Vanguard

Vanguard research

December 2023

Vanguard economic and market outlook for 2024: A return to sound money

Vanguard has said for more than a year that a return to sound money was underway. In the meantime, the transition to a higher interest rate environment no doubt has challenged investors, who have endured historical losses in bonds and high volatility in stocks. But make no mistake: This structural shift, which will endure beyond the next business cycle, is the single best economic and financial development in the last 20 years.

Sound money—the persistence of positive real interest rates—provides a solid foundation for long-term risk-adjusted returns. In contrast to the last decade, we expect return outcomes for diversified investors to be more balanced. For those with an appropriate risk tolerance, a more defensive risk posture may make sense given higher expected fixed income returns and an equity market that is yet to fully reflect the implications of the return to sound money.

Policy takes hold

We expect monetary policy to become increasingly restrictive in real terms as inflation falls towards central banks' targets. As economic resilience fades, central banks will be in a position to reduce policy interest rates. **Page 5**.

Equilibrium elevated

After policy rates recede from their cyclical peaks, we expect rates to settle at a higher level than we had grown accustomed to before the Covid-19 pandemic. Zero interest rates are gone; a higher-rate environment is here to stay. **Page 6**.

Bonds are back

Higher interest rates mean higher returns for long-term bond investors. We see global bonds as close to fair value. Meanwhile, the return premium of global equities over global bonds we expect over the next decade has further reduced. **Pages 17–18**.

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Vanguard's 2024 economic forecasts

	GDP growth		Unemployment rate		Core inflation	Monetary policy		
	2024		2024		2024			
Country/region	**Vanguard**	**Trend**	**Vanguard**	**NAIRU**	**Vanguard**	**Year-end 2023**	**Year-end 2024**	**Neutral rate**
US	0.25%–0.75%	1.8%	4.5%–5%	3.5%–4%	2.3%	5.5%	3.5%–4%	3%–3.5%
Euro area	0.5%–1%	1.2%	7%–7.5%	6.5%–7%	2.1%	4%	3.25%	2%–2.5%
UK	0.5%–1%	1%	4.5%–5%	3.5%–4%	2.8%	5.25%	4.25%	3%–3.5%
China	4.5%–5%	4.1%	4.5%–5%	4.5%–5%	1.2%	2.5%	2.2%	4.5%–5%

Notes: Forecasts are as at 4 December 2023. For the US, GDP growth is defined as the year-over-year change in fourth-quarter GDP. For all other countries/regions, GDP growth is defined as the annual change in GDP in the forecast year compared with the previous year. Unemployment forecasts are the average for the fourth quarter of 2024. NAIRU is the non-accelerating inflation rate of unemployment, a measure of labour market equilibrium. Core inflation excludes volatile food and energy prices. For the US, euro area and UK, core inflation is defined as the year-over-year change in the fourth quarter compared with the previous year. For China, core inflation is defined as the average annual change compared with the previous year. For the US, core inflation is based on the core Personal Consumption Expenditures Index. For all other countries/regions, core inflation is based on the core Consumer Price Index. For US monetary policy, Vanguard's forecast refers to the top end of the Federal Open Market Committee's target range. The neutral rate is the equilibrium policy rate at which no easing or tightening pressures are being placed on an economy or its financial markets.

Source: Vanguard.

Notes on asset-return distributions

The asset-return distributions shown here represent Vanguard's view on the potential range of risk premiums that may occur over the next 10 years; such long-term projections are not intended to be extrapolated into a short-term view. These potential outcomes for long-term investment returns are generated by the Vanguard Capital Markets Model® (VCMM) and reflect the collective perspective of our Investment Strategy Group. The expected risk premiums—and the uncertainty surrounding those expectations—are among a number of qualitative and quantitative inputs used in Vanguard's investment methodology and portfolio construction process.

IMPORTANT: The projections and other information generated by the VCMM 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 30 September 2023. Results from the model may vary with each use and over time. For more information, see "About the Vanguard Capital Markets Model" on page 21.

Global outlook summary

Higher interest rates are here to stay. Even after policy rates recede from their cyclical peaks, in the decade ahead rates will settle at a higher level than we've grown accustomed to since the 2008 global financial crisis (GFC). This development ushers in a return to sound money, and the implications for the global economy and financial markets will be profound. Borrowing and savings behaviour will reset, capital will be allocated more judiciously and asset class return expectations will be recalibrated. Vanguard believes that a higher interest rate environment will serve investors well in achieving their long-term financial goals, but the transition may be bumpy.

Monetary policy will bare its teeth

The global economy has proven more resilient than we expected in 2023. This is partly because monetary policy has not been as restrictive as initially thought. Fundamental changes to the global economy have pushed up the neutral rate of interest – the rate at which policy is neither expansionary nor contractionary. Various other factors have blunted the normal channels of monetary policy transmission, including the US fiscal impulse from debt-financed pandemic support and industrial policies, improved household and corporate balance sheets and tight labour markets that have resulted in real wage growth. In the US, our analysis suggests that these offsets have almost entirely counteracted the impact of higher policy interest rates. Outside the US, this dynamic is less pronounced. Europe's predominantly bank-based economy is already flirting with recession, and China's rebound from the end of Covid-19-related shutdowns has been weaker than expected.

The US exceptionalism is set to fade in 2024. We expect monetary policy to become increasingly restrictive in real terms as inflation falls and offsetting forces wane. The economy will experience a mild downturn as a result. This is necessary to finish the job of returning inflation to target. However, there are risks to this view. A "soft landing," in which inflation returns to target without recession, remains possible, as does a recession that is further delayed. In Europe, we expect anaemic growth as restrictive monetary and fiscal policy lingers, while in China, we expect additional policy stimulus to sustain economic recovery amid increasing external and structural headwinds.

Zero rates are yesterday's news

Barring an immediate 1990s-style productivity boom, a recession is likely a necessary condition to bring down the rate of inflation, through weakening demand for labour and slower wage growth. As central banks feel more confident in inflation's path towards targets, we expect they will start to cut policy rates in the second half of 2024.

