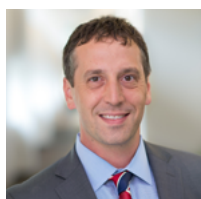


Tracking the strong but uneven recovery from Covid-19



By **Andrew Patterson**,
senior international economist,
Vanguard Investment
Strategy Group.

The outlook for the global economy continues to hinge on health outcomes. In our annual economic and market outlook published at the end of 2020, *Approaching the Dawn*, Vanguard economists expected that the path to recovery would be uneven and varied across industries and countries, even once effective vaccines for Covid-19 became available.

Fast forward half a year. The pandemic is still far from over as new virus variants surface and as the human toll continues to mount, especially in less developed economies. Yet macroeconomic indicators signal that the global economy is rebounding faster than many had expected from its sharpest contraction in modern history. That rebound is reflected in our current full-year GDP growth forecasts, which remain roughly in line with our optimistic projections at the start of 2021. In some places, we've upgraded our forecasts; in others, we've downgraded them.

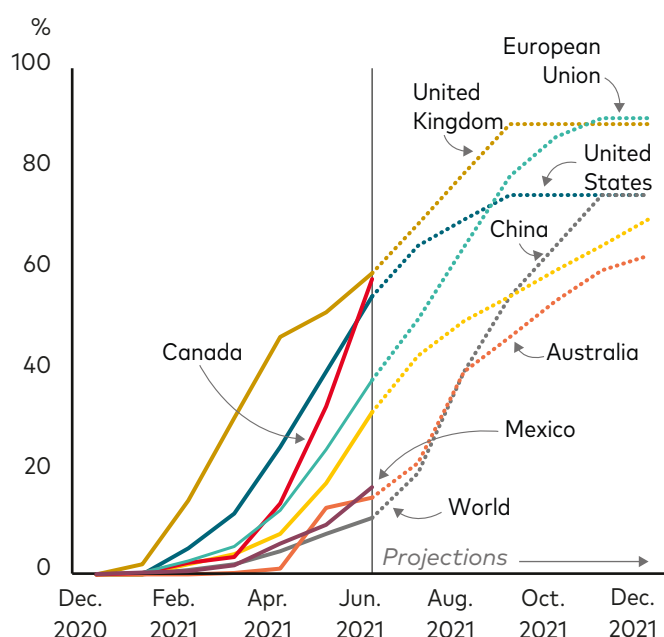
Countries that have contained the virus more successfully, whether through vaccinations, lockdowns or both, have tended to see their economies hold up better. As economies open up, demand—supported in many countries by government spending—will promote growth and, by extension, underlie our outlooks for inflation and monetary policy. Given Vanguard's focus on return expectations over the long term, revisions to our investment return outlooks remain a function of valuations and risks informed by current and expected future macroeconomic conditions and policy.

1 Herd immunity is the point at which a virus' spread becomes harder because numbers of vaccinated and already-infected people have reached a certain threshold.

Vaccination rates and fiscal support are driving the economic recovery

The extraordinary global response to the pandemic has set the stage for a strong economic recovery. Vaccines were developed, tested and made available faster than many anticipated. By our estimates, shown in the chart below, about 75% of the world's population will have received at least one vaccine dose by the end of 2021, putting herd immunity in the largest economies within reach¹. The reaction of governments and central banks has also been impressive, as many moved swiftly to provide unprecedented levels of fiscal and monetary support.

Percentage of population with at least one vaccine dose



Notes: Levels that constitute herd immunity will vary by region, depending on vaccine efficacy. Higher vaccination rates generally permit greater economic activity.

Sources: Vanguard projections, based on data from Our World in Data, the University of Oxford and the Australian federal government as at 1 June 2021. No projections are available for Canada and Mexico.

For professional investors only (as defined under the MiFID II Directive) investing for their own account (including management companies (fund of funds) and professional clients investing on behalf of their discretionary clients). In Switzerland for professional investors only. Not to be distributed to the public.

At the same time, the chart shows that vaccination rates have differed significantly by country and region. So have outcomes from policymakers' efforts to blunt Covid-19's economic impact. Both factors are likely to contribute to the recovery's continued unevenness for the rest of this year and beyond.

Our full-year GDP growth forecasts still reflect how far we've had to climb back to approach pre-pandemic growth. In the **United States**, for example, where positive health care developments and strong fiscal support are driving growth, we've raised our full-year forecast to at least 7%. Vaccination programmes accelerated after a somewhat slow start, paving the way for the reopening of segments of the economy that depend heavily on face-to-face interaction. Government programmes, including enhanced unemployment benefits and stimulus cheques delivered directly to lower-income earners, have supported consumer spending.

