

Q4

Economic & Market Review
Fourth Quarter 2021

Economic Review

Fourth Quarter 2021

Growth Moderates in the US, Labor Market “very tight”

The US economy grew at an annualized rate of 2.3% in the third quarter. Several factors restrained GDP growth in the summer, including the Delta variant surge, continued auto shortages amid global supply chain disruptions, and Hurricane Ida in August, which damaged US offshore oil and gas production.

Consumer spending, which accounts for two-thirds of US GDP, was strong in the October and November readings. **Consumer confidence improved further in December**, with more buyers planning to purchase a house and other big-ticket items like household appliances and motor vehicles in the next six months.

Employment gains fell short of expectations in December amid worker shortages, but the unemployment rate fell to 3.9% even as more workers entered the labor market. Average wages increased solidly and **minutes from the December Fed meeting indicate its members view the labor market as “very tight.”** Despite adding a record 6.4 million jobs last year, employment is still 3.6 million jobs below its February 2020 peak.

US manufacturing activity continued to expand in December but at a slower pace than in recent months. Demand remains strong and factories continue to be hampered by supply chain problems, but there are signs that input price increases are cooling, factory employment is increasing, and supply chain challenges are easing.

The Fed: Retiring the Word “Transitory”

The Fed intensified its battle against inflation during its latest policy meeting. Fed Chair Jerome Powell signaled its bond-buying program would end sooner than expected and penciled in three quarter-percentage-point rate hikes in 2022.

Market participants are expecting the initial rate hike in March when the Fed concludes its asset purchasing program. Fed minutes also show that discussions are underway on how and when to reduce its nearly \$9 trillion balance sheet, which would represent further monetary tightening.

Some Fed officials advocate a faster shrinking of the Fed’s balance sheet than what occurred in 2017, citing a stronger economy and higher inflation.

Updated Fed projections show a tighter labor market and continued elevated inflation. Core inflation (CPI excluding food and energy) is expected to remain somewhat above longer-term targets through 2022.

Economic Review

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Europe Continues Its Recovery While Japan Stalls

The eurozone economy expanded 2.2% over the third quarter on strong household consumption as vaccination rates improved in tandem with loosening social restrictions. However, rising prices and supply-chain bottlenecks are clouding Europe's outlook for the next several quarters.

The European Central Bank (ECB) is taking a more cautious approach than the Fed as its economy is still below its pre-pandemic output levels. The ECB indicated it would start scaling down its bond purchases in 2022 but provided no firm guidance on when the program would end. It also signaled keeping policy rates unchanged in 2022 despite rising inflation.

Japan's economy shrank 0.9% in the third quarter on supply chain disruptions and sluggish household consumption. The slowdown is expected to push Prime Minister Kishida to pursue more fiscal stimulus measures as Japan's economy seeks to return to its pre-pandemic levels.

Unlike the rest of the developed world, **inflation remains near zero in Japan**, potentially affording Japan more latitude to introduce new spending measures.

Emerging Markets At Different Points in Covid Recovery

China's economy grew slower than expected in the third quarter as factories were hit with power outages and Covid outbreaks. Fourth quarter growth appears to be muted as well, hurt by a slowing real estate sector. China's central government loosened some property restrictions and eased monetary policy in response.

India showed robust growth in the third quarter, boosted by vaccinations and government spending. Household spending is strong, but concerns remain about the impact of Omicron and supply chain disruptions.

Brazil's GDP contracted slightly (down 0.1%) in the third quarter and entered a technical recession following the second quarter's 0.4% decline. Inflation surged into double digits, eroding consumers' purchasing power and forcing steep interest rate hikes from the central bank.

Market Review: Stocks

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Stocks Surge Despite Inflation and Omicron Concerns, Capping Another Strong Year

US stocks finished the year on a strong note despite rising Omicron cases and the highest US inflation rate since 1982. The market was not to be deterred, with US large cap stocks, as measured by the S&P 500 stock index, rising 11.0% in the fourth quarter, finishing 2021 with a remarkable 28.7% gain. This is the third straight year of strong US stock performance.

