Q4

Economic & Market Review

Fourth Quarter 2022

Gould Asset Management®

Economic Review

Fourth Quarter 2022

Inflation Shows Early Signs of Moderating

The US economy grew at a 3.2% annualized rate in the third quarter, following a 0.6% contraction in the second quarter. Consumer and business spending remained strong despite rising interest rates and high inflation, but those headwinds may prove challenging in 2023.

The unemployment rate ticked down to its pre-pandemic low of 3.5% as employers added 223,000 jobs in December and 4.5 million total in 2022. In a welcome sign of cooling inflation pressures, wage growth moderated in December, bringing year-over-year gains to 4.6%.

US manufacturing contracted for a second straight month in December, continuing a months-long slowing trend. Prices paid for raw materials and other inputs fell for the ninth straight month to the lowest level since April 2020, which could further ease inflationary pressures.

Consumer spending, which accounts for more than two-thirds of the US economy, edged up slightly in November. The personal savings rate is at a rock-bottom level but consumers still have close to $1 trillion in excess cash savings accumulated from pandemic-related fiscal stimulus.

Fed to Slow Pace of Rate Hikes

The Federal Reserve raised its short-term benchmark federal funds rate by 1.25% in the fourth quarter. Higher rates are intended to slow the economy for the purpose of subduing persistent inflation and, as important, inflationary expectations. With the Fed's efforts yielding some early hopeful signs on the inflation front, Chairman Powell signaled that the pace of rate hikes will likely slow. This was evident in December's Fed meeting, when it raised rates by 0.50% compared to 0.75% in previous meetings.

Mr. Powell hinted that a more typical 0.25% increase could be in store in February, as the central bank would like to engineer a soft landing, slowing the economy enough to dampen inflation, but not so much as to push the economy into a severe recession.

New Fed projections show the federal funds rate peaking between 5.0% and 5.5% (up from its current 4.25%-4.50% level). 2023 GDP growth is now forecast at 0.5%, down from 1.2% in September's forecast.

Economic Review

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Europe Growth Slows; Japan's Economy Contracts

Eurozone growth slowed to 0.3% over the third quarter. The European Commission believes a modest recession began last quarter and will conclude by this spring. High inflation, the ongoing war in Ukraine, and tighter financial conditions are expected to weigh on economic growth.

The European Central Bank also met twice in the fourth quarter and raised its key interest rate by 1.25%. Like the Fed, the ECB implemented a 0.50% increase at its latest meeting, also slowing the pace of interest rate hikes. However, President Lagarde made it clear that this was not a pivot away from tightening and that the eurozone is not as far along as the US in its campaign to reduce inflation.

Japan's economy unexpectedly shrank in the third quarter, contracting 0.2% amid a weak yen and global inflationary pressures. Also weighing on the economy was another Covid surge in the summer that dented private consumption.

The Bank of Japan (BOJ) will continue to remain accommodative despite inflation running at a four-decade high (3.8%). BOJ officials expect inflation to fall back to its long-term target of 2% by the end of 2023.

Emerging Markets Face Tough Road in 2023

China's economy expanded 3.9% year-over-year in the third quarter. Growth is expected to slow in the fourth quarter due in part to the country's teetering real estate sector, which has struggled with defaults and stalled projects following a clampdown on excessive leverage. Additionally, the surge in infections across China due to the government's abrupt loosening of its strict Covid control measures could weigh on economic activity.

India posted year-over-year growth of 6.3% in the third quarter and is poised to be the fastest growing major economy in the year ahead. Domestic demand remains strong, but a slowing global economy and higher interest rates could dampen the outlook.

Brazil's economy slowed by more than expected in the third quarter, growing just 0.4%. Brazil's central bank raised its benchmark interest rate to near six-year highs (13.75%) in an effort to combat double-digit inflation. The higher borrowing costs weighed on household spending and will be a significant challenge for newly elected president Lula.

Market Review: Stocks

Fourth Quarter 2022

Gould Asset Management

Stocks Pare Losses in Q4, Capping Rocky Year for Markets

US stocks rallied in the fourth quarter amid signs of moderating inflation and hope that the Federal Reserve's pace of rate hikes might soon slow. US large cap stocks (the S&P 500 index) rose 7.6% in Q4 but it was not nearly enough to make up for earlier losses in 2022, a year that saw high inflation, sharply rising interest rates, and war in Ukraine. Accordingly, US large caps declined 18.1% in 2022, the fourth worst year for US stocks since the 1940s.

