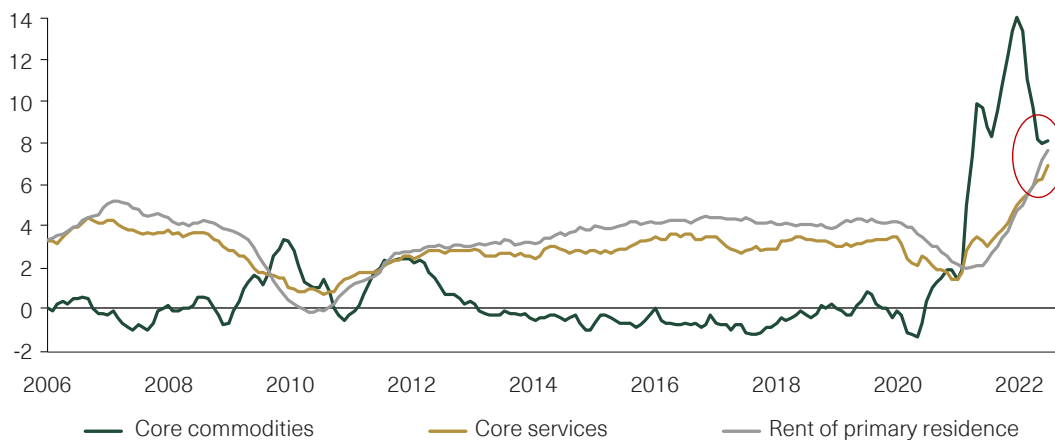
The U.S. macroeconomic backdrop continued to be challenged as high inflation persisted longer than expected and consumer spending slowed. Real gross domestic product (GDP) growth is expected to have increased by 2.9% in Q3 (estimated by the Atlanta Fed GDPNow model on October 7). The economy fought multiple headwinds, which slowed growth; however, it was supported by the stable labor market and remaining pandemic-related fiscal stimulus, which boosted consumer demand.

The challenges facing growth have remained broad-based: 1) Inflation remained higher than desired, weighing on consumer sentiment; 2) Fed rate hikes have taken their toll on demand, and real wages remain negative, leaving consumers with less purchasing power; 3) the Russia-Ukraine conflict heightened price volatility for commodities, keeping gas and food prices elevated; and 4) China’s COVID start-stop policy further disrupted manufacturing abroad, extending supply shortages.

Inflation continued to be more persistent than the Fed desires, keeping consumer sentiment historically low. However, consumers grew less concerned as inflation began to slowly moderate throughout the quarter. The headline annual Consumer Price Index (CPI) rose to 8.3% in August. Crude oil prices fell to their lowest level since January, ending Q3 at \$77.10 per barrel. The plunge in gasoline prices increased consumer purchasing power, which led to a temporary rise in demand and improved consumer confidence. Meanwhile, the 0.8% MoM increase in food prices, the smallest per-month increase this year, put upward pressure on the headline inflation number.

Excluding food and energy, core inflation prices rose by 0.60% MoM and a new peak of 6.3% YoY in August, reflecting cyclical pressures remain high. In a reversal of the recent trend, core commodity (goods) prices also surprised to the upside, supported by higher new vehicle prices and household furnishings. The annual rate increased to 7.1%, surpassing the prior five-month slowdown. Core services prices also posted a strong monthly increase in August as compared to July. The YoY move rose from 5.5% to 6.1%, the fastest rate since February 1991 (see Figure 2).