A market-cap-weighted indexed approach proved best in 2021, with a small number of large cap stocks accounting for a significant portion of US stock gains. This was evidenced by five stocks—Meta (Facebook), Apple, Amazon, Microsoft, and Google—accounting for nearly a third of the S&P 500’s 28.7% gain.

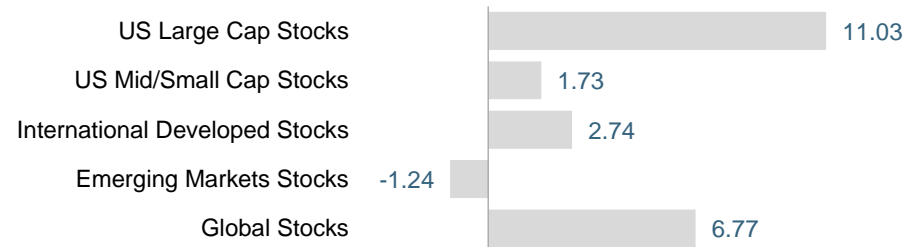
Mid and small cap US stocks, as measured by the Wilshire 4500 index, **were unable to keep pace with large caps,** rising a modest 1.7% in Q4 and 16.0% on the year. The significant underperformance on the quarter was attributed to fears that slowing economic growth and rising Omicron concerns would disproportionately impact smaller firms.

Technology stocks, led by strong gains from chipmakers, **were the best performing sector in the fourth quarter,** rising 16.6% in Q4 and 34.7% on the year. **Financials took the top spot on the year**—rising 35.0% in 2021—as higher interest rates increase lending profits. Utilities and Consumer Staples trailed the pack, but even they rose 17.7% and 17.3%, respectively, in 2021.

International stocks were unable to keep pace with US equities, lagging for both the quarter and the year, as international economic growth remains slow and the US dollar strong (up 3.3% in 2021). The MSCI EAFE index rose 2.7% in the fourth quarter, finishing the year up 11.8%, or less than half the return of US stocks.

Emerging markets stocks were weaker still, declining 1.2% in Q4 and 2.2% for the year. The causes are myriad, ranging from political instability (Chile), to geopolitical tensions (Russia), to inflation concerns (Brazil), and currency volatility (Turkey), not to mention the impact of Covid. Valuations look attractive, but that’s been the case for many years. Patience is counseled.

Returns for the Quarter (%)



Period Returns (%)

Asset Class	* Annualized		
	1 Year	3 Years*	5 Years*
US Large Cap Stocks	28.71	26.07	18.47
US Mid/Small Cap Stocks	16.03	25.17	15.89
International Developed Stocks	11.78	14.08	10.07
Emerging Markets Stocks	-2.22	11.33	10.26
Global Stocks	19.04	20.97	14.97

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 2021

Bonds Flat in Q4, Finish 2021 Modestly Lower, as Inflation and a Hawkish Fed Set the Tone for 2022

US Bonds were stuck in neutral in the fourth quarter, as the Fed took a more hawkish tone, signaling reduced bond purchases (QE) along with interest rate hikes. This caused the yield curve to flatten as short-term rates rose, with 2-year US Treasury rates rising from 0.28% on September 30 to 0.73% at year-end. 10-year rates were unchanged at 1.52%, while the 30-year Treasury rate dipped from 2.08% to 1.90%.

The Bloomberg Barclays Aggregate Bond index, a measure of the performance of the US bond market, was flat on the quarter (up 0.01%), while declining 1.5% on the year. Real (inflation-adjusted) returns were soundly negative however, with US inflation (as measured by the Consumer Price Index) running at its highest level in over 40 years.

