Q3

Quarterly Market Review

Third Quarter 2022

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Quarterly Market Review

Third Quarter 2022

This report features world capital market performance and a timeline of events for the past quarter. It begins with a global overview, then features the returns of stock and bond asset classes in the US and international markets.

The report also illustrates the impact of globally diversified portfolios and features a quarterly topic.

Overview:

Investing Through Tough Times in Four Charts

The U.S. stock market continues to record losses in 2022, and the U.S. economy shows signs that we are either in or may soon face a recession. Four charts help illustrate why we think sticking with stocks through tough times is still likely the better path forward for investors than jumping in and out of the market.

What Does a Recession Mean for Stock Returns?

While not official, there's reason to believe the U.S. is currently in a recession. Two consecutive quarters of negative gross domestic product (GDP) growth are already in the books — a commonly cited barometer for recessions.

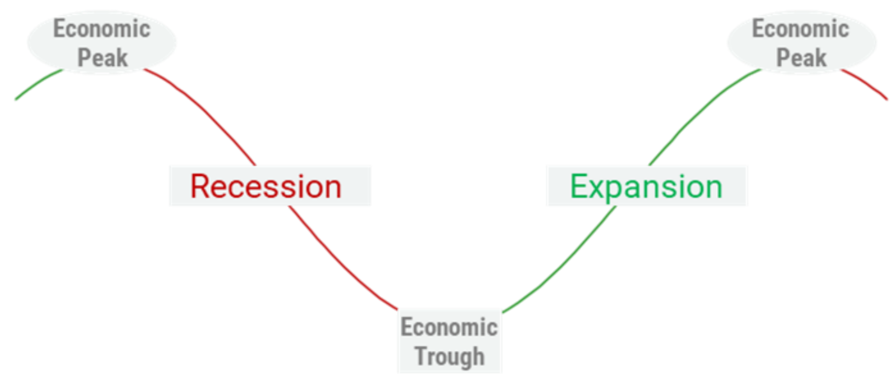
The National Bureau of Economic Research (NBER) makes the official call, which typically comes many months after a recession actually begins. The NBER definition includes more than GDP declines (e.g., unemployment). Despite having to wait for its version of the assessment, the market is pricing a slowdown in the economy.

For argument's sake, let's assume we are currently in a recession. What has that meant historically for U.S. stock returns? To explore this question, we measured returns during business cycles over the past 50 years.

NBER defines a business cycle as the period from one economic peak to the next. Between two economic peaks is a recessionary period (where the economy contracts, or a peak to trough period) characterized by a decline in economic activity and an expansionary period (trough to peak) characterized by increasing economic growth.

Our results are presented in **Figure 1**. We observe that the average monthly return of the U.S. market during all months, whether in recession or expansion, is just over 1% or about 12% per year. During recessions, returns have historically been slightly negative and well below the average across all months. Returns during periods of expansion have historically been positive and, at 1.20% per month, slightly above average stock returns across all months.

Figure 1 | U.S. Stocks Have Historically Underperformed in Recessions, But the Economy Is More Often in Expansion



	Recessions	Expansions	All Months
Average Monthly Market Return	-0.21%	1.20%	1.02%
Average Length in Months	11	72	-

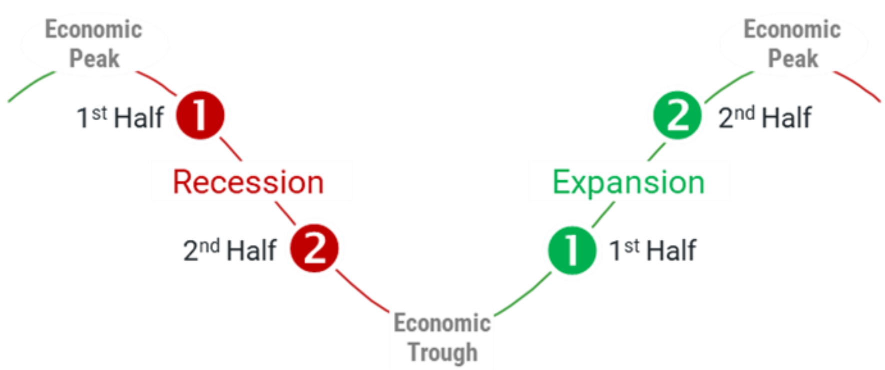
Data from 1973 – 2021. The market is represented by the CRSP U.S. Total Market Index. Source: Avantis Investors. The average number of months over the period from Peak to Trough is 10.7 and from Trough to Peak is 71.9. Past performance is no guarantee of future results.

Investing Through Tough Times in Four Charts

At first glance, these results may not seem encouraging in the current economic environment, but there's more to the story. First, it's important to consider that the U.S. economy has historically experienced growth far more often than decline. The seven recessions over the past 50 years each lasted on average around 11 months, while each expansion lasted on average about 72 months.

A deeper look at the returns during recessions reveals another interesting insight. In **Figure 2**, we divide recessionary and expansionary periods in half and present average monthly returns over these subperiods.

Figure 2 | U.S. Stocks Have Enjoyed Strongly Positive Returns in the Second Half of Recessions



	Recessions		Expansions		
	1st Half	2nd Half	1st Half	2nd Half	All Months
Average Monthly Market Return	-2.51%	2.15%	1.34%	1.05%	1.02%

What stands out is that the below-average returns we've seen historically during times of recession have been driven by significantly negative returns during the first half of the recession. In the second half of recessions, returns have been strongly positive and far above the average monthly return. Good times have historically continued during the first and second halves of expansions.

What do these returns tell us? In the first half of recessions, markets react quickly to possible bad news. Expectations of lower company earnings during an economic slowdown and, more importantly, lower risk appetite due to increasing uncertainty, for example, are quickly reflected in lower stock prices.

The lower risk appetite is reflected in investors increasing their demanded discount rates[1]—their expected return—for investing in risky assets (i.e., equities). That increase in discount rates for future cash flows produces a drop in prices. But, as bad news dissipates and uncertainty subsides, the market also incorporates these improving expectations.