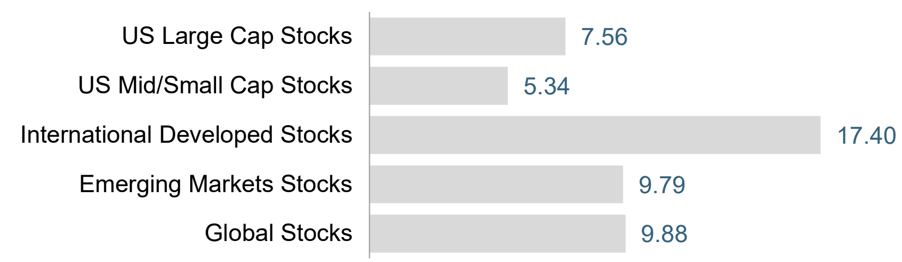
The Industrial and Materials sectors performed best in the fourth quarter, rising 19.2% and 15.1% respectively in Q4, while **Utilities stocks took the top prize for the year,** rising 1.6% in 2022. Aside from the Energy sector (see discussion in our alternatives section), Utilities were the only sector to post a positive return in 2022, illustrating what a challenging year it was for US stocks. The Consumer Discretionary and Technology sectors were particularly hard hit, falling 36.2% and 27.6% on the year.

Mid and small cap US stocks (the Wilshire 4500 index) **did even worse than large caps,** rising 5.3% in Q4 but still falling 23.9% for the full year. Markets believe slowing economic growth or outright recession will disproportionately impact mid and small cap companies.

After a rough first three quarters of the year, international stocks rebounded strongly in Q4, with the MSCI EAFE index jumping 17.4%, as the US dollar weakened and inflation pressures abated. For the year, international developed stocks fell 14.0%—outperforming US stocks in a calendar year for the first time since 2017. **Emerging markets stocks also had a strong quarter,** with the MSCI Emerging Markets index rising 9.8%, cutting year-to-date losses to 19.7%. Chinese stocks (down over 20% in 2022) weighed on returns, as they comprise about one-third of emerging market indexes.

Market volatility, as measured by the VIX volatility index, **subsided in the fourth quarter,** with the index dropping from 31 at the start of October to 21 by year-end as markets rallied. A reading of 21 is close to the long-term average for VIX, suggesting market volatility may be returning to normal after the tumult of 2022.

Returns for the Quarter (%)



Period Returns (%)

** Annualized*

Asset Class	1 Year	3 Years*	5 Years*
US Large Cap Stocks	-18.11	7.66	9.42
US Mid/Small Cap Stocks	-23.86	5.25	6.20
International Developed Stocks	-14.01	1.34	2.03
Emerging Markets Stocks	-19.74	-2.34	-1.03
Global Stocks	-17.96	4.49	5.75

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

Fourth Quarter 2022

Bonds Post Worst Year on Record Despite Small Bounce in Q4

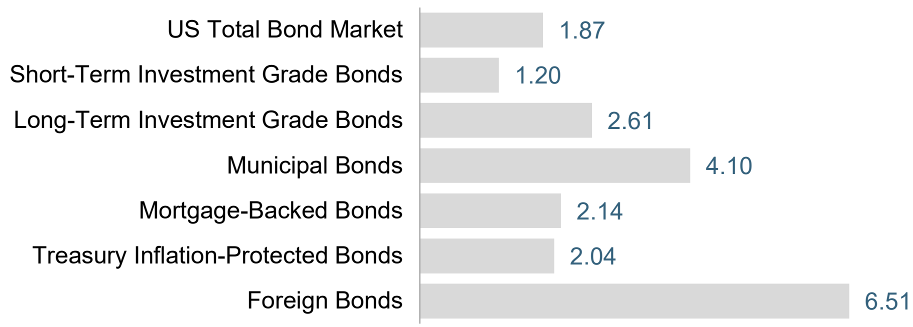
US bonds rose in the fourth quarter but couldn’t make up for sizable earlier losses, resulting in by far the worst year ever for the asset class. The remarkably poor performance in bonds was attributable to the highest inflation in more than 40 years and a Federal Reserve determined to rein it in through aggressive rate hikes. With a total of seven hikes in 2022, the Fed brought its lending rate from 0% to 4.25% - 4.50% over the course of the year. In this environment, the 2-year US Treasury yield moved from 0.73% to 4.41% over the course of 2022 (up from 4.22% at the end of Q3), while the 10-year US Treasury yield increased from 1.52% to 3.88% at year-end (up slightly from 3.83% at the end of Q3).