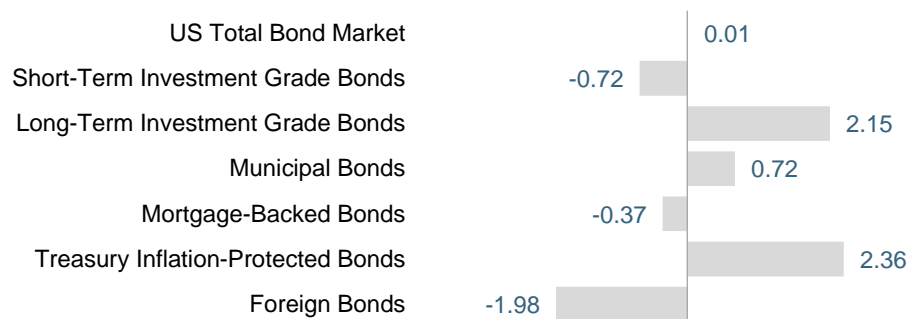
The down year for bonds comes after two strong years in 2019 and 2020 for the asset class. The Fed seems intent on raising short-term rates, but the impact that has on longer term rates and bond performance generally remains to be seen.

High-yield bonds and Treasury Inflation-Protected Securities (TIPS) continued to perform best in 2022. US high yield bonds gained 0.7% in Q4 (5.3% for the year) as their rate differential versus government bonds continued to narrow. TIPS gained 2.4% (6.0% for the year), supported by investors seeking a

hedge against inflation. Long bonds also did well in Q4, rising 2.2%, as 30-year rates fell, though over the entire calendar year they declined 2.5%.

Tax-exempt municipal bonds posted gains, returning 0.7% for the quarter and finishing 2021 1.5% higher. Munis benefited from the passage of the bipartisan infrastructure bill and outperformed comparable US government bonds.

Returns for the Quarter (%)



Period Returns (%)

Asset Class	*Annualized		
	1 Year	3 Years*	5 Years*
US Total Bond Market	-1.54	4.79	3.57
Short-Term Investment Grade Bonds	-0.97	2.88	2.25
Long-Term Investment Grade Bonds	-2.52	10.62	7.39
Municipal Bonds	1.52	4.73	4.17
Mortgage-Backed Bonds	-1.04	3.01	2.50
Treasury Inflation-Protected Bonds	5.96	8.44	5.34
Foreign Bonds	-9.68	1.76	2.68

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Market Review: Alternatives

Fourth Quarter 2021

Alternative Assets Performance Mostly Positive, as REITs, Energy, and Commodities Close Strong Year; Gold Loses Some Luster

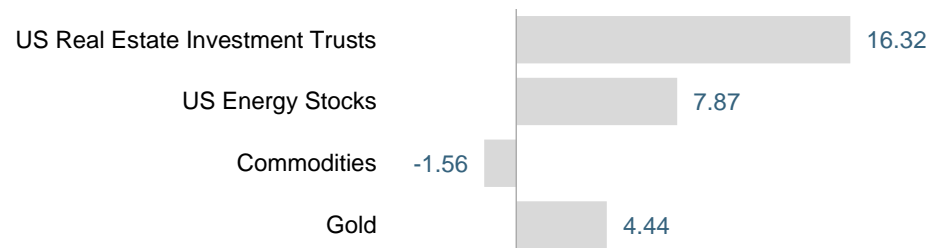
After some truly dismal years in 2018 and 2020, US energy stocks were the best performing asset class in 2021, rising 8.0% in the fourth quarter and 54.6% for the full year. However, it's important to keep those gains in context, given the steep losses in previous years. Commodities didn't fare as well, falling 1.6% in Q4, though they also posted stellar calendar year returns in 2021, rising 27.1%. Industrial metals were the best performing segment on the quarter, with strong gains in the prices of zinc, nickel, lead, and copper.