It would be great if we could get out of the market at the start of a recession before stocks typically experience a downturn and then get back in as prices go back up. The issue is that we can't say with certainty when economic peaks and troughs will start and end until after the fact — and trying to time these events can have detrimental effects on investors if they get it wrong.

[1] **Discount rate:** The rate used to reflect the time value of money and calculate the present value of a future stream of expected cash flows in a discounted cash flow (DCF) analysis.

Data from 1973 – 2021. The market is represented by the CRSP U.S. Total Market Index. Source: Avantis Investors. The average number of months over the period from Peak to ½-Trough and ½-Trough to Trough is 5.4, while the number of months over the period from Trough to ½-Peak and ½-Peak to Peak is 35.9. *Past performance is no guarantee of future results.*

Investing Through Tough Times in Four Charts

Considering where we are today, we've already seen U.S. stocks decline significantly. We can't know for sure, but it may be that we are currently experiencing the disappointing returns often seen during the first half of recessions. The market seems to have already priced in a lot of bad news and the potential for turmoil.

The risk of fleeing the market today is that investors may leave when the bad news is priced in and miss out on the historically positive returns typically seen in the second half of recessions.

What Has Recession Meant for Small Value-Focused Investors?

Investors may also wonder how stocks with different characteristics or in different asset classes perform throughout business cycles to understand how a particular focus in their portfolios might affect outcomes during and after recessions.

We find that a focus on companies with lower valuations has historically fared better than the market over the long-term, but the difference has been especially meaningful following the poor returns historically exhibited during the first half of recessions.

In **Figure 3**, we show the returns of traditional value (low price-to-book) stocks within small caps during the business cycle periods shown in **Figures 1** and **2**. We see that small value stocks have exhibited higher returns than the market, dating back to 1973. Over the first half of recessions, when we have historically seen sharply negative returns for U.S. stocks, small value stocks declined to a lesser degree than the total market.

Over the second half of recessions and during the first and second halves of expansions, small value stocks again outperformed the market during each period. Notably, the returns for small value stocks have, on average, been much higher than the market in the second half of recessions and the first half of expansions.

This tells us that valuations matter whether the economy expands or contracts. In the periods following the first half of historical recessions, valuations have mattered quite a lot.

Figure 3 | Lower-Priced Stocks Have Historically Fared Better Than the Market in Recessions and Expansions

	Recessions		Expansions		
	1st Half	2nd Half	1st Half	2nd Half	All Months
Average Monthly Market Return	-2.51%	2.15%	1.34%	1.05%	1.02%
Average Monthly Small Value Return	-2.39%	2.95%	2.08%	1.10%	1.42%

Data from 1973 – 2021. The market is represented by the CRSP U.S. Total Market Index. Source: Avantis Investors. Small value stocks are represented by the Small Value Portfolio from Ken French's Data Library. The average number of months over the period from Peak to ½-Trough and ½-Trough to Trough is 5.4, while the number of months from Trough to ½-Peak and ½-Peak to Peak is 35.9. *Past performance is no guarantee of future results.*

Investing Through Tough Times in Four Charts

Don't Lose Sight of the Destination

While it is normal to look for insights from historical periods that seem similar to what we face today, we do not want to lose sight of the bigger picture. In **Figure 4**, we plot U.S. real GDP, which accounts for the effects of inflation to make different periods comparable, and the growth of $1 invested in the U.S. stock market from 1947 through 2021.

Figure 4 also shows drawdowns for U.S. stocks over time, which is the negative performance from the market's previous peak. This shows that, while the long-term growth of wealth line appears smooth, if we magnify periods of decline, we can see that the experience for investors is not always so smooth.

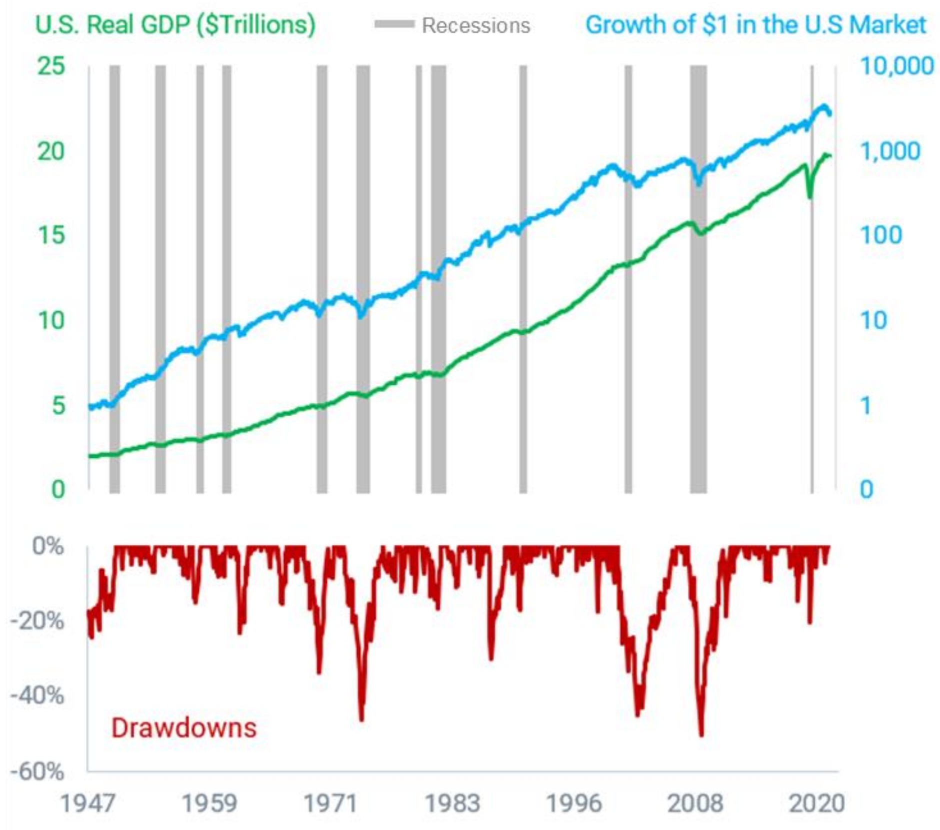
Over the long term, the U.S. economy has overcome many recessions, shown as shaded periods in **Figure 4**, and despite these short-term bumps along the way, has time and again recovered and experienced tremendous growth in GDP.

