

Q3

Economic & Market Review
Third Quarter 2022

Economic Review

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Signs of Slowdown in the US

The US GDP contracted at a 0.6% annualized rate in the second quarter, marking the second consecutive quarter of negative growth. However, an alternative measure of economic activity, gross domestic income (GDI), increased at a 1.4% rate. The two measures tend to converge over time. A recession may be looming but there are signs that segments of the economy remain strong.

The job market remains red hot as the **unemployment rate ticked down to 3.5%** from 3.7% in September, which will do little to deter the Fed from its rate-hiking campaign.

The ISM manufacturing index fell to 50.9 in September, from 52.8, meaning the sector is still in expansion territory, but activity slowed more than expected. The decline was driven by sharp drops in new orders and job growth. Price pressures and supply bottlenecks appear to be easing though.

Consumer spending, which accounts for about two-thirds of US GDP, rose 0.4% in August. However, wage growth appears to be slowing and consumers are tapping excess savings to offset the effects of stubbornly high inflation.

Mortgage rates rose to their highest levels since 2008 and home prices remain high as affordability deteriorated further this quarter. New home sales increased unexpectedly in August, but existing and pending home sales continued their months-long declines.

The Fed Continues to Hike, More Rate Increases Expected

The Federal Reserve raised interest rates by 0.75% to a range of 3.00% to 3.25% in their latest meeting, as Chairman Powell vowed to end high levels of inflation. Mr. Powell reiterated that while slower growth and a softening labor market are painful, failing to restore price stability would be much worse.

New Fed projections show the federal funds rate topping out at 4.4% by the end of the year, representing a 1% increase from the June forecast. GDP growth in 2022 is also expected to slow considerably to 0.2% from their June projection of 1.7%.

The Fed concedes that the risks of a recession are rising, with inflation proving to be stickier than expected. While inflation hasn't worsened this summer, it also hasn't shown any meaningful signs of improvement, as housing or shelter costs have risen. Higher mortgage rates, however, are starting to bend the housing market.

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Foreign Growth Outlook Worsens

The Eurozone recovery picked up in the second quarter, expanding **0.8%** on strong household spending. However, economic indicators are showing that the recovery will likely stall out in the third quarter, as the war in Ukraine is weighing heavily on the economy, sending food and energy prices soaring.

Despite a cloudier economic picture, **the European Central Bank (ECB) raised interest rates by a historic 0.75%** and hinted that more such hikes are expected in its mission to combat rising inflation. Like the Fed, the ECB is very serious about restoring price stability.

Japan's economy also strengthened in the second quarter, expanding 0.9% on strong household consumption. Japan's economy is expected to slow considerably in the third quarter, as central banks around the world continue to tighten monetary policy.

For now, **the Bank of Japan will buck the trend and remain accommodative.** However, inflation is beginning to spill over into Japan's economy in part due to higher commodity prices and a weaker yen.

China Weighed Down by Property Slump; India and Brazil Gain Momentum

Economic **growth in China was a tepid 0.4% in the second quarter.** Manufacturing output and retail sales showed signs of life in August, but a deepening decline in China's property market continues to weigh on growth expectations.

India's economy grew 13.5% year-over-year in the second quarter, fueled by manufacturing and spending on services. A slowdown is expected in the second half of the year, with higher interest rates cooling economic activity.

Brazil's economy grew 1.2% in the second quarter and the unemployment rate fell to a seven-year low of 9.1%. All eyes are on the upcoming presidential election runoff between far-right incumbent Jair Bolsonaro and former president Luiz Inácio Lula da Silva.

Market Review: Stocks

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Stocks Move Lower as the Fed Signals its Resolve and Geopolitical Tensions Simmer

Q3 was a proverbial roller coaster ride, with stocks rocketing higher in July as investors hoped the Fed might slow its tightening, **only to plummet in August and September** when it became abundantly clear that was wishful thinking. The Fed said its determined to do whatever it takes to rein in inflation, spooking investors already concerned with the economic and geopolitical ramifications of the ongoing war in Ukraine.