Real estate investment trusts (REITs) were the second-best performing asset class in 2021, rising 16.3% for the quarter and 43.1% on the year. Strong demand from e-commerce companies is driving growth in industrial warehousing, among other segments of the buoyant real estate market. REITs, which pay out a portion of their return in income, generally are adversely affected by rising long-term interest rates, so this should be an interesting asset class to watch in 2022 as we see the path rates take.

Gold posted a positive return of 4.4% in the fourth quarter but still declined on the year, falling 3.8%. Despite progress in Q4, the precious metal continues to languish, posting negative inflation-adjusted rates of return for the quarter and the year. Historically, gold has done well in inflationary environments

since it offers a unique store of value not tied to global monetary policy. Its poor showing in 2021 indicates other factors are also affecting demand for the precious metal.

Returns for the Quarter (%)



Period Returns (%)







Asset Class	1 Year	3 Years*	5 Years*
US Real Estate Investment Trusts	43.06	18.50	10.78
US Energy Stocks	53.43	4.92	-1.28
Commodities	27.11	9.86	3.66
Gold	-3.75	13.25	10.31

* Annualized

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Market Summary

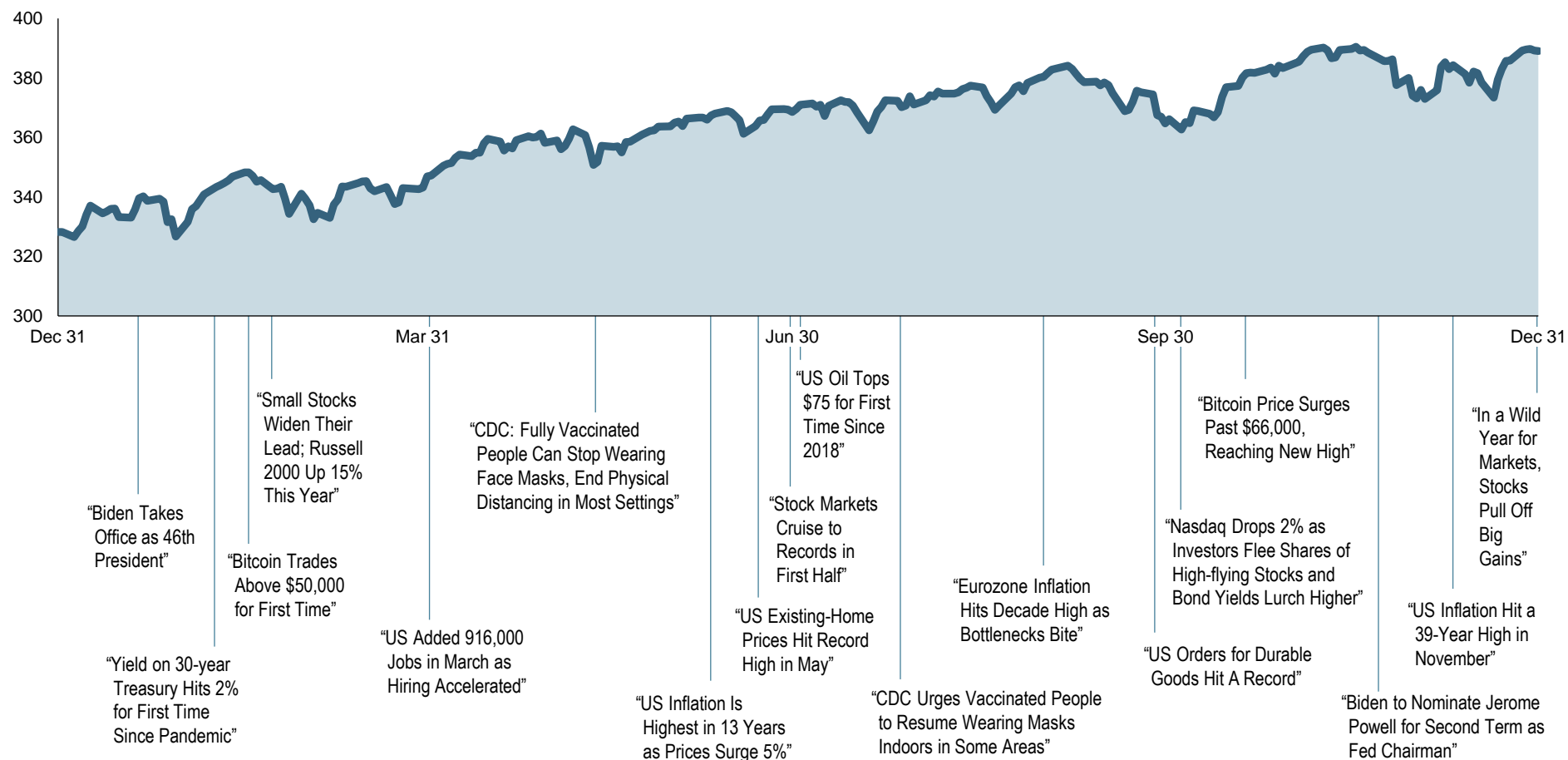
Index Returns

	US Large Cap	US Mid/Small Cap	International Developed	Emerging Markets	US Bond Market	US Dollar
Q4 2021	STOCKS				BONDS/DOLLAR	
	11.03%	1.73%	2.74%	-1.24%	0.01%	0.56%
						
Since Jan. 2001						
Avg. Quarterly Return	2.4%	3.1%	1.7%	2.7%	1.2%	0.3%
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	-3.4% Q1 2021	-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 © 2022 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. MSCI data © MSCI 2022, all rights reserved. Bloomberg data provided by Bloomberg.

World Stock Market Performance

MSCI All Country World Index with selected headlines from 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 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.**