U.S. stocks have also been a powerful driver of long-term growth despite market drawdowns. The long-term results demonstrate that investors who have stuck with stocks through the tough times have historically been rewarded.

Market downturns are like traffic lights. When we drive, we may be slowed by red lights, but that doesn't prevent us from proceeding to our destination. If we choose not to drive to avoid being stopped at red lights, we can't get to where we want to go.

Similarly, if we stay out of the market to avoid downturns, we may not reach our financial goals. So, it's important to practice patience and learn to manage in times of uncertainty. Keeping a focus on the long-term

Figure 4 | The Economy and Stock Market Have Overcome Many Rough Periods Throughout History



Data from 1947 – 2021. The market is represented by the CRSP U.S. Total Market Index. Source: Avantis Investors. U.S. real GDP data from Federal Reserve Economic Data (FRED). *Past performance is no guarantee of future results.*

Quarterly Market Summary

Index returns

Q3 2022	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
	STOCKS				BONDS	
	-4.46%	-9.20%	-11.57%	-11.12%	-4.75%	-2.21%

Since Jan. 2001	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
Average Quarterly Return	2.1%	1.3%	2.4%	2.2%	0.9%	0.9%
Best Quarter	22.0%	25.9%	34.7%	32.3%	4.6%	4.6%
	2020 Q2	**2009 Q2**	**2009 Q2**	**2009 Q3**	**2001 Q3**	**2008 Q4**
Worst Quarter	-22.8%	-23.3%	-27.6%	-36.1%	-5.9%	-4.1%
	2008 Q4	**2020 Q1**	**2008 Q4**	**2008 Q4**	**2022 Q1**	**2022 Q1**

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio.
Market segment (index representation) as follows: US Stock Market (Russell 3000 Index), International Developed Stocks (MSCI World ex USA Index [net dividends]), Emerging Markets (MSCI Emerging Markets Index [net dividends]), Global Real Estate (S&P Global REIT Index [net dividends]), US Bond Market (Bloomberg US Aggregate Bond Index), and Global Bond Market ex US (Bloomberg Global Aggregate ex-USD Bond Index [hedged to USD]).

Long-Term Market Summary

Index returns as of September 30, 2022

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
	STOCKS				BONDS	
1 Year	-17.63%	-23.91%	-28.11%	-20.49%	-14.60%	-9.86%
5 Years	8.62%	-0.39%	-1.81%	0.17%	-0.27%	0.71%
10 Years	11.39%	3.62%	1.05%	3.58%	0.89%	2.21%

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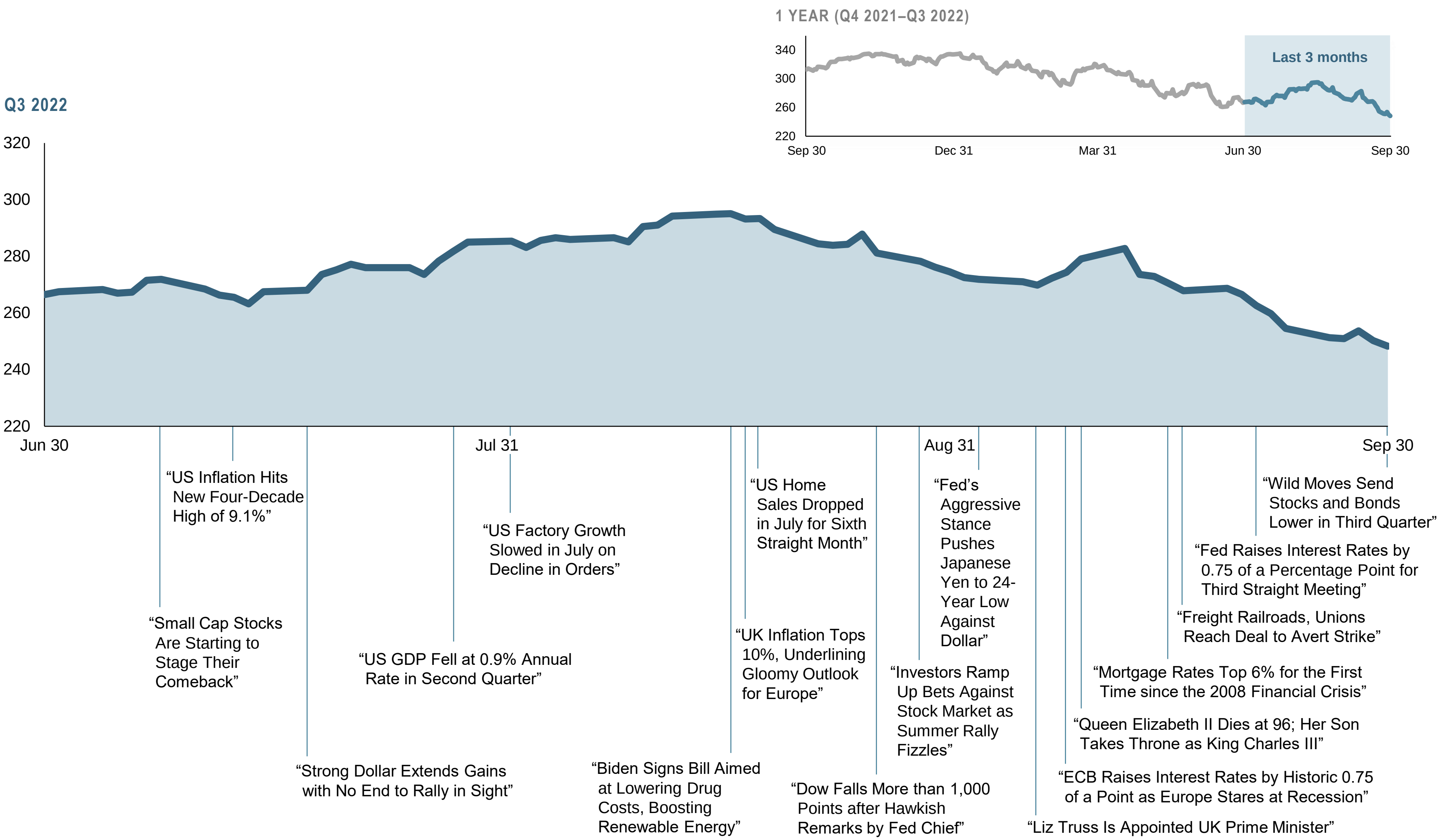
World Stock Market Performance