**Figure 2 | U.S. core CPI commodity, services and rent inflation (percentage change YoY) As of 09/30/2022**



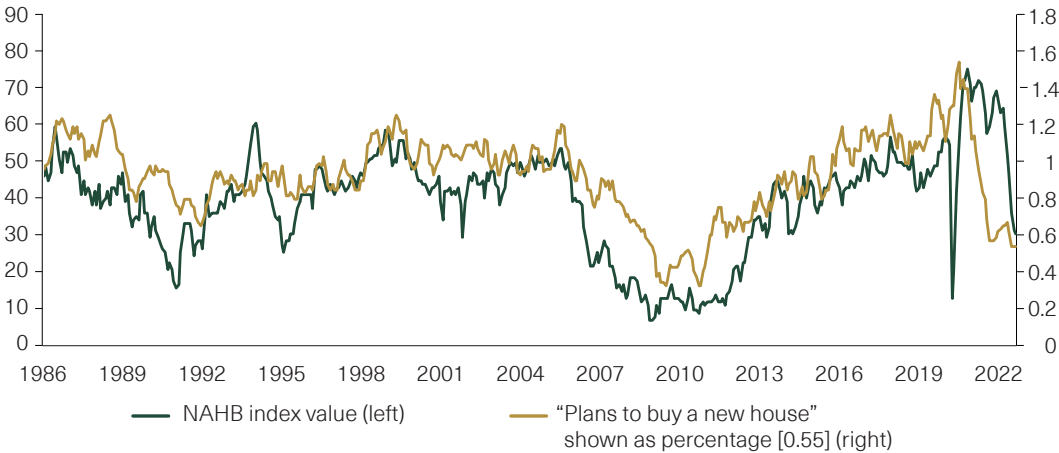
Sources: Bloomberg, Oxford Economics / Haver Analytics, First Republic Investment Management, as of September 30, 2022.

Within the core services sector, shelter prices continue to lead the charge, increasing by 0.7%, the fastest monthly increase since January 1991. With shelter as the largest component (~40%) of core CPI, we expect to see slower gains as residential prices weaken. However, rental prices lag home price changes by about 12 to 18 months. We don't expect the delayed effects of a decline in rental prices to materially slow the pace of inflation until the end of this year and into 2023. We expect the inflation outlook to remain elevated, pressuring policy rates to move higher and stay at those levels longer.

U.S. consumer sentiment remains low. The University of Michigan’s consumer sentiment data fell to 58.6 in September. The report showed increased optimism on current economic conditions but lower expectations on future conditions. Inflation expectations moderated amid the recent drop in gasoline prices and deacceleration in inflation. Respondents’ five-year inflation expectations declined for the third straight month to low not seen since April 2021. The downward revision to September’s preliminary reading highlights consumers’ delicate position. Embroiled by still-high prices and growing uncertainty over the economic outlook, consumers remain historically pessimistic. We expect sentiment to remain depressed in the months to come.

The housing market continued to show some weakness. Higher mortgage and interest rates lowered homeowner affordability and continued to weigh on demand. Mortgage rates soared, reaching a 14-year high in September. September’s National Association of Home Builders (NAHB) Housing Market Index, a measure of builder confidence and a leading economic indicator, fell further in contraction mode to the lowest level since May 2020. The underlying data in the report showed broad-based growth is slowing, with slight declines in current sales, sales expectation and traffic indexes. NAHB’s economists don’t see signs of this downtrend reversing in the near term, due to low homeowner affordability, high mortgage rates, high construction prices and tightening Fed policy. We expect further deterioration in homeowner affordability will weigh on the housing market, further hurting the growth picture (see Figure 3).

**Figure 3 | NAHB U.S. housing market index vs. consumer confidence**  
As of 09/30/2022



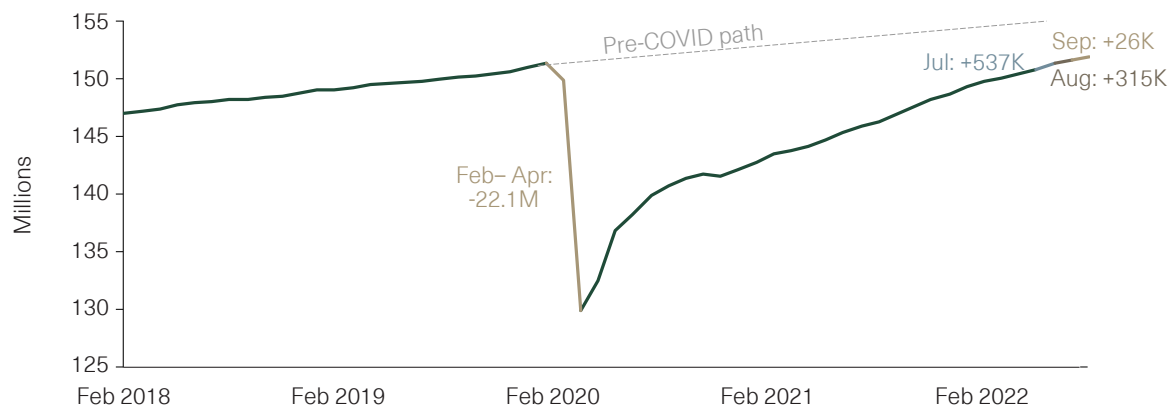
Sources: Absolute Strategy Research, First Republic Investment Management, as of September 30, 2022.