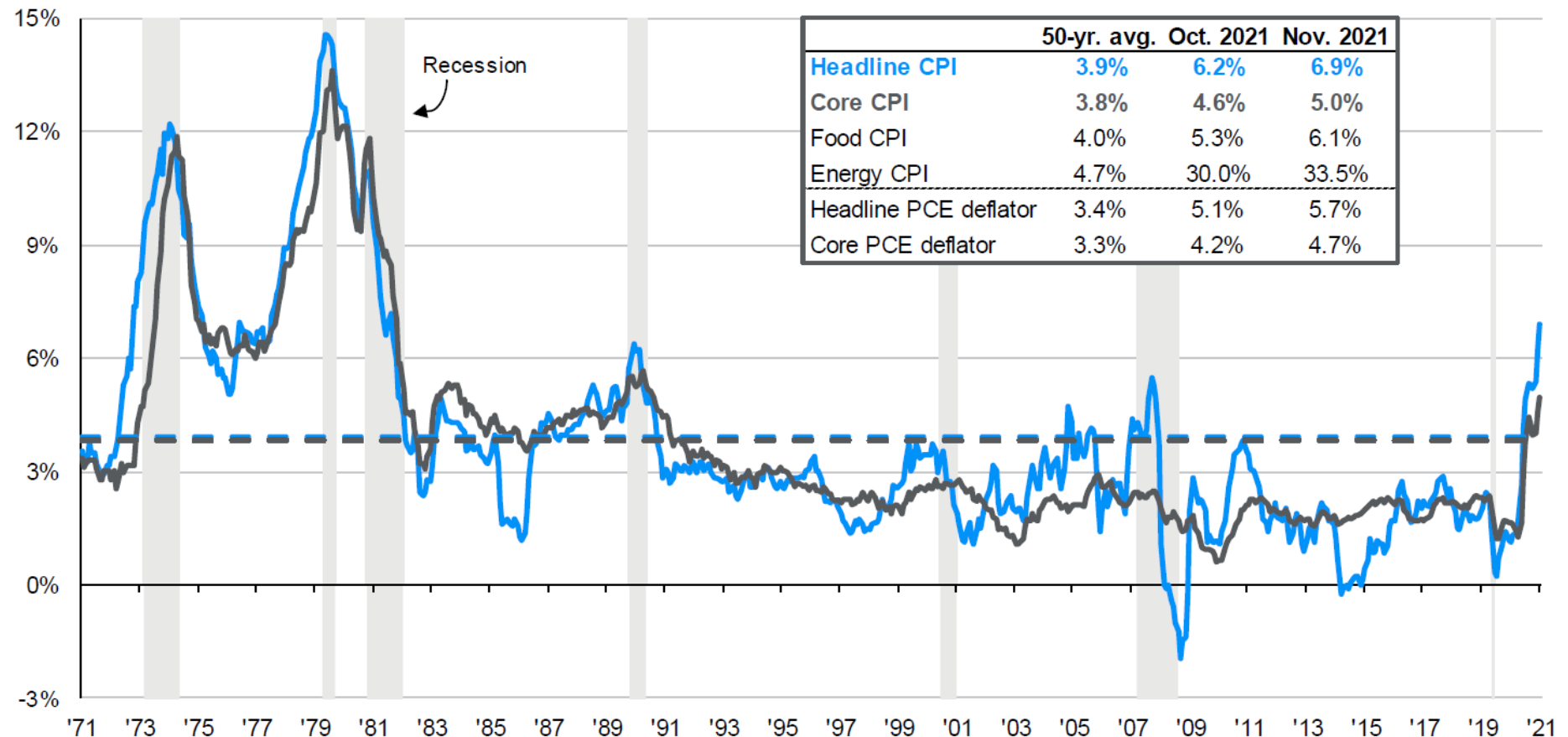
Inflation

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The chart below shows two measures of inflation – headline and core Consumer Price Index (CPI), which jumped to the highest level in almost 40 years. Price increases first emerged in consumer sectors following the ease of pandemic restrictions earlier in the year, expanding into the more volatile food and energy sectors in the fourth quarter. Global supply chain bottlenecks and labor shortages have stoked inflation. The surge in Food and Energy CPI levels suggests a potentially more persistent inflation than originally thought. The Fed is scaling back its asset purchases and will likely raise short-term interest rates in 2022 to fight inflation.

CPI and core CPI

% change vs. prior year, seasonally adjusted



Source: BLS, Factset, J.P. Morgan Asset Management.

CPI used is CPI-U and values shown are % change vs. one year ago. CoreCPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations. *Guide to the Market – U.S.* Data are as of December 31, 2021.