MSCI All Country World Index with selected headlines from Q3 2022



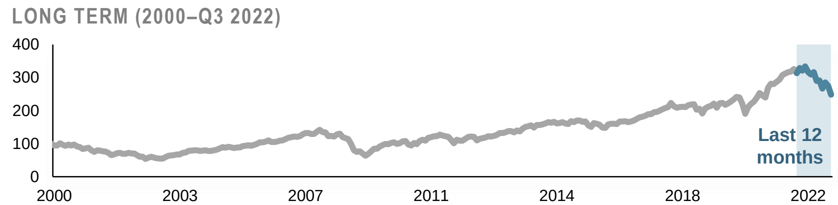
These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news.

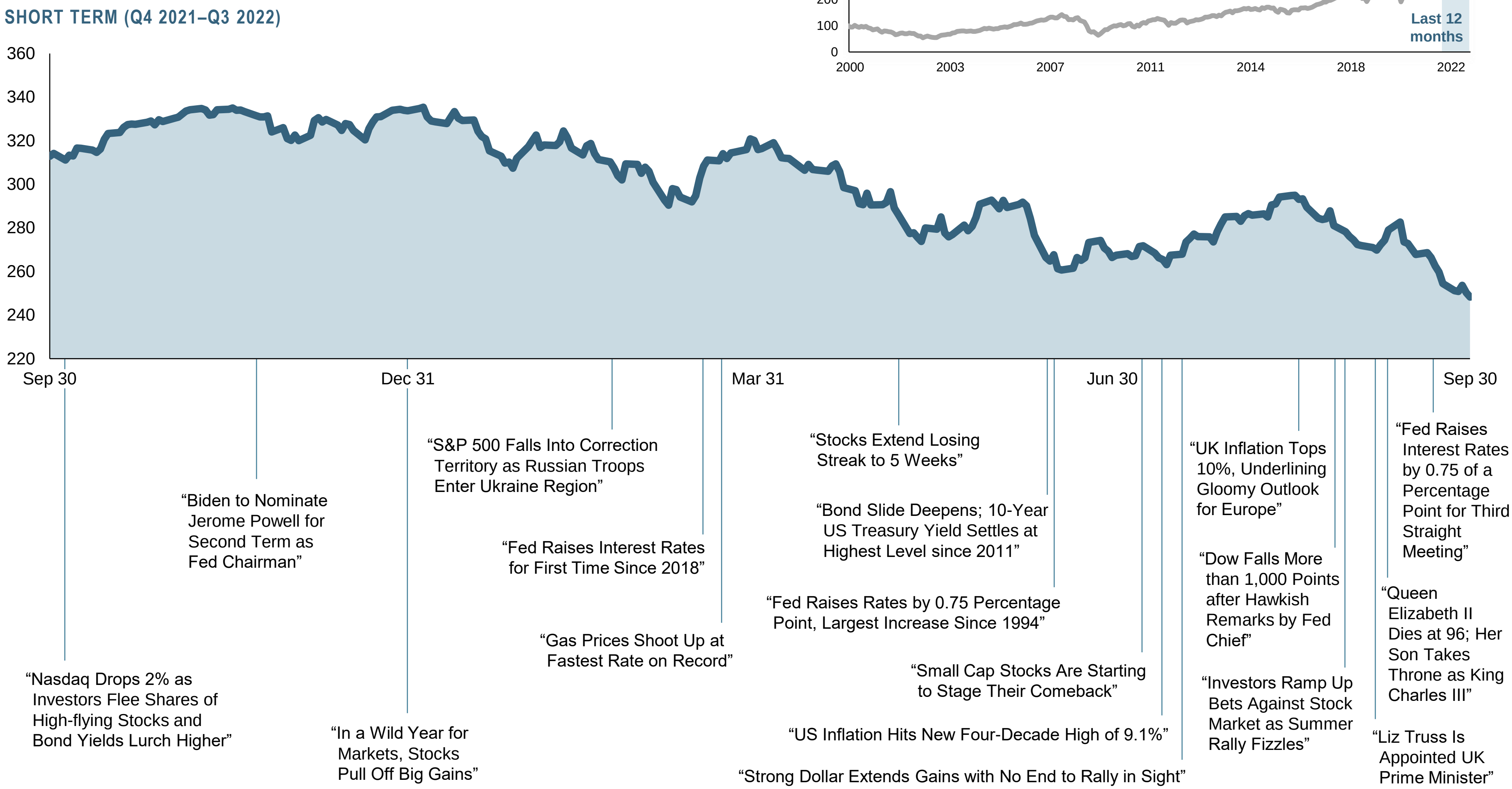
Graph Source: MSCI ACWI Index (net dividends). MSCI data © MSCI 2022, all rights reserved.

It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. **Past performance is not a guarantee of future results.**

World Stock Market Performance

MSCI All Country World Index with selected headlines from past 12 months





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Graph Source: MSCI ACWI Index (net dividends). MSCI data © MSCI 2022, all rights reserved.