That said, we expect policy rates to settle at a higher level compared with after the GFC and during the Covid-19 pandemic. Vanguard research has found that the equilibrium level of the real interest rate, also known as r-star or r*, has increased, driven primarily by demographics, long-term productivity growth and higher structural fiscal deficits. This higher interest rate environment will last not months, but years. It is a structural shift that will endure beyond the next business cycle and, in our view, is the single most important financial development since the GFC.

A return to sound money

For households and businesses, higher interest rates will limit borrowing, increase the cost of capital and encourage saving. For governments, higher rates will force a reassessment of fiscal outlooks sooner rather than later. The vicious circle of rising deficits and higher interest rates will accelerate concerns about fiscal sustainability. Vanguard's research suggests the window for governments to act on this is closing fast – it is an issue that must be tackled by this generation, not the next.

For well-diversified investors, the permanence of higher real interest rates is a welcome development. It provides a solid foundation for long-term risk-adjusted returns. However, as the transition to higher rates is not yet complete, near-term financial market volatility is likely to remain elevated.

Bonds are back

Global bond markets have repriced significantly over the last two years because of the transition to the new era of higher rates. In our view, bond valuations are now close to fair, with higher long-term rates more aligned with secularly higher neutral rates. Meanwhile, term premia have increased as well, driven by elevated inflation and fiscal and monetary outlook uncertainty.

Despite the potential for near-term volatility, we believe this rise in interest rates is the single best economic and financial development in 20 years for long-term investors. Our bond return expectations have increased substantially. Hedged into Swiss francs, we now expect US bonds to return a nominal annualised 1.1%–2.1% over the next decade, compared with the -0.4%–0.6% annualised returns we expected before the rate-hiking cycle began. Similarly, for global bonds (hedged), we expect annualised returns of 0.9%–1.9% over the next decade, compared with a forecast of -0.7%–0.3% when policy rates were low or, in some cases, negative.

If reinvested, the income component of bond returns at this level of rates will eventually more than offset the capital losses experienced over the last two years. By the end of the decade, bond portfolio values are expected to be higher than if rates had not increased in the first place.

Similarly, the case for the 60/40 portfolio[1] is stronger than in recent memory. Long-term investors in balanced portfolios have seen a rise in the probability of achieving a 10-year annualised return of at least 3%, from a 32% likelihood in 2021 to 43% today.

Moving up the risk spectrum, credit valuations appear fair in the investment-grade space but relatively rich in high-yield. What's more, the growing likelihood of recession and declining profit margins skew the risks towards wider spreads.

Higher rates leave equities overvalued

A higher-rate environment depresses asset price valuations across global markets while squeezing profit margins as corporations find it more expensive to issue and refinance debt.

Valuations are most stretched in the US. As a result, we have downgraded our US equity return expectations for Swiss franc investors to an annualised 0.7%–2.7% over the next 10 years from 2.0%–4.0% heading into 2023. Within the US market, value stocks are more attractive than they have been since late 2021, and small-capitalisation stocks also appear attractive for the long term.

US equities have continued to outperform their international peers. The key drivers of this performance gap over the last two years have been valuation expansion and US dollar strength beyond our fair-value estimates, both of which are likely to reverse. Indeed, our VCMM projections suggest an increasing likelihood of greater opportunities outside the US. For example, we project 10-year annualised returns of 1.9%–3.9% for euro area equities and 2.9%–4.9% for emerging market equities, all from the perspective of a Swiss franc investor.

The global equity risk premium that emerges from current stock and bond market valuations is the lowest since the 1999–2009 "lost decade." The spread between global equity and global bond returns is expected to be 0 to 2 percentage points annualised over the next 10 years. In contrast to the last decade, we expect return outcomes for diversified investors to be more balanced. For those with an appropriate risk tolerance, a more defensive risk posture may be appropriate given higher expected fixed income returns and an equity market that is yet to fully reflect the implications of the return to sound money.

IMPORTANT: The projections and other information generated by the VCMM 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 VCMM are derived from 10,000 simulations for each modelled asset class. Simulations are as at 30 September 2023. Results from the model may vary with each use and over time. For more information, see "About the Vanguard Capital Markets Model" on page 21.

1 In our analysis, the 60% equity/40% fixed income portfolio is represented by the following indices: Equity: MSCI AC World Total Return Index. Fixed income: Bloomberg Global Aggregate Bond Index Swiss Franc Hedged.

OUR ECONOMIC OUTLOOK

Fading growth resilience to spur rate cuts in 2024

After nearly two years of steady interest rate hikes in most developed markets and with inflation falling back from generational highs, we expect central banks' policy rates to remain near current levels in the first half of 2024 before receding. As inflation falls towards central banks' targets, monetary policy will become increasingly restrictive in real terms. The resilience that global economies exhibited through much of 2023 is likely to fade as the effects of Covid-19-era expansive fiscal policy and excess savings diminish.

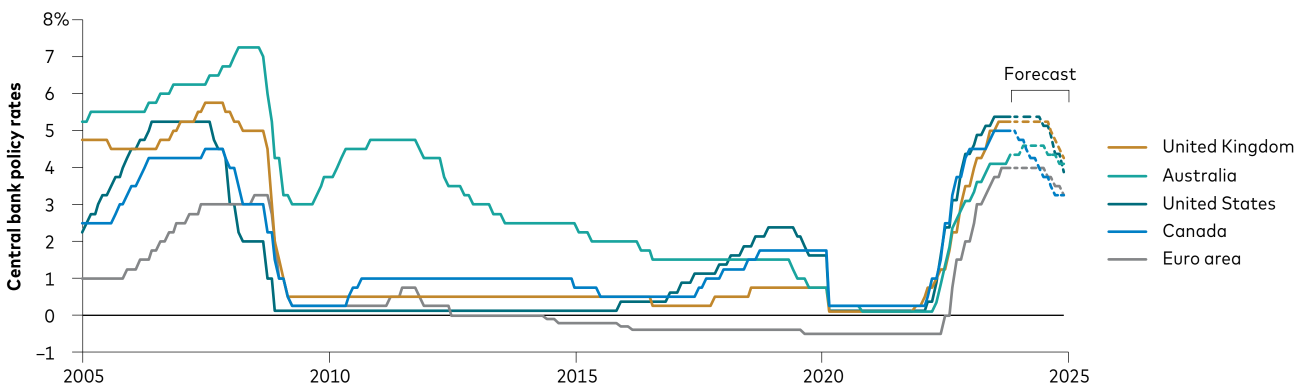
Inflation's initial surge was driven by well-understood factors including pandemic-related supply-demand imbalances, sharply higher commodities prices and expansionary fiscal policy. As we move into 2024, most of the remaining gap between current levels of inflation and central banks' targets is attributable to services, a typically "stickier" component of inflation tied closely to labour markets.

