

Q1

Economic & Market Review

First Quarter 2022

Economic Review

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US Growth Strong Despite Emergence of New Headwinds

The US economy expanded at a 6.9% annualized rate in the fourth quarter and grew 5.7% for the whole of 2021, the strongest pace since 1984. Momentum slowed to start the new year amid a surge in Covid cases in January and sustained high inflation.

Employers added over 400,000 jobs for the 11th straight month in March, and the headline **unemployment rate fell to 3.6%**. Job openings remain near record highs, drawing in more workers to the labor pool. Wage growth is strong, rising 5.6% year-over-year, but still lags the current pace of inflation.

Manufacturing activity slowed in March as supply chain issues continued to drive up input prices. Hiring in the sector picked up though, allowing factories to clear some of the backlog of unfinished work.

With a marked decline in Covid cases by the end of the quarter, consumers shifted their spending in March from motor vehicles and other goods to services like hotels, restaurants, air travel, and healthcare. **Household balance sheets are generally healthy** due to accumulated savings through the pandemic and rising wages for workers.

Liftoff at the Federal Reserve

The Fed raised its key interest rate by 0.25%, its first increase since 2018, and penciled in six more quarter-percentage-point hikes by the end of the year as it aims to cool high levels of inflation.

Fed chair **Jerome Powell indicated he is willing to do whatever it takes to tame inflation** and signaled the committee's willingness to implement multiple 0.50% rate hikes, if necessary. A plan to reduce the Fed's balance sheet could also be finalized in May, with officials signaling a quicker unwind than the one carried out in 2017.

Market participants are expecting even tighter monetary conditions than the Fed is projecting. Markets are forecasting the federal funds rate (currently 0.25% – 0.50%) to be 2.50% – 2.75% by year-end, suggesting the Fed will implement several 0.50% rate increases.

Recession talk has increased as a result of monetary tightening, but Mr. Powell deflected these concerns, pointing to strong household balance sheets and consumer demand.

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Challenges Mount for Europe's Recovery

The Eurozone economy moderated in the fourth quarter, expanding 0.3% as another Covid surge weighed on economic activity, evidenced by a decline in household consumption.

Europe faces a tough road ahead, as the Russian invasion of Ukraine will have negative consequences on growth and inflation (particularly energy prices). European Central Bank (ECB) President Christine Lagarde expects more severe consequences for Europe than the US.

At the same time, **Ms. Lagarde downplayed the prospects of stagflation** (high inflation coupled with low or negative growth) in Europe, suggesting that even in the bleakest scenarios, the ECB expects the Eurozone to expand by about 2% in 2022.

Japan's economy fared better in the fourth quarter, expanding 1.3% despite the winter Covid surge. The Bank of Japan (BOJ) will continue its monetary stimulus measures, diverging from Fed policy, as inflation isn't yet a prime concern. However, many economists believe it's only a matter of time before inflation exceeds the BOJ's 2% target.

Soaring Commodity Prices Weigh on Emerging Markets Outlook

China's economy slowed in the fourth quarter to 4%, bringing full-year 2021 growth to 8.1%. Industrial production and retail sales picked up to start the new year, but a surge in Covid cases and the ensuing lockdowns dampened the economic outlook in March. The central government set a 5.5% GDP growth target for 2022.

India's economy grew at a slower than expected pace of 5.4% in the fourth quarter after growing 20.3% and 8.5% in the second and third quarters, respectively. The widespread Omicron outbreak curtailed economic activity in January, and the war in Ukraine caused a spike in the prices of key imports such as oil, wheat, and fertilizer. GDP growth is expected to moderate in 2022 but estimates are still above 8%, which would lead all major economies.

Brazil's economy grew 0.5% in the fourth quarter, ending the technical recession it entered the previous quarter. Food and fuel prices soared in Brazil following Russia's invasion of Ukraine, and inflation hit 11.3% in March. Growth is expected to be modest this year as high inflation and rising interest rates weigh on economic output.

