A mid-year update to the *Vanguard economic and market outlook for 2021*

A strong but uneven global recovery

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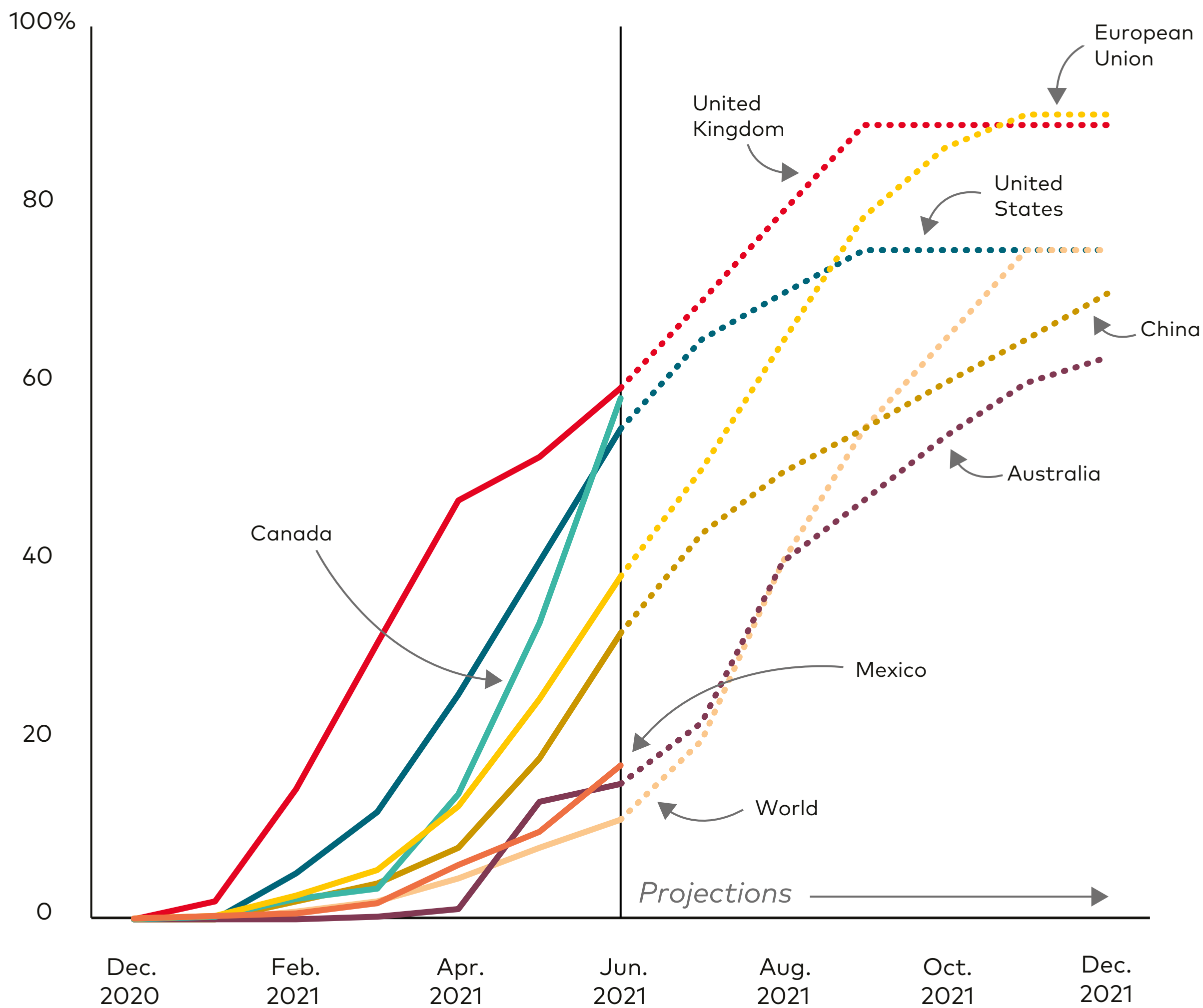
Health outcomes remain critical

The march toward herd immunity

- The degree to which economic activity can resume depends on the staying power of Covid-19 and its variants.
- Vaccination progress suggests an uneven global economic recovery. Consumers are more likely to engage in face-to-face economic activity where vaccination rates are greatest.
- Emerging markets remain at greater risk from Covid-19 and its variants than developed markets given the pace of vaccinations.

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.

