

# Quarterly Economic Report

4th Quarter 2022

SVB Asset Management views on  
economic and market factors affecting  
global markets and business health



# Quarterly Economic Report

Published in Q4 2022 | [Data for Q3 2022](#)

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# OVERVIEW

## Key Takeaways

- The Federal Reserve remains hawkish with three consecutive 75 basis point (bps) rate hikes in Q3 2022. Inflation remains elevated, and all Fed speak is unified in the message to raise rates until there is evidence inflation is heading toward the 2% target.
- During the third quarter of 2022, the unemployment rate stayed historically low, ending the period at 3.5%, the same rate that it was before the onset of the COVID-19 pandemic in the US.
- Higher wages and savings rates should lead to continued consumer spending. As the reopening continues, the shift from goods to services remains in effect.
- While inflation has been sustained, the Fed reiterates that it is committed to measures to bring inflation down over the course of 2023 and beyond.



### **Labor markets remain strong.**

There continue to be more jobs available than unemployed Americans as companies report difficulty in hiring despite rising wages.



### **The Fed has indicated that further tightening of monetary policy is likely.**

The Fed remains focused on lowering inflation. Hawkish monetary policy is expected to remain in place in the near term.



### **Central banks employ more restrictive monetary policies.**

Global recession predictions, slower global growth and persistent inflation push central banks to remain hawkish in their monetary policy.



### **The US dollar remains strong.**

Sizable depreciation in foreign currencies vs. the US dollar (USD) is being caused by factors including spiraling inflation, monetary policy complacency, deteriorating trade and lower interest rates.



### **The yield curve inverts further.**

While not an imminent indicator, the shape of the yield curve warrants monitoring as a possible predictor of future recessionary events.



### **Spread between US Treasuries and corporate bonds remains elevated.**

Inflation, a hawkish Fed and a “risk off” tone in markets have caused credit spreads to widen across the credit ratings spectrum.



# Domestic Economy



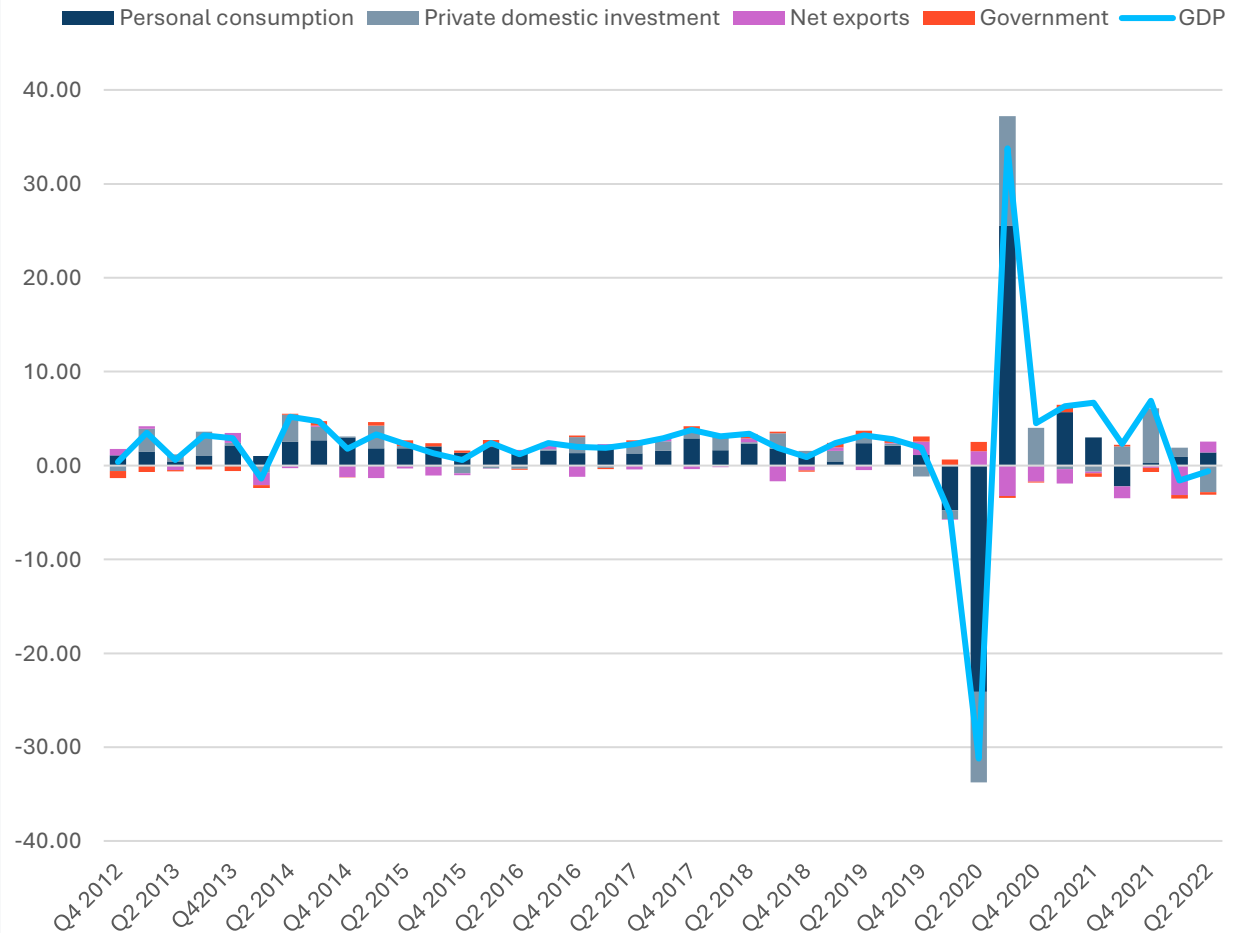
# Gross Domestic Product (GDP): Normalization Expected

Q2 GDP read negative 0.6% (quarter-over-quarter [QoQ], annualized rate) — lower than market consensus — due to setbacks in domestic investment.

For the full year 2021, GDP growth was 5.7%, the highest since 1984, with personal consumption and domestic investment heavily contributing.

Growth is expected to normalize later in 2022, with market consensus showing expectations for 1.9% for Q3 2022 and 0.6% for Q4 2022.

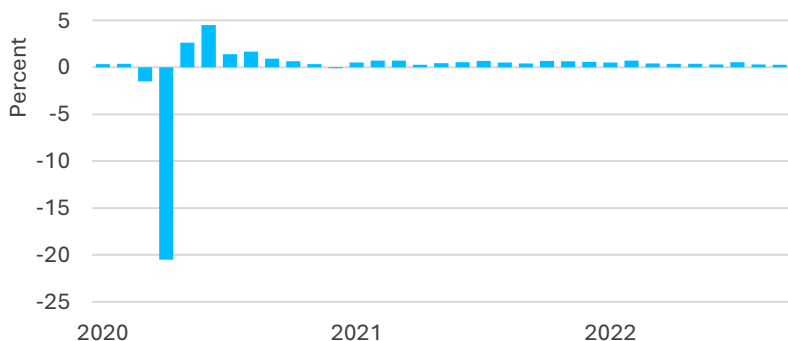
## GDP and Components



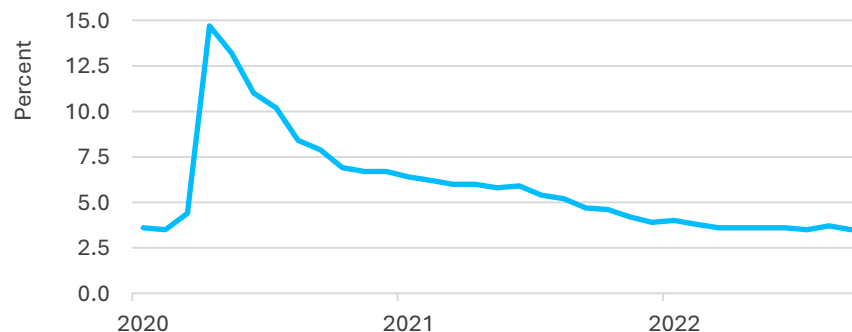
# Employment: Hovering Near Pre-pandemic Levels

During the third quarter of 2022, the average number of jobs grew by approximately 369,000 per month. The unemployment rate stayed historically low, ending the period at 3.5%, the same rate that it was before the onset of the COVID-19 pandemic in the US in February 2020. There continue to be more jobs available (~10 million) than unemployed Americans (~5 million), as companies continue to report difficulty in hiring despite rising wages.

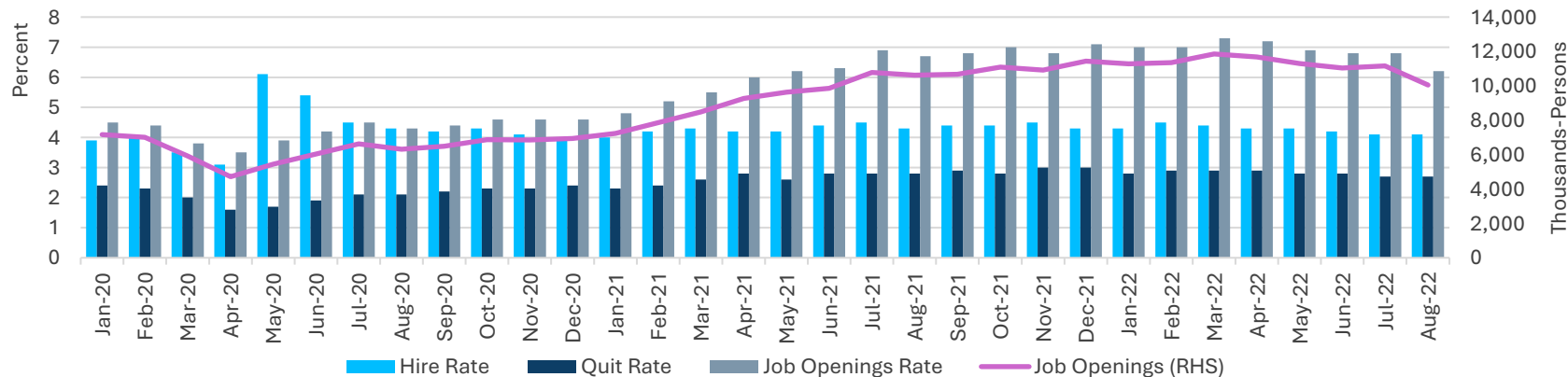
## Non-farm Payrolls



## Unemployment Rate



## Job Openings and Labor Turnover



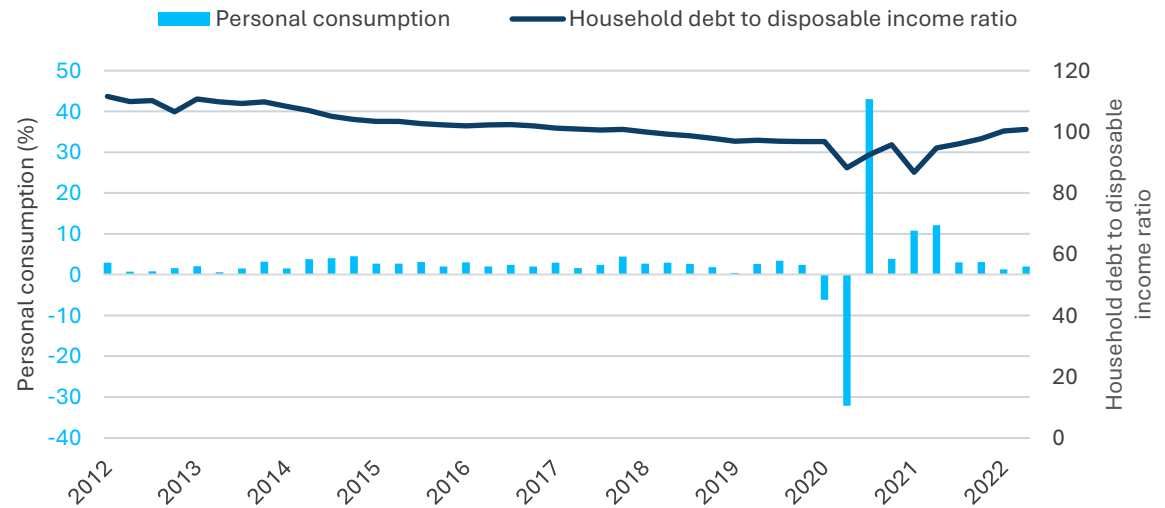
# Consumption: Solid Consumer Spending

Consumption for Q2 2022 increased 2% from the prior period and increased 2.4% on a year-over-year (YoY) basis. Market expectations are for personal consumption to moderate to 3.2% in 2022 from the 7.9% rate seen in 2021.