Market Review: Stocks

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Stocks Tumble to Start 2022 as War in Ukraine, Inflation, and Rate Hikes Unnerve Investors

After a strong finish to 2021, **domestic and international stocks retreated in Q1 as Russia's shock invasion of Ukraine roiled markets** and exacerbated already prevalent supply chain problems and inflation concerns. The Fed also signaled several rate hikes for 2022, further worrying investors.

The challenging geopolitical and economic backdrop made it difficult for US equities to find their footing, with large cap stocks falling 4.6% on the quarter, as measured by the S&P 500 index. Things looked even more dire in February when the market officially entered "correction" territory (down more than 10%), however a late-quarter rally pared losses.

Consumer Discretionary (down 9.4%) **and Technology** (down 8.5%) **were the hardest hit sectors, while Consumer Staples** (down 1.3%) **and Financials** (down 1.5%) **performed best.** Banks and other financial companies stand to benefit from higher lending rates, should the Fed's expected rate increases come to fruition in 2022, while consumer staples are often less affected by cyclical economic factors.

Mid and small cap US stocks were also out of favor, lagging large cap stocks to start the year, with the Wilshire 4500 stock index falling 7.5% in Q1.

International developed and emerging market stocks also sank amidst the negative sentiment, with the MSCI EAFE

index falling 5.8% and the MSCI Emerging Markets index dropping 6.9% in Q1. Russia comprises only a very small percentage of emerging market indexes (about 0.8% as of 2/28/22), but its war on Ukraine has had a widespread impact on both developed and emerging market economies.

Market volatility climbed over the quarter, as geopolitical tensions ran high, with the VIX volatility index rising from 16 to a high of 36 in late February. March proved a bit calmer as the market recouped some of its earlier losses, with VIX finishing the quarter at just above 20. It seems likely that volatility will remain elevated given the ongoing war in Ukraine and the knock-on effects to the economy.

Returns for the Quarter (%)

US Large Cap Stocks	-4.60	
US Mid/Small Cap Stocks	-7.49	
International Developed Stocks	-5.79	
Emerging Markets Stocks	-6.92	
Global Stocks	-5.26	

Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*
US Large Cap Stocks	-4.60	15.65	18.92	15.99
US Mid/Small Cap Stocks	-7.49	-1.25	16.02	13.18
International Developed Stocks	-5.79	1.65	8.29	7.23
Emerging Markets Stocks	-6.92	-11.08	5.31	6.35
Global Stocks	-5.26	7.73	14.30	12.20

* Annualized

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 Decline as Yields Rise Sharply on Inflation Concerns and Expectations for Fed Rate Hikes

US government bond yields rose sharply, as the Fed implemented a 0.25% rate hike in March and paved the way for a swift pace of monetary policy tightening in a bid to curb inflation. Short-term rates rose the most, causing parts of the yield curve to invert (i.e., when short-term interest rates rise above long-term rates) and sparking fears of a recession. The US 10-year Treasury yield increased from 1.52% to 2.32%, while the 2-year yield rocketed from 0.73% to 2.28%—significant moves which might signal the end of the ultra-low interest rate era.

The Bloomberg Aggregate Bond index, a measure of the performance of the US bond market, was down 5.9% on the quarter. Real (inflation-adjusted) returns on bonds were even worse, as US inflation, as measured by the Consumer Price Index, continued to run at its highest level in over 40 years and well above bond yields.

The decline in bond prices made for one of the worst quarters in over 40 years for fixed income, bringing with it unusual volatility for the asset class. A flight to safe haven assets at the onset of the war in Ukraine was short lived, followed by a selloff causing bond prices to drop and yields to rise. Some investors seem skeptical the Fed can navigate a soft landing for the economy as it tries to combat inflation with aggressive rate hikes in 2022.

High-yield bonds and Treasury Inflation-Protected Securities (TIPS) ended their positive streak and posted

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losses in Q1. US high yield bonds lost 4.8% on the quarter and their spread against government bonds widened. TIPS, which provide a hedge against inflation, were a top performer, however they still declined 3.0% in the rising rate environment.