New home sales were softer than expected in July but surprisingly stronger in August. July had the slowest pace of sales since early 2016, including pandemic lows. Homeowners were cautious as mortgage and interest rates lowered affordability. Despite slowing sales and the rise in inventory to its highest level since 2008, both median and average home prices rose sharply. In August, new home sales rebounded to 685,000, driven by the decline in home prices. We don’t expect the August pace of sales to be sustained in the months ahead, as the recent rise in mortgage rates will take a greater toll on homebuying affordability.

The labor market is slowly cooling but remains very tight, continuing to be a bright spot in the economy. The 263,000 gain in nonfarm payrolls in September, compared to the 315,000 gain in the prior month, reflects the labor market is moderating. This drop marks a shift downward, as the average monthly payroll gains in the three months prior was 382,000. Job gains were broad-based in September but weighed down by the 29,000 decline in state and local government educational payrolls. This plunge is due to seasonal factors, as fewer teachers returned to work this year. The Fed will view September's jobs report as a reason to continue its tightening cycle.

Private nonfarm payrolls grew by 288,000 in September, more than the prior month, due to an increase in healthcare, leisure and other services jobs. The decline in the labor force in September, coupled with a 204,000 rise in employed individuals from the household survey, pushed the unemployment rate back down to a 50-year low of 3.5%, after rising to 3.7% in August. This reflects that the labor market remains tight and labor demand remains high while, at the same time, the labor supply continues to be shallow (see Figure 4).

**Figure 4 | U.S. nonfarm payroll employment**  
As of 09/30/2022



Sources: BCA Research, Bureau of Labor Statistics, Department of Labor, First Republic Investment Management, as of September 30, 2022.

Wage pressures started to slow only marginally, as average hourly earnings rose by a slower 0.3% MoM in September, the same as the prior month. The YoY increase in wages fell to 5.0% from 5.2%, and that's well off the peak of 5.6% YoY wage growth in March of this year, but still well above the pre-pandemic average of ~5.5%. Slower growth in average hourly earnings will help alleviate inflationary pressures later this year. This will play an important role in helping to cool inflation.

Overall, there's evidence in the September jobs report and other recent indicators of a slight easing in tight labor market conditions. However, it's not enough to knock the Fed off course to raise rates by 75 basis points (bps) at the November meeting. We believe that job growth, job openings and, more importantly, the inflation rate will continue to moderate through year-end, giving the Fed room to deliver a smaller 50-bp hike during its December meeting.

Near the end of September, Hurricane Ian caused severe damage in large parts of Florida, particularly in the southwest part of the state. It caused significant structural damage and disrupted economic activity in the region and is possibly one of the most expensive storms in U.S. history.

Emerging markets (EMs) continued to be challenged by supply chain issues and high inflation. The Russia-Ukraine conflict further exacerbated the energy crisis as tensions intensified, keeping energy prices elevated and adding to cyclical inflationary pressures. China's zero-COVID policy continued to decrease activity and confidence.