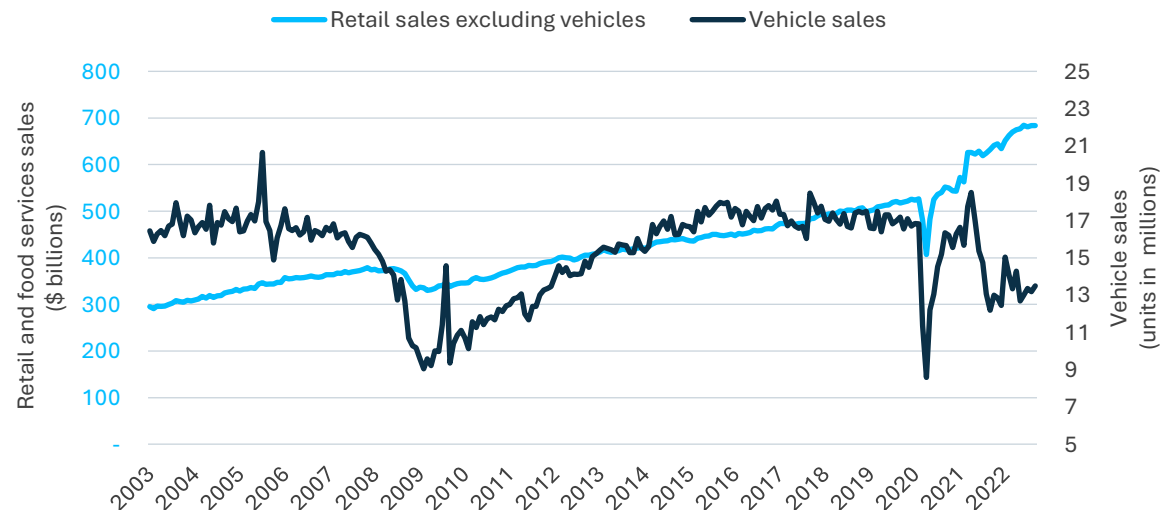
Retail sales excluding vehicles rose 8.2% on a YoY basis at the end of September 2022, down from 18.9% in December 2021.

Higher wages and savings rates should lead to continued consumer spending. As the reopening continues, the rotation from goods to services should be in effect.

## Consumption Overview



## Retail Sales



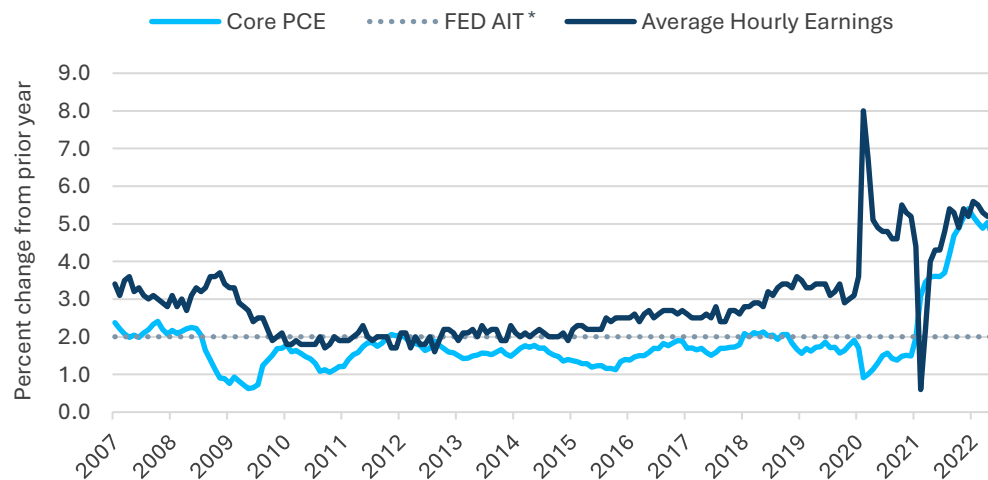


# Inflation: At Multiyear Highs

Inflation continues to run hot with the September 2022 Consumer Price Index (CPI) YoY reaching 8.2%. Core personal consumption expenditures (PCE), the Fed's preferred inflation indicator, rose 4.9% on a YoY basis, slightly up from 4.6% in July 2022.

In addition to market forecasts, the Fed continues to reiterate that it expects inflation to decline over the course of 2023.

## Core PCE



## CPI Breakdown (MoM Change)

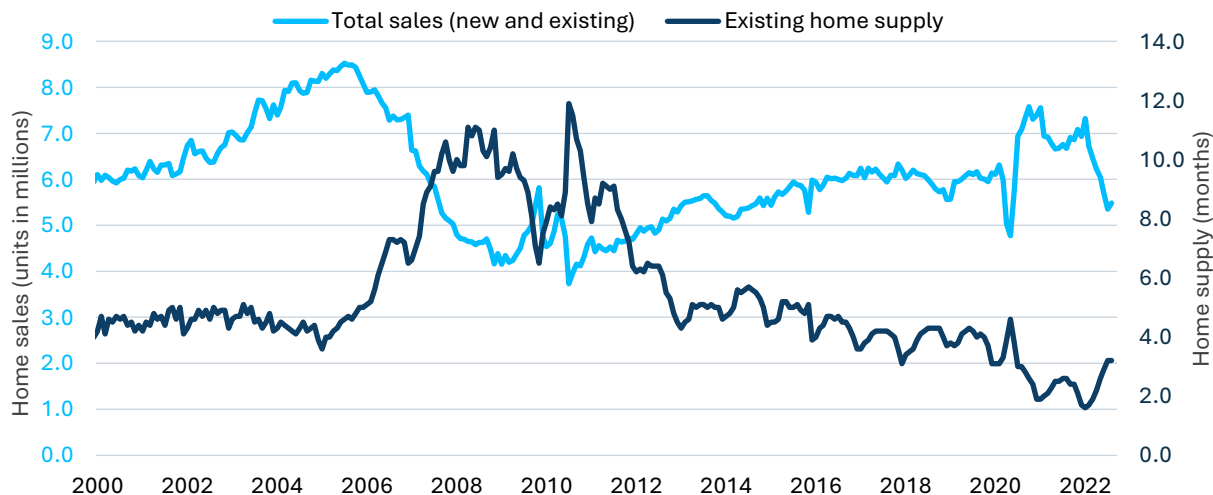
|        | All items | Food   | Food at home | Food away from home | Energy | Gasoline (all types) | Electricity | Natural gas (piped) | All items less food and energy | Commodities less food and energy | Apparel | New vehicles | Medical care commodities | Services less energy services | Shelter | Medical care services | Education and communication |
|--------|-----------|--------|--------------|---------------------|--------|----------------------|-------------|---------------------|--------------------------------|----------------------------------|---------|--------------|--------------------------|-------------------------------|---------|-----------------------|-----------------------------|
| Sep-22 | 8.20%     | 11.20% | 13.00%       | 8.50%               | 19.80% | 18.20%               | 15.50%      | 33.10%              | 6.60%                          | 6.60%                            | 5.50%   | 9.40%        | 3.70%                    | 6.70%                         | 6.60%   | 6.50%                 | 0.20%                       |
| Aug-22 | 8.30%     | 11.40% | 13.50%       | 8.00%               | 23.80% | 25.60%               | 15.80%      | 33.00%              | 6.30%                          | 7.10%                            | 5.10%   | 10.10%       | 4.10%                    | 6.10%                         | 6.20%   | 5.60%                 | 0.50%                       |
| Jul-22 | 8.50%     | 10.90% | 13.10%       | 7.60%               | 32.90% | 44.00%               | 15.20%      | 30.50%              | 5.90%                          | 7.00%                            | 5.10%   | 10.40%       | 3.70%                    | 5.50%                         | 5.70%   | 5.10%                 | 0.50%                       |
| Jun-22 | 9.10%     | 10.40% | 12.20%       | 7.70%               | 41.60% | 59.90%               | 13.70%      | 38.40%              | 5.90%                          | 7.20%                            | 5.20%   | 11.40%       | 3.20%                    | 5.50%                         | 5.60%   | 4.80%                 | 0.80%                       |
| May-22 | 8.60%     | 10.10% | 11.90%       | 7.40%               | 34.60% | 48.70%               | 12.00%      | 30.20%              | 6.00%                          | 8.50%                            | 5.00%   | 12.60%       | 2.40%                    | 5.20%                         | 5.50%   | 4.00%                 | 0.80%                       |
| Apr-22 | 8.30%     | 9.40%  | 10.80%       | 7.20%               | 30.30% | 43.60%               | 11.00%      | 22.70%              | 6.20%                          | 9.70%                            | 5.40%   | 13.20%       | 2.10%                    | 4.90%                         | 5.10%   | 3.50%                 | 1.00%                       |
| Mar-22 | 8.50%     | 8.80%  | 10.00%       | 6.90%               | 32.00% | 48.00%               | 11.10%      | 21.60%              | 6.50%                          | 11.70%                           | 6.80%   | 12.50%       | 2.70%                    | 4.70%                         | 5.00%   | 2.90%                 | 1.50%                       |
| Feb-22 | 7.90%     | 7.90%  | 8.60%        | 6.80%               | 25.60% | 38.00%               | 9.00%       | 23.80%              | 6.40%                          | 12.30%                           | 6.60%   | 12.40%       | 2.50%                    | 4.40%                         | 4.70%   | 2.40%                 | 1.60%                       |
| Jan-22 | 7.50%     | 7.00%  | 7.40%        | 6.40%               | 27.00% | 40.00%               | 10.70%      | 23.90%              | 6.00%                          | 11.70%                           | 5.30%   | 12.20%       | 1.40%                    | 4.10%                         | 4.40%   | 2.70%                 | 1.60%                       |
| Dec-21 | 7.00%     | 6.30%  | 6.50%        | 6.00%               | 29.30% | 49.60%               | 6.30%       | 24.10%              | 5.50%                          | 10.70%                           | 5.80%   | 11.80%       | 0.40%                    | 3.70%                         | 4.10%   | 2.50%                 | 1.60%                       |
| Nov-21 | 6.80%     | 6.10%  | 6.40%        | 5.80%               | 33.30% | 58.10%               | 6.50%       | 25.10%              | 4.90%                          | 9.40%                            | 5.00%   | 11.10%       | 0.20%                    | 3.40%                         | 3.80%   | 2.10%                 | 1.70%                       |
| Oct-21 | 6.20%     | 5.30%  | 5.40%        | 5.30%               | 30.00% | 49.60%               | 6.50%       | 28.10%              | 4.60%                          | 8.40%                            | 4.30%   | 9.80%        | -0.40%                   | 3.20%                         | 3.50%   | 1.70%                 | 1.80%                       |
| Sep-21 | 5.40%     | 4.60%  | 4.50%        | 4.70%               | 24.80% | 42.10%               | 5.20%       | 20.60%              | 4.00%                          | 7.30%                            | 3.40%   | 8.70%        | -1.60%                   | 2.90%                         | 3.20%   | 0.90%                 | 1.70%                       |
| Aug-21 | 5.40%     | 3.70%  | 3.00%        | 4.70%               | 25.00% | 3.00%                | 5.20%       | 21.10%              | 4.00%                          | 7.70%                            | 4.20%   | 7.60%        | -2.50%                   | 2.70%                         | 2.80%   | 1.00%                 | 1.20%                       |
| Jul-21 | 5.40%     | 3.40%  | 2.60%        | 4.60%               | 23.80% | 41.80%               | 4.00%       | 19.00%              | 4.30%                          | 8.50%                            | 4.20%   | 6.40%        | -2.10%                   | 2.90%                         | 2.80%   | 0.80%                 | 1.10%                       |
| Jun-21 | 5.40%     | 2.40%  | 0.90%        | 4.20%               | 24.50% | 45.10%               | 3.80%       | 15.60%              | 4.50%                          | 8.70%                            | 4.90%   | 5.30%        | -2.20%                   | 3.10%                         | 2.60%   | 1.00%                 | 2.10%                       |
| May-21 | 5.00%     | 2.20%  | 0.70%        | 4.00%               | 28.50% | 56.20%               | 4.20%       | 13.50%              | 3.80%                          | 6.50%                            | 5.60%   | 3.30%        | -1.90%                   | 2.90%                         | 2.20%   | 1.50%                 | 1.90%                       |
| Apr-21 | 4.20%     | 2.40%  | 1.20%        | 3.80%               | 25.10% | 49.60%               | 3.60%       | 12.10%              | 3.00%                          | 4.40%                            | 1.90%   | 2.00%        | -1.70%                   | 2.50%                         | 2.10%   | 2.20%                 | 1.70%                       |
| Mar-21 | 2.60%     | 3.50%  | 3.30%        | 3.70%               | 13.20% | 22.50%               | 2.50%       | 9.80%               | 1.60%                          | 1.70%                            | -2.50%  | 1.50%        | -2.40%                   | 1.60%                         | 1.70%   | 2.70%                 | 1.50%                       |
| Feb-21 | 1.70%     | 3.60%  | 3.50%        | 3.70%               | 2.40%  | 1.50%                | 2.30%       | 6.70%               | 1.30%                          | 1.30%                            | -3.60%  | 1.20%        | -2.50%                   | 1.30%                         | 1.50%   | 3.00%                 | 1.70%                       |
| Jan-21 | 1.40%     | 3.80%  | 3.70%        | 3.90%               | -3.60% | -8.60%               | 1.50%       | 4.30%               | 1.40%                          | 1.70%                            | -2.50%  | 1.40%        | -2.30%                   | 1.30%                         | 1.60%   | 2.90%                 | 1.70%                       |