Tax-exempt municipal bonds also saw their worst rout since the 1980s with significant outflows in the first quarter. The asset class, which is normally favored for its stability, declined 6.2% in Q1, as volatility and negative sentiment battered financial markets to start the year.

Returns for the Quarter (%)

US Total Bond Market	-5.93	
Short-Term Investment Grade Bonds	-3.45	
Long-Term Investment Grade Bonds	-10.95	
Municipal Bonds	-6.23	
Mortgage-Backed Bonds	-4.97	
Treasury Inflation-Protected Bonds	-3.02	
Foreign Bonds	-7.13	

Period Returns (%)

Asset Class	YTD	1 Year	3 Years*	5 Years*
US Total Bond Market	-5.93	-4.15	1.69	2.14
Short-Term Investment Grade Bonds	-3.45	-3.84	1.14	1.42
Long-Term Investment Grade Bonds	-10.95	-3.11	4.23	4.60
Municipal Bonds	-6.23	-4.47	1.53	2.52
Mortgage-Backed Bonds	-4.97	-4.92	0.56	1.36
Treasury Inflation-Protected Bonds	-3.02	4.29	6.22	4.43
Foreign Bonds	-7.13	-10.36	-1.21	0.77

*Annualized

Market Review: Alternatives

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Geopolitical and Inflation Concerns Drive Energy, Commodities, and Gold Higher; REITs Retreat

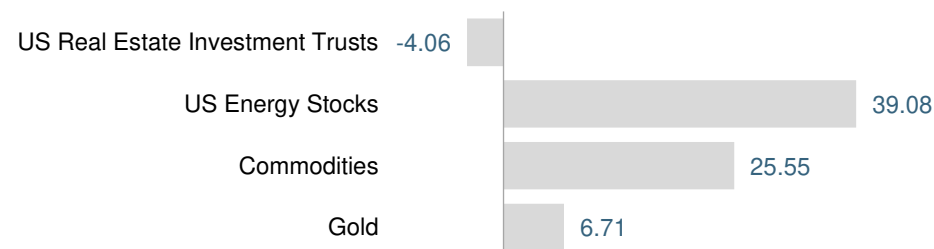
Excluding REITs, performance of alternative investments was strongly positive in the first quarter; energy and commodity prices moved sharply higher as war in Ukraine and related sanctions on Russia roiled energy markets, disrupted supply chains, and stoked inflation.

US energy stocks (up 39.1%) **posted the strongest gains of the alternative asset classes in the first quarter, with the price of oil skyrocketing** from about \$77 per barrel of Brent crude in January to \$127 in early March, before settling at \$107 per barrel at quarter-end. **Commodities, of which energy is a significant component, also rose in response to Russia's aggression in Ukraine**, with the Bloomberg Commodity index rising 25.6%. Wheat prices soared, as Russia and Ukraine account for nearly one-third of global wheat exports. Nickel, aluminum, and zinc prices were also markedly higher in Q1.

Gold—often a haven in times of economic turmoil and high inflation—rose 6.7% to start the year. The precious metal has shown signs of life in 2022 after a lackluster 2021 (down 3.8%) despite high inflation. The precious metal seems back in favor, with investors driving its price close to record highs in early March before retreating somewhat at quarter-end.

Real estate investment trusts posted negative returns, with the MSCI US REIT index dropping 4.1%. REITs are income-producing investments that can be sensitive to rising interest rates and economic concerns, and the Q1 environment proved challenging on both of those fronts. Higher interest rates put a damper on REITs since they increase the relative attractiveness of bonds while also increasing borrowing costs for REITs, which are often leveraged.