We expect policy interest rates to reach or remain at their peaks in the first half of 2024, dampening economic activity. We expect the US and other developed markets to experience below-trend growth in 2024, with uncomfortably high odds of slipping into mild recessions.

This economic slowdown, coupled with inflation falling to target, gives us conviction that central banks will start to ease policy in the second half of 2024. In our base case, we expect rate cuts of 75 basis points in the euro area and 150 to 200 basis points—or 1.5 to 2 percentage points—in the US.

Although policy rates are likely to be cut, we expect them to settle at a higher level than we've become accustomed to in recent years. By the end of 2025, we expect policy rates to be between 2.25% and 3.75% across major developed markets. We're not returning to a zero interest rate world anytime soon, and this will have profound implications for the global economy and financial markets.

Rate cuts in 2024, but zero rates are behind us



Notes: Monthly data are from January 2005 to November 2023. Forecasts thereafter run to year-end 2024.
Sources: Vanguard calculations, based on data from Bloomberg, as at 30 November 2023.

Why we expect rates to settle at a higher level

Although interest rates in 2024 are likely to recede from their peaks, in the years ahead we expect them to settle at a higher level than we experienced after the 2008 GFC. Zero interest rates are yesterday's news.

In our view, the equilibrium real interest rate—also known as the neutral rate, r-star or r*—has increased. This is the theoretical level of interest rates at which monetary policy would neither stimulate nor restrict an economy. Described another way, the neutral rate is the balancing point between savings and investments in an economy.

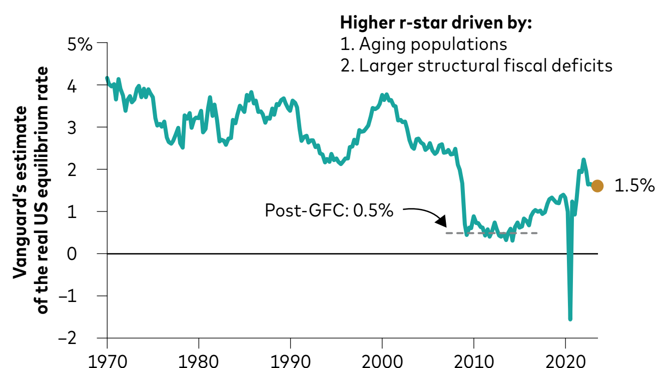
Vanguard research suggests r-star has increased by about 100 basis points—or 1 percentage point—since 2008 to around 1.5% today, making the nominal interest rate around 3.5%.

There are two important drivers for this higher equilibrium rate: aging populations and relatedly higher structural government deficits. As people age and retire, accumulated savings are spent and the size of the working-age population shrinks. On the other side, governments borrow to finance infrastructure and other long-term needs. So, as fewer people are saving and more are borrowing, interest rates will rise.

The pattern exists across other developed markets including the UK, the euro area, Australia, Japan and Canada. Every country has its own dynamics, so the changes occur at different rates, but we calculate an increase of roughly 1 percentage point in equilibrium real interest rates since the GFC.

A notable exception to this upward trend is China, where the economy is rebalancing to a lower, but more sustainable, growth path. In our view, this will lead to a lower equilibrium real interest rate there relative to that of the last two decades.

The US neutral rate is likely to settle at a higher level



Notes: The chart depicts our estimate for the real US neutral rate using our proprietary extended Laubach-Williams model; a similar pattern exists for other developed markets. If inflation were at the Federal Reserve's 2% target and real r-star were 1.5%, then nominal r-star would be 3.5%.

Sources: Vanguard calculations, based on data from the Federal Reserve Bank of New York, as at 30 June 2023. More information can be found at www.newyorkfed.org/research/policy/rstar.

Powerful offsets delayed monetary policy transmission

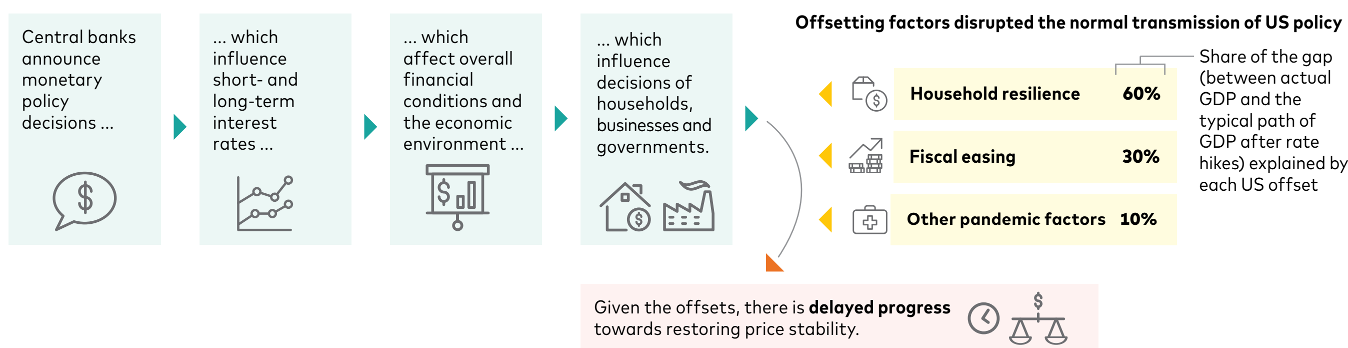
Central banks have raised interest rates to their highest levels in decades to return elevated inflation towards the banks' targets. Some central banks in developed markets have had a degree of success in the effort. Prices have fallen, though not yet by enough to declare victory.