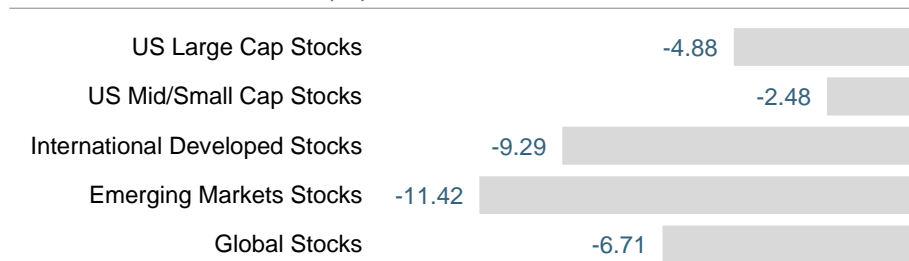
US large cap stocks declined 4.9% on the quarter, as measured by the S&P 500 stock index, rising 9.2% in July, only to fall 4.1% and 9.2% respectively in August and September. For the year-to-date, US large caps have now fallen 23.9%. In this environment, **market volatility continued to climb, with the VIX volatility index rising from 26 at the start of July to over 31 by quarter-end**. High volatility seems to be a key characteristic of this market, and we expect it will persist while the economic and geopolitical situation remains uncertain.

The Communication Services sector (which includes both telecoms and media stocks) **was among the hardest hit in Q3** (down 12.2%), **as was the Consumer Staples sector** (down 7.0%). The more resilient sectors proved to be Consumer Discretionary (up 3.9%) and Financials (down 3.1%). **Year-to-date, all sectors have declined** (excluding energy—see alts section), with the Utilities and Consumer Staples sectors faring the least badly, falling 6.5% and 11.8% in 2022.

Mid and small cap US stocks outperformed large caps on the quarter, falling 2.5%, but still lag large caps year-to-date (down 27.7%). Large caps have outperformed small caps throughout much of 2022, with investors seemingly opting for stability over growth as they weigh the probability of prolonged recession.

A strong US dollar—supported by higher US interest rates—**made a bad situation worse for international developed and emerging market stocks** in Q3, with the MSCI EAFE index dropping 9.3% (down 26.8% year-to-date) and the MSCI Emerging Markets index falling 11.4% (down 26.9% year-to-date). **The US dollar rose 5.4% in Q3 and is up a sizable 10.7% so far in 2022**.

Returns for the Quarter (%)



Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*
US Large Cap Stocks	-23.87	-15.47	8.16	9.24
US Mid/Small Cap Stocks	-27.72	-26.47	6.36	6.09
International Developed Stocks	-26.76	-24.75	-1.38	-0.36
Emerging Markets Stocks	-26.89	-27.80	-1.71	-1.44
Global Stocks	-25.34	-20.29	4.23	4.96

Past performance is not a guarantee of future results. Returns for periods longer than one year are annualized. 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 Large Cap (S&P 500 Index), US Mid/Small Cap (Wilshire 4500 Completion Index), International Developed (MSCI Europe Australasia Far East Index), Emerging Markets (MSCI Emerging Markets Index), and Global Stocks (MSCI All Country World Index). Growth of \$1,000 chart market segmentations as follows: US Stocks (Wilshire 5000 Index) and Foreign Stocks (All Country World Index ex US)

Market Review: Bonds

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Bonds Extend Historic Losses After a Short Summer Rally

The Fed stayed on the tightening path, pushing some US government bond yields above the 4% level. The Fed implemented two 75 basis points hikes, increasing its lending rate to a range of 3.00% to 3.25%. Long-term Treasuries (those with maturities of 10 years or more) were the hardest hit, while short-term Treasuries (those with maturities of 3 years or less) performed best. The 10-year US Treasury yield rose from 2.98% on June 30 to 3.83% in September. The 2-year US Treasury yield moved from 2.92% to 4.22% at quarter end.

Despite a short summer rebound, US bonds declined by 4.8% over the quarter, as measured by the Bloomberg US Aggregate Bond index, **extending the annual losses to 14.6%, bonds' worst performance in 70 years.** Bonds rallied early in the summer on hopes that price pressures were easing, but a tight labor market and another high CPI number in August dashed hopes that rate hikes would end soon.

Rising geopolitical tensions, sticky inflation, and heightened volatility fueled the selloff in September. With the fifth rate hike this year, the Fed stressed that curbing inflation will be given priority, even at the price of economic "pain." Higher interest rates push prices of existing bonds down. The United Kingdom's ill-received tax cut plan roiled the UK bond market and pushed the pound to near all-time lows versus the dollar.