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US Stocks

Third quarter 2022 index returns

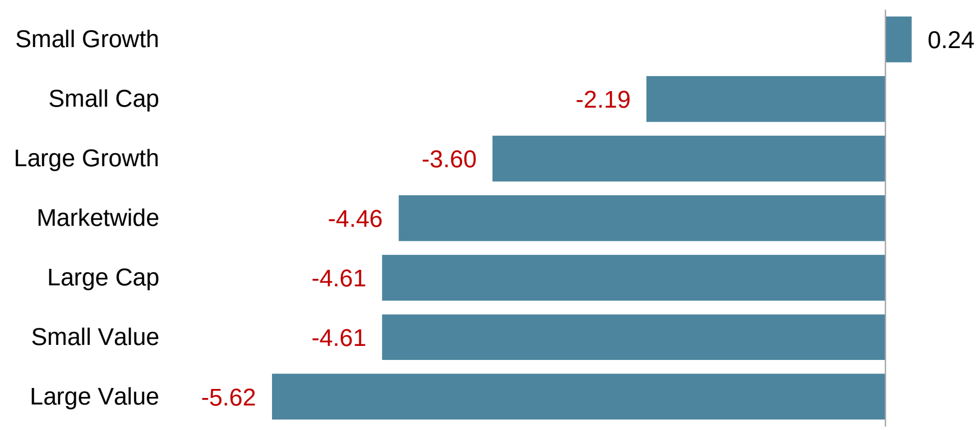
The US equity market posted negative returns for the quarter and outperformed both non-US developed and emerging markets.

Value underperformed growth.

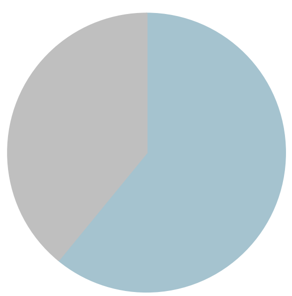
Small caps outperformed large caps.

REIT indices underperformed equity market indices.

Ranked Returns (%)



World Market Capitalization—US



61%

US Market
$35.6 trillion

Period Returns (%)

** Annualized*

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Small Growth	0.24	-29.28	-29.27	2.94	3.60	8.81
Small Cap	-2.19	-25.10	-23.50	4.29	3.55	8.55
Large Growth	-3.60	-30.66	-22.59	10.67	12.17	13.70
Marketwide	-4.46	-24.62	-17.63	7.70	8.62	11.39
Large Cap	-4.61	-24.59	-17.22	7.95	9.00	11.60
Small Value	-4.61	-21.12	-17.69	4.72	2.87	7.94
Large Value	-5.62	-17.75	-11.36	4.36	5.29	9.17

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Market segment (index representation) as follows: Marketwide (Russell 3000 Index), Large Cap (Russell 1000 Index), Large Value (Russell 1000 Value Index), Large Growth (Russell 1000 Growth Index), Small Cap (Russell 2000 Index), Small Value (Russell 2000 Value Index), and Small Growth (Russell 2000 Growth Index). World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. Russell 3000 Index is used as the proxy for the US market. Dow Jones US Select REIT Index used as proxy for the US REIT market. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

International Developed Stocks

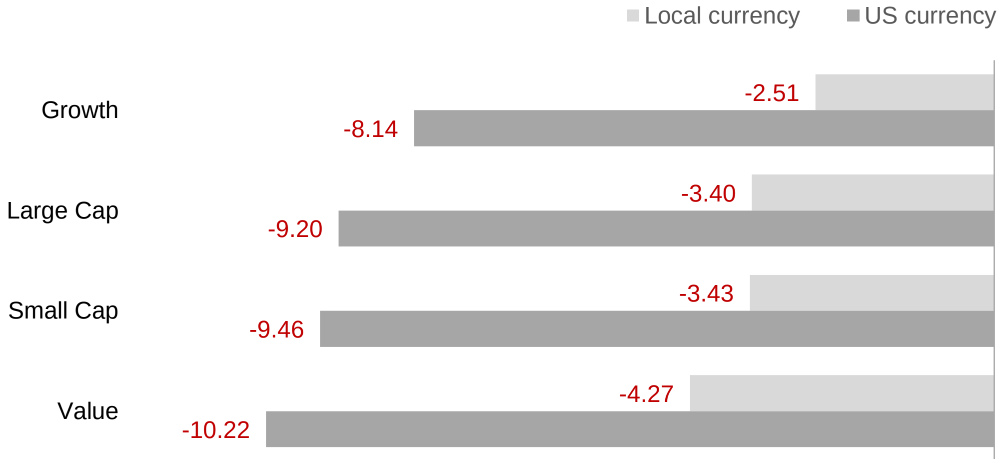
Third quarter 2022 index returns

Developed markets outside of the US posted negative returns for the quarter and underperformed the US market, but outperformed emerging markets.

Value underperformed growth.

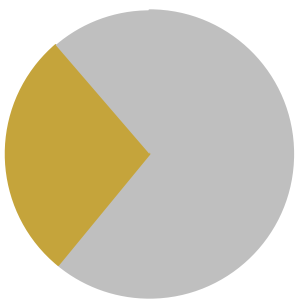
Small caps underperformed large caps.

Ranked Returns (%)



World Market Capitalization—International Developed

28%
International Developed Market
$16.2 trillion



Period Returns (%)

** Annualized*

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Growth	-8.14	-32.33	-29.44	-1.14	0.85	4.46
Large Cap	-9.20	-26.23	-23.91	-1.21	-0.39	3.62
Small Cap	-9.46	-31.07	-30.80	-1.27	-1.24	4.78
Value	-10.22	-20.10	-18.58	-1.97	-2.08	2.53

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Market segment (index representation) as follows: Large Cap (MSCI World ex USA Index), Small Cap (MSCI World ex USA Small Cap Index), Value (MSCI World ex USA Value Index), and Growth (MSCI World ex USA Growth Index). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI World ex USA IMI Index is used as the proxy for the International Developed market.

Emerging Markets Stocks

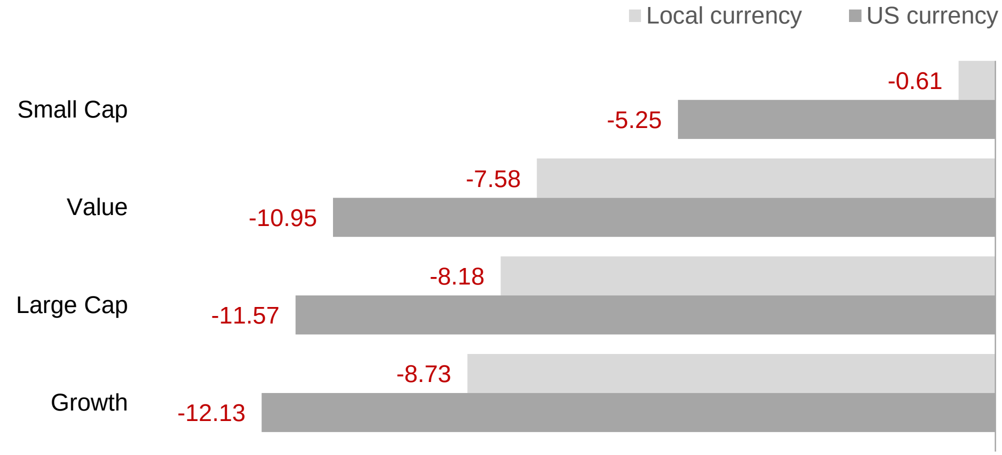
Third quarter 2022 index returns

Emerging markets posted negative returns for the quarter and underperformed both US and non-US developed markets.