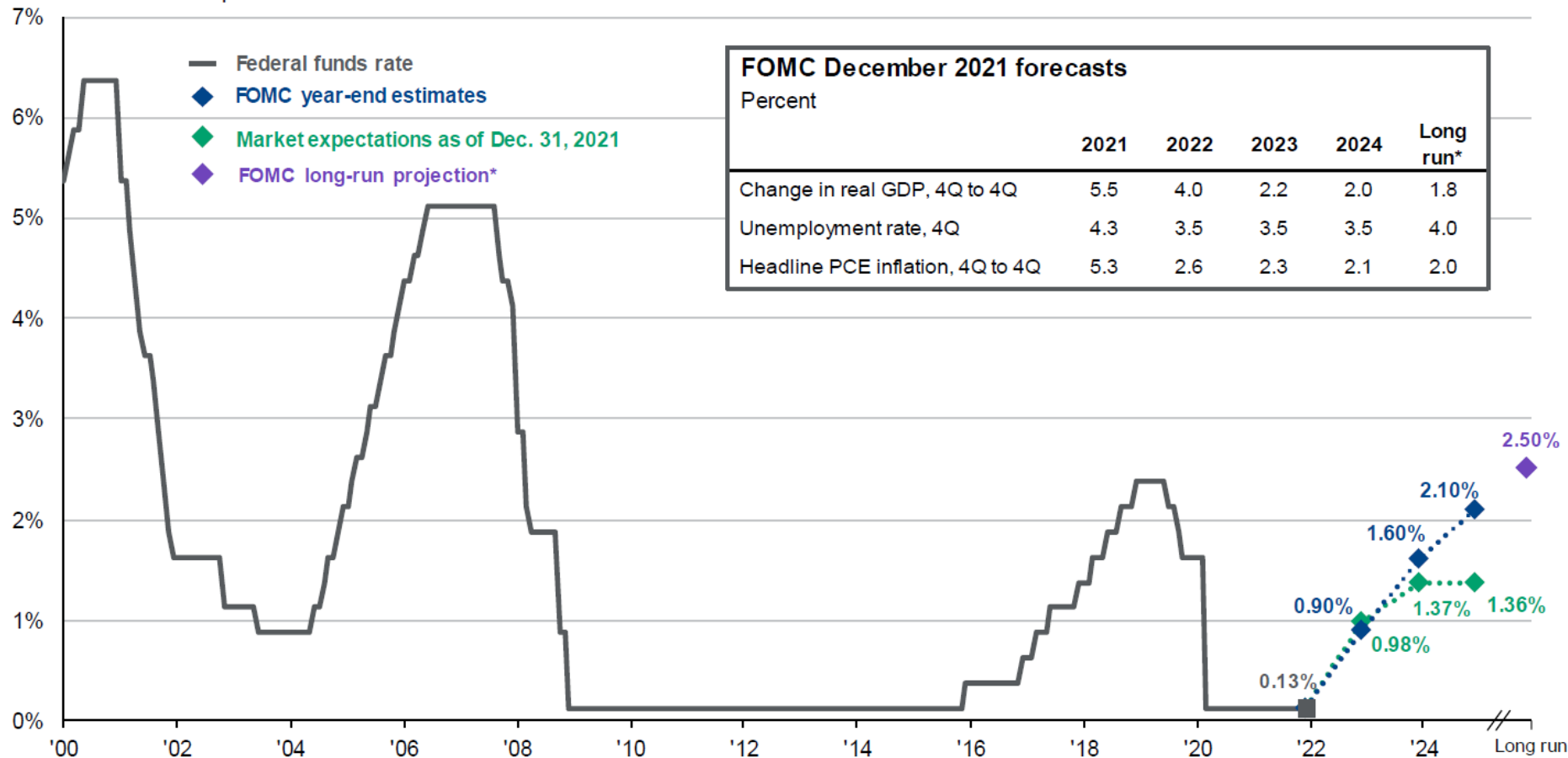
The Fed and Interest Rates

Fourth Quarter 2021

This chart shows the Federal Reserve's benchmark short-term federal funds rate over time. The Fed has kept this rate near zero since the beginning of the pandemic in order to support the US economy. With the economy and labor market strengthening and inflation spiking recently, the Fed plans to accelerate the tapering of its asset purchases and has signaled up to three rate hikes in 2022. The chart shows that the market also expects three rate hikes this year.

Federal funds rate expectations

FOMC and market expectations for the federal funds rate



Source: Bloomberg, Factset, Federal Reserve, J.P. Morgan Asset Management.

Market expectations are based off the USD Overnight Index Forward Swap rates. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge over the next five to six years in absences of further shocks and under appropriate monetary policy. Forecasts, projections, and other forward-looking statements based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. *Guide to the Markets – U.S.* Data are as of December 31, 2021.

Periodic Table of Returns

Fourth Quarter 2021



The Periodic Table of Returns shows annual returns over the last 20 years for various asset classes, ranked best to worst (top to bottom). 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 (2002-2021) In Order of Performance

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Best	GOLD 25.57%	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 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%
	INTL BONDS 22.37%	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%	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 10.25%	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%	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%
	REIT 3.64%	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%	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%
	EMERG MKTS -6.00%	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%	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%
	BALANCED -6.06%	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%	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 STKS -15.66%	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%	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%
	US MD/SM CAP -17.85%	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%	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%
Worst	US LG CAP -22.1%	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%	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%

- 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)