Returns for the Quarter (%)









Period Returns (%)

Asset Class	* Annualized			
	YTD	1 Year	3 Years*	5 Years*
US Real Estate Investment Trusts	-4.06	26.20	11.14	9.65
US Energy Stocks	39.08	63.26	11.36	6.89
Commodities	25.55	49.25	16.12	9.00
Gold	6.71	14.85	15.32	9.80

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Market Summary

Index Returns

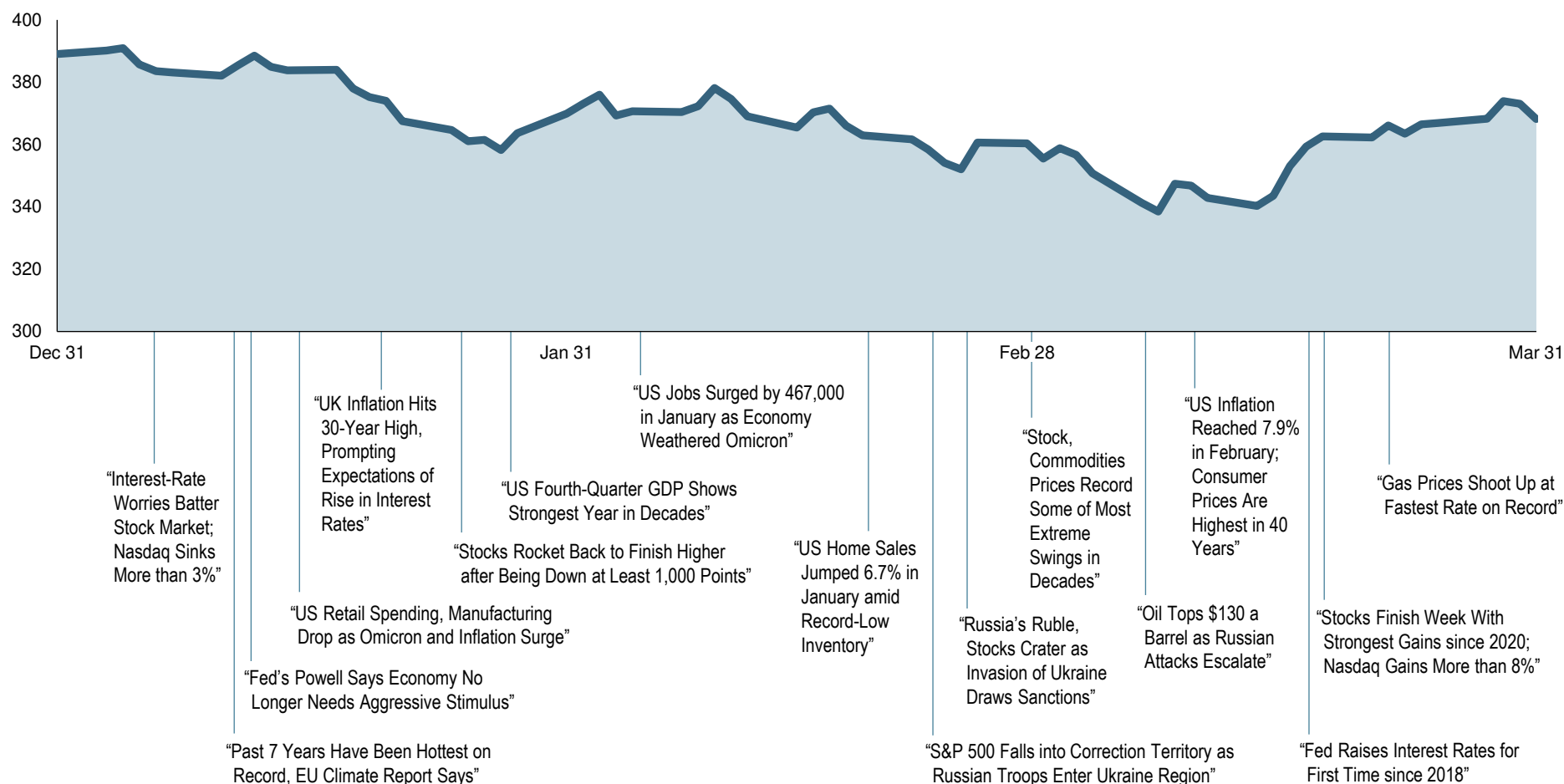
	US Large Cap	US Mid/Small Cap	International Developed	Emerging Markets		US Bond Market	US Dollar
Q1 2022	STOCKS					BONDS/DOLLAR	
	-4.60%	-7.49%	-5.79%	-6.92%		-5.93%	0.03%
							

Since Jan. 2001							
Avg. Quarterly Return	2.3%	3.0%	1.6%	2.6%		1.1%	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		-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 Q1 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.