High yield bonds stood their ground, declining only 0.7%

and significantly outperforming higher rated debt. Resilient corporate earnings tempered fears of high yield bond defaults. Treasury Inflation-Protected Securities (TIPS) lost 5.1% due to rising interest rate environment and a drop in the market's longer-term inflation forecast.

Rising yields also impacted the tax-exempt municipal bond market, resulting in a loss of 3.5% in Q3. Year-to-date, municipal bonds have declined 12.1%, outperforming most taxable bond indexes. This is reflective of the relatively strong financial condition of most state and local governments so far in 2022, despite signs of economic slowing.

Returns for the Quarter (%)



Period Returns (%)

Asset Class	*Annualized			
	YTD	1 Year	3 Years*	5 Years*
US Total Bond Market	-14.61	-14.60	-3.26	-0.27
Short-Term Investment Grade Bonds	-6.62	-7.29	-0.90	0.55
Long-Term Investment Grade Bonds	-28.94	-27.41	-7.35	-1.17
Municipal Bonds	-12.13	-11.50	-1.85	0.59
Mortgage-Backed Bonds	-13.66	-13.98	-3.67	-0.92
Treasury Inflation-Protected Bonds	-13.61	-11.57	0.79	1.95
Foreign Bonds	-26.83	-28.27	-9.89	-5.12

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Market Review: Alternatives

Third Quarter 2022

Alternatives Provide Little Refuge in Q3; Energy the Lone Bright Spot

Alternative investments failed to provide much diversification benefit in the third quarter, with nearly all asset classes declining. Returns on REITs and gold were particularly dismal, underperforming both stocks and bonds.

US energy stocks eked out a modest 2.4% gain in the third quarter, rising despite a drop in crude oil prices.

Gains were mostly due to skyrocketing natural gas prices, as Russia's war in Ukraine disrupted gas supplies. Record second-quarter earnings in the energy sector boosted year-to-date returns to 34.9%, a lone bright spot on the investment landscape.

Commodities failed to keep pace, falling 4.1% on the quarter, but still up 13.6% in 2022. **Softening commodity prices provide some hope inflationary pressures may be easing.**

An ugly year for real estate investment trusts (REITs) only got worse, with the sector down 10.0% in the third quarter, putting year-to-date losses at 28.3%. **REITs continued to struggle as interest rates moved sharply higher, creating headwinds for real estate valuations while increasing borrowing costs for REITs.**

A strong US dollar (up 5.4%) and rising interest rates weighed on the performance of gold, with the precious metal dropping 8.0% during the quarter. Year-to-date, gold has declined 8.1%. The strength of the US dollar makes gold relatively less attractive, as do higher yields on bonds, since gold does not generate income for investors.

Returns for the Quarter (%)









Period Returns (%)

Asset Class	* Annualized			
	YTD	1 Year	3 Years*	5 Years*
US Real Estate Investment Trusts	-28.26	-16.56	-2.00	2.93
US Energy Stocks	33.94	44.49	13.39	6.10
Commodities	13.57	11.80	13.45	6.96
Gold	-8.15	-4.08	4.80	5.91