In the United States especially, a combination of factors has reduced the potency of monetary policy, allowing economic activity to remain resilient. Among them is that the neutral rate has moved structurally higher (see page 6). But other factors have also played a significant role in disrupting the transmission of monetary policy, including:

- **Household resilience.** Consumers have benefitted from inexpensive long-term, fixed-rate loans that have helped shield them from higher interest rates. They also accumulated meaningful cash positions during the pandemic, mitigating the need to borrow.
- **Fiscal easing.** Government cash transfers boosted household savings, and industrial policy supported public and private investment, which helped sustain demand despite rising prices.
- **Other pandemic factors.** Monetary policy could do little to combat the pandemic's disruption to the supply of goods and services, which drove up inflation.

We expect these offsets to fade and monetary policy to become more restrictive in real terms as inflation decelerates. We believe the effects will be slowing growth, a somewhat looser labour market and, eventually, a recession. Our outlooks for the US, the euro area and the UK (pages 9–11) offer more details.

The transmission of monetary policy, disrupted



Notes: The graphic represents the period from the second quarter of 2022 to the third quarter of 2023. Shares of offsets are rounded. Business and residential investment, an additional offset not shown above, had a negligible contribution.

Sources: Vanguard and the Federal Reserve, as at 31 October 2023.

The implications of a return to sound money

We are witnessing a return to sound money. Given our view that the equilibrium real interest rate, or neutral rate, has increased, Vanguard anticipates that rates over the next decade will be higher on average than they were over the last decade. This is the single most important financial development since the 2008 GFC and it has profound implications for households, businesses and governments.

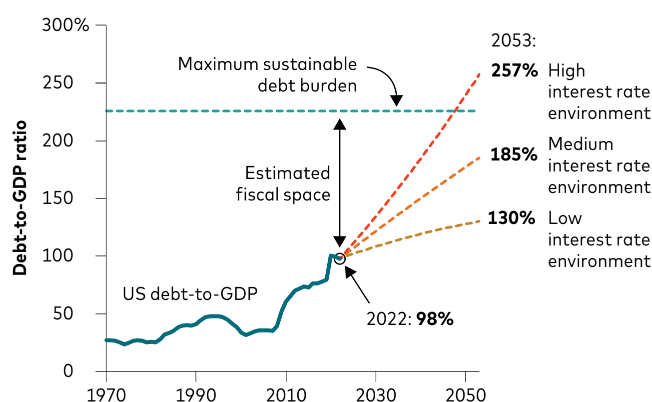
For households, saving will become more attractive. Higher interest rates will encourage prudent consumption behaviour, such as moving away from luxuries and big-ticket items that require credit in favour of focusing on essentials. Purchases of more speculative, higher-risk retail investments, such as cryptocurrency, are likely to become less commonplace.

For businesses, higher borrowing costs will ensure that capital is allocated more judiciously, to the most productive and profitable projects. In the US, more than $3 trillion of corporate debt is due for repayment over the next five years. Not all companies will be affected immediately, as many locked in cheap financing when interest rates were low. Smaller companies that issue high-yielding debt and are typically more leveraged, however, will be more vulnerable to higher rates.

For governments, higher rates will force a reassessment of fiscal policy. Rising debt has become an issue that must be tackled by this generation, not the next. A potentially vicious circle of rising deficits and higher interest rates will accelerate concerns about fiscal sustainability.

The trajectory of government debt looks increasingly worrisome as we move from a low interest rate environment to one of medium or high interest rates. Vanguard research suggests the window for addressing these concerns is closing fast. In the US, we estimate that at the current debt-to-GDP level of around 100%, the government should keep its primary deficits below 2% of GDP to ensure a sustainable path. Current official deficit projections greater than 3% of GDP for coming decades would put debt on an unsustainable trajectory unless policy action is taken.

Higher interest rates will exert pressure on debt sustainability



Notes: All debt-to-GDP projections are based on US real economic growth of 2%, average inflation of 2% and a primary deficit of 3.5%. "Low interest rate environment" assumes an average interest rate of 1.8%, consistent with the average 5-year US Treasury yield over the 2008–2019 period, "Medium interest rate environment" assumes an average interest rate of 3.5%, and "High interest rate environment" assumes an average interest rate of 5%. Maximum sustainable debt burden and estimated fiscal space are calculated using Vanguard's proprietary fiscal space methodology, detailed in *Assessing U.S. Fiscal Space* (Aliaga-Díaz, Patterson and Raithatha, 2023).

Sources: Vanguard calculations, based on data from the Congressional Budget Office, as at 30 June 2023.

United States: Monetary policy to finally weigh on economy

The US economy has been exceptionally resilient since the Federal Reserve began raising interest rates early in 2022 to combat inflation. Offsets to monetary policy, including pandemic-era household fiscal support and recent industrial policy legislation, are largely responsible for this resilience.

Policy hasn't been restrictive enough for long enough to overcome these offsets. But we expect the accumulated impact of monetary policy to take firm hold in 2024, for which we forecast US growth of just 0.5%.

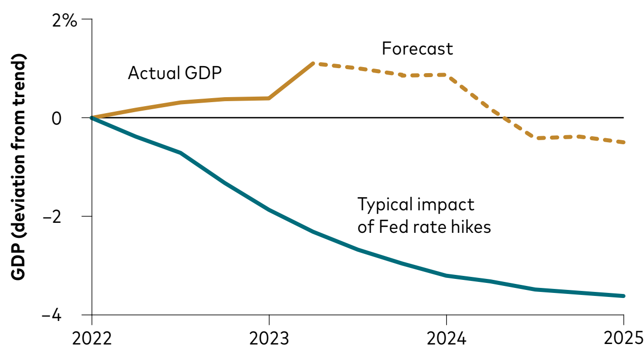
The US economy is outperforming expectations at this stage of the policy tightening cycle. Our analysis suggests that, if not for the offsets, the economy would have been growing in a range close to 0% in 2023 rather than on track to grow between 2.5% and 3%.

A resilient consumer and fiscal policy are behind this outperformance. A strong labour market that has averaged more than 225,000 monthly job creations in 2023 has driven above-trend growth in real incomes. This has added to household balance sheets that were already stronger because of the fiscal support received during the Covid-19 pandemic. Legislation such as the Bipartisan Infrastructure Law, the CHIPS Act and the Inflation Reduction Act—all enacted between November 2021 and August 2022—have further supported growth through private and public investment.