Calendar year losses for US bonds totaled 13.0% (Bloomberg US Aggregate Bond index) **even after a 1.9% gain in the fourth quarter.** Last year’s debacle brings one silver lining for investors, which is higher yields on both new bond purchases and reinvestment of bond interest and principal. The average yield on the Bloomberg Aggregate index climbed from 1.7% to 4.7% over the year.

High yield bonds (up 4.2%) were among the best performing bond sectors in the fourth quarter and generally fared better for the year (down 11.2%) than higher quality debt. Cash and short-term bonds were king in 2022, helping to moderate losses. Treasury Inflation-Protected Securities (TIPS) modestly outperformed conventional Treasurys but were not immune to the adverse impact of rising interest rates.

The tax-exempt municipal bond market experienced its worst rout since the 1980s, losing 8.5% over the year. However, favorable supply conditions (a reduction in new bond issuance) contributed to outperformance versus Treasurys. The asset class returned 4.1% in Q4.

Returns for the Quarter (%)



Period Returns (%)

**Annualized*

Asset Class	1 Year	3 Years*	5 Years*
US Total Bond Market	-13.01	-2.71	0.02
Short-Term Investment Grade Bonds	-5.50	-0.67	0.85
Long-Term Investment Grade Bonds	-27.09	-6.20	-1.21
Municipal Bonds	-8.53	-0.77	1.25
Mortgage-Backed Bonds	-11.81	-3.22	-0.53
Treasury Inflation-Protected Bonds	-11.85	1.21	2.11
Foreign Bonds	-22.07	-7.96	-4.21

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Market Review: Alternatives

Fourth Quarter 2022

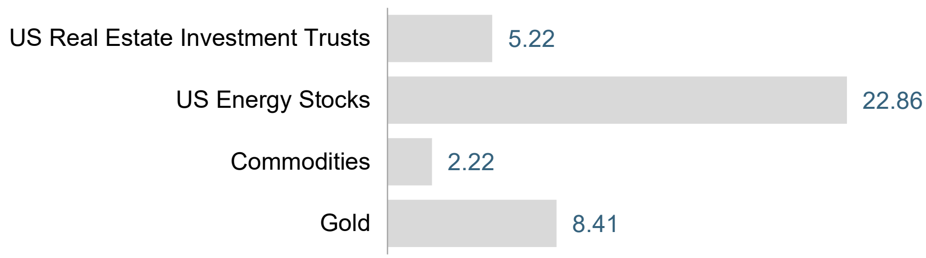
Alternative Asset Performance Diverges Widely as Energy and Commodities Close Strong Year, Gold Rebounds, and REITs Languish

It seems to be feast or famine with US Energy stocks. After some truly dismal years in 2018 and 2020, the sector posted a second straight year of stellar returns, rising 22.9% in the fourth quarter on record Q4 earnings, putting year-to-date returns at 65.7%. This comes on the back of 2021, where the US energy sector rose 54.6%, making it **one of the best performing asset classes for two years running thanks to higher oil and gas prices.** Commodities fared well, too, rising 2.2% in Q4 and 16.1% for the year. Industrial Metals stocks were the best-performing segment on the quarter, benefiting from sharply higher prices for nickel, lead, and copper.

Real Estate Investment Trusts (REITs) had a year to forget in 2022, falling 24.5% despite a 5.2% gain in Q4. 2021's lofty 43.1% gain seems a world away for the interest rate sensitive asset class, which couldn't find its footing in 2022 **amid multiple rate hikes, cooling real estate markets, and markedly higher borrowing costs.**

Gold rallied 8.4% in the fourth quarter, trimming earlier losses on the year and allowing it to finish 2022 nearly flat (down 0.4%). Real (inflation-adjusted) rates of return for the precious metal were soundly negative, however, given the high rate of inflation in 2022, a disappointing result for an asset class that is looked to as a long-term store of value. We continue to believe small allocations to gold can deliver returns that are less correlated to stock and bond returns, enhancing portfolio diversification.