Market Summary

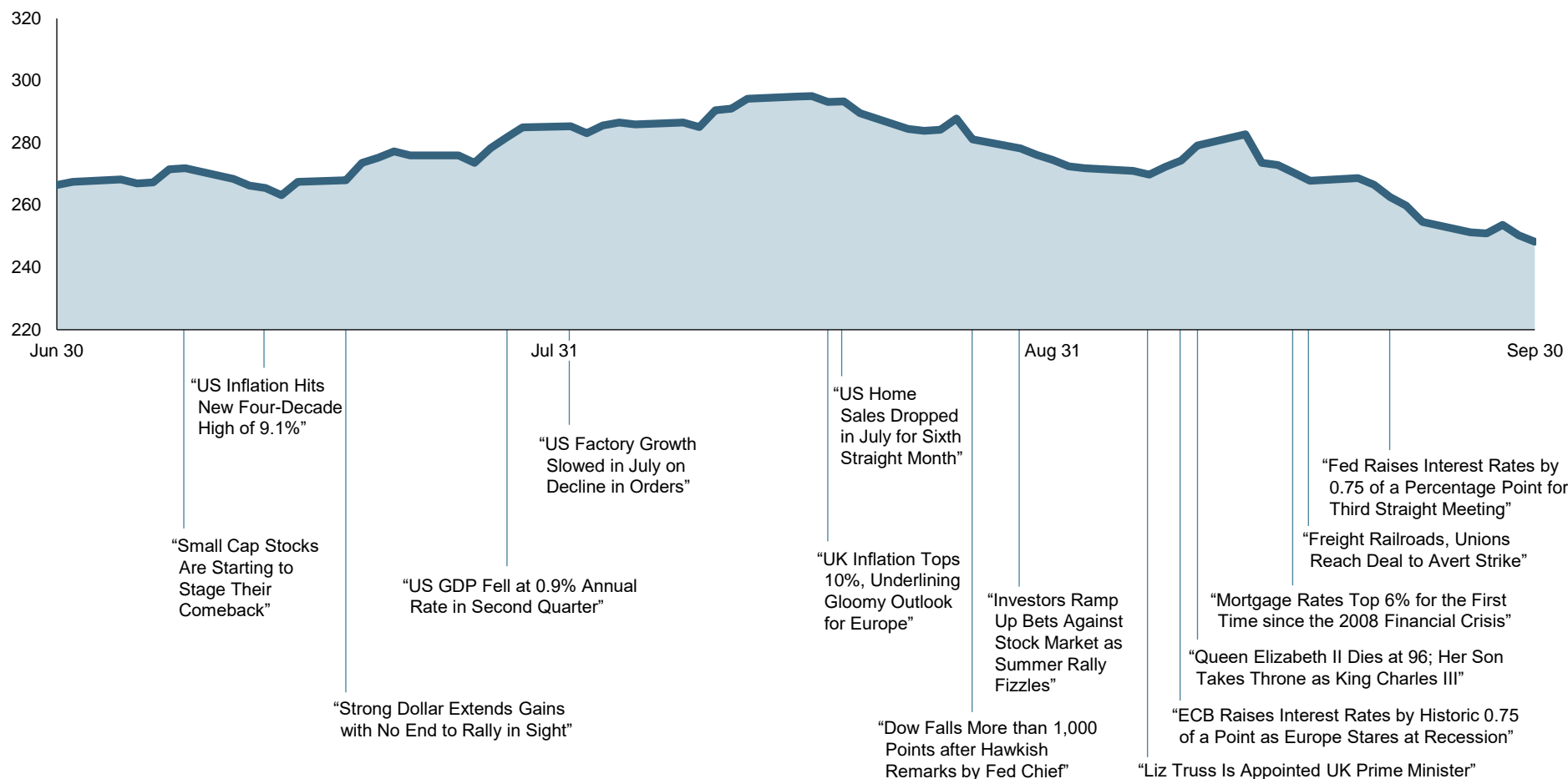
Index Returns

	US Large Cap	US Mid/Small Cap	International Developed	Emerging Markets	US Bond Market	US Dollar
Q3 2022	STOCKS				BONDS/DOLLAR	
	-4.88%	-2.48%	-9.29%	-11.42%	-4.75%	5.44%
						
Since Jan. 2001						
Avg. Quarterly Return	2.0%	2.7%	1.3%	2.3%	0.9%	0.5%
Best Quarter	20.5% Q2 2020	30.3% Q2 2020	25.8% Q2 2009	34.8% Q2 2009	4.6% Q3 2001	7.1% Q1 2020
Worst Quarter	-21.9% Q4 2008	-27.9% Q1 2020	-22.7% Q1 2020	-27.6% Q4 2008	-5.9% Q1 2022	-5.8% Q2 2009

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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.