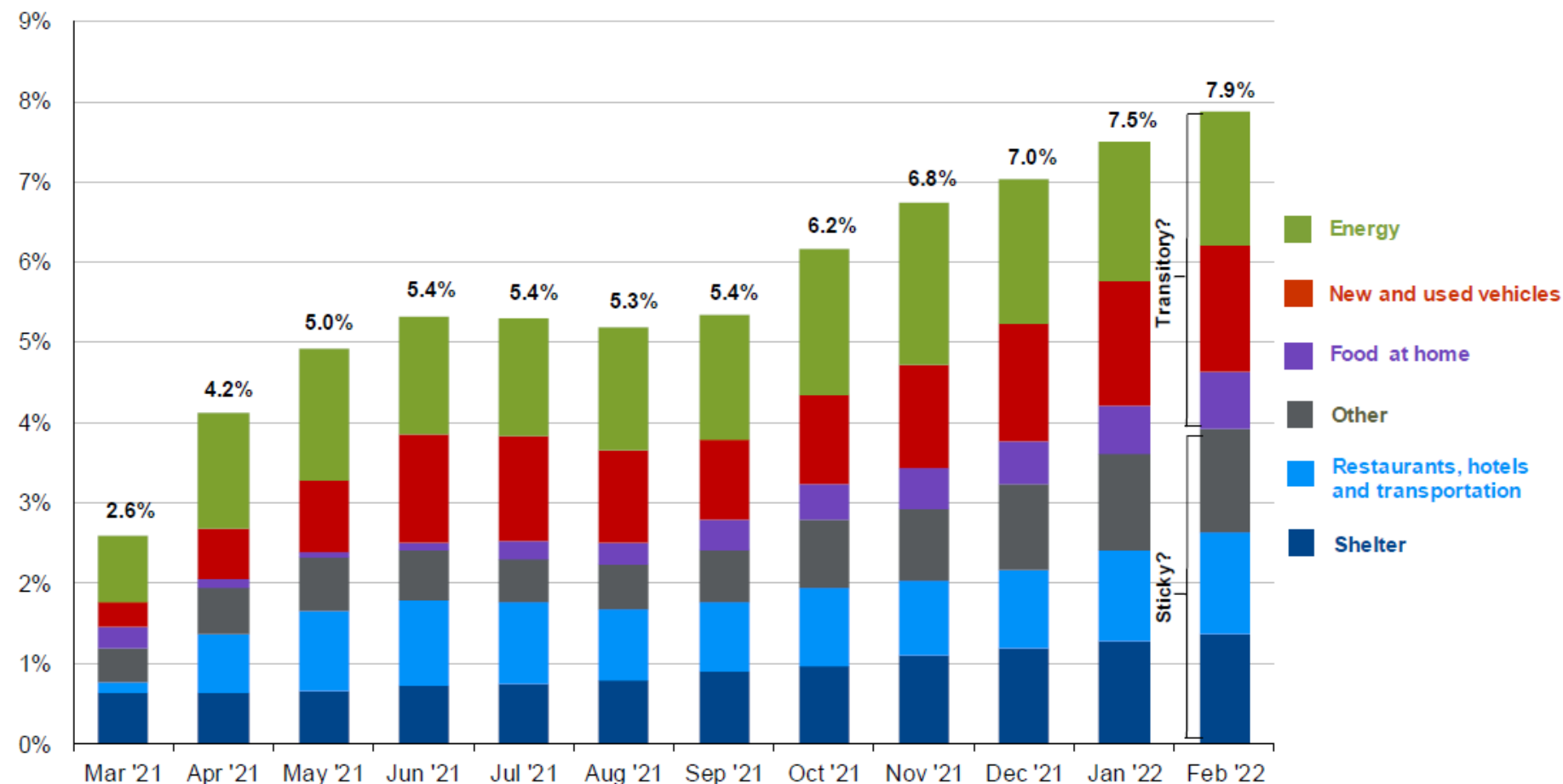
Inflation Components

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The chart below shows the different components of the prior 12 months' inflation, month by month, since March 2021. Note that each component has grown substantially in the past year—the inflation is broad-based. The three components at the top of the chart—energy, vehicles, and food—could be considered “transitory” and expected to subside as supply and demand factors come into better balance. The remaining components, including rent, household furnishings, apparel, and services, tend to be “stickier” and might take longer to subdue.

