Vanguard

NOVEMBER 2021

Market perspectives

Vanguard's monthly economic and market update

KEY HIGHLIGHTS

- Vanguard foresees fourth-quarter U.S. growth around 5.5% and full-year growth for 2022 around 3.5% to 4.0%.
- We've downgraded our view on China's growth to reflect more persistent policy-related supply shocks and uncertainty.
- Recent labor market and inflation developments have led Vanguard to move up our expected timeline for a Fed rate hike to late 2022.
- We foresee the core Consumer Price Index (CPI) ending this year just below 4.5% year-on-year and ending 2022 just above 3.0%.

Asset class return outlooks

Our 10-year, annualized, nominal return projections, as of June 30, 2021, are shown below. Please note that the figures are based on a 1.0-point range around the rounded 50th percentile of the distribution of return outcomes for equities and a 0.5-point range around the rounded 50th percentile for fixed income.

Equities	Return projection	Median volatility
U.S. equities	2.3%–4.3%	16.7%
U.S. value	2.9%–4.9%	18.9%
U.S. growth	–0.6%–1.4%	17.7%
U.S. large-cap	2.2%–4.2%	16.3%
U.S. small-cap	2.1%–4.1%	21.8%
U.S. real estate investment trusts	2.2%–4.2%	19.3%
Global equities ex-U.S. (unhedged)	5.1%–7.1%	18.7%
Global ex-U.S. developed markets equities (unhedged)	5.2%–7.2%	16.4%
Emerging markets equities (unhedged)	3.6%–5.6%	27.0%

Fixed income	Return projection	Median volatility
U.S. aggregate bonds	1.3%–2.3%	4.5%
U.S. Treasury bonds	1.1%–2.1%	4.6%
U.S. credit bonds	1.5%–2.5%	4.6%
U.S. high-yield corporate bonds	1.9%–2.9%	10.4%
U.S. Treasury Inflation-Protected Securities	0.9%–1.9%	7.0%
U.S. cash	1.2%–2.2%	1.2%
Global bonds ex-U.S. (hedged)	1.2%–2.2%	3.8%
Emerging markets sovereign bonds	1.9%–2.9%	10.2%
U.S. inflation	1.4%–2.4%	2.3%

These probabilistic return assumptions depend on current market conditions and, as such, may change over time.

IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model® regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from the VCMM are derived from 10,000 simulations for each modeled asset class. Simulations are as of June 30, 2021. Results from the model may vary with each use and over time. For more information, see page 4.

Source: Vanguard Investment Strategy Group.

Region-by-region outlook

Labor constraints hold back U.S. growth

United States. Signs of a growth slowdown at the start of the third quarter in the United States appear to be stabilizing as the impact of the COVID-19 Delta variant subsides. Supply constraints, however, particularly in the labor market, are likely to keep growth from realizing its potential in the quarter.

- We foresee fourth-quarter growth around 5.5% and full-year 2021 growth around 6.0%. For 2022, we expect growth around 3.5% to 4.0%.
- Although health outcomes remain important, we expect the most severe outcomes to be mitigated by high vaccination rates among the most vulnerable individuals, and for economic sensitivity to virus spikes to wane through the fourth quarter.
- GDP growth was a weaker-than-originally-expected 6.7% in the second quarter, according to the third and final estimate by the Bureau of Economic Analysis.

Euro area. A consumption impulse whose timing trailed that of the United States and the United Kingdom is buoying growth and consumer confidence in the euro area.

- Despite some signs of an easing in momentum, we continue to foresee full-year GDP growth around 5%, which would put the euro area on track to reach its pre-pandemic level of growth in the fourth quarter.
- We foresee 2022 growth around 4%, lower than in the United Kingdom, where the pandemic-induced fall-off in growth was larger and there's more ground to recover.
- We foresee the euro area reaching its pre-pandemic growth trajectory around the start of 2023.

China. The economy in China grew by just 4.9% in the third quarter compared with a year earlier, below market expectations, according to data released by the National Bureau of Statistics.

- We foresee growth in the fourth quarter of around 1.0% compared with the third quarter, below trend and down from our earlier forecast of just above 1.5%.
- Such a more modest fourth-quarter rebound would come amid a backdrop of tightened controls in the property and energy sectors, which we see as representing fundamental shifts in China's policy priorities that we expect to continue into 2022.
- Reflecting this more persistent nature of policy-related supply shocks and uncertainty, we've downgraded our view on China's growth from a range of 8.0% to 8.5% to slightly below 8.0% in 2021 and to around 5.0% in 2022, both of which remain below consensus.
- The magnitude of the consumption and export-driven rebound in the fourth quarter and in 2022 will hinge critically on policy actions, both micro regulation and macro easing.

Emerging markets. Growth in emerging markets is likely to depend in the medium term on inflation and central bank actions, including actions taken in developed markets that could spur some emerging markets to follow suit.

- Where inflation is running high, such as Latin America, interest rate hikes have occurred and may not be finished—a headwind to growth.
- Where growth is the more immediate concern, however, including some markets in central Europe, rate hikes are less likely, and economic recovery from the pandemic is likely to have fewer obstacles.

Labor force participation is key

Employment headed for a rebound?

We anticipate monthly job gains averaging 700,000 the rest of the year. We also foresee an increasing participation rate as unemployment benefits fade out and virus fears wane amid increased vaccination.

- We expect labor force participation to peak around 62.3%, a full percentage point below its February 2020 level before the onset of the COVID-19 pandemic.
- Though demand for labor is robust, behavioral and demographic factors keeping people out of the labor force are showing signs of persistence.