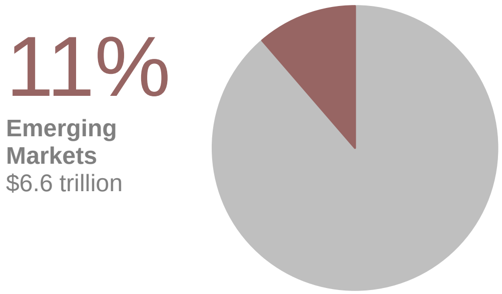
Value outperformed growth.

Small caps outperformed large caps.

Ranked Returns (%)



World Market Capitalization—Emerging Markets



Period Returns (%)

** Annualized*

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Small Cap	-5.25	-24.23	-23.23	5.54	1.25	2.91
Value	-10.95	-23.32	-23.63	-2.57	-2.13	-0.41
Large Cap	-11.57	-27.16	-28.11	-2.07	-1.81	1.05
Growth	-12.13	-30.65	-32.09	-1.75	-1.64	2.38

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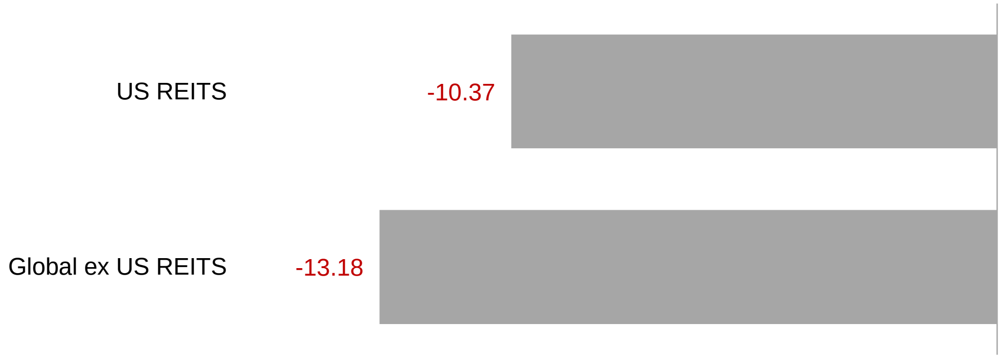
Market segment (index representation) as follows: Large Cap (MSCI Emerging Markets Index), Small Cap (MSCI Emerging Markets Small Cap Index), Value (MSCI Emerging Markets Value Index), and Growth (MSCI Emerging Markets Growth Index). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI Emerging Markets IMI Index used as the proxy for the emerging market portion of the market. MSCI data © MSCI 2022, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

Real Estate Investment Trusts (REITs)

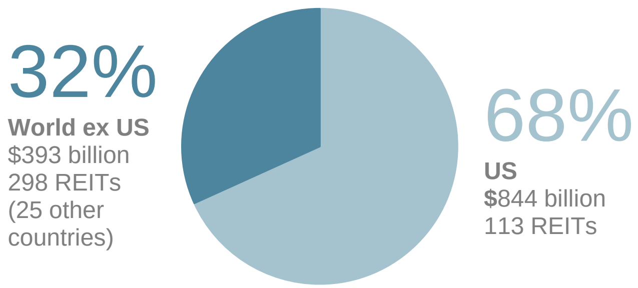
Third quarter 2022 index returns

US real estate investment trusts outperformed non-US REITs during the quarter.

Ranked Returns (%)



Total Value of REIT Stocks



Period Returns (%)

** Annualized*

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
US REITS	-10.37	-29.32	-17.15	-3.29	1.95	5.49
Global ex US REITS	-13.18	-30.48	-27.32	-9.72	-3.01	1.12

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio.
Number of REIT stocks and total value based on the two indices. All index returns are net of withholding tax on dividends. Total value of REIT stocks represented by Dow Jones US Select REIT Index and the S&P Global ex US REIT Index. Dow Jones US Select REIT Index used as proxy for the US market, and S&P Global ex US REIT Index used as proxy for the World ex US market. Dow Jones and S&P data © 2022 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved.

Fixed Income

Third quarter 2022 index returns

Interest rates increased across all bond maturities in the US Treasury market for the quarter.

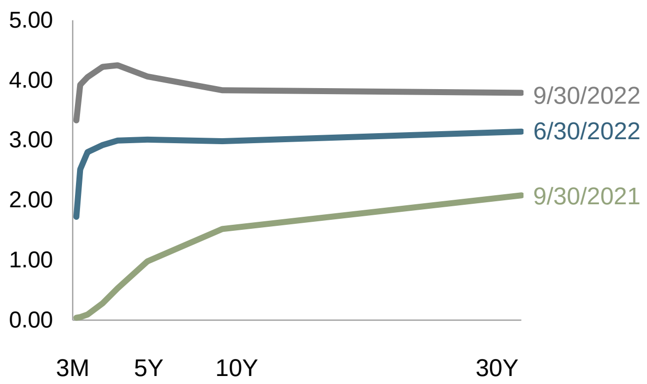
The yield on the 5-Year US Treasury Note increased 105 basis points (bps) to 4.06%. The yield on the 10-Year US Treasury Note increased 85 bps to 3.83%. The yield on the 30-Year US Treasury Bond increased 65 bps to 3.79%.