Contributors to headline inflation

Contribution to y/y % change in CPI, non seasonally adjusted



Source: BLS, J.P. Morgan Asset Management. Contributions mirror the BLS methodology on Table 7 of the CPI report. Values may not sum to headline CPI figures due to rounding and underlying calculations. “Shelter” includes owners equivalent rent and rent of primary residence. “Other” primarily reflects household furnishings, apparel and medical care services. *Guide to the Markets – US Data* are as of March 31, 2022.

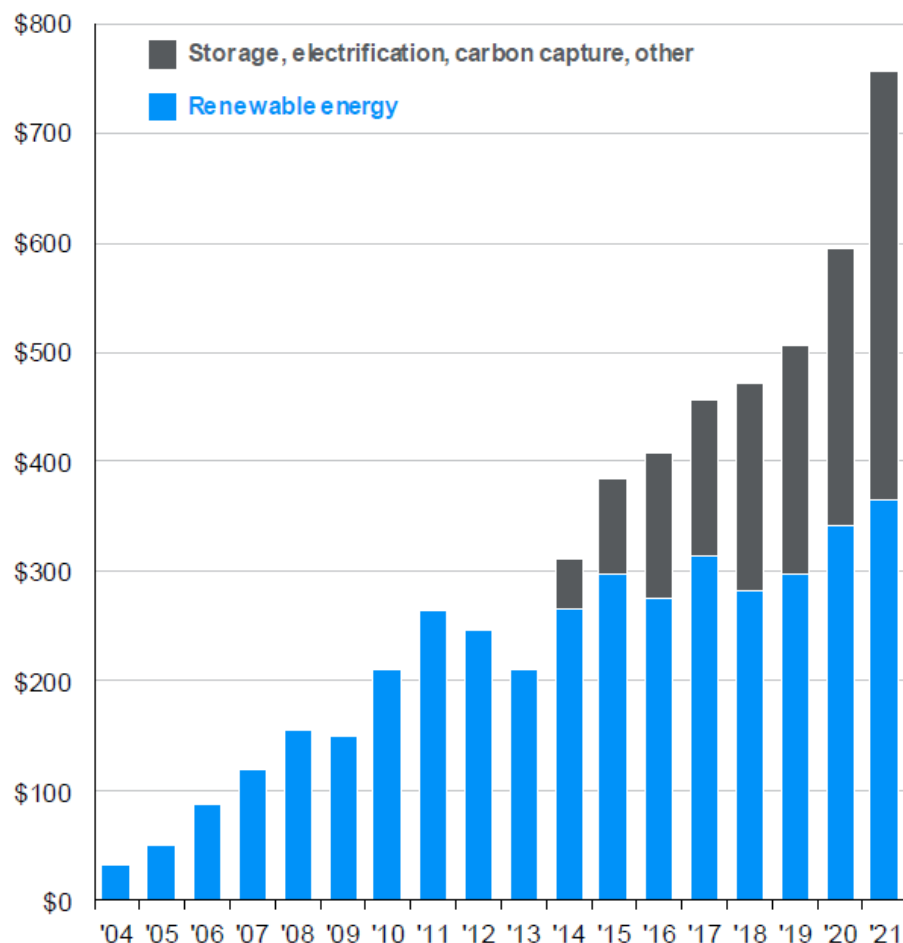
Global Energy Transition

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The left chart shows the growth of global investment in energy transition, which surged in 2021. The recent spike in fossil fuel prices could be expected to further accelerate this trend. The chart on the right shows the levelized cost of various energy sources. Note the remarkable decline in the cost of wind and solar energy in recent years.