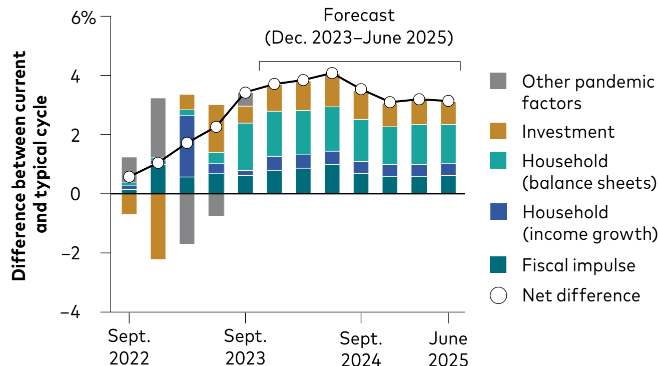
Despite significant progress on inflation and strong economic growth, we believe a "soft landing"—where inflation returns sustainably to the Federal Reserve's target absent weakness in demand—is unlikely. The last mile on the path to 2% inflation will be the most difficult. In the year ahead, we expect a combination of below-trend growth, rising unemployment and slowing wage growth. This would occur as the labour market loosens, in large part because of higher-than-expected labour supply growth. We expect the Fed to start easing policy in the second half of 2024, and we expect the policy rate to be cut below 4% by the end of 2024.

Offsetting factors have blunted the impact of US monetary policy

a. Growth has offset monetary policy impact ...



b. ... driven by consumer strength and fiscal policy



Notes: This simulation of the impact of the current US rate hiking cycle on US GDP was performed using a proprietary vector autoregression model with a combination of short- and long-run drivers including inflation, short-term and long-term interest rates, potential GDP, real disposable income and commodity prices. The offset factors were measured using a growth decomposition model to assess the impacts of labour income, liquid asset balances, residential and business investment and the fiscal impulse estimate using Congressional Budget Office (CBO) budgetary projections. The bars in Chart B reflect differences between actual and trend, or expected, growth for various growth drivers. We project the drivers' effects to wane in 2024 and 2025, when we foresee growth falling below trend.

Sources: Vanguard calculations, based on data from the CBO, as at 30 September 2023.

Euro area: Monetary policy transmission is about a third complete

Euro area economic activity has slowed since the European Central Bank (ECB) started raising interest rates in mid-2022. This contrasts sharply with the United States, where the economy has proven resilient. We see three reasons for this relative weakness: more effective transmission of monetary policy, mildly restrictive fiscal policy and larger exposure to the slowing global trade cycle. We expect these headwinds to spill into 2024, when we forecast muted euro area growth of just 0.5%–1%.

The economy is slowing broadly in line with expectations at this stage of the tightening cycle. Evidence is building that tighter monetary policy is taking hold: Credit growth is slowing, and corporate net interest payments are rising sharply. In contrast to the US, corporate funding in the euro area is predominantly bank-based rather than capital-market-based. As such, higher interest rates are feeding through more quickly into profit and loss statements. Still, we assess that the transmission of ECB monetary policy in the fight against inflation is only about one-third complete, bolstering our view that rates won't be cut as quickly as some may hope.

We expect euro area fiscal policy to be mildly restrictive in 2024, driven by the unwinding of energy support to households; the phaseout of attractive tax credits in the Italian construction sector is also a factor.

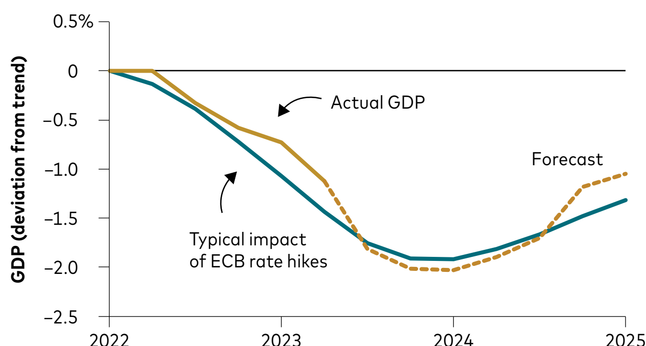
The euro area is an open economy—international trade accounts for about one-quarter of its GDP—with a relatively large manufacturing base. Activity has suffered recently from soft growth in China and a broader slowdown in global trade. Exports contracted at an average quarterly rate of –0.3% in the three quarters ended 30 June 2023. We expect this headwind to fade in 2024.

Finally, strong household balance sheets, bolstered by savings built up during the Covid-19 pandemic, should continue to provide support to the consumer relative to previous tightening cycles.

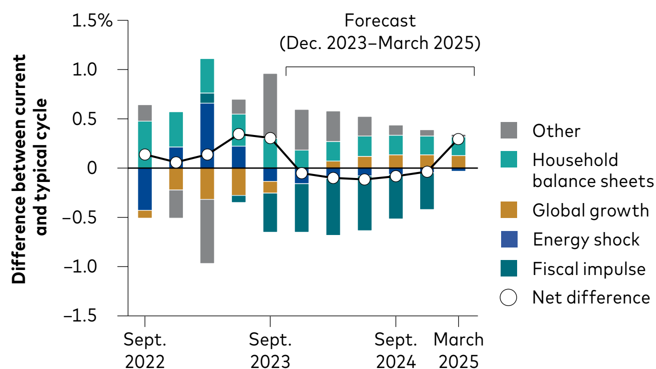
With the output gap—the difference between actual and potential economic activity—expected to widen in coming quarters, we expect the ECB to start easing policy from mid-2024. Our base case is for the ECB to cut the policy rate to around 3.25% by the end of 2024.

Offsetting factors have had little impact on euro area monetary policy

a. Policy is having its intended effects ...



b. ... and should continue to do so in 2024



Notes: This simulation of the impact of the current ECB rate-hiking cycle on euro area GDP was performed using a proprietary error-correction model of euro area consumption using a combination of short- and long-run drivers including disposable income, unemployment rate, household wealth and the short-run interest rate. The model was supplemented by simulations run on the Bloomberg SHOK model for the impact of energy prices and global growth on euro area GDP, as well as by fiscal impulse estimates using International Monetary Fund (IMF) budgetary projections.