Balancing dual objectives

Expected timeline moves up for a Fed rate hike

Recent labor market and inflation developments have led Vanguard to move forward our expectations for the timing of the first Federal Reserve post-pandemic rate hike to late 2022.

- With the Fed's inflation target largely already met, labor market strength and the Fed's interpretation of "full employment" remain key for the timing of the Fed's hike.
- A risk factor is how the Fed would treat an unemployment rate of around 3% while labor force participation falls short of pre-pandemic levels—especially if pandemic-induced early retirements turn permanent.
- Vanguard believes the Fed will announce the timetable for its reducing asset purchases at its next meeting despite a weaker-than-expected September jobs report.

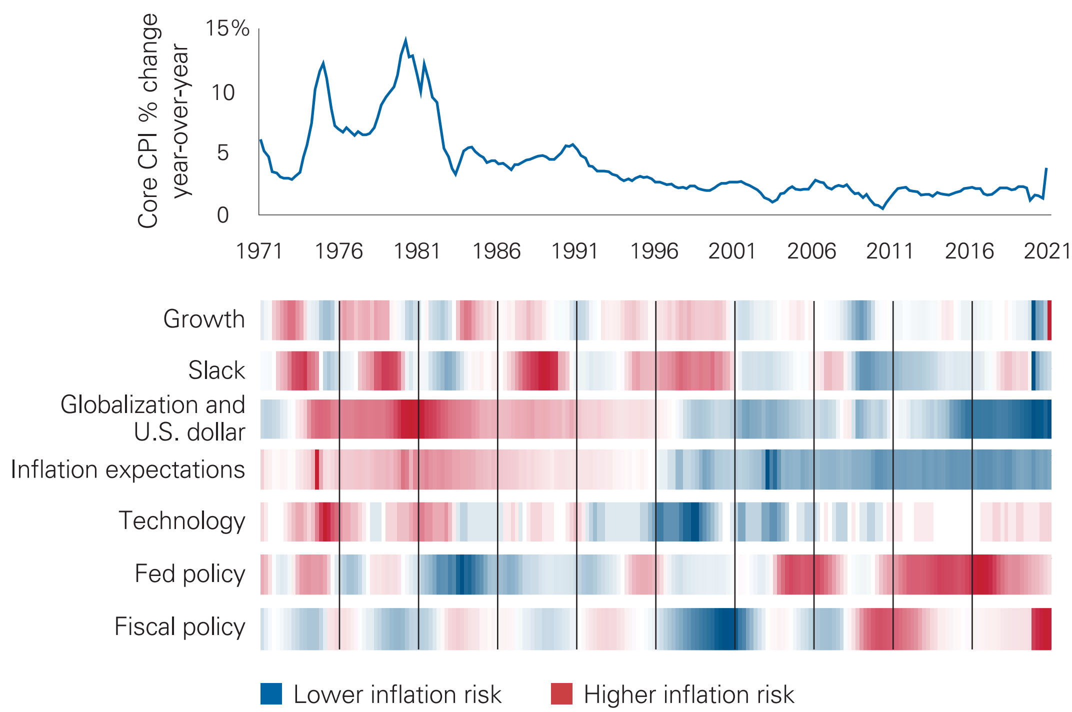
Oil prices affect headline inflation

Inflation concerns linger

Amid labor and other supply constraints, we expect the core Personal Consumption Expenditures Index (PCE), the Federal Reserve's preferred inflation measure, to end 2021 just above 4.0% compared with a year earlier, and to end 2022 around 2.5% higher year-on-year.

- We foresee the core Consumer Price Index (CPI) ending this year just below 4.5% year-on-year and ending 2022 just above 3.0%.
- Core versions of price indexes strip out volatile food and energy prices. Headline inflation could be in for some volatility in the near term as U.S. benchmark crude oil futures approach $85 a barrel, levels last seen seven years ago.
- We foresee higher oil prices adding 20 basis points to headline CPI and 10 basis points to headline CPE.
- The many drivers of inflation show a mixed picture (see figure). Fiscal and monetary policies are highly stimulative, yet the secular disinflationary forces such as technology have not disappeared.

The key drivers of U.S. inflation are sending mixed signals



Note: Data cover the 50 years ended June 1, 2021.

Sources: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, and Federal Reserve, using information from Refinitiv.

All investing is subject to risk, including possible loss of principal.

Diversification does not ensure a profit or protect against a loss.

Investments in bonds are subject to interest rate, credit, and inflation risk.

Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk. These risks are especially high in emerging markets.

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The VCMM projections are based on a statistical analysis of historical data. Future returns may behave differently from the historical patterns captured in the VCMM. More important, the VCMM may be underestimating extreme negative scenarios unobserved in the historical period on which the model estimation is based.

The Vanguard Capital Markets Model is a proprietary financial simulation tool developed and maintained by Vanguard's primary investment research and advice teams. The model forecasts distributions of future returns for a wide array of broad asset classes. Those asset classes include U.S. and international equity markets, several maturities of the U.S. Treasury and corporate fixed income markets, international fixed income markets, U.S. money markets, commodities, and certain alternative investment strategies. The theoretical and empirical foundation for the Vanguard Capital Markets Model is that the returns of various asset classes reflect the compensation investors require for bearing different types of systematic risk (beta). At the core of the model are estimates of the dynamic statistical relationship between risk factors and asset returns, obtained from statistical analysis based on available monthly financial and economic data from as early as 1960. Using a system of estimated equations, the model then applies a Monte Carlo simulation method to project the estimated interrelationships among risk factors and asset classes as well as uncertainty and randomness over time. The model generates a large set of simulated outcomes for each asset class over several time horizons. Forecasts are obtained by computing measures of central tendency in these simulations. Results produced by the tool will vary with each use and over time.

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