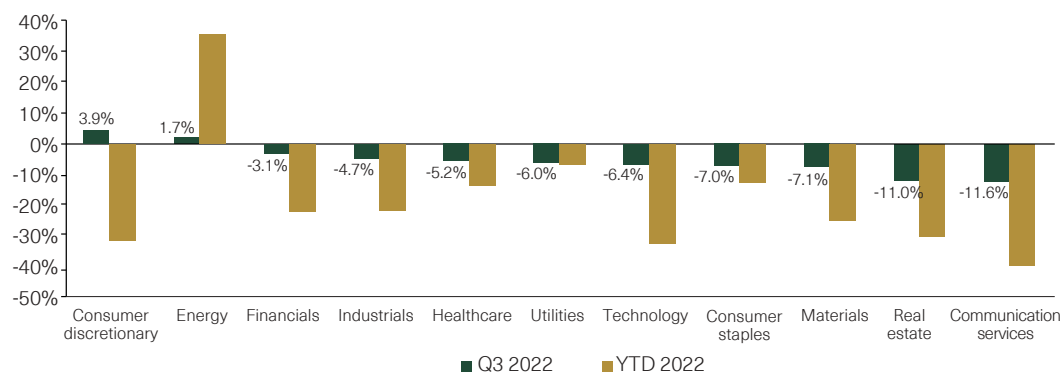
In our view, U.S. economic growth will continue to slow in the rest of 2022, as the Fed continues to hike interest rates to restore price stability. High prices and interest rates will likely be uncomfortable for consumers, particularly in EMs, as food tends to be a large component of the inflation budget. This will likely keep leading to food scarcity and more volatility in inflation data for EMs. As the Fed continues to “keep at it,” raising policy rates until price stability is restored, the odds of a hard economic landing increase.

## Global Equities

U.S. equities ended lower in Q3 for a third straight quarter. The S&P 500 fell 5.3% this quarter, after falling 16.1% in Q2 and 4.6% in Q1. The S&P 500 staged the worst monthly performance in September since March 2020. The Nasdaq 100 and the Dow Jones fell by 4.11% and 6.66%, respectively, in Q3.

During this quarter, sector performance was mixed. The best-performing S&P 500 sectors were consumer discretionary, returning 3.9%; energy, returning 1.7%; financials, returning -3.1%; and industrials, returning -4.7%. The underperforming sectors were communication services, returning -11.6%; real estate, returning -11.0%; materials, returning -7.1%; consumer staples, returning -7.0%; technology, returning -6.4%; utilities, returning -6.0%; and healthcare, returning -5.2% (see Figure 5).

**Figure 5 | S&P 500 sectors return**  
As of 09/30/2022



Sources: S&P Dow Jones Indices LLC and/or its affiliate, as of September 30, 2022.

Inflation and Fed policy remained the big drag on deteriorating risk sentiment in Q3, which weighed on markets. Nearly all of the decline in U.S. equities for the period is attributable to a re-rating of valuation rather than earnings, meaning that markets have likely priced in a good degree of elevated risk, but fundamentals still have more room to settle. The Fed's commitment to restore price stability through higher interest rates and quantitative tightening has the dual effects of lowering the outlook for corporate profits while making other asset classes relatively more attractive.

Given tighter policy and financial conditions, markets are discounting a more turbulent backdrop. Equity fundamentals have remained relatively strong, but the implications of the Fed slowing growth to quell inflation augers for weakness ahead. Corporate guidance has declined, as recent corporate updates reflect increased concerns about earnings risk going forward. With nominal growth having been solid through the summer, we see the potential for stronger than expected Q3 headline results but caution that outer periods, such as those in 2023, are more at risk. We would also be mindful of credit conditions with the potential for wider spreads to put further downside pressure on valuation if a deeper or more debilitating slowdown is expected. Alternatively, lower bond yields could actually boost the relative attractiveness of stocks.

Geopolitical tensions remained elevated and heightened global market volatility. Recent developments pertaining to Russia's invasion of Ukraine and President Vladimir Putin's escalation of force increases the potential for a deeper and/or more contracted conflict. We still feel that the chances of a tail risk event are minimal, and the direct exposure of most markets to the region is limited, but we advise investor prudence, as some assets may be more affected by a ratcheting up of tensions than others. Energy, for example, is front and center, with sanctions on Russian products contributing to supply constraints. European equities and companies with exposure to the bloc are more vulnerable to the effects of an energy squeeze, which is likely to weigh on consumption and industrial production. Finally, we'd highlight the implications that this episode has regarding China and the future trajectory of its relations with the global marketplace.

On the bright side for markets, the peak of inflation is likely in the rear-view mirror. This narrative is supported by the 99-day stretch of falling gasoline prices, declining inflation expectations in the New York Fed survey and the largest decline in home prices in July that has been recorded. In addition, the Q2 earnings season was stronger than expected, highlighting that demand remained relatively stable and that pricing power supported companies as costs were high, and there was some easing in labor and supply chain shortages.