Sources: Vanguard calculations, based on data from Eurostat, the IMF and Bloomberg, as at 27 October 2023.

United Kingdom: Changes in mortgage market slow monetary policy transmission

In a global developed markets context of increasing interest rates, the UK is no exception. It has witnessed its most rapid interest rate-hiking cycle since the late 1980s, and the hikes are starting to hurt the domestic economy. Economic activity was subdued through most of 2023, and we expect this fragility to persist through 2024 as the impact of tighter monetary policy intensifies.

Despite more than 5 percentage points of monetary policy tightening in the last two years, inflation in the UK remains elevated relative to other advanced economies. This is partly because the UK is suffering from the worst of both worlds—a US-style labour supply shock and a euro area-style energy shock.

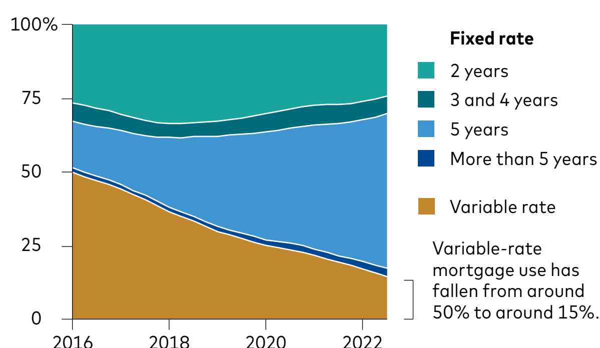
The transmission of monetary policy through the housing channel is slower and weaker than in the past. The portion of outstanding mortgages on variable rates has fallen from around 50% in 2016 to around 15% at the end of 2022. Similarly, the popularity of longer-term mortgages (for example, 5 years) has increased at the expense of shorter alternatives (for example, 2 years).

These changes have slowed the transmission of policy to the real economy, as more households are now able to wait longer before refinancing.

The mortgage channel is also less potent than it once was, because a greater proportion of homeowners no longer have a mortgage: In 1997, more than 60% of homeowners had a mortgage; today, the proportion is closer to 45%.

With services inflation elevated and wage growth resilient, we expect interest rates will need to stay elevated for an extended period. In our base case, we expect the bank rate to remain at 5.25% until at least mid-2024, after which we expect a gradual easing cycle to begin.

A greater use of fixed-rate mortgages



Note: The chart shows quarterly data from the first quarter of 2016 to the third quarter of 2022.

Sources: UK Housing Survey and the Bank of England, as at 30 September 2023.

China: Policy rates to stay *lower* for longer

Amid a backdrop of global economic resilience, China's recovery from its lengthy Covid-19-related lockdowns has stuttered. A beleaguered property market, weak private-sector confidence and a reluctant, belated policy response has left the economy seeking firm footing.

But stimulus has gained momentum. An unusual 1 trillion yuan ($140 billion) increase to the fiscal deficit, equivalent to 0.8% of GDP, signals an important policy shift to buttress domestic demand and mitigate local governments' financial constraints. We believe that continued policy easing is necessary—and forthcoming—to cushion against lingering downside risks.

We expect China's economy to grow by 4.5%–5% in 2024 amid intensifying external headwinds and a continued decline in sustainable potential, or trend, growth. The magnitude of stimulus will likely be more modest than after the 2008 GFC, when it was equivalent to around 12% of GDP. Financial stability concerns will likely limit the scale of stimulus to targeted measures.

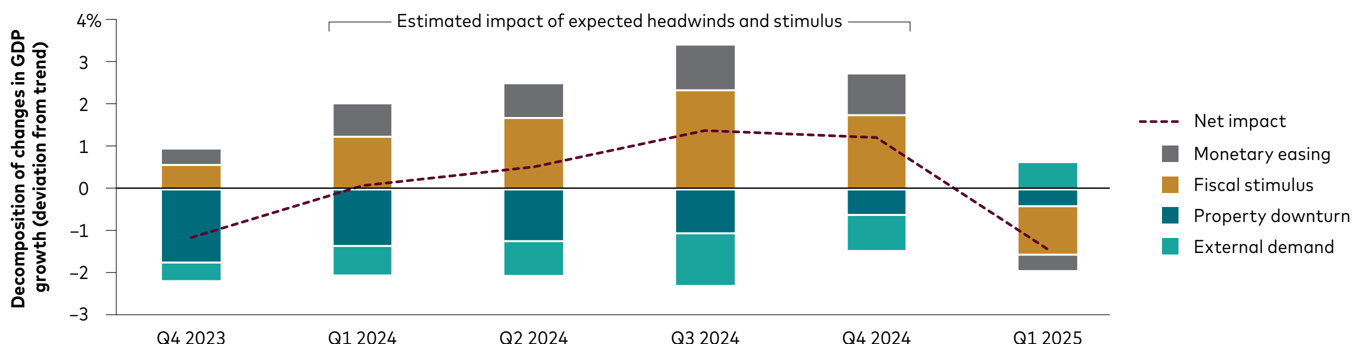
We expect coordinated monetary, fiscal and regulatory policy to work to ensure economic normalisation towards pre-pandemic trend levels.

We expect fiscal expansion to take the lead, facilitated by monetary easing—which could take the form of further cuts to the policy rate and banks' reserve requirements—in addition to further support for the housing sector. We expect policymakers to set their 2024 growth target at 5% once again, but that would require more aggressive stimulus given falling trend growth that we estimate in the low 4% range.

We anticipate that policy interest rates will stay lower for longer—in contrast to the rest of the world—given requirements for growth, deleveraging and a decline in China's neutral rate, a theoretical rate that would neither stimulate nor restrict an economy.

Financial system vulnerabilities have grown as leverage has risen; rate differentials with developed markets could drive capital outflows. Although an anticipated slowing in US growth in 2024 should ease pressure on the yuan, we believe policymakers will continue to monitor cross-border capital flows closely. We expect increased fiscal and monetary policy coordination and strengthened macroprudential regulations to manage financial stability and ensure a smooth deleveraging beyond 2024.