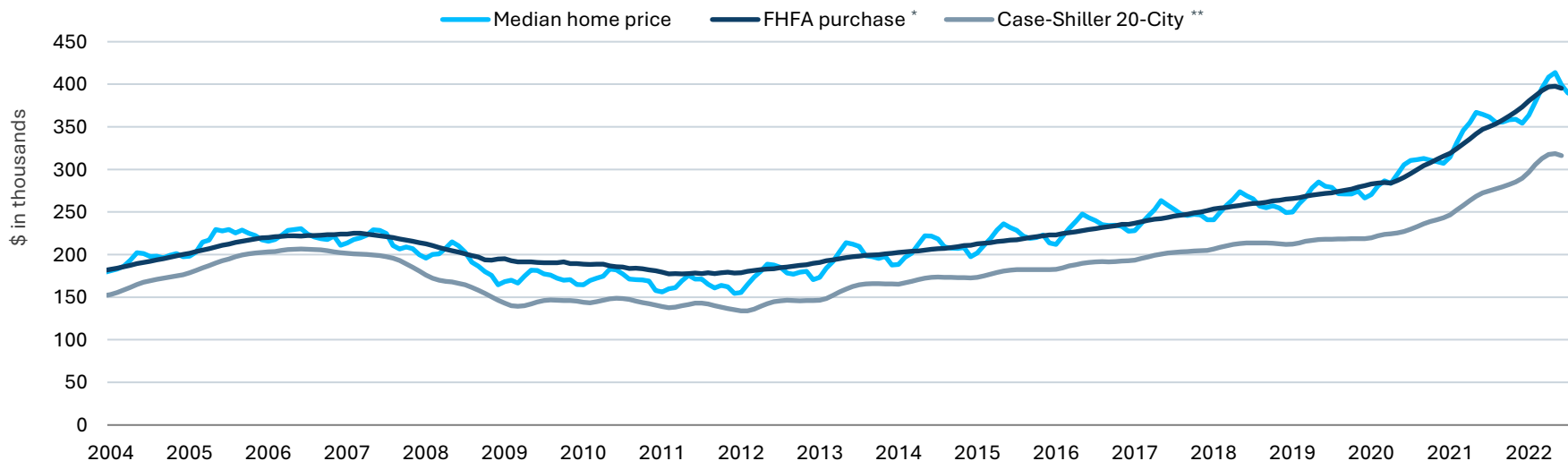
# Housing: Sales Are Moderating

Home sales have slowed moderately, while inventory continues to remain near multidecade lows. For 2022, the market will be focused on the impact that multiyear highs in mortgage rates could have on home sales.

## Housing Market



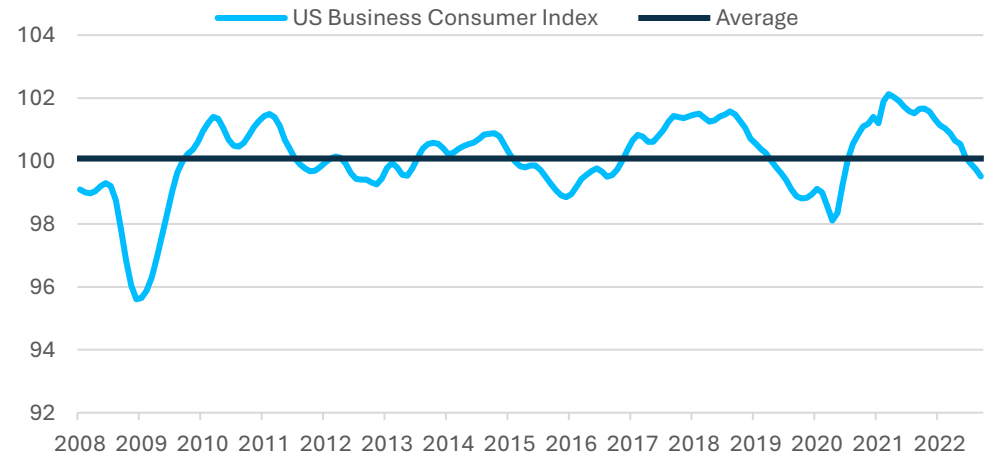
## Home Prices



# Business Outlook: Moderating

Business sentiment has declined over the past several quarters and dropped to below average in Q3 2022. Economic activity continued steadily throughout the third quarter. Institute for Supply Management (ISM) data remained in solid territory, and companies continue to be impacted by supply-chain issues and geopolitical events.

## Business Confidence Index (BCI)



## Business Sentiment

|        | Dallas Fed Manufacturing Survey | Philly Fed Manufacturing Survey | New York Fed's Empire Manufacturing Survey | Kansas City Fed Manufacturing Survey | Richmond Fed Manufacturing Survey | ISM Manufacturing PMI SA | ISM Non-Manufacturing |
|--------|---------------------------------|---------------------------------|--|--------------------------------------|-----------------------------------|--------------------------|-----------------------|
| Sep-22 | -17.2                           | -9.9                            | -1.5                                       | 1.0                                  | 0.0                               | 50.9                     | 56.7                  |
| Aug-22 | -12.9                           | 6.2                             | -31.3                                      | 3.0                                  | -8.0                              | 52.8                     | 56.9                  |
| Jul-22 | -22.6                           | -12.3                           | 11.1                                       | 13.0                                 | 0.0                               | 52.8                     | 56.7                  |
| Jun-22 | -17.7                           | -3.3                            | -1.2                                       | 12.0                                 | -9.0                              | 53.0                     | 55.3                  |
| May-22 | -7.3                            | 2.6                             | -11.6                                      | 23.0                                 | -9.0                              | 56.1                     | 55.9                  |
| Apr-22 | 1.1                             | 17.6                            | 24.6                                       | 25.0                                 | 7.0                               | 55.4                     | 57.1                  |
| Mar-22 | 8.7                             | 27.4                            | -11.8                                      | 37.0                                 | 11.0                              | 57.1                     | 58.3                  |
| Feb-22 | 14.0                            | 16.0                            | 3.1  | 29.0                                 | 3.0                               | 58.6                     | 56.5                  |
| Jan-22 | 2.0                             | 23.2                            | -0.7                                       | 24.0                                 | 6.0                               | 57.6                     | 59.9                  |
| Dec-21 | 7.8                             | 15.4                            | 31.9                                       | 22.0                                 | 14.0                              | 58.8                     | 62.3                  |
| Nov-21 | 11.5                            | 39.0                            | 30.9                                       | 22.0                                 | 14.0                              | 60.6                     | 68.4                  |
| Oct-21 | 14.4                            | 23.8                            | 19.8                                       | 28.0                                 | 12.0                              | 60.8                     | 66.7                  |
| Sep-21 | 4.6                             | 30.7                            | 34.3                                       | 21.0                                 | -1.0                              | 60.5                     | 62.6                  |
| Aug-21 | 9.0                             | 19.4                            | 18.3                                       | 25.0                                 | 14.0                              | 59.7                     | 62.2                  |
| Jul-21 | 27.3                            | 21.9                            | 43.0                                       | 28.0                                 | 24.0                              | 59.9                     | 64.1                  |
| Jun-21 | 31.1                            | 30.7                            | 17.4                                       | 28.0                                 | 27.0                              | 60.9                     | 60.7                  |
| May-21 | 35.7                            | 31.5                            | 24.3                                       | 29.0                                 | 21.0                              | 61.6                     | 63.2                  |
| Apr-21 | 38.1                            | 50.2                            | 26.3                                       | 33.0                                 | 17.0                              | 60.6                     | 62.7                  |
| Mar-21 | 28.9                            | 51.8                            | 17.4                                       | 26.0                                 | 17.0                              | 64.7                     | 62.2                  |
| Feb-21 | 17.2                            | 23.1                            | 12.1                                       | 24.0                                 | 14.0                              | 60.8                     | 55.3                  |
| Jan-21 | 7.0                             | 26.5                            | 3.5  | 17.0                                 | 14.0                              | 58.7                     | 58.7                  |
| Dec-20 | 11.4                            | 11.1                            | 4.9  | 12.0                                 | 16.0                              | 60.5                     | 57.8                  |
| Nov-20 | 13.3                            | 26.3                            | 6.3  | 9.0                                  | 16.0                              | 57.3                     | 56.5                  |
| Oct-20 | 21.1                            | 32.3                            | 10.5                                       | 10.0                                 | 23.0                              | 58.8                     | 56.1                  |
| Sep-20 | 15.5                            | 15.0                            | 17.0                                       | 10.0                                 | 23.0                              | 55.4                     | 57.7                  |
| Aug-20 | 9.3                             | 17.2                            | 3.7  | 12.0                                 | 18.0                              | 55.4                     | 57.4                  |
| Jul-20 | -2.3                            | 24.1                            | 17.2                                       | 1.0                                  | 8.0                               | 53.9                     | 57.0                  |
| Jun-20 | -6.3                            | 27.5                            | -0.2                                       | 2.0                                  | 7.0                               | 52.4                     | 56.8                  |
| May-20 | -48.8                           | -43.1                           | -48.5                                      | -16.0                                | -27.0                             | 43.5                     | 45.2                  |
| Apr-20 | -74.8                           | -56.6                           | -78.2                                      | -28.0                                | -55.0                             | 41.6                     | 41.5                  |
| Mar-20 | -70.0                           | -12.7                           | -21.5                                      | -17.0                                | 2.0                               | 49.1                     | 52.5                  |

Source: Bloomberg, Organization for Economic Co-operation and Development (OECD, 2022) and BCI (indicator). Data as of 09/30/2022.