Returns for the Quarter (%)



Period Returns (%)

** Annualized*

Asset Class	1 Year	3 Years*	5 Years*
US Real Estate Investment Trusts	-24.51	-0.06	3.69
US Energy Stocks	64.56	19.24	9.25
Commodities	16.09	12.65	6.44
Gold	-0.43	6.77	7.41

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Market Summary

Index Returns

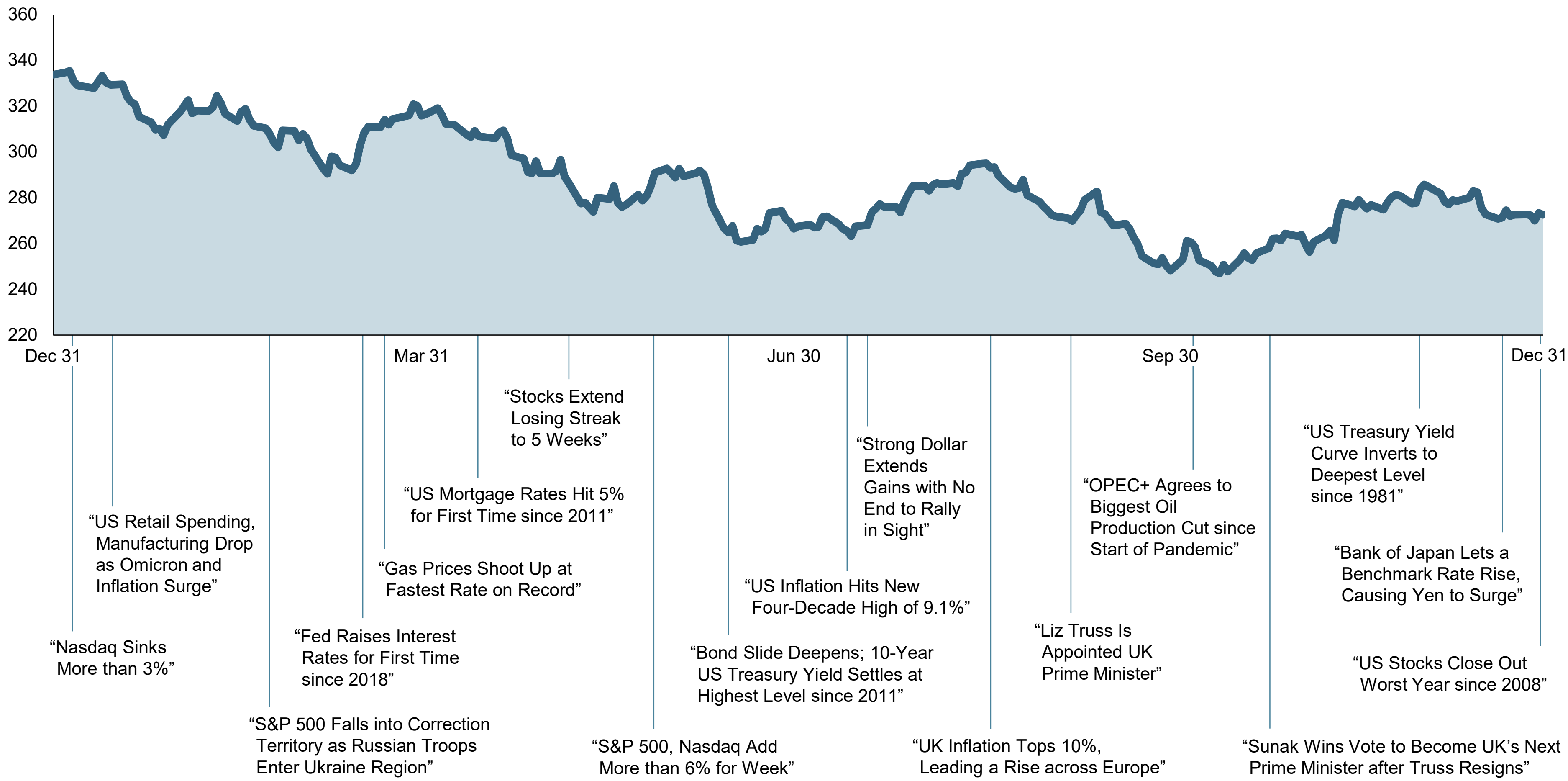
Q4 2022	US Large Cap	US Mid/Small Cap	International Developed	Emerging Markets	US Bond Market	US Dollar
	STOCKS				BONDS/DOLLAR	
	7.56%	**5.34%**	**17.40%**	**9.79%**	**1.87%**	**-4.80%**