On the short end of the yield curve, the 1-Month US Treasury Bill yield increased 151 bps to 2.79%, while the 1-Year US Treasury Bill yield increased 125 bps to 4.05%. The yield on the 2-Year US Treasury Note increased 130 bps to 4.22%.

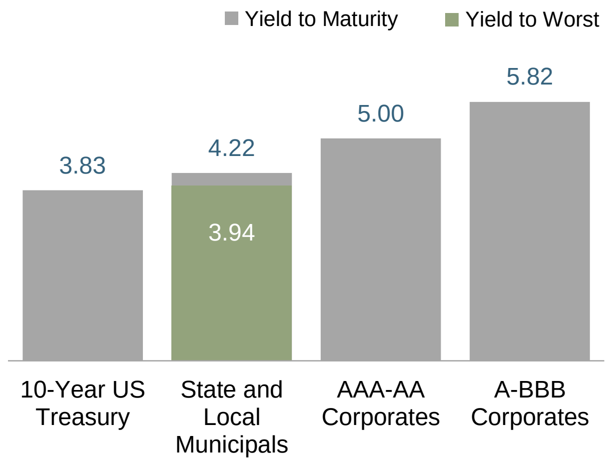
In terms of total returns, short-term corporate bonds returned -1.94% and intermediate-term corporate bonds returned -3.11%.[1]

The total return for short-term municipal bonds was -1.88% and -2.65% for intermediate-term municipal bonds. Within the municipal fixed income market, general obligation bonds outperformed revenue bonds, returning -3.30% vs. -3.62%, respectively.[2]

US Treasury Yield Curve (%)



Bond Yield Across Issuers (%)



Period Returns (%)

*Annualized

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
ICE BofA US 3-Month Treasury Bill Index	0.46	0.61	0.62	0.59	1.15	0.68
ICE BofA 1-Year US Treasury Note Index	-0.50	-1.77	-1.95	0.18	0.94	0.67
Bloomberg U.S. High Yield Corporate Bond Index	-0.65	-14.74	-14.14	-0.45	1.57	3.94
FTSE World Government Bond Index 1-5 Years (hedged to USD)	-1.79	-5.03	-5.53	-0.87	0.63	0.96
Bloomberg Municipal Bond Index	-3.46	-12.13	-11.50	-1.85	0.59	1.79
Bloomberg U.S. Aggregate Bond Index	-4.75	-14.61	-14.60	-3.26	-0.27	0.89
FTSE World Government Bond Index 1-5 Years	-4.77	-12.10	-13.34	-3.33	-1.83	-1.74
Bloomberg U.S. TIPS Index	-5.14	-13.61	-11.57	0.79	1.95	0.98
Bloomberg U.S. Government Bond Index Long	-9.60	-28.77	-26.60	-8.48	-1.62	0.60

1. Bloomberg US Corporate Bond Index.
2. Bloomberg Municipal Bond Index.

One basis point (bps) equals 0.01%. Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Yield curve data from Federal Reserve. State and local bonds, and the Yield to Worst are from the S&P National AMT-Free Municipal Bond Index. AAA-AA Corporates represent the ICE BofA US Corporates, AA-AAA rated. A-BBB Corporates represent the ICE BofA Corporates, BBB-A rated. Bloomberg data provided by Bloomberg. US long-term bonds, bills, inflation, and fixed income factor data © Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefield). FTSE fixed income indices © 2022 FTSE Fixed Income LLC, all rights reserved. ICE BofA index data © 2022 ICE Data Indices, LLC. S&P data © 2022 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. Bloomberg data provided by Bloomberg.

Global Fixed Income

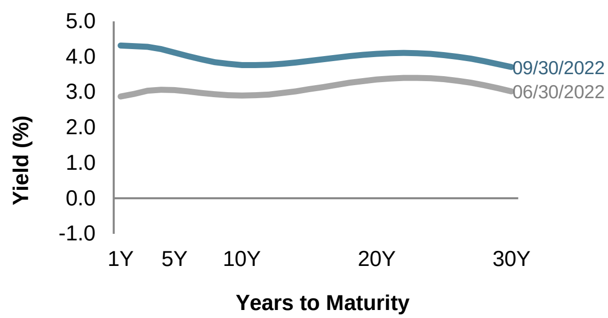
Third quarter 2022 yield curves

Interest rates generally increased within global developed markets for the quarter.

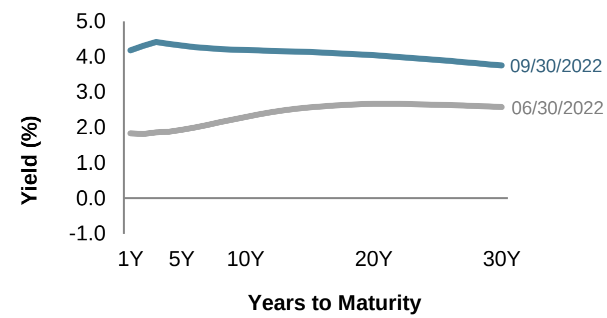
Realized term premiums were negative in global developed markets.

In Japan, short-term nominal interest rates remained negative. In Canada, the short-term segment of the yield curve inverted.