DOI: 10.1787/3092dc4f-en (Accessed on 10/17/2022). Heatmap colors are based on the indices and time periods shown and summarizes businesses plan for economic activities. For the Fed surveys, the number represents business sentiment and the higher number represents higher business sentiment.

For ISM indexes, the neutral number is usually 50. >50, the economy is likely to expand; <50, the economy is likely to contract.



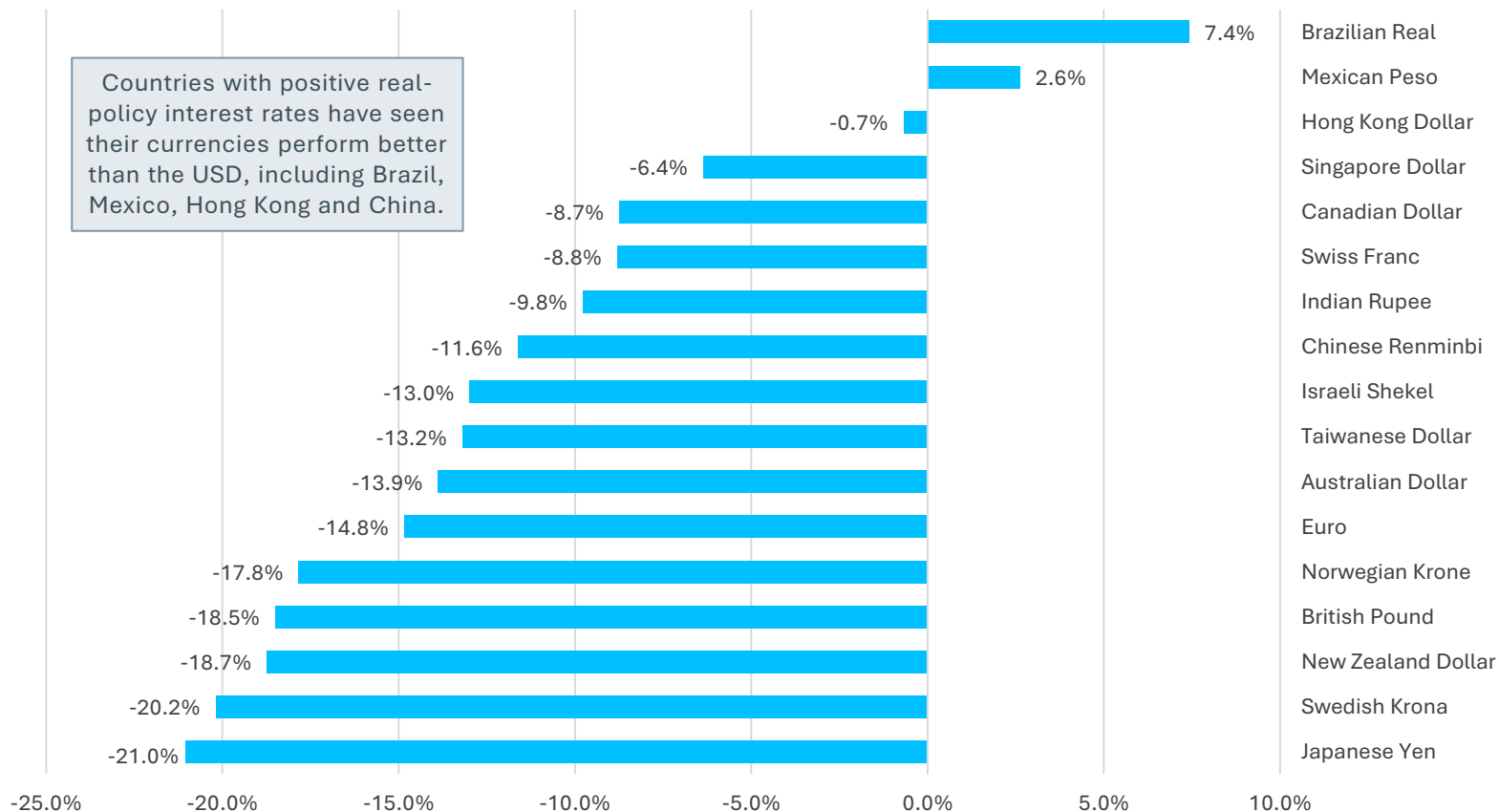
# Foreign Exchange



# USD Strength Is Broad-based but Imbalanced

A combination of spiraling inflation, monetary policy complacency, deteriorating trade, current account balances and lower interest rates have contributed to sizable depreciation in currencies vs. the USD.

Currency Depreciation vs. the USD in 2022 YTD



# Positioning in Currency Options Markets Shows Sharp Bullish USD Bias

## Call Options on the USD Are More Expensive than Puts

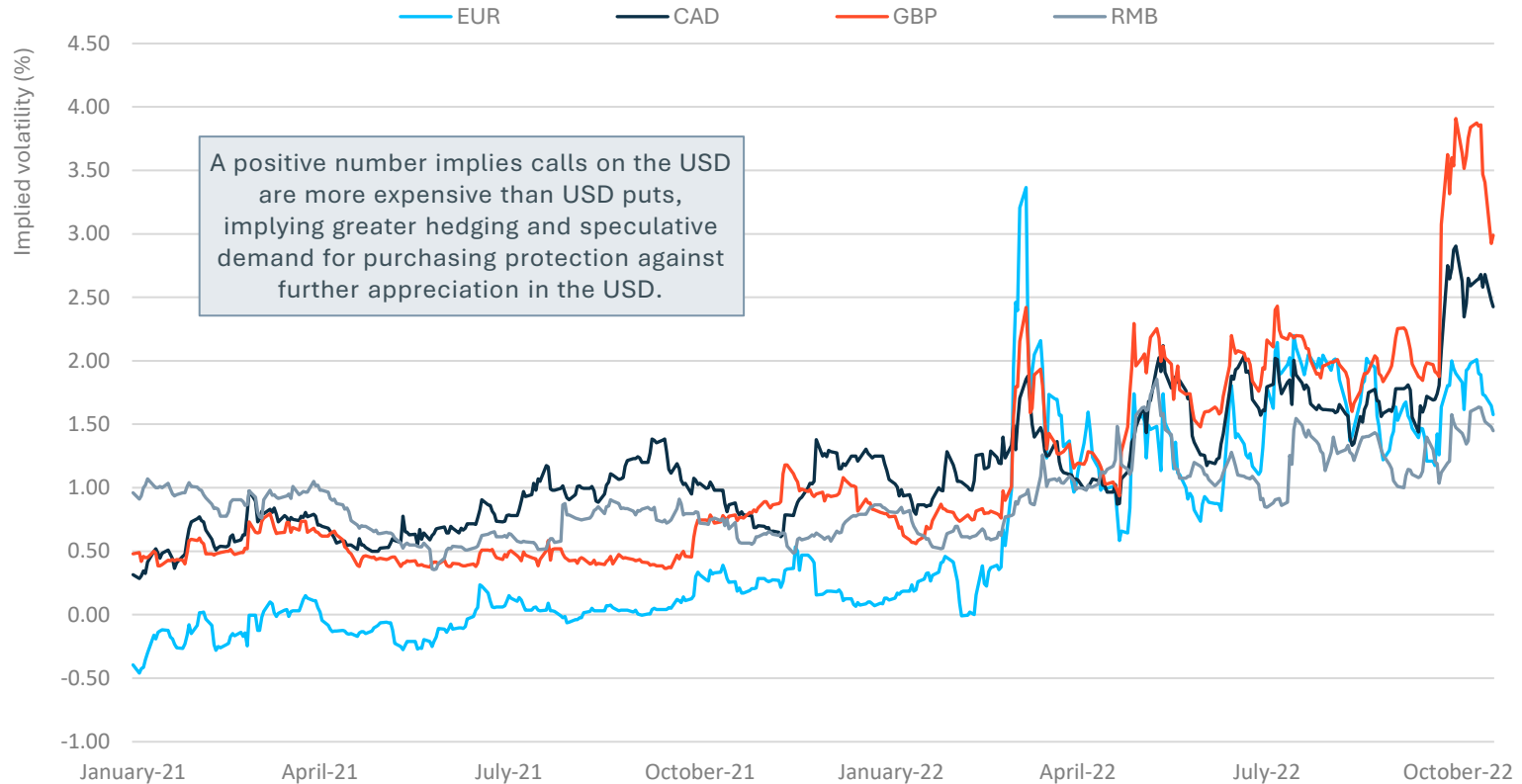
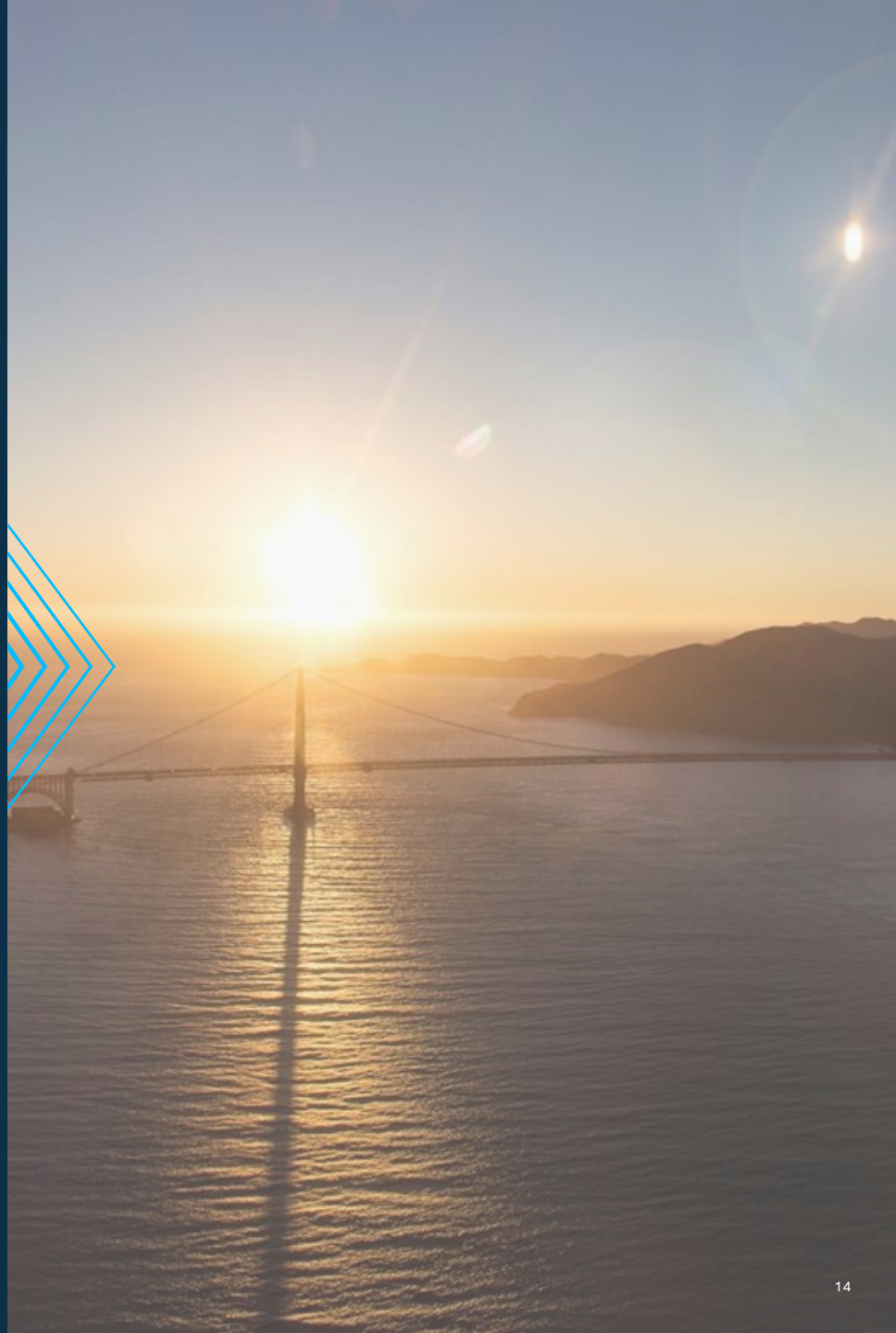


Chart tracks three-month 25-delta implied volatility risk reversals for currency pairs vs. the USD. A reading of 3% implies call options on the USD vs. the GBP are assigned an implied volatility that is 3% higher than USD puts vs. the GBP for pricing purposes.