Since Jan. 2001	US Large Cap	US Mid/Small Cap	International Developed	Emerging Markets	US Bond Market	US Dollar
Avg. Quarterly Return	2.1%	2.7%	1.5%	2.4%	1.0%	0.4%
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**

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 div.]), Emerging Markets (MSCI Emerging Markets Index [net div.]), Global Real Estate (S&P Global REIT Index [net div.]), US Bond Market (Bloomberg US Aggregate Bond Index), and Global Bond Market ex US (Bloomberg Global Aggregate ex-USD Bond Index [hedged to USD]). S&P data

World Stock Market Performance

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



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 2023, all rights reserved. Index level based at 100 starting January 2001.
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.**

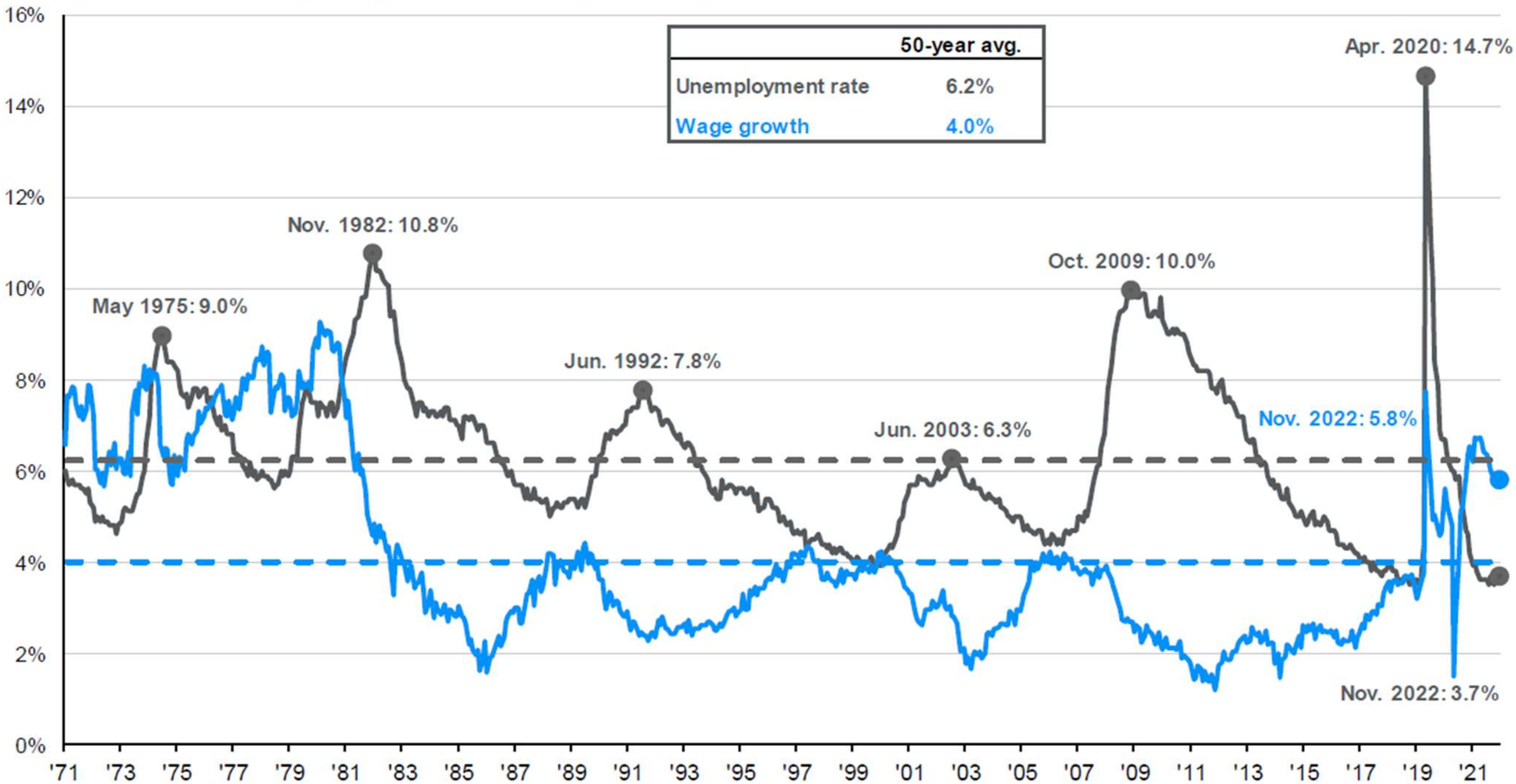
Unemployment and Wages

Fourth Quarter 2022

In the chart below, the black line represents the unemployment rate, and the blue line shows the rate of wage growth over time. The dashed horizontal lines show the long-term average of each. As expected, these indicators exhibit an inverse relationship. Note the moderation in wage growth from its 2022 high, a sign that Federal Reserve policies are beginning to cool the economy somewhat. In an ideal scenario for the Fed, a so-called “soft landing,” wage growth would continue to trend downward without too much of an upward spike in unemployment.

Civilian unemployment rate and year-over-year wage growth

Private production and non-supervisory workers, seasonally adjusted, percent



Source: BLS, FactSet. J.P. Morgan Asset Management.
Guide to the Markets – US Data are as of December 31, 2022.