Q2 earnings results were primarily positive, with both sales and earnings for the quarter exceeding estimates and YoY growth. However, some concerning trends have emerged. Energy accounted for a disproportionate share of earnings growth. If you exclude the energy sector growth, S&P 500 earnings actually fell; meanwhile, downgrades for estimates in upcoming quarters now outnumber upgrades. In addition, margins, or the ability for companies to turn sales into profits, have come under pressure with businesses increasingly less able to pass along increased costs to consumers. Moving forward, we expect earnings to come under increased pressure given tighter policies and slowing growth. We expect much of the same when the Q3 reporting season commences.

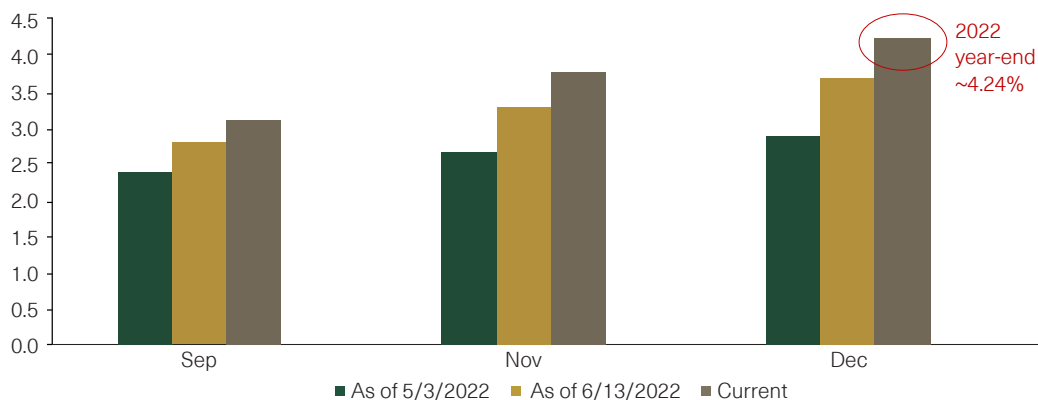
Overseas, developed markets (DMs), EMs and Asia continued to be challenged in Q3 as geopolitical risks, supply shortages and slowing economic growth persist. This quarter, China's stock prices fell by 21.2%, measured by the Hang Seng Index (HSI); Japan's stock prices fell by 1.7%, measured by the Nikkei; and the U.K.'s stock prices fell by 3.8%, measured by the FTSE 100.

## Fixed Income

Treasuries endured pressure this quarter, as the U.S. Treasury yield curve inverted the most this century. Bond markets fell to their worst performance in a century, falling 20% below their 2021 high, as measured by the Bloomberg U.S. Aggregate Bond Index. The decline in the bond market this year led to a significant rise in bond yields. In Q3, the 2-year yields increased almost 130 basis points (bps), reaching slightly above 4.2%. The 10-year yields increased about 85 bps, reaching slightly above 3.8%. The U.S. dollar index had its strongest gains in two decades, increasing concerns about lower corporate earnings ahead.

In a unanimous decision, the Federal Open Market Committee (FOMC) increased the Fed Funds rate by 75 bps for a third consecutive meeting in September. With inflation significantly above the threshold of the Fed and stickier than anticipated, the policy statement maintained a hawkish tone — meaning the Fed has more work to do (see Figure 6).

**Figure 6 | Fed Funds futures**  
Percentage, as of 9/30/2022



Sources: Bloomberg, Federal Reserve Bank, First Republic Investment Management, as of September 30, 2022

Quantitative tightening (QT) remains on track, as it actively reduced the Fed's \$9 trillion balance sheet by \$48 billion per month through August before doubling the reduction to \$95 billion per month beginning in September.

The FOMC's assessment of current macroeconomic conditions acknowledged the economy has weakened since earlier in the summer; however, the strong labor market buoys the risk of stickier inflation pressures and likely needs to cool for policymakers to achieve their goal. The FOMC's view on inflation is that it remains elevated and broad due to supply and demand imbalances related to the pandemic, higher food and energy prices, and shelter costs.