For the **euro area**, our forecast for 2021 growth of around 5% is unchanged. A halting start to vaccination rollouts and repeated lockdowns tipped the bloc back into recession early this year, but supportive policy, an easing of travel restrictions and consumption that remains 10% below its pre-pandemic trend could underpin a strong bounce-back.

For the **United Kingdom**, we have lowered our forecast for 2021 growth to around 7%. Surprising strength in the fourth quarter of 2020 set the economic output level higher going into this year, making 2021 comparisons more challenging. Despite successive lockdowns and new Covid-19 variants, the UK has been a leader in vaccination efforts, with around 60% of its population having received at least one vaccine dose. Consumption is currently about 15% below its pre-pandemic trend, so further vaccination progress should lead it to substantially rebound.

For **China**, we have lowered our 2021 forecast to around 8.5%. The country has largely contained the pandemic and was the first to return to its pre-Covid GDP level, but consumption is taking time to normalise amid slow vaccination rollouts and sporadic virus outbreaks. Domestic consumption may continue to lag even as vaccinations ramp up, but exports have boosted China's economy.

For **emerging markets**, we have raised our forecast for 2021 to above 6%. A resurgence of the virus, particularly in emerging Asia, weighed on growth in the first half of this year, but growth should accelerate as vaccination efforts advance.

How faster growth could affect inflation and monetary policy

Various factors are fanning concerns about higher inflation, including the stronger-than-expected rebound in global growth, extraordinary and unprecedented

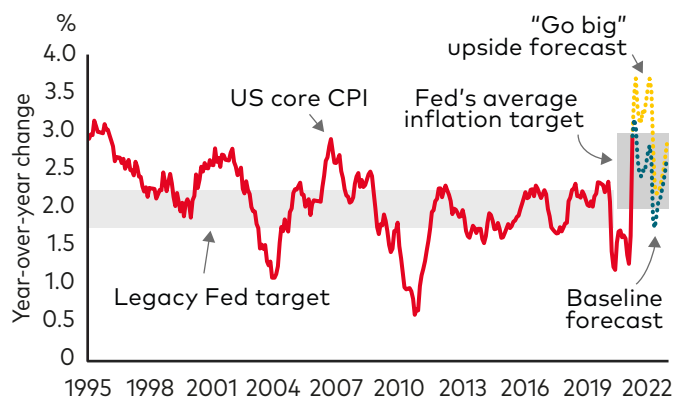
monetary and fiscal stimulus and a jump in demand for goods and services as economies reopen and supply gradually comes back online. Although we expect the effects to be largely transitory, our outlook is for a modest but eventually persistent increase in inflation.

Improving economies and somewhat higher inflation are, in turn, spurring questions about monetary policy. Some central banks have already begun slowing the pace of asset purchases put in place at the start of the pandemic and others are contemplating doing so. Such moves constitute a gradual removal of accommodative monetary policy. We nevertheless expect that initial increases in central bank short-term rates won't occur broadly before 2023.

US inflation risks are higher than those in other countries given some supply-and-demand imbalances. Diminished supply of goods, including new and used cars, and of labour amid demand rebounds in some sectors might take time to unwind. Our baseline scenario, shown in the chart below, is that core inflation (which excludes volatile food and energy prices) will persist above the Federal Reserve's (Fed's) 2% target in the second half of 2021 before moderating in 2022.

There is a risk, however, that significantly more fiscal spending in the order of \$2 trillion to \$3 trillion—our "go big" scenario in the chart below—could lead inflation to significantly overshoot the Fed's target later this year and into 2022. Such a development could affect inflation psychology, in which higher expected inflation can lead to higher actual inflation.

Inflation: Up, up ... but not away in 2021

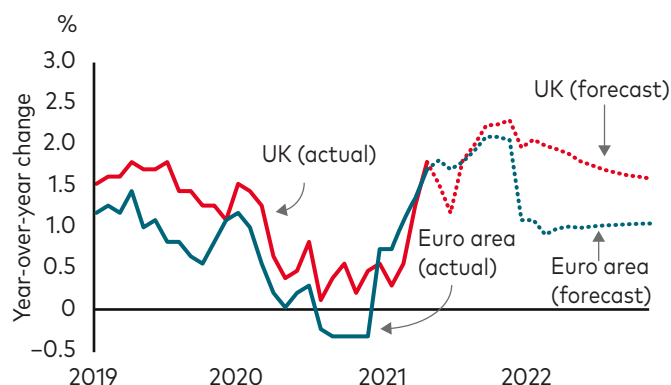


Sources: Vanguard, based on data from January 1995 to April 2021 from the US Bureau of Labor Statistics. CPI = consumer price index.