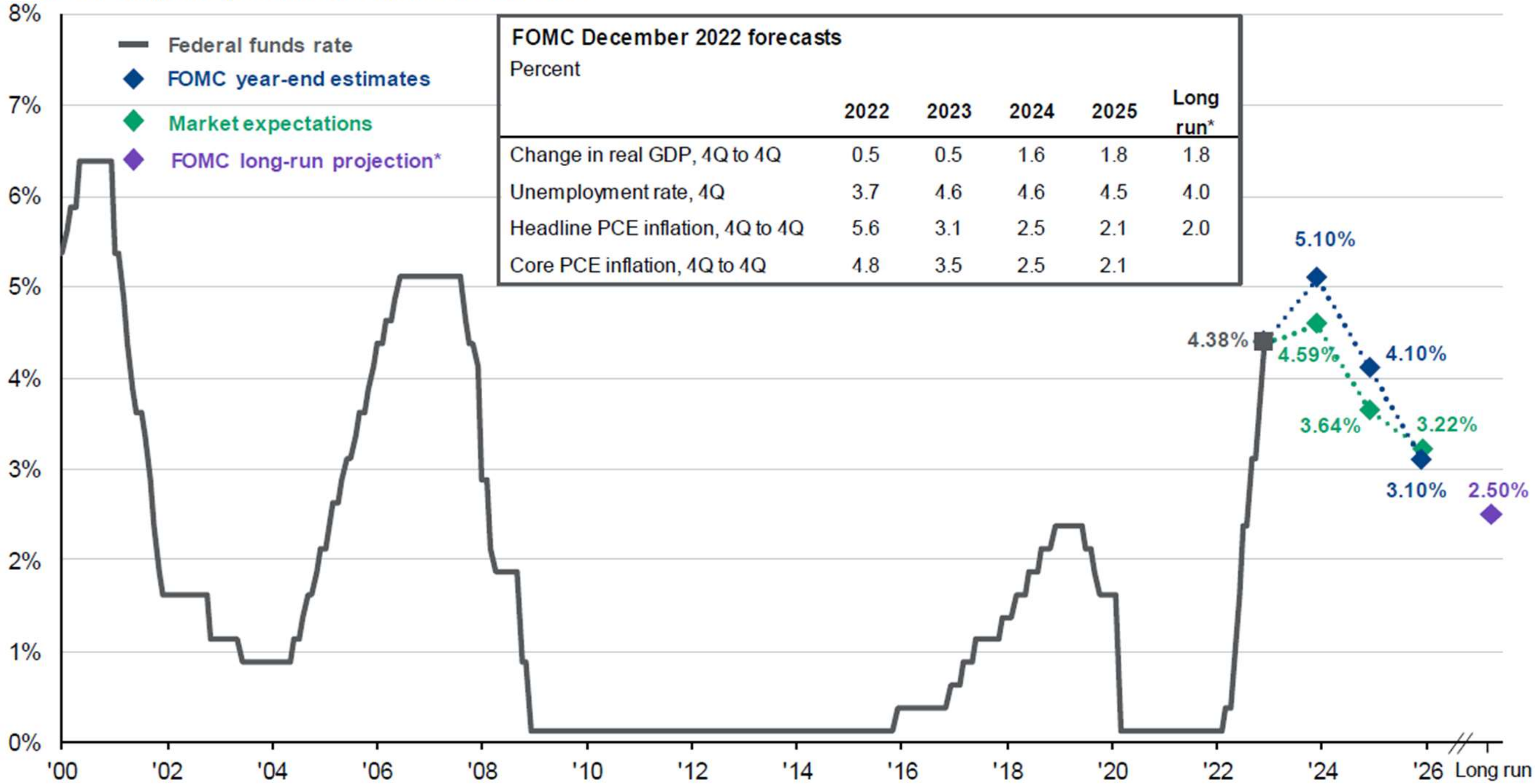
The Fed and Interest Rates

Fourth Quarter 2022

The chart below shows the Federal Reserve's benchmark short-term federal funds rate over time. In an effort to bring down persistent high inflation by slowing the economy, the Fed raised the rate from close to zero to a current rate of about 4.4% while gradually reducing the size of its balance sheet. The blue dots show that Fed officials expect the fed funds rate to climb to over 5% in 2023 before reversing course, while the market (green dots) expects a quicker pivot to lower rates, perhaps reflecting a less sunny view on the timing and/or depth of a recession.

Federal funds rate expectations

FOMC and market expectations for the federal funds rate



FOMC December 2022 forecasts

Percent

	2022	2023	2024	2025	Long run*
Change in real GDP, 4Q to 4Q	0.5	0.5	1.6	1.8	1.8
Unemployment rate, 4Q	3.7	4.6	4.6	4.5	4.0
Headline PCE inflation, 4Q to 4Q	5.6	3.1	2.5	2.1	2.0
Core PCE inflation, 4Q to 4Q	4.8	3.5	2.5	2.1	

Source: Bloomberg, Factset, J.P. Morgan Asset Management.
Guide to the Markets – US Data are as of December 31, 2022.

Periodic Table

Fourth Quarter 2022

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The Periodic Table of Returns shows annual returns over the last 20 years for various asset classes, ranked best to worst (top to bottom). Last year was a markedly bad year for investments (the only year where every asset class was in the red) but notice how different asset classes take turns in the spotlight. The balanced portfolio (in white) represents a diversified portfolio, which gives the long-term investor steadier relative performance. Never at the extremes, instead it sits reliably in the middle over time.