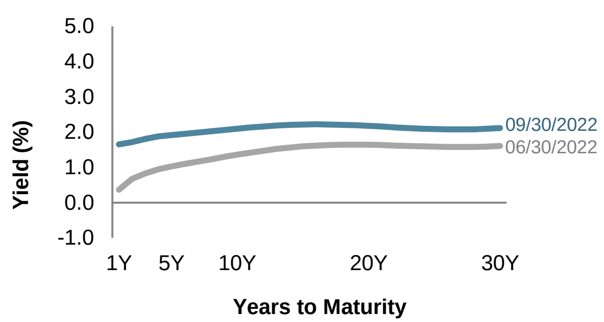
US



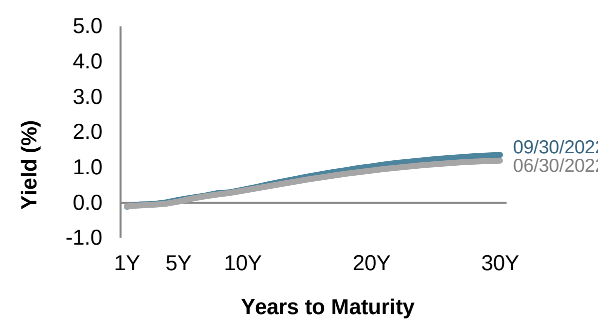
UK



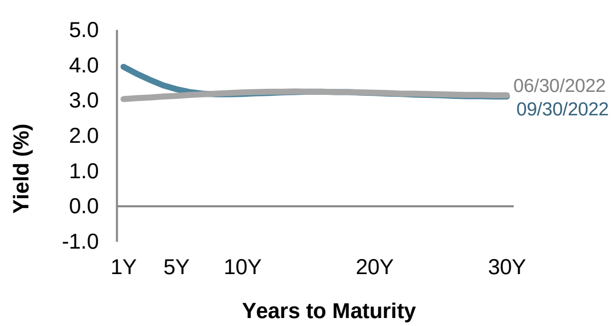
Germany



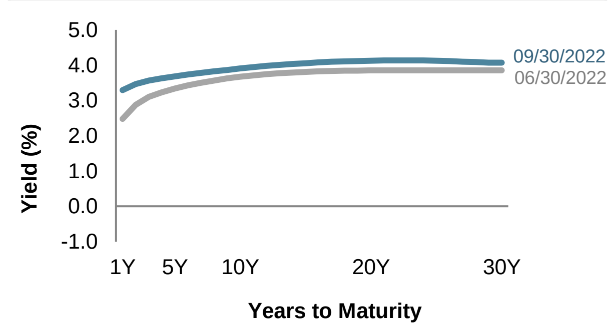
Japan



Canada



Australia



Changes in Yields (bps) since 6/30/2022

	1Y	5Y	10Y	20Y	30Y
US	143.7	106.4	86.3	72.8	68.6
UK	235.1	238.0	188.6	137.8	117.5
Germany	128.0	88.7	73.9	53.5	50.9
Japan	-1.1	4.4	2.6	12.1	15.7
Canada	90.6	18.6	-4.1	-0.6	-3.5
Australia	81.1	34.8	23.4	27.6	22.6

One basis point (bps) equals 0.01%. Source: ICE BofA government yield. ICE BofA index data © 2022 ICE Data Indices, LLC.

Commodities

Third quarter 2022 index returns

The Bloomberg Commodity Total Return Index returned -4.11% for the third quarter of 2022.

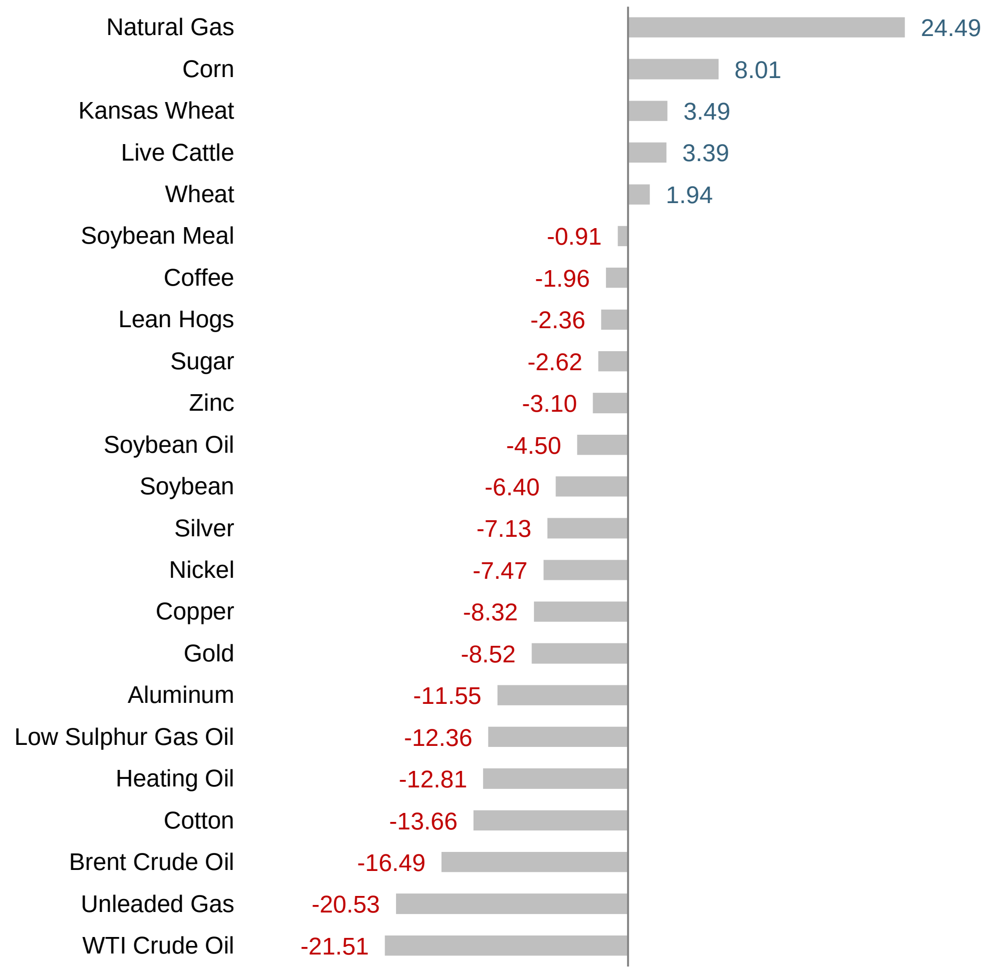
WTI Crude Oil and Unleaded Gas were the worst performers, returning -21.51% and -20.53% during the quarter, respectively. Natural Gas and Corn were the best performers, returning +24.49% and +8.01% during the quarter, respectively.

Period Returns (%)

** Annualized*

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Commodities	-4.11	13.57	11.80	13.45	6.96	-2.14

Ranked Returns (%)



Past performance is not a guarantee of future results. Index is not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio.
Commodities returns represent the return of the Bloomberg Commodity Total Return Index. Individual commodities are sub-index values of the Bloomberg Commodity Total Return Index. Data provided by Bloomberg.

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