With its 2020 adoption of "average inflation targeting," which makes 2% a longer-term goal rather than an upper limit, the Fed may be more comfortable letting inflation run reasonably above 2% for some time. We foresee accommodative policy persisting for the rest of 2021, though plans for reducing the pace of asset purchases are likely to be disclosed in the second half. We currently don't foresee conditions meeting the Fed's rate-hike criteria of price stability and maximum sustainable employment until the second half of 2023.

Headline inflation, as shown in the chart below, is likely to follow similar paths in the euro area and the United Kingdom. Euro-area energy prices are likely to push headline inflation above 2% in the second half of 2021, but underlying price pressures remain subdued. We foresee core inflation rising to 1% to 1.5% by year-end, slightly higher than our view when 2021 began. The European Central Bank is likely to keep interest rates on hold at least to 2022, even as the economy improves, though it will probably slow its pace of asset purchases in the near term.

Headline inflation in the euro area and UK is likely to moderate in 2022



Sources: Vanguard, based on data from January 2019 to May 2021 from the UK Office for National Statistics and Eurostat.

Headline inflation in the UK could top 2.5% at the end of 2021 given higher energy prices and a strengthening economy. Core inflation should rise toward the Bank of England's target of 2% in 2021, in line with our view at the start of the year. Although we expect the central bank to slow and then halt asset purchases by year-end, we don't expect it to begin raising policy rates until 2023.

We continue to foresee core inflation in China of around 1.5% for 2021, well below the People's Bank of China's 3% target. Although producer prices have climbed, we expect pass-through effects to remain limited, especially amid modest consumer demand. We expect monetary policy to continue to normalise, but only gradually as economic growth remains uneven.

Inflation in emerging markets has been higher than expected. A disinflationary trend in parts of Asia has disappeared, and inflation in other regions has largely risen above its pre-pandemic pace as higher borrowing costs in developed markets spill over. Inflation dynamics and rising US interest rates have constrained central banks' accommodative bias even as economic growth remains below potential. Recent rate hikes in Brazil, Russia and Turkey amid rising inflation demonstrate the challenge.

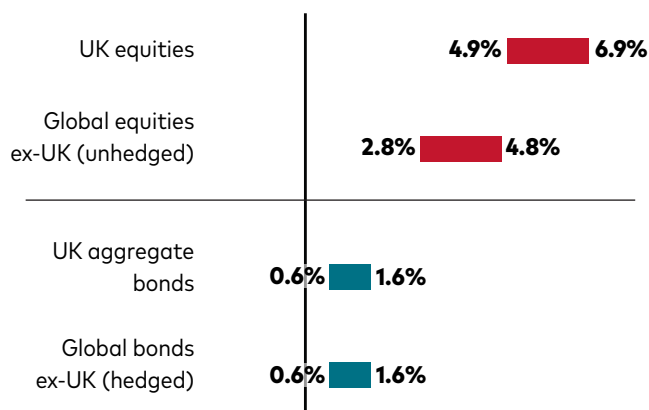
Where our 10-year return forecasts stand

Starting valuations matter. Global stocks this year have continued to rally from pandemic lows, and that will make further gains harder to come by. In fact, our 10-year annualised return forecasts for some developed markets are nearly 2 percentage points lower than they were at the end of 2020.

The news is better for bond investors. Because we expect bond portfolios of all types and maturities to earn returns close to their current yield levels, the recent increase in market interest rates has led us to raise our 10-year annualised return forecasts by a half to a full percentage point for a number of markets.

Our forecasts, in local currencies, are derived from the Vanguard Capital Markets Model® on 31 May 2021.

Equity and fixed income outlook (for sterling investors)



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 modelled asset class. Simulations are as at 31 May 2021. Results from the model may vary with each use and over time.

Note: Figures are based on a 1-point range around the 50th percentile of the distribution of return outcomes for equities and a 0.5-point range around the 50th percentile for fixed income.

Source: Vanguard as at 31 May 2021.

A final word about bonds and portfolios

Even with our upward revisions, returns from bonds in most markets are likely to be modest. We nonetheless still see their primary role in a portfolio as providing *diversification from riskier assets* rather than generating returns.

Keep in mind that return forecasts change in response to evolving assessments of economic and market conditions, which is why we advocate that professional

investors ensure that clients' portfolios are well-diversified across asset classes, sectors and regions in line with their investment goals and tolerance for risk.

Indexes used in Vanguard Capital Markets Model simulations

UK equities: Bloomberg Barclays Equity Gilt Study from 1900 to 1964; Thomson Reuters Datastream UK Market Index from 1965 to 1969; MSCI UK Index thereafter.

Global ex-UK equities: Standard & Poor's 90 Index from January 1926 to 4 March 1957; S&P 500 Index from 4 March 1957, to 1969; MSCI World ex UK Index from 1970 to 1987; MSCI AC World Index ex UK thereafter.