Global economies in transition

Growth | Inflation | Monetary policy

Differences in vaccination rates and varied levels of fiscal support are likely to produce uneven economic growth.

We expect the United States (with its strong fiscal support), the United Kingdom (a leader in vaccination efforts), and China (the first to emerge from pandemic restrictions) to lead the way.

As vaccinations progress, emergent demand amid supply shortages in some sectors has heightened inflation risks, especially in the United States, where we anticipate above-target core inflation into 2022.

We expect core inflation to rise toward central bank targets outside the United States.

Improving economies are spurring talk about eventual tapering of central bank asset purchases, a first step in the gradual removal of policy accommodation.

We expect continued accommodative policy nonetheless, with liftoff in policy rates not broadly occurring until 2023.

Source: Vanguard analysis as at 17 June 2021.

Global economies in transition

Growth | Inflation | Monetary policy

United States

+ 7%

Positive health care developments and strong fiscal support are likely to drive **full-year growth of at least 7%**, stronger than we anticipated at the start of 2021. Activity will likely peak late in the second quarter and early in the third.

Euro area

~ 5%

After a halting start, vaccination rollout has accelerated, supporting **full-year growth of around 5%**, and possibly higher. Supportive policy underpins our view, which is largely in line with our expectations at the beginning of 2021.

United Kingdom

~ 7%

Our forecast for **full-year growth of around 7%** is lower than it was when 2021 began, as surprising fourth-quarter 2020 growth started the new year at a higher base. Strong vaccination rollout has supported an easing of Covid-19 restrictions that has largely been faster than expected.

China

~ 8.5%

Our expectation for **full-year growth of around 8.5%** is down somewhat from the start of 2021. We expect support from the export sector to wane and consumption growth to normalise slowly, given sporadic virus outbreaks and an initially slow vaccination rollout.

Emerging markets

+ 6%

Virus resurgence, particularly in emerging Asia, has slowed first-half 2021 growth. Whether our view of **full-year growth of above 6%** (up slightly from our view at the start of 2021) can be achieved will depend on accelerated vaccination efforts.

Source: Vanguard analysis as at 17 June 2021.

Global economies in transition

Growth | **Inflation** | Monetary policy

United States

Keeping a watchful eye

Prospects for stimulative fiscal policy and only a gradual readjustment of a supply-and-demand imbalance **increase the likelihood of moderately higher inflation** more persistently. We don't, however, foresee a return to 1970s-style runaway inflation.

Euro area

A moderate increase

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 at the start of 2021.

United Kingdom

Moving toward target

In line with our view at the start of 2021, we expect **core inflation to rise toward the Bank of England's 2% target** this year. Headline inflation should exceed that level in the second half as the economy strengthens and energy prices rise.

China

Modest consumer demand

We continue to foresee **core inflation of around 1.5% for the year**, well below the People's Bank of China's 3% target. Though producer prices have climbed, we expect pass-through effects to remain limited, especially amid modest consumer demand.

Emerging markets

Greater 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. The trend threatens central banks' flexibility.

Source: Vanguard analysis as at 17 June 2021.

Global economies in transition

Growth | Inflation | Monetary policy

United States

Policy remains accommodative

We foresee **accommodative policy remaining in place** for the rest of the year, though talk of reducing the pace of asset purchases will ramp up in the second half. We don't foresee conditions meeting the Federal Reserve's rate-hike criteria until the second half of 2023.

Euro area

Accommodative policy continues

We expect European Central Bank policy interest rates to remain on hold at least through 2022, even as the economy improves, though **the bank is likely to slow its pace of asset purchases** slightly in the near term.

United Kingdom

Slowing asset purchases

The Bank of England has slowed the pace of its asset purchases, and we expect a halt to purchases by the end of 2021. We **continue to foresee accommodative policy interest rates**, however, with the central bank not tightening until 2023.

China

Gradual policy normalisation

Our largely unchanged view continues to see the People's Bank of China **normalising its monetary policy, albeit gradually**, as economic growth remains uneven. Bond yields could rise in the near term as deleveraging efforts continue.

Emerging markets

Policy challenges abound

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.

Source: Vanguard analysis as at 17 June 2021.