# Central Banks and Fiscal Policy

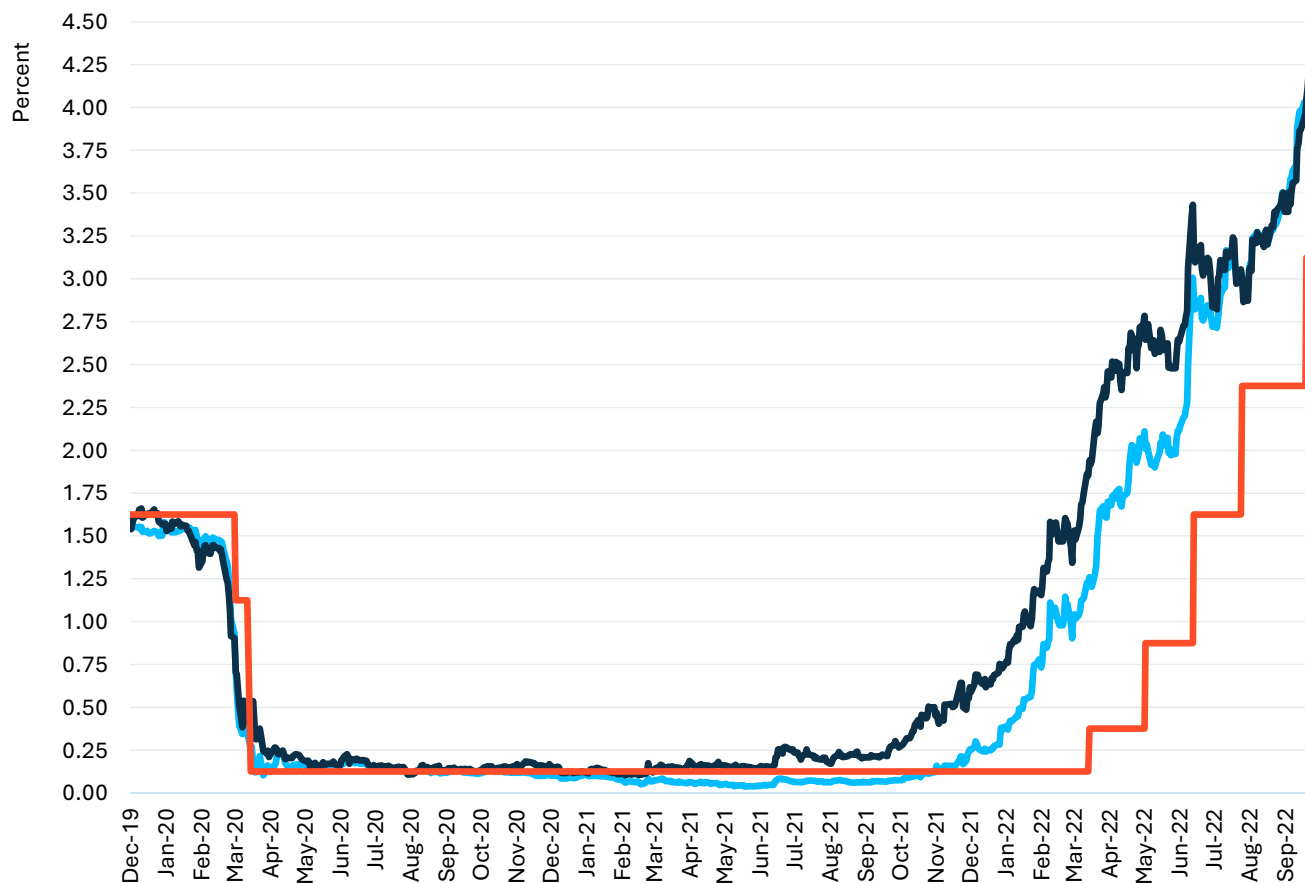




# Short-end Interest Rates

Unprecedented accommodation removal has been put in place by the Fed to slow corporate demand for labor and consumer demand for goods and services.

1-Year Treasury Yield 2-Year Treasury Yield Fed Funds Midpoint



**Q1 2020:** The Fed cut rates by 150 bps in two surprise meetings driven by the outbreak of COVID-19 in the US.

**Q3 2020:** The Fed announced it would aim to achieve inflation moderately above 2% “for some time.” Fed projections showed rates remaining near zero through 2023.

**Q2 2021:** The stronger recovery triggered the Fed to revise growth and inflation expectations. The dot plot was updated to reflect two potential rate hikes in 2023.

**Q1 2022:** The Fed turned hawkish in an effort to slow persistently elevated inflation. Seven or more rate hikes—along with balance sheet reductions—pushed interest rates to multiyear highs.

**Q2 2022:** Inflation and deteriorating consumer confidence forced the Fed to hike 50 and 75 bps in May and June. The Fed warned that the likelihood of a soft landing would be challenging as growth slowed.

**Q3 2022:** The Fed remains very hawkish with three consecutive 75 bps rate hikes in Q3 2022. Inflation stays elevated and all Fed speak is unified in the message to raise rates until there is evidence inflation is heading toward the 2% target.

# Economic Forecasts

Recession predictions, slower global growth and persistent inflation push central banks to remain hawkish in their monetary policy.



| Economic Projections | 2022 | 2023 | 2024 |
|----------------------|------|------|------|
| United States        |      |      |      |
| Change in real GDP   | 0.2% | 1.2% | 1.7% |
| Core PCE             | 4.5% | 3.1% | 2.3% |
| Unemployment rate    | 3.8% | 4.4% | 4.4% |



|                    |      |        |      |
|--------------------|------|--------|------|
| United Kingdom     |      |        |      |
| Change in real GDP | 2.3% | (2.1%) | 0.0% |
| CPI                | 9.9% | 9.5%   | 2.0% |
| Unemployment rate  | 3.7% | 4.4%   | 5.5% |



|                    |      |      |      |
|--------------------|------|------|------|
| Eurozone           |      |      |      |
| Change in real GDP | 3.1% | 0.9% | 1.9% |
| CPI                | 8.1% | 5.5% | 2.3% |
| Unemployment rate  | 2.0% | 0.2% | 0.2% |



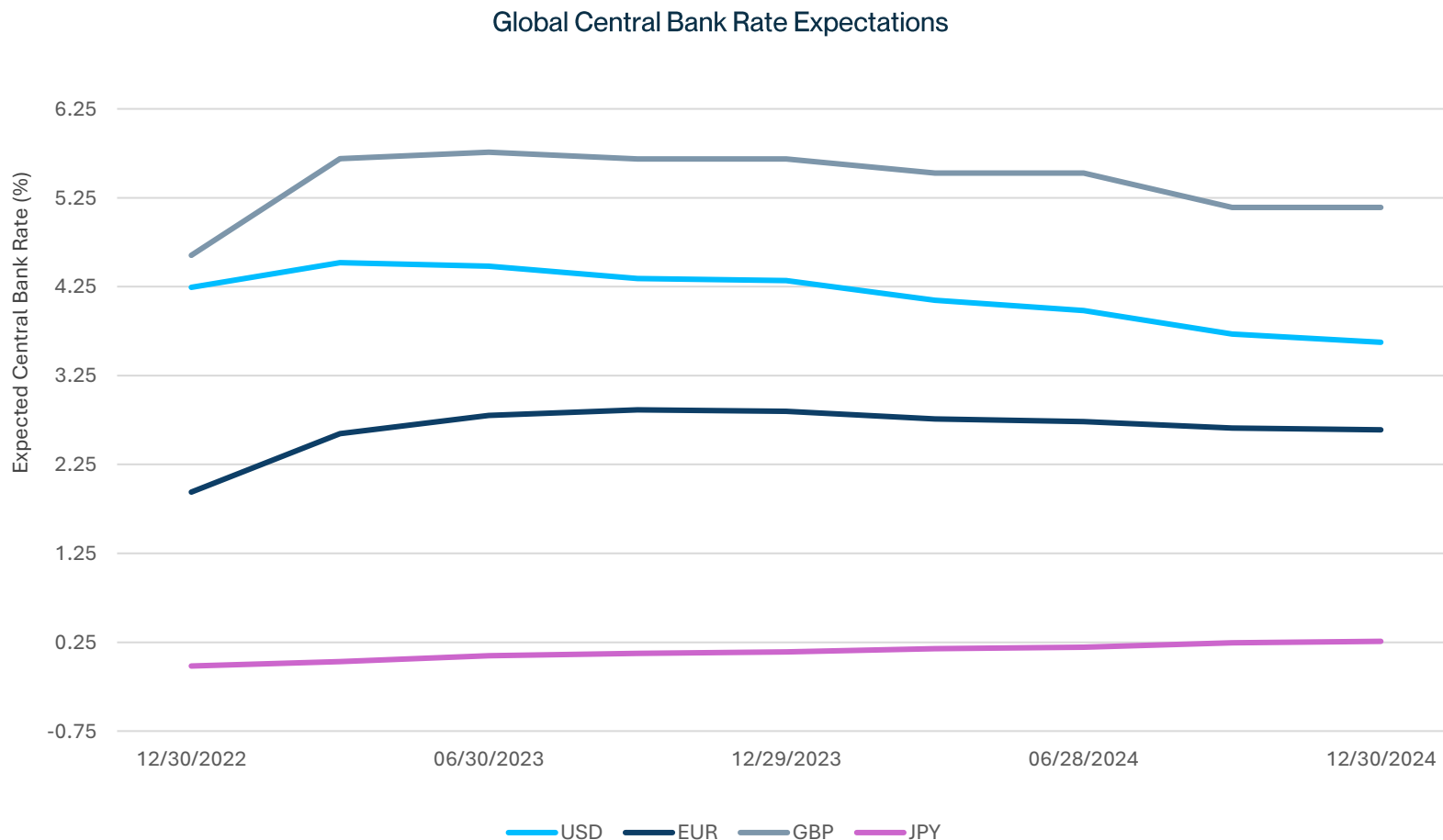
|                    |      |      |      |
|--------------------|------|------|------|
| Japan              |      |      |      |
| Change in real GDP | 2.4% | 1.9% | 1.3% |
| CPI                | 2.3% | 1.4% | 1.3% |
| Unemployment rate  | NA   | NA   | NA   |



|                    |      |      |      |
|--------------------|------|------|------|
| China              |      |      |      |
| Change in real GDP | 3.3% | 5.0% | 5.0% |
| CPI                | 2.2% | 2.3% | 2.2% |
| Unemployment rate  | 4.1% | 3.9% | 4.0% |

# Global Central Bank Expectations

Persistent inflation continues to push expectations for higher interest rates delivered by global central banks.