UK aggregate bonds: Bloomberg Barclays Sterling Aggregate Bond Index.

Global ex-UK bonds: S&P High Grade Corporate Index from 1926 to 1968; Citigroup High Grade Index from 1969 to 1972; Lehman Brothers US Long Credit AA Index from 1973 to 1975; Bloomberg Barclays US Aggregate Bond Index from 1976 to 1990; Bloomberg Barclays Global Aggregate Index from 1990 to 2001; Bloomberg Barclays Global Aggregate ex GBP Index thereafter.

About the Vanguard Capital Markets Model:

IMPORTANT: The projections and 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 modelled asset class. Simulations are as at 31 May 2021. Results from the model may vary with each use and over time.

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 Investment Strategy Group. 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. 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.

Investment risk information

The value of investments, and the income from them, may fall or rise and investors may get back less than they invested.

Past performance is not a reliable indicator of future results.

Simulated past performance is not a reliable indicator of future results.

Any projections should be regarded as hypothetical in nature and do not reflect or guarantee future results.

Funds investing in fixed interest securities carry the risk of default on repayment and erosion of the capital value of your investment and the level of income may fluctuate. Movements in interest rates are likely to affect the capital value of fixed interest securities. Corporate bonds may provide higher yields but as such may carry greater credit risk increasing the risk of default on repayment and erosion of the capital value of your investment. The level of income may fluctuate and movements in interest rates are likely to affect the capital value of bonds.

Important information

For professional investors only (as defined under the MiFID II Directive) investing for their own account (including management companies (fund of funds) and professional clients investing on behalf of their discretionary clients). In Switzerland for professional investors only. Not to be distributed to the public.

The information contained in this document is not to be regarded as an offer to buy or sell or the solicitation of any offer to buy or sell securities in any jurisdiction where such an offer or solicitation is against the law, or to anyone to whom it is unlawful to make such an offer or solicitation, or if the person making the offer or solicitation is not qualified to do so. The information in this document does not constitute legal, tax, or investment advice. You must not, therefore, rely on the content of this document when making any investment decisions.

The index is a product of S&P Dow Jones Indices LLC ("SPDJI"), and has been licensed for use by Vanguard. Standard & Poor's® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); S&P® and S&P 500® are trademarks of S&P; and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by Vanguard. Vanguard product(s) are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, or their respective affiliates and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the index.

The funds or securities referred to herein are not sponsored, endorsed, or promoted by MSCI, and MSCI bears no liability with respect to any such funds or securities. The prospectus or the Statement of Additional Information contains a more detailed description of the limited relationship MSCI has with Vanguard and any related funds.

BLOOMBERG® is a trademark and service mark of Bloomberg Finance L.P. BARCLAYS® is a trademark and service mark of Barclays Bank Plc, used under license. Bloomberg Finance L.P. and its affiliates, including Bloomberg Index Services Limited ("BISL") (collectively, "Bloomberg"), or Bloomberg's licensors own all proprietary rights in the Bloomberg Barclays Indices.

The products are not sponsored, endorsed, issued, sold or promoted by "Bloomberg or Barclays". Bloomberg and Barclays make no representation or warranty, express or implied, to the owners or purchasers of the products or any member of the public regarding the advisability of investing in securities generally or in the products particularly or the ability of the Bloomberg Barclays Indices to track general bond market performance. Neither Bloomberg nor Barclays has passed on the legality or suitability of the products with respect to any person or entity. Bloomberg's only relationship to Vanguard and the products are the licensing of the Bloomberg Barclays Indices which are determined, composed and calculated by BISL without regard to Vanguard or the products or any owners or purchasers of the products. Bloomberg has no obligation to take the needs of the products or the owners of the products into consideration in determining, composing or calculating the Bloomberg Barclays Indices. Neither Bloomberg nor Barclays is responsible for and has not participated in the determination of the timing of, prices at, or quantities of the products to be issued. Neither Bloomberg nor Barclays has any obligation or liability in connection with the administration, marketing or trading of the products.

Issued in EEA by Vanguard Group (Ireland) Limited which is regulated in Ireland by the Central Bank of Ireland.

Issued in Switzerland by Vanguard Investments Switzerland GmbH.

Issued by Vanguard Asset Management, Limited which is authorised and regulated in the UK by the Financial Conduct Authority.

© 2021 Vanguard Group (Ireland) Limited. All rights reserved.

© 2021 Vanguard Investments Switzerland GmbH. All rights reserved.

© 2021 Vanguard Asset Management, Limited. All rights reserved. 07/21_821

Connect with Vanguard™
global.vanguard.com

Vanguard