Annual Total Returns % of Selected Indices (2003-2022) In Order of Performance

Performance	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Best	EMERG MKTS 56.28%	REIT 31.48%	EMERG MKTS 34.54%	REIT 35.92%	EMERG MKTS 39.82%	US BONDS 5.24%	EMERG MKTS 79.02%	REIT 28.48%	GOLD 8.93%	EMERG MKTS 18.63%
	US MD/SM CAP 43.95%	EMERG MKTS 25.95%	GOLD 17.77%	EMERG MKTS 32.55%	GOLD 31.92%	INTL BONDS 4.40%	US MD/SM CAP 36.99%	US MD/SM CAP 28.43%	REIT 8.69%	US MD/SM CAP 17.99%
	INTL STKS 39.16%	INTL STKS 20.70%	INTL STKS 14.02%	INTL STKS 28.86%	INTL STKS 11.63%	GOLD 4.32%	INTL STKS 32.46%	GOLD 29.24%	US BONDS 7.84%	INTL STKS 17.90%
	REIT 36.74%	US MD/SM CAP 18.01%	REIT 12.13%	GOLD 23.20%	INTL BONDS 11.03%	BALANCED -23.07%	REIT 28.61%	EMERG MKTS 19.20%	INTL BONDS 4.36%	REIT 17.77%
	US LG CAP 28.68%	INTL BONDS 12.55%	US MD/SM CAP 10.03%	US LG CAP 15.80%	BALANCED 9.86%	US LG CAP -37.00%	US LG CAP 26.46%	US LG CAP 15.06%	US LG CAP 2.11%	US LG CAP 16.00%
	BALANCED 25.22%	BALANCED 12.17%	BALANCED 6.95%	US MD/SM CAP 15.28%	US BONDS 6.97%	REIT -37.97%	GOLD 25.04%	BALANCED 13.14%	BALANCED 0.85%	BALANCED 12.26%
	GOLD 19.89%	US LG CAP 10.88%	US LG CAP 4.91%	BALANCED 15.00%	US LG CAP 5.49%	US MD/SM CAP -39.03%	BALANCED 23.88%	INTL STKS 8.21%	US MD/SM CAP -4.10%	GOLD 8.26%
	INTL BONDS 19.36%	US BONDS 4.34%	US BONDS 2.43%	INTL BONDS 8.16%	US MD/SM CAP 5.39%	INTL STKS -43.06%	INTL BONDS 7.53%	US BONDS 6.54%	INTL STKS -11.73%	US BONDS 4.21%
Worst	US BONDS 4.10%	GOLD 4.65%	INTL BONDS -8.65%	US BONDS 4.33%	REIT -16.82%	EMERG MKTS -53.18%	US BONDS 5.93%	INTL BONDS 4.95%	EMERG MKTS -18.17%	INTL BONDS 4.09%