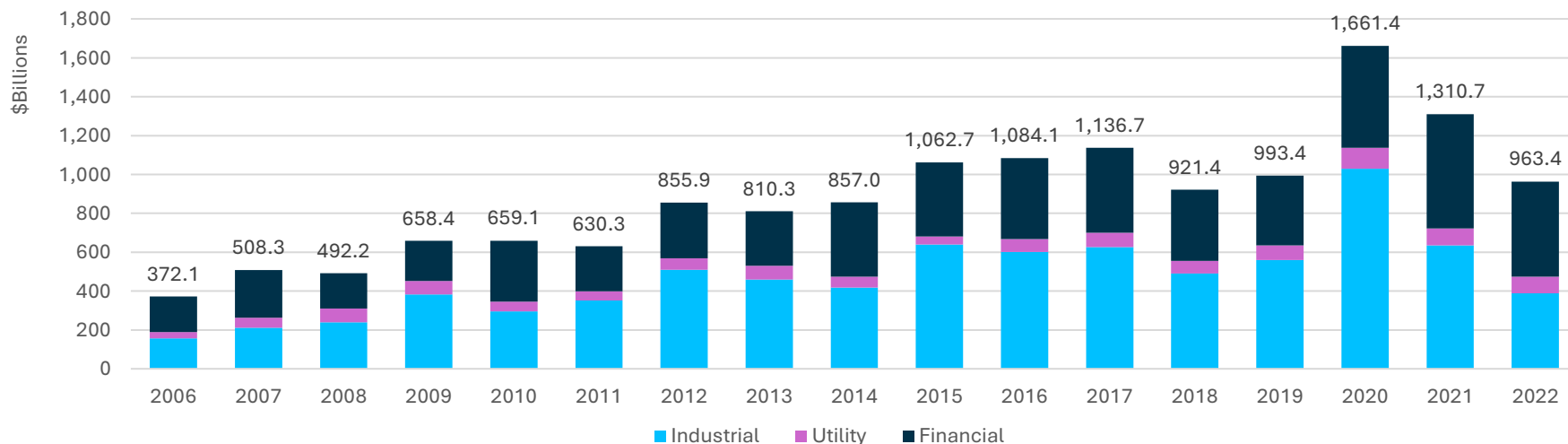
# Corporate Bond Market



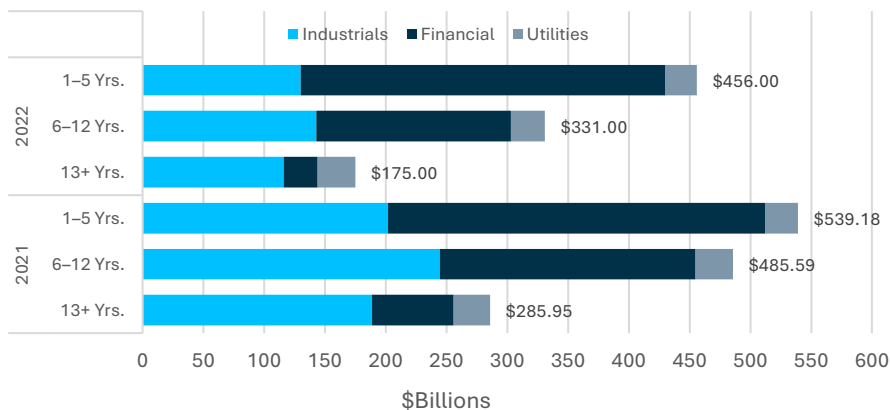
# 2022 Corporate New-issue Update

New issue of corporate bonds remains lower on the year as industrial volumes remain significantly lower than prior years. Financial issuance has remained steady. Maturity profile is skewing slightly shorter in duration than in 2021.

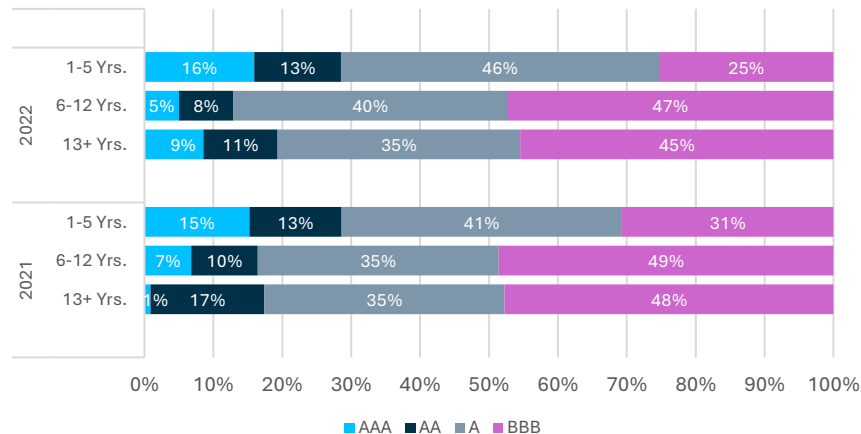
## US Investment-grade (IG) Corporate New-issue Volume



## IG Corporate New-issue Supply (Sector/Maturity)



## IG Corporate New-issue Supply (Rating/Maturity)

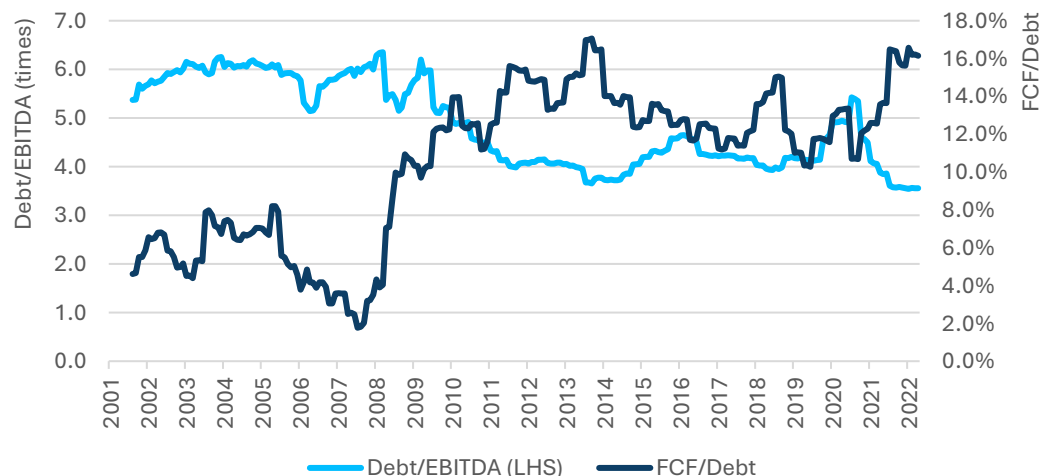


# Corporates: Credit Metrics Leveling Off

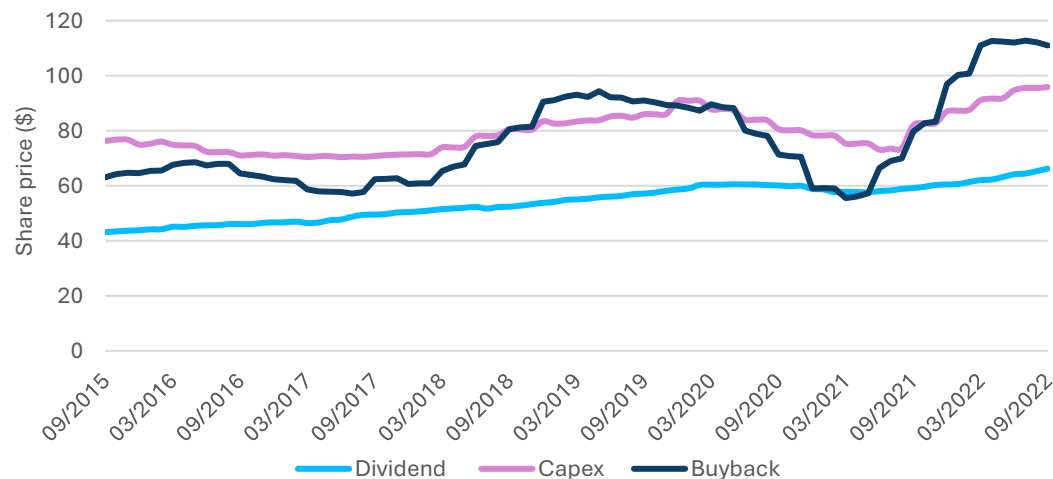
Total leverage remained at a five-year low due to a stable debt balance and higher Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA). Debt coverage, measured by free cash flow (FCF) to total debt, has started to migrate from 2021's high but has remained favorable.

Shareholder buybacks have tapered since March 2022 as companies have switched to preserve cash amidst the economic slowdown.