The Fed reiterated its commitment to fight inflation and continues to prioritize slowing inflation over economic growth. The accompanying Summary of Economic Projections confirms that the Fed intends to act aggressively in its mission to return inflation back to its 2% objective, pushing the policy rate higher than previously expected and keeping it higher for longer. The FOMC's revised economic projections also acknowledge the toll that higher rates may take on the economy, and their acceptance of that risk, including increased chances of a recession. While markets continue to be wary that future rate hikes will significantly hurt economic growth, the Fed believes this will ultimately lead to longer-run economic sustainability.

We expect the inflationary outlook to remain elevated, pressuring policy rates to move higher and stay at those levels longer. However, the magnitude of future monetary policy actions will be data dependent, causing rate volatility to remain elevated for the foreseeable future. Persistently higher global inflation will force central banks to raise rates.

Volatility increased in the bond market and foreign exchange markets, driven largely by concerns of a global economic slowdown as central banks raise interest rates. In late September, volatility particularly increased in the U.K. financial markets, where not just gilts but also the British pound, started acting in a disorderly fashion following the new government's decision to aggressively ease fiscal policy while inflation remains very high.

Later that week, the Bank of England decided to intervene in the local sovereign bond market by temporarily buying up to £5 billion worth of long-dated gilts per operation to "restore orderly market conditions." This decision highlights the trade-offs central banks are faced with as they try to balance price stability with financial stability, which is an explicit objective in the U.K. In the U.K., and by reflection the United States and other global yields, are likely to experience some temporary relief from upward pressure, but in the longer term, they'll continue to be driven by aggressive central bank policy action.

Overall investment grade credit fundamentals remain generally stable. That said, credit spreads, which can be helpful in judging the severity of the slowdown, continue to widen. In the corporate investment-grade and high-yield credit sector, we expect strong credit market fundamentals will mitigate a sharp spike in corporate rating downgrades. The municipal sector overall remains sound with the exception of a few areas we're keeping a watchful eye on. We remain defensive in our credit positioning, as we expect credit spreads to continue widening in 2022 but still below prior down cycles. Corporate defaults and downgrades are expected to increase in the next year after falling to all-time lows in Q3, albeit more manageable levels relative to other downturns (see Figure 7).

**Figure 7: Credit spreads of U.S. high-yield and investment-grade (average option-adjusted spreads)**  
As of 09/30/2022



Sources: Federal Reserve Bank, First Republic Investment Management, as of September 30, 2022.

Going forward, we expect growth to slow, inflation to remain elevated for longer despite commodities moderating and rates to rise. The sharp rise in yields this year is expected to level off into 2023. We expect bond interest rate volatility to continue and play into equity markets. Active fixed income portfolio management and fundamental credit selection will be key drivers of performance.

## Investor Takeaways

Equity and bond market volatility will remain elevated until the future path of inflation and rates is more certain as markets become comfortable with a “data-dependent” Fed. We remain defensive in our positioning, as we view greater risks to corporate earnings as growth slows, and we’d look for opportunities to upgrade portfolios during market weakness. Within equities, we continue to favor U.S. Large Cap exposure, since economic growth is rapidly slowing in Europe, which is close to a recession, and China’s strict COVID policies have weighed on manufacturing and growth. We expect credit spreads to leak wider to account for recession risks.

- We remain underweight risk and advise investors to prioritize diversification and discipline to help achieve long-term goals. Tactical tilts should be considered within the context of a strategic asset allocation.
- Within equities, we favor segments exhibiting a defensive tilt toward low volatility, higher quality and shareholder yield. We favor less cyclical segments with reoccurring revenues, sustainable growth and defensible margins.
- Consider strategic investment programs to deploy uninvested capital, including dollar-cost averaging. Attractive opportunities should present themselves for long-term investors.
- In fixed income, we remain defensive in our credit positioning, with short to at benchmark duration and higher in credit quality.