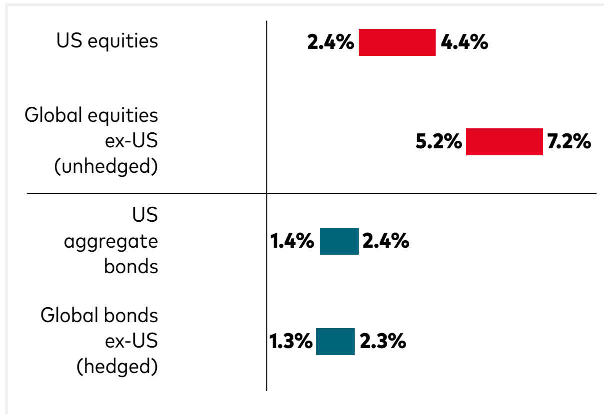
Global equity and fixed income outlook

Our forecasts are derived from a 31 May 2021, running of the Vanguard Capital Markets Model®. All forecasts are in local currencies.

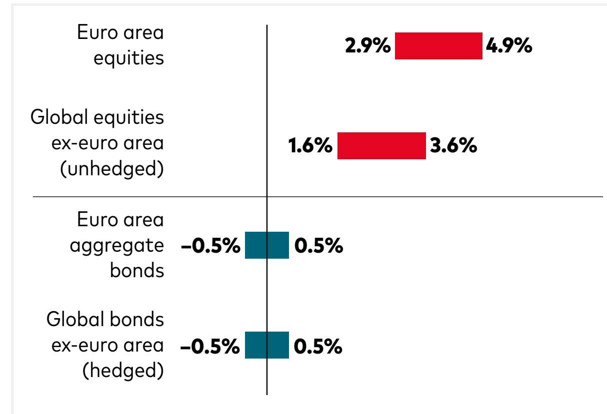
Vanguard's 10-year annualised outlooks for equity and fixed income returns have changed markedly since the *Vanguard Economic and Market Outlook for 2021* was released in December 2020.

Our equity return outlooks are significantly lower—in some developed markets by nearly 2 percentage points—as equity valuations have continued to rise. Our fixed income outlooks, on the other hand, have risen, largely in a range of a half to a full percentage point, attributable primarily to higher interest rates.