Performance	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Best	US MD/SM CAP 38.39%	US LG CAP 13.69%	REIT 2.52%	US MD/SM CAP 18.54%	EMERG MKTS 37.75%	US BONDS 0.01%	US LG CAP 31.49%	US MD/SM CAP 31.99%	REIT 43.06%	GOLD -0.43%
	US LG CAP 32.39%	REIT 30.38%	US LG CAP 1.38%	US LG CAP 11.96%	INTL STKS 25.62%	GOLD -1.15%	US MD/SM CAP 28.06%	GOLD 24.17%	US LG CAP 28.71%	US BONDS -13.01%
	INTL STKS 23.29%	US MD/SM CAP 7.97%	US BONDS 0.55%	EMERG MKTS 11.60%	US LG CAP 21.83%	INTL BONDS -2.15%	REIT 25.84%	EMERG MKTS 18.69%	US MD/SM CAP 16.03%	INTL STKS -14.01%
	BALANCED 15.52%	BALANCED 6.83%	INTL STKS -0.39%	GOLD 9.35%	US MD/SM CAP 17.84%	US LG CAP -4.38%	INTL STKS 22.66%	US LG CAP 18.40%	BALANCED 12.42%	BALANCED -16.50%
	REIT 2.47%	US BONDS 5.97%	BALANCED -1.10%	REIT 8.60%	BALANCED 16.30%	REIT -4.57%	BALANCED 20.73%	BALANCED 14.15%	INTL STKS 11.78%	US LG CAP -18.11%
	US BONDS -2.02%	GOLD 0.12%	US MD/SM CAP -2.65%	BALANCED 7.69%	GOLD 11.85%	BALANCED -5.02%	EMERG MKTS 18.90%	INTL BONDS 10.11%	US BONDS -1.54%	INTL BONDS -18.70%
	EMERG MKTS -2.27%	EMERG MKTS -1.82%	INTL BONDS -6.02%	US BONDS 2.65%	INTL BONDS 10.51%	US MD/SM CAP -9.53%	GOLD 18.83%	INTL STKS 8.28%	EMERG MKTS -2.22%	EMERG MKTS -19.74%
	INTL BONDS -3.08%	INTL BONDS -3.08%	GOLD -12.11%	INTL STKS 1.51%	REIT 5.07%	INTL STKS -13.36%	US BONDS 8.72%	US BONDS 7.51%	GOLD -3.75%	US MD/SM CAP -23.86%
Worst	GOLD -27.33%	INTL STKS -4.48%	EMERG MKTS -14.60%	INTL BONDS 1.49%	US BONDS 3.54%	EMERG MKTS -14.25%	INTL BONDS 5.09%	REIT -7.57%	INTL BONDS -7.05%	REIT -24.51%

- S&P 500 TR USD Index (US LG CAP)
- Wilshire 4500 Completion TR Index (US MD/SM CAP)
- Barclays US Aggregate Bond TR Index (US BONDS)
- Barclays Global Aggregate Ex USD TR Bond Index (INTL BONDS)
- Balanced Portfolio Index (BALANCED)
- MSCI EAFE GR USD Index (INTL STKS)
- MSCI Emerging Markets GR USD Index (EMERG MKTS)
- LBMA Closing PM Gold Price (GOLD)
- MSCI REIT GR USD Index (REIT)