S&P 500 Leverage and Debt Coverage



S&P Capital Spending and Distribution

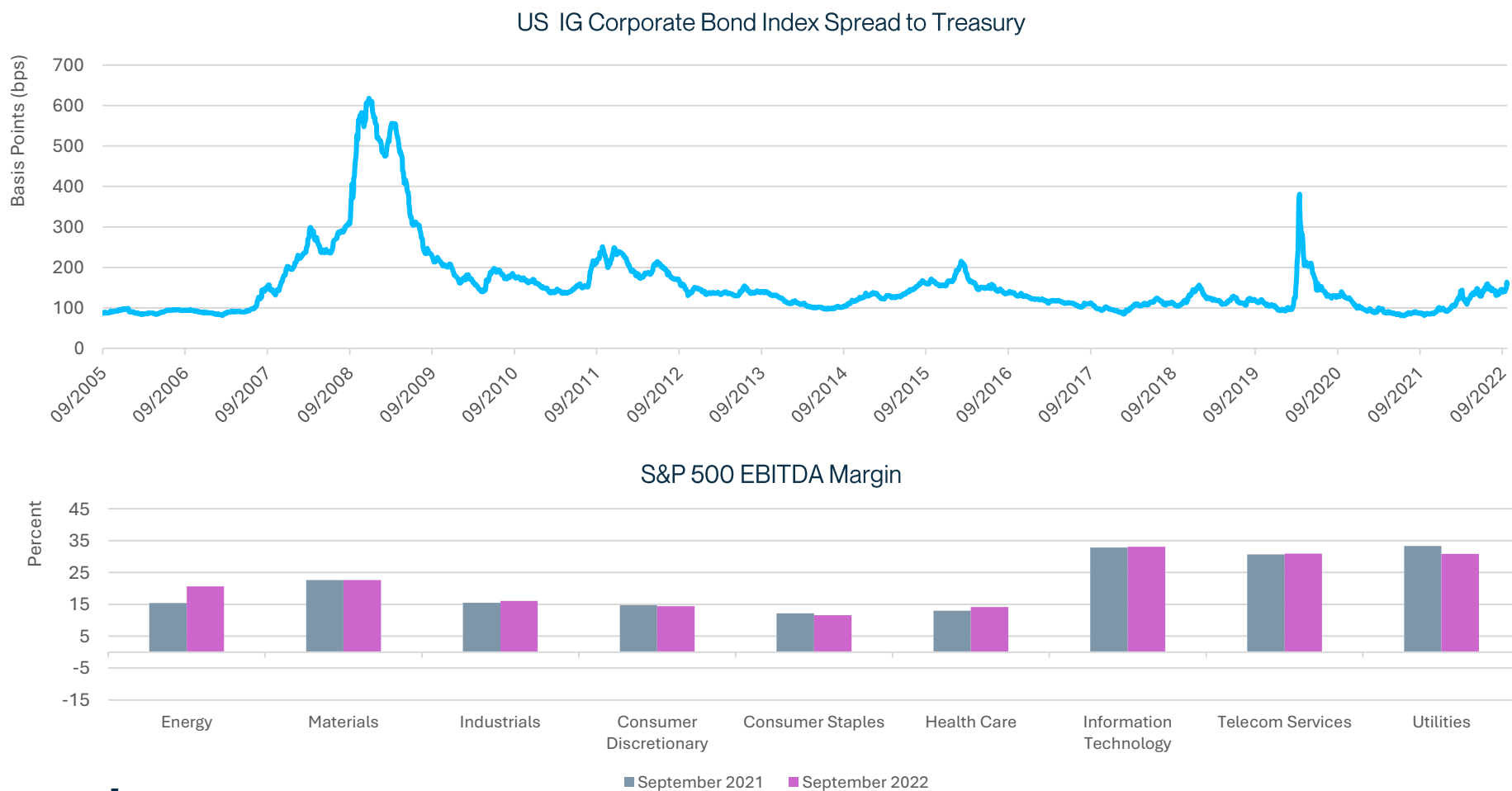




# Corporates: Spread and Sector Performance

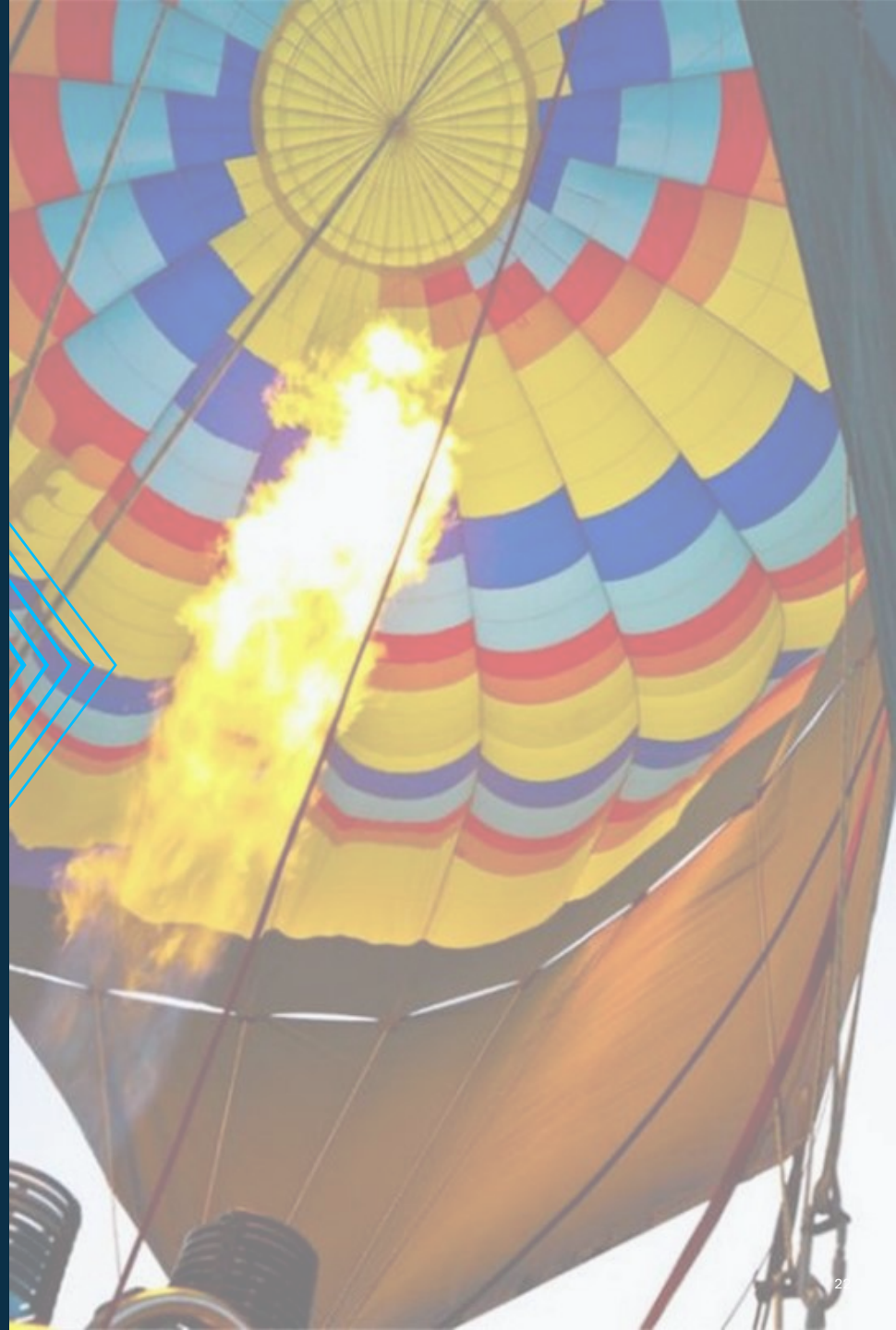
The risk premium between US Treasuries and corporate bonds (top chart) continued to stay elevated due to geopolitical risk, persistent inflation and recession concerns.

Operating profitability, as measured by EBITDA margin (bottom chart), remained mostly unchanged from the same period in the prior year, with the exception of the Energy sector.





# Markets and Performance



# Market Sector Performance

US markets continued to deal with higher inflation due to persistent supply chain issues, unending COVID-19 issues and the ongoing conflict between Russia and Ukraine. By the end of the quarter, there have been increasing concerns of a recession, pushing equities lower and credit spreads wider.

|  | 2012                        | 2013                         | 2014                        | 2015                         | 2016                        | 2017                        | 2018                         | 2019                         | 2020                        | 2021                         | 2022 YTD                      |
|--|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|-----------------------------|------------------------------|-------------------------------|
|  | Biotech<br>32.91%           | IPO Index<br>54.33%          | Biotech<br>43.24%           | Biotech<br>13.09%            | Crude Oil<br>45.03%         | Biotech<br>43.85%           | US Treasury<br>0.86%         | Tech<br>45.97%               | IPO Index<br>109.60%        | Crude Oil<br>55.01%          | Crude Oil<br>5.69%            |
|  | IPO Index<br>17.86%         | Biotech<br>48.20%            | Tech<br>14.23%              | Tech<br>3.23%                | High Yield<br>17.13%        | Tech<br>39.65%              | US Aggregate<br>0.01%        | Crude Oil<br>34.46%          | Biotech<br>48.10%           | Tech<br>28.73%               | US Treasury<br>-13.09%        |
|  | S&P 500<br>16.00%           | S&P 500<br>32.39%            | S&P 500<br>13.69%           | S&P 500<br>1.38%             | Tech<br>12.27%              | IPO Index<br>35.75%         | High Yield<br>-2.08%         | IPO Index<br>33.87%          | Tech<br>42.64%              | S&P 500<br>28.71%            | US Aggregate<br>-14.61%       |
|  | High Yield<br>15.81%        | Tech<br>23.66%               | US IG<br>Corporate<br>7.46% | US Treasury<br>0.84%         | S&P 500<br>11.96%           | S&P 500<br>21.83%           | US IG<br>Corporate<br>-2.51% | Biotech<br>32.34%            | S&P 500<br>18.40%           | High Yield<br>5.28%          | High Yield<br>-14.74%         |
|  | Tech<br>14.52%              | High Yield<br>7.44%          | IPO Index<br>7.17%          | US Aggregate<br>0.55%        | US IG<br>Corporate<br>6.11% | Crude Oil<br>12.47%         | S&P 500<br>-4.38%            | S&P 500<br>31.49%            | US IG<br>Corporate<br>9.89% | US IG<br>Corporate<br>-1.04% | US IG<br>Corporate<br>-18.72% |
|  | US IG<br>Corporate<br>9.82% | Crude Oil<br>7.19%           | US Aggregate<br>5.97%       | US IG<br>Corporate<br>-0.68% | US Aggregate<br>2.65%       | High Yield<br>7.50%         | Tech<br>-6.02%               | US IG<br>Corporate<br>14.54% | US Treasury<br>8.00%        | US Aggregate<br>-1.54%       | S&P 500<br>-23.87%            |
|  | US Aggregate<br>4.22%       | US IG<br>Corporate<br>-1.53% | US Treasury<br>5.05%        | High Yield<br>-4.47%         | US Treasury<br>1.04%        | US IG<br>Corporate<br>6.42% | Biotech<br>-14.99%           | High Yield<br>14.32%         | US Aggregate<br>7.51%       | US Treasury<br>-2.32%        | Biotech<br>-28.99%            |
|  | US Treasury<br>1.99%        | US Aggregate<br>-2.02%       | High Yield<br>2.45%         | IPO Index<br>-7.98%          | IPO Index<br>-0.51%         | US Aggregate<br>3.54%       | IPO Index<br>-17.53%         | US Aggregate<br>8.72%        | High Yield<br>7.11%         | IPO Index<br>-9.89%          | Tech<br>-34.41%               |
|  | Crude Oil<br>-7.09%         | US Treasury<br>-2.75%        | Crude Oil<br>-45.87%        | Crude Oil<br>-30.47%         | Biotech<br>-15.61%          | US Treasury<br>2.31%        | Crude Oil<br>-24.84%         | US Treasury<br>6.86%         | Crude Oil<br>-20.54%        | Biotech<br>-20.38%           | IPO Index<br>-50.77%          |

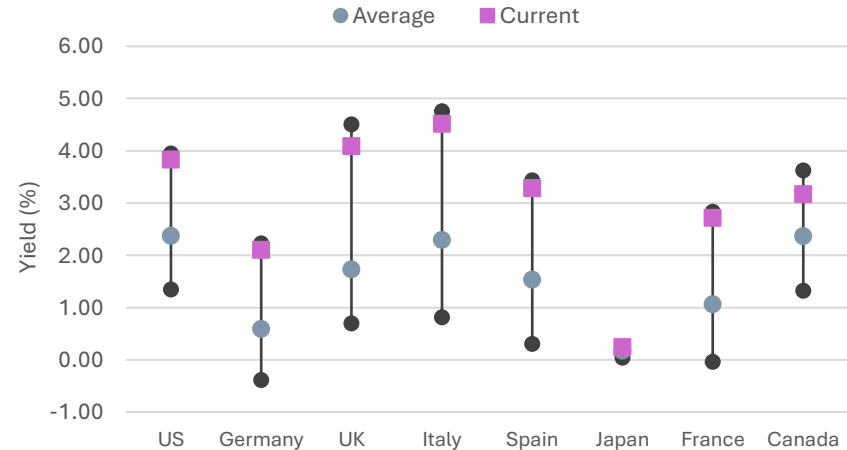
All returns above are on a total return basis. YTD 2022 returns are on an aggregate basis up to 09/30/2022. US Aggregate refers to Bloomberg Barclays Aggregate Bond Index. US Treasuries refers to the US Treasury allocation of the Bloomberg Barclays Aggregate Bond Index. US IG Corporate refers to the IG Corporate allocation of the Bloomberg Barclays Aggregate Bond Index. High Yield refers to the US Corporate High Yield Bloomberg Index. Crude oil refers to the Spot West Texas Intermediate Crude Oil — Bloomberg-sourced. S&P 500 refers to the S&P 500 Total Return Index. Tech refers to the S&P Global 1200 Information Technology Index. Biotech refers to the S&P Biotechnology Select Industry Index. IPO Index refers to the Renaissance IPO Index.