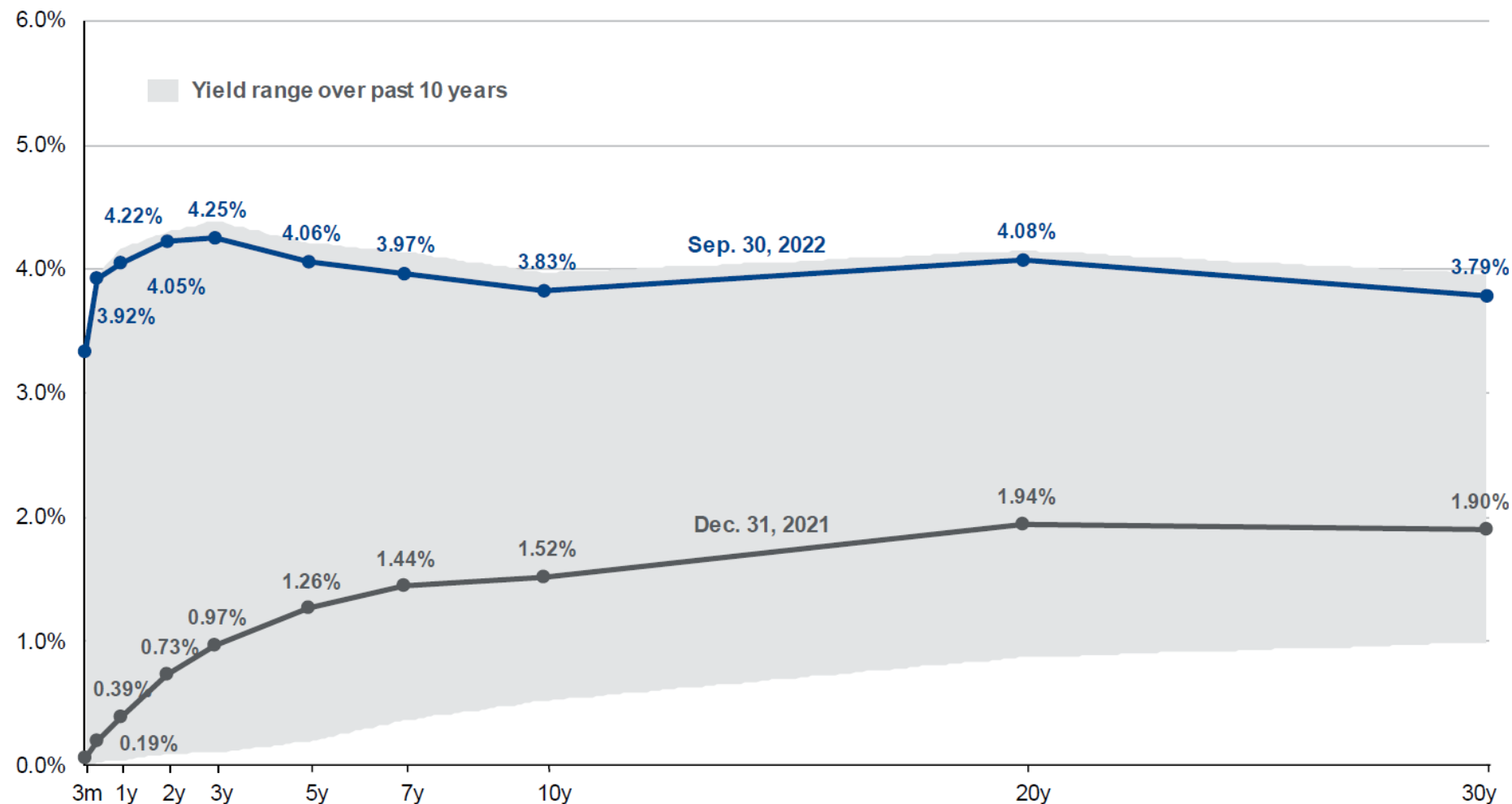
It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. **Past performance is not a guarantee of future results.**

Yield Curve

Third Quarter 2022

The chart below shows the US Treasury yield curve as of September 30, 2022, in blue, compared to the yield curve on December 31, 2021, in grey. The Fed's aggressive rate-hiking campaign this year caused short-term rates to rise most, flattening the yield curve and pushing rates to near the top of their 10-year range (light grey background).

U.S. Treasury yield curve



Source: J.P. Morgan Asset Management; Factset, Federal Reserve. *Guide to the Markets* – US Data are as of September 30, 2022.