Impact of headwinds and policy stimulus will determine China's growth



Notes: This simulation uses Vanguard's proprietary semi-structural China macroeconomic model. We incorporated the following shocks: a 3% increase from trend in money supply; a 10% increase from trend in fiscal stimulus; a 5% decrease compared with trend in property investment coupled with a 5% decrease from trend in property prices; and a 5% decrease from trend in external demand.

Sources: Vanguard estimates, based on data from CEIC, as at 30 September 2023.

Emerging markets: Holding up, with divergence across regions

Despite interest rates having reached a cyclical peak in 2023, growth in emerging markets has remained resilient. With inflation's rise exacerbated by a need to protect their currencies, emerging market central banks were ahead of their developed market counterparts in raising policy rates—unlike in past rate-hiking cycles. Now, with inflation slowing, interest rates are becoming more restrictive, raising concerns about growth. In response, emerging market central banks are leading the cutting cycle.

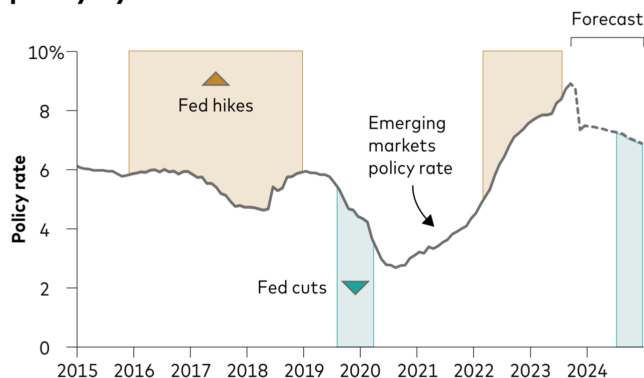
Broadly, we expect central banks in Latin America and emerging Europe to cut rates modestly through 2024. We expect banks in emerging Asia to remain on pause for longer, until the second half of 2024. Beyond these cyclical rate cuts, we expect interest rates to settle at levels higher than before the hiking cycle and to remain there for an extended period.

We expect emerging market GDP to grow mostly in line with consensus in 2024, and to a greater degree than developed markets. We anticipate growth of around 4% for emerging markets broadly—around 5% for emerging Asia and 2%–2.5% for emerging Europe and Latin America.

A divergence theme is likely to continue across regions. Emerging Asia should benefit from an upturn in the global tech cycle and a modest boost from the continued normalisation of China's economy. The euro area's flirtation with recession and its relatively stubborn inflation could leave growth in emerging Europe below trend and consensus expectations. In Latin America, we expect growth below trend but in line with consensus, owing to lower expected US growth and more restrictive interest rates in both places.

We expect inflation to continue to fall but at a slower pace. Still, upside risks remain in the form of volatile energy and food prices. We expect inflation in emerging Europe to remain above central banks' targets as labour markets remain tight. In Latin America, we expect inflation to make only slow progress towards central banks' targets as services inflation and elevated wage growth remain obstacles. We expect inflation in emerging Asia to remain well-behaved, owing to price controls in some countries and flagging demand in others.

Emerging markets are leading the monetary policy cycle



Notes: The emerging markets policy rate is a GDP-weighted average of the following countries, listed in order of GDP: India, Brazil, Mexico, South Korea, Indonesia, Turkey, Poland, Israel, Thailand, Philippines, South Africa, Colombia, Romania, Chile, Czech Republic, Peru and Hungary.

Sources: Vanguard calculations, based on data from Refinitiv, as at 30 September 2023.

Stretched US equity valuations are apt to ease

The valuation-driven equity rally of 2021, supported by fiscal stimulus and the end of Covid-19 restrictions, pushed the cyclically adjusted price/earnings (CAPE) ratio for the US equity market to highs not seen since the dotcom bubble of the late 1990s. The sell-off in 2022 reversed much of that. In 2023, however, valuations again have increased, and the prospect that the higher interest rate environment will last for years remains underappreciated.

US equity prices exceed fair value

Our analysis shows that, over the long term, equity prices trade within a fair-value range that depends in part on the macroeconomic environment. Lower rates of interest and inflation increase the level of justifiable valuations; higher rates of interest and inflation have the opposite effect.

More than a decade of low rates and low inflation followed the GFC of 2008, boosting our fair-value estimates for equities. But the rapid monetary tightening aimed at bringing down inflation has more than reversed the valuation support provided by an era of easy money.

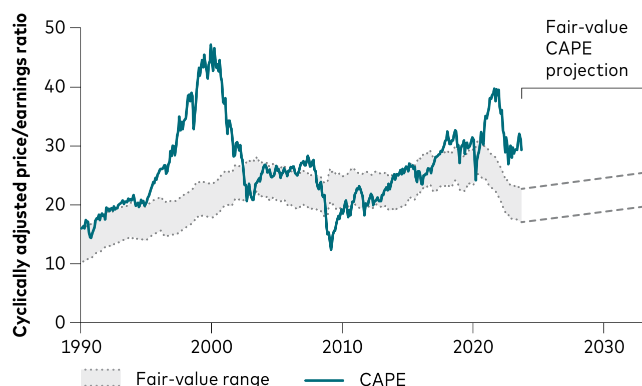
Looking ahead, we believe that the Federal Reserve and other central banks will win the fight against inflation. We expect short- and long-term interest rates to recede from their peaks but settle at higher levels than we've become accustomed to. As a result, our estimates of equities' fair value will increase, but only modestly. We do not envision any near-term return to the high levels reached at the start of this decade.

Our views are reflected in the declining expected valuations in our 10-year annualised US equity return forecast. Despite some expected rate relief, price/earnings ratios must ease for US equities to reach fair value.

Non-US equity market valuations remain more attractive

As in the United States, our fair-value estimates for most non-US equity markets declined in recent years. Valuations in non-US equity markets did not rise as much as US valuations, however, and non-US shares were priced more modestly to begin with. The result: Most non-US equity markets remain fairly valued, and we expect valuation changes to have only a minor impact on global ex-US equity returns in the coming decade.