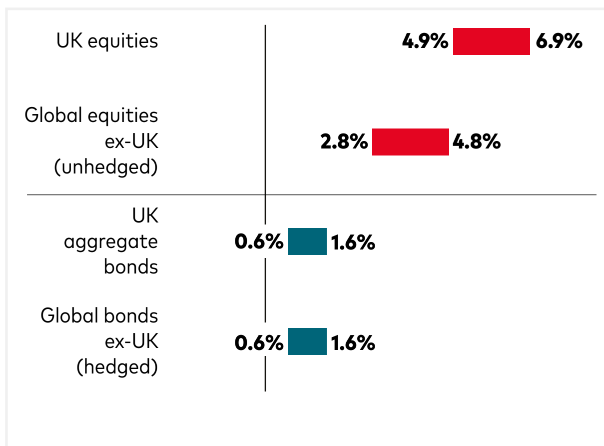
US dollar



Euro



British pound



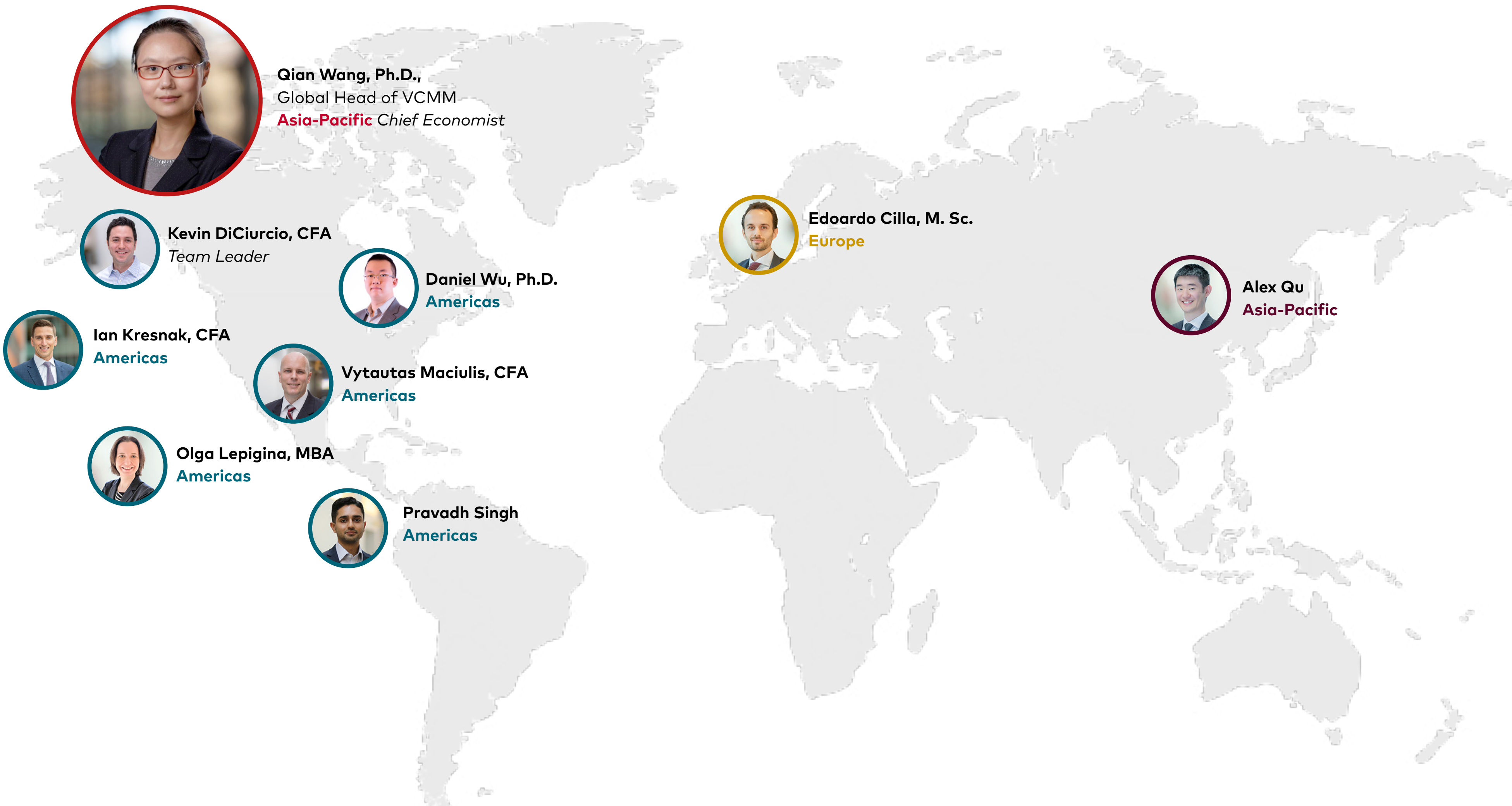
IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from the VCMM are derived from 10,000 simulations for each modeled asset class. Simulations are as of 31 May 2021. Results from the model may vary with each use and over time. For more information, please see the important information slide.

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.

Vanguard Investment Strategy Group's Global Economics Team

Vanguard Investment Strategy Group's Capital Markets Model Research Team



Indexes used in Vanguard Capital Markets Model simulations

The long-term returns of our hypothetical portfolios are based on data for the appropriate market indexes through 31 May 2021. We chose these benchmarks to provide the most complete history possible, and we apportioned the global allocations to align with Vanguard's guidance in constructing diversified portfolios. Asset classes and their representative forecast indexes are as follows:

US equities: MSCI US Broad Market Index.

Global ex-US equities: MSCI All Country World ex USA Index.

US aggregate bonds: Bloomberg Barclays U.S. Aggregate Bond Index.

Global ex-US bonds: Bloomberg Barclays Global Aggregate ex-USD Index.

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

Global ex-UK equities: S&P 90 Index from January 1926 to 3 March 1957; S&P 500 Index from 4 March 1957 to 1969; MSCI World ex UK from 1970 to 1987; MSCI AC World ex UK from 1988 onwards.

UK aggregate bonds: Bloomberg Barclays Sterling Aggregate Bond Index.

Global ex-UK bonds: Standard & Poor's 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 from 2001 onwards.

Euro area equities: MSCI European Economic and Monetary Union (EMU) Index.

Global ex-euro area equities: MSCI AC World ex EMU Index.

Euro area aggregate bonds: Bloomberg Barclays Euro-Aggregate Bond Index.

Global ex-euro area bonds: Bloomberg Barclays Global Aggregate ex Euro Index.

China equities: MSCI China A Onshore Index

Global equities ex-China: MSCI All Country World ex China Index

China aggregate bonds: ChinaBond Aggregate Index

About the Vanguard Capital Markets Model

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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 Investment Strategy Group. The model forecasts distributions of future returns for a wide array of broad asset classes. Those asset classes include US and international equity markets, several maturities of the US Treasury and corporate fixed income markets, international fixed income markets, US. 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.

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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.

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

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