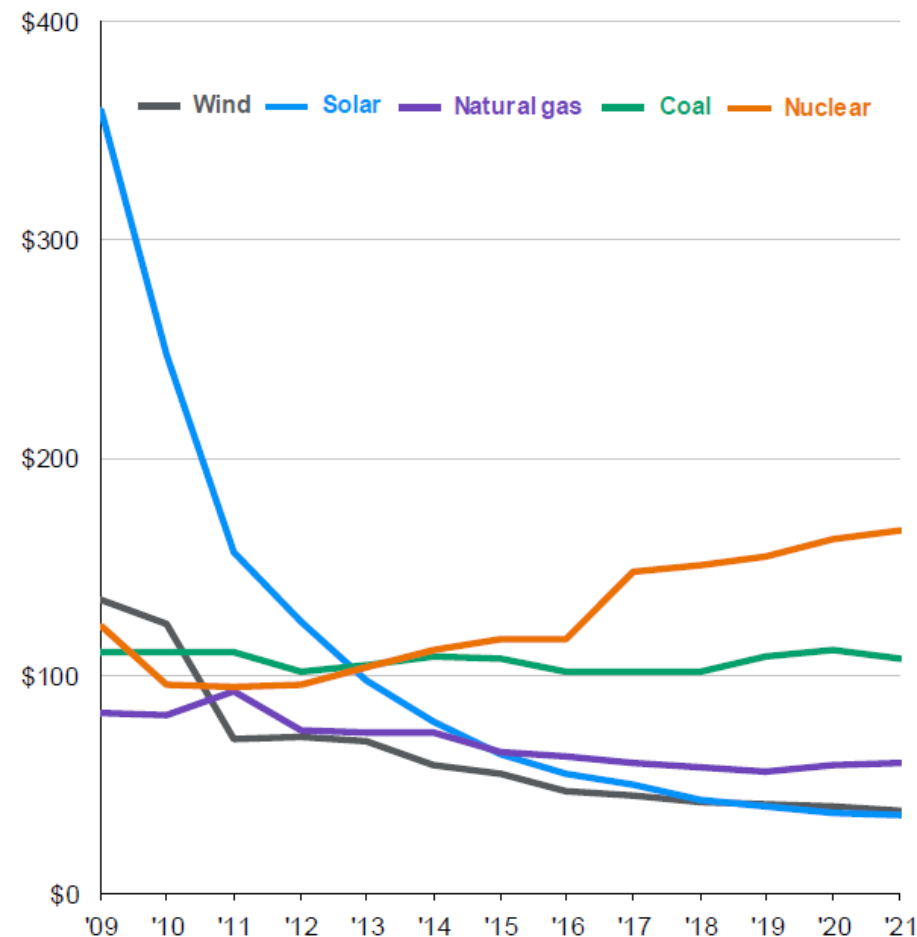
Global investment in energy transition

Billions USD, nominal



Cost of wind, solar, natural gas, nuclear and coal

Mean LCOE*, 2021, dollar per megawatt hour



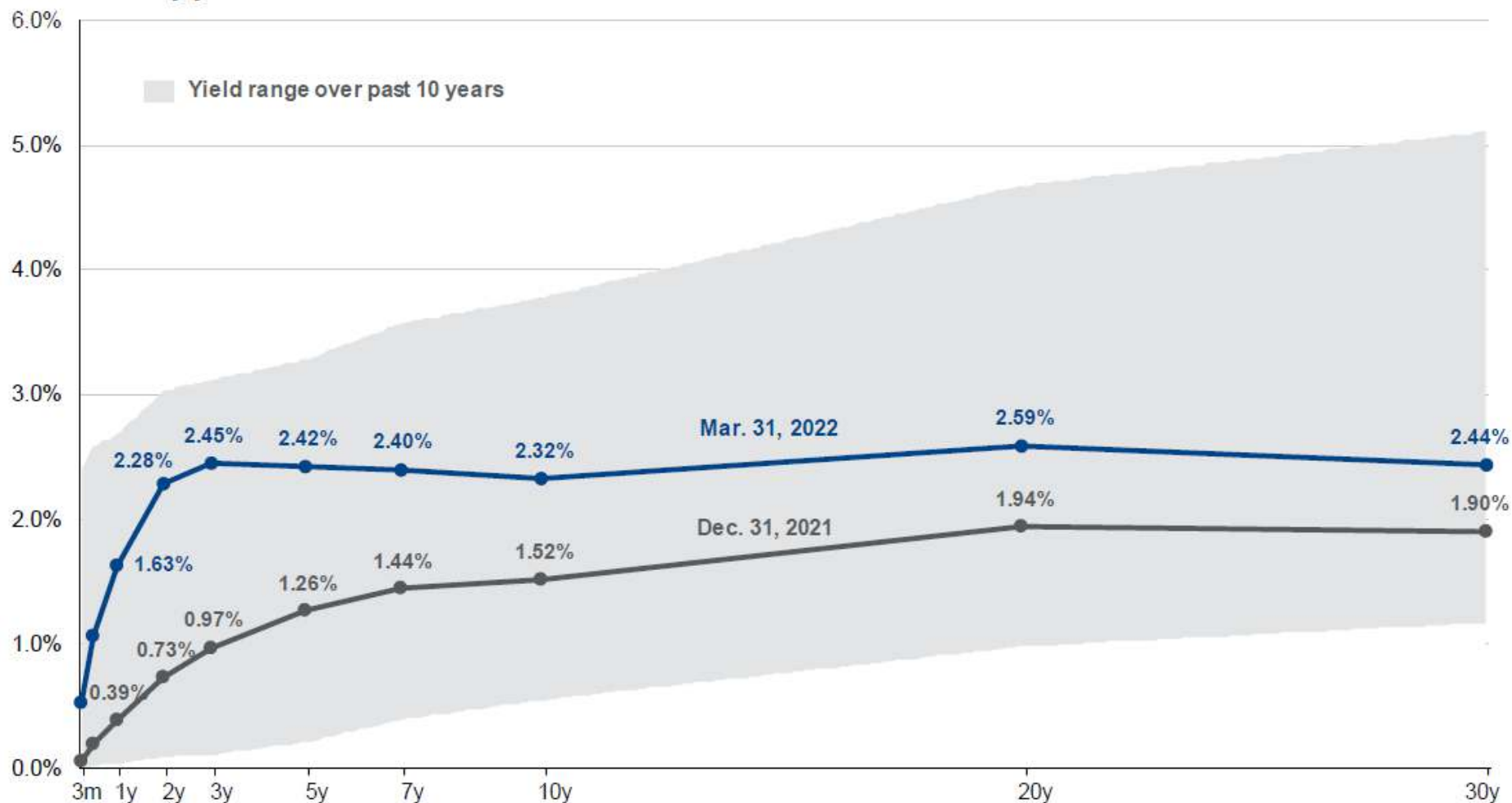
Source: Bloomberg NEF, BP Statistical, Eurostat, Lazard, Meti, J.P. Morgan Asset Management; (Left) Storage, electrification, other includes hydrogen, carbon capture and storage, energy storage, electrified transport and electrified heat; (Top right) *LCOE is levelized cost of energy, the net present value of the unit-cost of electricity over the lifetime of a generating asset. It is often taken as a proxy for the average price that the generating asset must receive in a market to break even over its lifetime. Forecasts are not a reliable indicator of future performance. *Guide to the Markets – US* Data are as of March 31, 2022.

Yield Curve

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This chart shows the US Treasury yield curve as of March 31, 2022 (blue) and as of December 31, 2021 (grey). Note the sharp rise in short-term rates during the first quarter, which led to a much flatter—and in some spots inverted—yield curve that sometimes presages economic slowing. The Fed's aggressive stance in combating inflation has pushed short-term yields significantly higher, inching closer to the upper end of their range over the past decade, as the Fed is telling markets to expect several more rate hikes by year-end.

U.S. Treasury yield curve



Source: FactSet, Federal Reserve, JP Morgan.
Guide to the Markets – US Data are as of March 31, 2022.