# Global and Domestic Yields

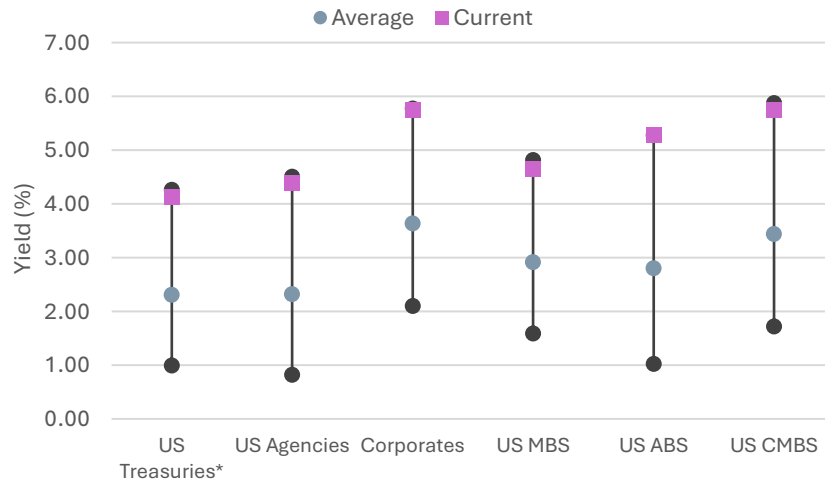
Global yields are high relative to their YoY averages, as the strength in the USD has put pressure on other central banks to raise rates in order to stem the weakening of their local currencies.

With the benchmark rates higher, all-in yields for broad and short-duration fixed income have pushed higher compared to their respective averages.

## Yields Across the Globe

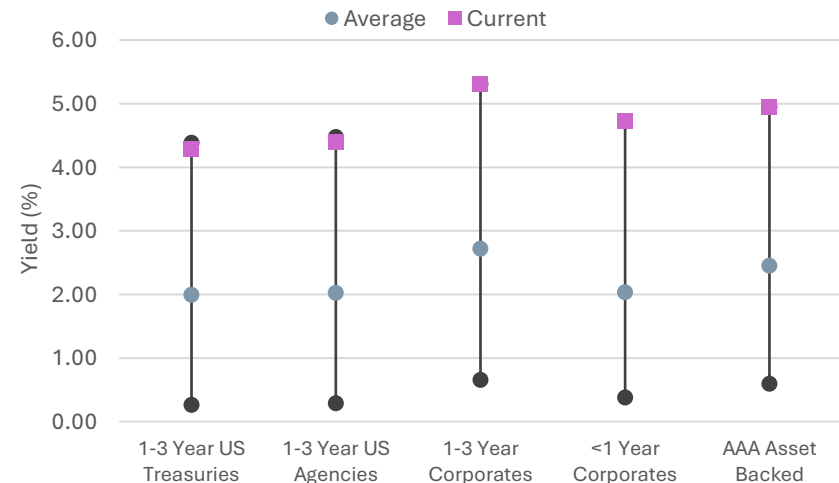


## Broad Fixed Income Yields



\*US Treasuries pertain to on-the-run sovereign 10-year securities.

## Short-Duration Yields



# Quarterly Credit and Duration Performance Stratification

Higher interest rates have negatively affected IG corporate bond performance YTD. The message remains consistent this year as inflation, a hawkish Fed and a “risk off” tone in markets have caused credit spreads to widen across the credit ratings spectrum.

## Corporate Credit

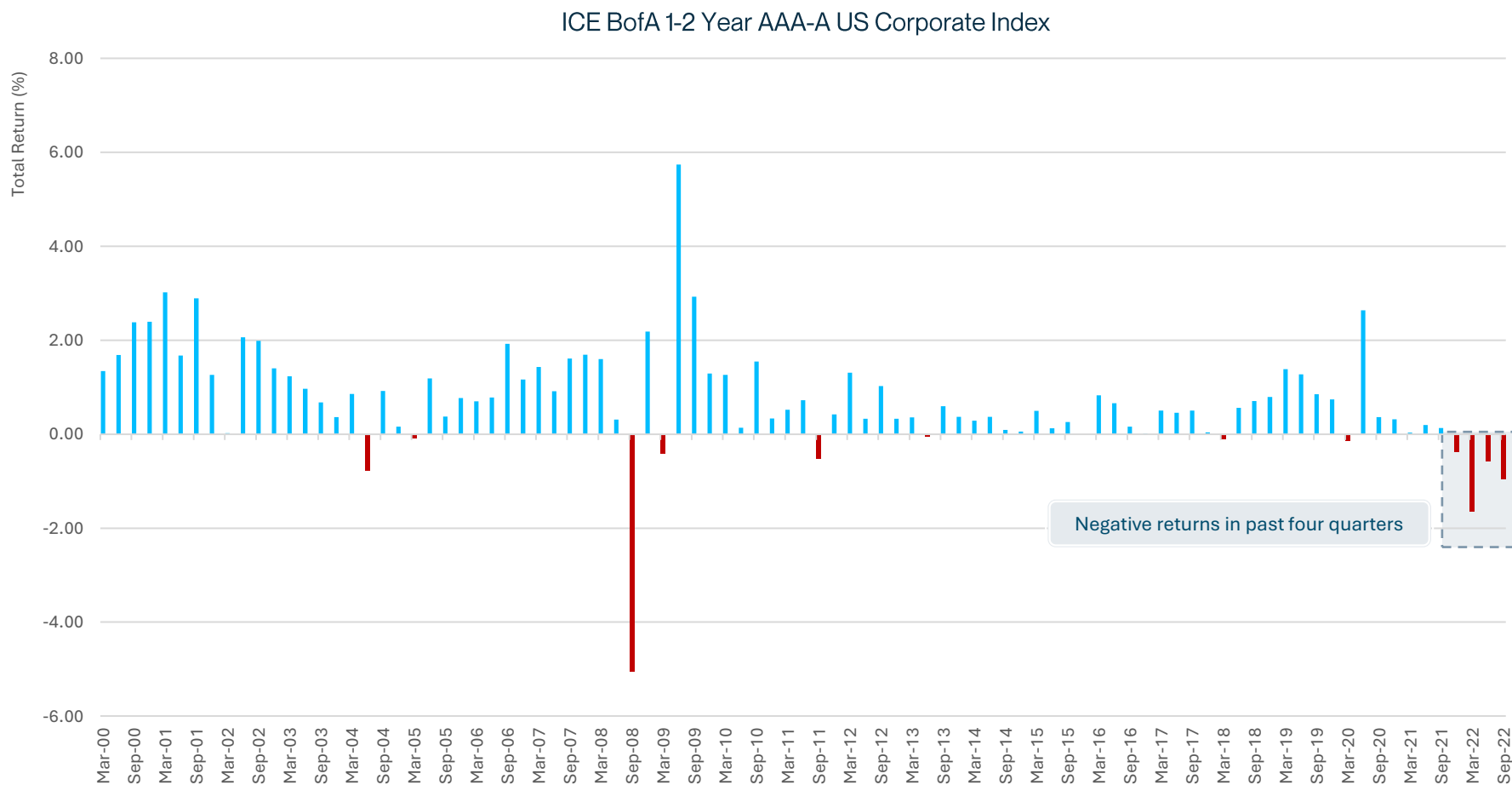
| Duration | 0-0.25 | 0.25-0.5 | 0.5-1.0 | 1.0-1.5 | 1.5-2.0 | 2.0-2.5 | 2.5-3.0 | 3.0-4.0 | 4.0-5.0 | 5.0-6.0 | 6.0-7.0 | 7.0-8.0 | 8.0-9.0 | 9.0-10.0 | 10.0-11.0 | 11.0-12.0 | Over 12.0 |
|----------|--------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| AAA      |        | 0.20%    | 0.01%   | -0.82%  | -0.98%  | -2.22%  | -3.09%  | -3.42%  | -3.67%  | -5.41%  |         | -5.13%  | -6.04%  | -5.93%   | -7.80%    | -7.46%    | -10.72%   |
| AA1      |        |          | 0.01%   | -0.73%  | -1.22%  | -1.97%  | -2.28%  | -2.97%  | -3.69%  | -4.37%  | -5.39%  | -5.86%  | -6.95%  |          | -6.65%    |           | -9.82%    |
| AA2      | 0.70%  | 0.27%    | -0.23%  | -0.92%  | -1.21%  | -2.13%  | -2.17%  | -3.29%  | -3.41%  | -3.95%  | -4.09%  | -6.14%  | -5.82%  | -6.75%   | -7.55%    | -6.27%    | -10.13%   |
| AA3      | 0.50%  | 0.37%    | -0.04%  | -0.83%  | -1.37%  | -1.90%  | -2.26%  | -2.92%  | -3.46%  | -4.31%  | -4.70%  | -5.56%  | -6.60%  | -6.42%   | -7.54%    | -7.57%    | -9.61%    |
| A1       | 0.59%  | 0.39%    | 0.00%   | -0.80%  | -1.14%  | -1.77%  | -2.22%  | -2.76%  | -3.72%  | -4.39%  | -5.02%  | -6.05%  | -6.28%  | -7.97%   | -7.40%    | -7.23%    | -10.22%   |
| A2       | 0.62%  | 0.38%    | 0.01%   | -0.84%  | -1.22%  | -1.76%  | -2.20%  | -2.97%  | -3.77%  | -4.67%  | -5.56%  | -6.78%  | -6.45%  | -7.65%   | -8.38%    | -7.66%    | -9.97%    |
| A3       | 0.75%  | 0.30%    | 0.13%   | -0.64%  | -1.25%  | -1.73%  | -2.00%  | -2.98%  | -3.83%  | -4.26%  | -4.95%  | -6.07%  | -6.02%  | -7.58%   | -8.37%    | -8.24%    | -9.96%    |
| BBB1     | 0.69%  | 0.54%    | 0.28%   | -0.63%  | -1.05%  | -1.70%  | -2.14%  | -2.87%  | -3.72%  | -4.39%  | -5.15%  | -6.29%  | -6.72%  | -7.19%   | -7.36%    | -7.66%    | -9.48%    |
| BBB2     | 0.58%  | 0.57%    | 0.16%   | -0.49%  | -0.91%  | -1.59%  | -1.82%  | -2.72%  | -3.44%  | -4.33%  | -4.93%  | -5.65%  | -6.49%  | -7.37%   | -7.76%    | -7.94%    | -9.55%    |
| BBB3     | 1.33%  | 0.48%    | 0.47%   | -0.31%  | -0.82%  | -0.99%  | -1.30%  | -2.18%  | -2.98%  | -3.95%  | -4.39%  | -5.73%  | -6.90%  | -6.71%   | -6.82%    | -8.43%    | -8.61%    |

## US Treasuries

| Duration | 0-0.25 | 0.25-0.5 | 0.5-1.0 | 1.0-1.5 | 1.5-2.0 | 2.0-2.5 | 2.5-3.0 | 3.0-4.0 | 4.0-5.0 | 5.0-6.0 | 6.0-7.0 | 7.0-8.0 | 8.0-9.0 | 9.0-10.0 | 10.0-11.0 | 11.0-12.0 | Over 12.0 |
|----------|--------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|-----------|
| AAA      | 0.46%  | 0.36%    | -0.08%  | -0.85%  | -1.50%  | -2.01%  | -2.56%  | -3.27%  | -3.91%  | -4.60%  | -5.15%  | -5.75%  | -6.10%  |          | -7.45%    | -7.93%    | -9.98%    |

# Corporate Bond Index Returns

High-quality corporate bonds have underperformed in the last four consecutive quarters as interest rates have moved significantly higher since Q4 2021. Inflation, a hawkish Fed and a “risk off” tone in markets causing credit spreads to widen have all contributed to the worst-performing bond market since 2008.





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