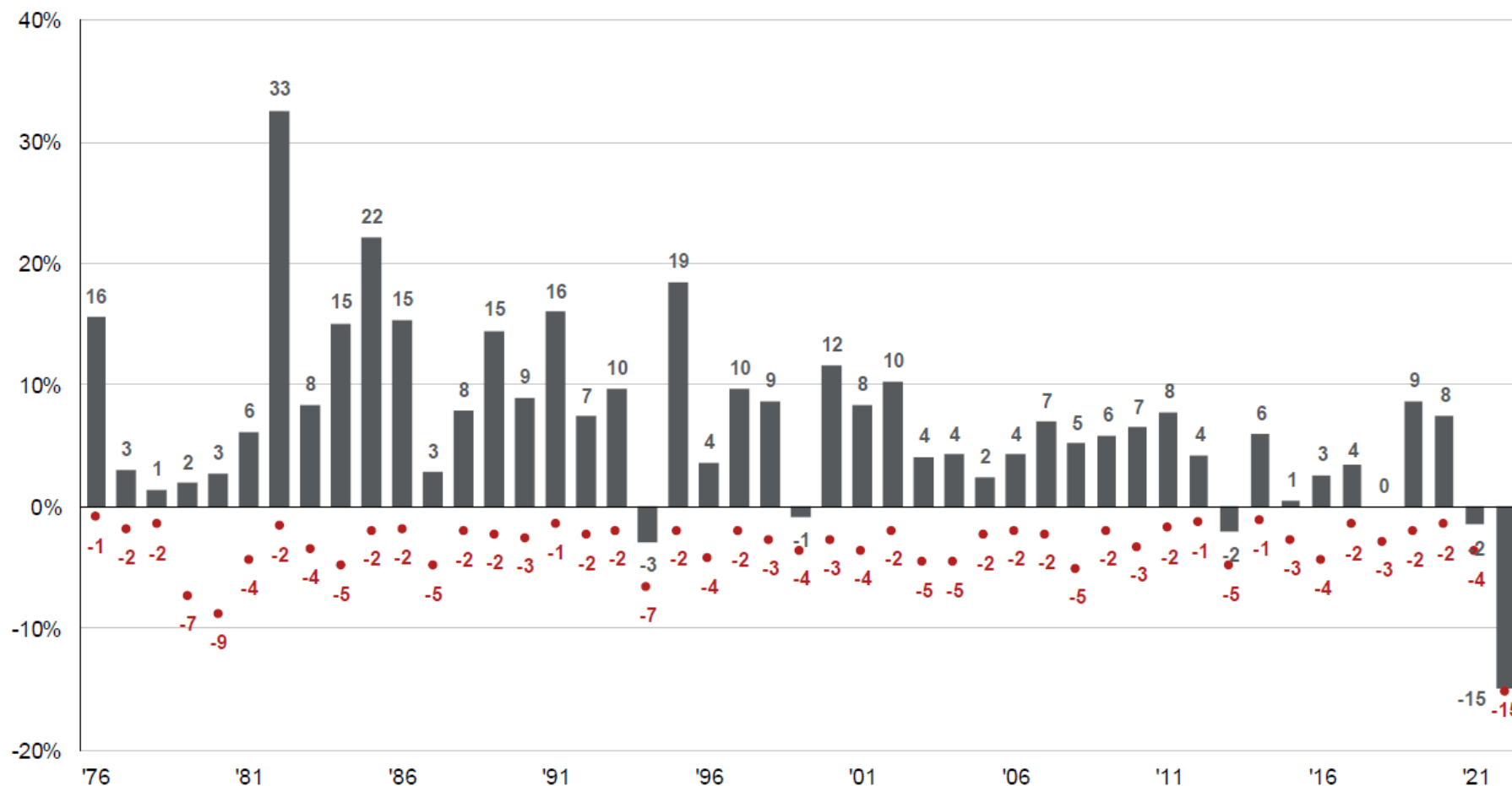
Bloomberg U.S. Aggregate

Third Quarter 2022

The chart below shows the annual total return of the Bloomberg US Aggregate Bond Index for each full year since 1976. The “Agg” is an index widely referenced when measuring US bond market performance. The red dots show the largest peak-to-trough decline in each year. With yields at 10-year highs, the index is seeing its worst performance in modern history (remember, prices of existing bonds fall when yields rise). On the bright side, higher yields increase the expected return on bonds going forward and also mean more income on new investments.

Bloomberg U.S. Aggregate intra-year declines vs. calendar year returns

Despite average intra-year drops of 3.1%, annual returns positive in 42 of 46 years