## Financial Market Returns

| U.S. Equity                  | Q3 2022 | 1-Year | ANNUALIZED |        |         |
|------------------------------|---------|--------|------------|--------|---------|
|                              |         |        | 3-Year     | 5-Year | 10-Year |
| DJ Industrial Average        | -6.2%   | -13.4% | 4.4%       | 7.4%   | 10.5%   |
| NASDAQ Composite             | -3.9%   | -26.3% | 10.6%      | 11.2%  | 14.2%   |
| S&P 500 TR Index             | -4.9%   | -15.5% | 8.2%       | 9.2%   | 11.7%   |
| Russell 1000 Index           | -4.6%   | -17.2% | 7.9%       | 9.0%   | 11.6%   |
| Russell 1000 Growth Index    | -3.6%   | -22.6% | 10.7%      | 12.2%  | 13.7%   |
| Russell 1000 Value Index     | -5.6%   | -11.4% | 4.4%       | 5.3%   | 9.2%    |
| Russell Mid Cap Index        | -3.4%   | -19.4% | 5.2%       | 6.5%   | 10.3%   |
| Russell Mid Cap Growth Index | -0.7%   | -29.5% | 4.3%       | 7.6%   | 10.9%   |
| Russell Mid Cap Value Index  | -4.9%   | -13.6% | 4.5%       | 4.8%   | 9.4%    |
| Russell 2000 Index           | -2.2%   | -23.5% | 4.3%       | 3.6%   | 8.6%    |
| Russell 2000 Growth Index    | 0.2%    | -29.3% | 2.9%       | 3.6%   | 8.8%    |
| Russell 2000 Value Index     | -4.6%   | -17.7% | 4.7%       | 2.9%   | 7.9%    |

| International Equity                     | Q3 2022 | 1-Year | ANNUALIZED |        |         |
|--|---------|--------|------------|--------|---------|
|  |         |        | 3-Year     | 5-Year | 10-Year |
| MSCI EAFE Index (\$USD, net)             | -9.4%   | -25.1% | -1.8%      | -0.8%  | 3.7%    |
| MSCI AC World Index (\$USD, net)         | -6.8%   | -20.7% | 3.7%       | 4.4%   | 7.3%    |
| MSCI AC World Ex US Index (\$USD, net)   | -9.9%   | -25.2% | -1.5%      | -0.8%  | 3.0%    |
| MSCI Emerging Markets Index (\$USD, net) | -11.6%  | -28.1% | -2.1%      | -1.8%  | 1.0%    |
| MSCI BRIC Index (\$USD, net)             | -12.7%  | -31.2% | -5.1%      | -3.0%  | 1.0%    |

| Fixed Income   | Q3 2022 | 1-Year | ANNUALIZED |        |         |
|--|---------|--------|------------|--------|---------|
|  |         |        | 3-Year     | 5-Year | 10-Year |
| Bloomberg Barclays U.S. Treasury 1–3 Year Index        | -1.5%   | -5.1%  | -0.5%      | 0.5%   | 0.6%    |
| Bloomberg Barclays U.S. Treasury 5–10 Year Index       | -4.9%   | -13.8% | -3.2%      | -0.2%  | 0.6%    |
| Bloomberg Barclays U.S. Long Treasury Index            | -9.6%   | -26.6% | -8.5%      | -1.6%  | 0.6%    |
| Bloomberg Barclays U.S. Treasury U.S. TIPS Index       | -5.1%   | -11.6% | 0.8%       | 2.0%   | 1.0%    |
| Bloomberg Barclays U.S. Govt/Credit Intermediate Index | -3.1%   | -10.1% | -1.6%      | 0.4%   | 1.0%    |
| ICE BofAML Municipals 1–10 Year A-AAA Index            | -2.2%   | -7.0%  | -0.9%      | 0.5%   | 1.1%    |
| Bloomberg Barclays U.S. Corporate High Yield Index     | -0.6%   | -14.1% | -0.5%      | 1.6%   | 3.9%    |
| ICE BofAML Preferred Stock Fixed Rate Index            | -1.0%   | -14.7% | -1.7%      | 1.1%   | 3.6%    |
| JPMorgan GBI EM Global Diversified Index               | -4.7%   | -20.6% | -7.1%      | -3.9%  | -2.4%   |

Sources: Bloomberg, Morgan Stanley Capital International, Russell®, Standard & Poor's and Barclays.