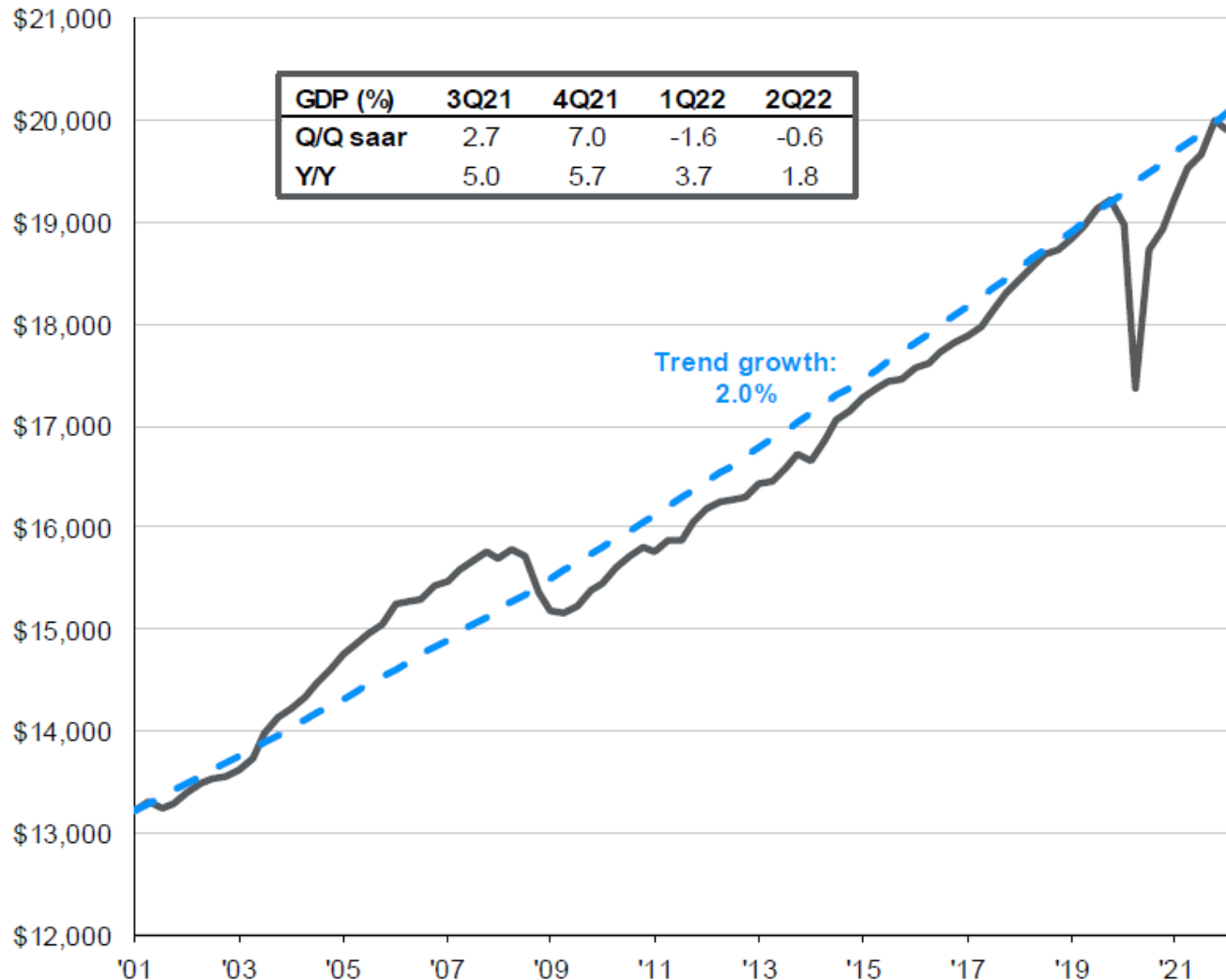
Source: Bloomberg, Factset, J.P. Morgan Asset Management. Returns are based on total return. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. Returns shown are calendar year returns from 1976 to 2021, over which time the average annual return was 7.1%. Returns from 1976 to 1989 are calculated on a monthly basis, daily data are used afterwards. *Guide to the Markets – US Data* are as of September 30, 2022.

Economic Growth

Third Quarter 2022

Real GDP

Billions of chained (2012) dollars, seasonally adjusted at annual rates



This chart shows real GDP growth in the US since 2001. Following a sharp decline at the outset of the pandemic, growth surged in 2021. Remarkably, it returned all the way to the 2% trend line; in other words, GDP is about where we would have expected it to be had the pandemic never happened. The fiscal stimulus that powered the pandemic reopening boom has faded and has been supplanted by high inflation and sharply rising interest rates, acting as drags on the economy.

Source: J.P. Morgan Asset Management. Trend growth is measured as the average annual growth rate from business cycle peak of 1Q01 to business cycle peak 4Q19. *Guide to the Markets – US Data* are as of September 30, 2022.