## Index Definitions

### U.S. Equity

**Dow Jones Industrial Average** is a price-weighted average of 30 actively traded blue-chip U.S. stocks.

**NASDAQ Composite Index** is a market capitalization index of approximately 3,000 common equities listed on the NASDAQ exchange.

**S&P 500 TR Index** is a type of equity index that tracks both the capital gains of the equities in the S&P 500 and assumes any cash distributions (dividends) are reinvested back into the index.

**Russell 1000 Index**<sup>®</sup> measures the performance of the 1,000 largest companies in the Russell 3000.

**Russell 1000 Growth Index**<sup>®</sup> measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

**Russell 1000 Value Index**<sup>®</sup> measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

**Russell Mid Cap Index**<sup>®</sup> measures the performance of the 800 smallest companies in the Russell 1000 Index.

**Russell Mid Cap Growth Index**<sup>®</sup> measures the performance of those Russell Midcap<sup>®</sup> companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth Index.

**Russell Mid Cap Value Index**<sup>®</sup> measures the performance of those Russell Midcap<sup>®</sup> companies with lower price-to-book and lower forecasted growth values. The stocks are also members of the Russell 1000 Value Index.

**Russell 2000 Index**<sup>®</sup> measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

**Russell 2000 Growth Index**<sup>®</sup> measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

**Russell 2000 Value Index**<sup>®</sup> measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

### International Equity

**MSCI EAFE Index** is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the United States and Canada.

**MSCI AC World Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.

**MSCI AC World Ex U.S. Index** captures large and midcap representation across 22 of 23 developed market countries (excluding the United States) and 23 emerging markets countries.

**MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets.

**MSCI BRIC Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance across the following four emerging market country indexes: Brazil, Russia, India and China.

## Fixed Income

### **Bloomberg Barclays U.S. Treasury 1–3 Year Index**

measures the performance of U.S. Treasury securities that have a remaining maturity of at least one year and less than three years.

### **Bloomberg Barclays U.S. Treasury 5–10 Year Index**

measures the performance of U.S. Treasury securities that have a remaining maturing of at least five years and less than 10 years.

### **Bloomberg Barclays U.S. Long Treasury Index**

includes all publicly issued, U.S. Treasury securities that have a remaining maturity of 10 or more years, are rated investment grade and have \$250 million or more of outstanding face value.

### **Bloomberg Barclays U.S. Treasury U.S. TIPS Index**

includes all publicly issued U.S. Treasury inflation-protected securities that have at least one year remaining to maturity, are rated investment grade and have \$250 million or more of outstanding face value.

### **Bloomberg Barclays U.S. Govt/Credit Intermediate Index**

measures the performance of the USD-denominated U.S. Treasuries, government-related and investment-grade U.S. corporate securities that have a remaining maturity of greater than one year and less than 10 years.

### **Bloomberg Barclays U.S. Corporate High Yield Index**

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 issues with an emerging markets country of risk, based on Barclay's emerging markets country definition, are excluded.

### **ICE BofAML Municipals 1-10 Year A-AAA Index**

is a subset of the BofAML U.S. Municipal Securities Index and includes all securities with a remaining term to final maturity of less than 10 years and rated AAA through A3, inclusive.

### **ICE BofAML Preferred Stock Fixed Rate Index**

is designed to replicate the total return of a diversified group of investment-grade preferred securities.

### **JPMorgan GBI EM Global Diversified Index**

is an investable benchmark that includes only those countries that are directly accessible by most of the international investor base. This index excludes countries with explicit capital controls, but it does not factor in regulatory/tax hurdles in assessing eligibility.

Chart sources:

1. Bloomberg, First Republic Investment Management
2. Bloomberg, Oxford Economics / Haver Analytics, First Republic Investment Management
3. Absolute Strategy Research, First Republic Investment Management
4. BCA Research, Bureau of Labor Statistics, Department of Labor, First Republic Investment Management
5. S&P Dow Jones Indices LLC and/or its affiliate
6. Bloomberg, Federal Reserve Bank, First Republic Investment Management
7. Federal Reserve Bank, First Republic Investment Management

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Investors cannot invest directly in an index. The indexes referred to do not reflect management fees and transaction costs that are associated with some investments.

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