US equity valuations need to fall to return to fair value



The components of our forecasts for equity total returns

	Valuation change	+	Earnings growth	+	Dividend yield	+	Currency effect	=	Total return
US equities	–1.1%		4.4%		2.0%		–3.6%		**1.7%**
Global ex-US equities	–0.1%		3.4%		3.7%		–2.7%		**4.3%**

Notes: The chart shows the cyclically adjusted price/earnings (CAPE) ratio for US equities, measured by the MSCI US Broad Market Index. CAPE reflects contemporaneous real equity prices and 10-year average historical real earnings. The chart also shows our estimates of fair value, considering inflation and interest rates. Our historical fair-value estimates are based on actual levels of inflation and interest rates and reflect underlying data since 31 January 1940, while our 10-year fair-value forecast considers our expectations for inflation and rates.

The table reflects the distribution of 10,000 VCMM simulations of annualised nominal equity returns, in Swiss francs, over the 10-year period ending 30 September 2033. Nominal returns do not take into account management fees and expenses, or the effect of taxes. They do reflect the reinvestment of income and capital gains. Indices are unmanaged; therefore, direct investment is not possible. Any discrepancies in the total return sum are due to rounding.

Sources: Vanguard calculations, based on data from Refinitiv and Global Financial Data, as at 30 September 2023.

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Below-trend earnings growth could suppress returns

In the last quarter-century, corporate earnings grew at an annualised rate of 7.2%[2]. In the decade ahead, our forecast is for annualised earnings growth of 4.4% for US equities and 3.4% for global ex-US equities.

We expect slower earnings growth due to a compression in corporate profit margins. Weaker earnings growth will weigh on equities' total returns.

Profit margins are key—and are likely to fall

Earnings growth is a function of revenue growth and profit margins. While individual companies and industries may grow more quickly or more slowly than the overall economy, corporate revenue growth in aggregate is highly correlated with changes in economic output. Absent shocks, changes in output tend to be relatively slow-moving. As a result, cyclicality in earnings growth is often driven by changes in profit margins.

In the post-Covid-19 era, profit margins even surpassed the high levels seen in the run-up to the GFC and earnings growth was revitalised amid declines in the share of labour costs per unit of output. In the coming years, we expect profit margins—and thus corporate earnings growth—to weaken. Government stimulus will have faded. Profit margins also face pressure from increases in labour and borrowing costs, plus "onshoring" or "near-shoring" of supply chains.

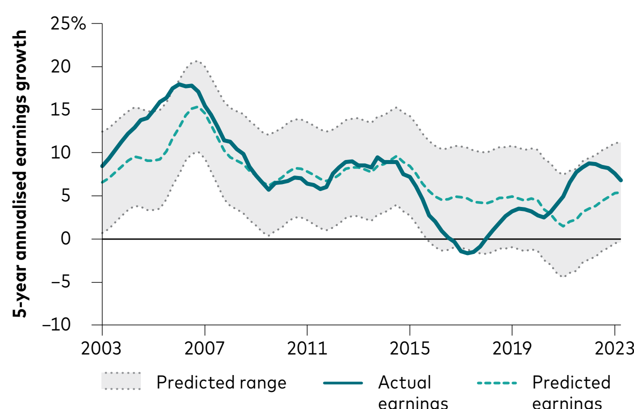
The risk to equity returns

Declines in profit margins and revenue growth trends augur weaker earnings growth compared with historical averages. In the US, where this is coupled with downside pressure on equity valuations, slower earnings growth leads to our forecast for lower long-term equity returns than we had forecast last year.

One element that may further impact our outlook for earnings growth is our expectation for a weaker US dollar over the next decade.

A depreciating US dollar increases the value of offshore earnings for US companies and, given the large share of revenue many firms derive from abroad, this represents a significant factor for earnings growth.

Recent profit-margin-driven earnings growth has started to reverse



The components of our forecasts for equity total returns

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Global ex-US equities	−0.1%		3.4%		3.7%		−2.7%		**4.3%**

Notes: In the chart, five-year annualised earnings growth figures, actual and predicted, reflect the aggregate results of Standard & Poor's 500 Index constituents, including loss-making companies, as at 30 June 2023. Predicted earnings reflect the median forecast of a proprietary Vanguard model of corporate earnings, which is detailed in "From Economics to Earnings: A Macro-Based Equity Earnings Growth Forecasting Model," an article published in the February 2023 issue of *The Journal of Investing*.

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Sources: Vanguard calculations, based on data from Bloomberg, Refinitiv, and the Federal Reserve Bank of St. Louis FRED database.

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2 As measured by the S&P 500 Index, as at 30 June 2023.

US dollar strength is likely to ebb

We believe the US dollar faces more headwinds than tailwinds in the coming decade. The result should be some dollar depreciation and a boost to non-US equity returns for dollar-based investors[3].

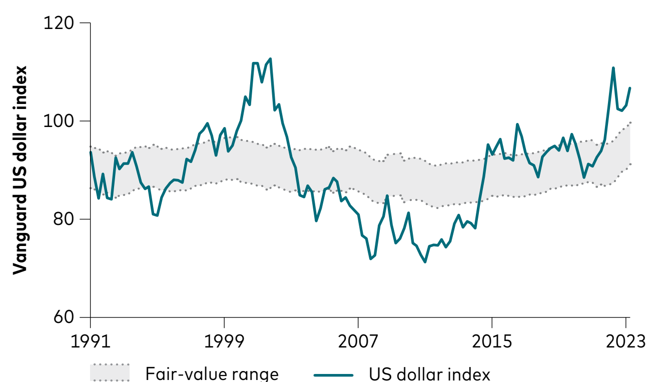
The depreciation could unwind much of the roughly 12% overvaluation we see now. Our view reflects a new, proprietary Vanguard model that estimates the fair value of the dollar against a basket of five leading currencies and estimates the currency impact experienced by unhedged international investors.

Just as an undervaluation 10 years ago set the stage for US dollar strengthening over the last decade, we expect today's overvaluation to precede US dollar weakness. Normalisations in global interest rates, inflation and productivity growth also suggest a weaker dollar over time. The central tendency of our forecasts is a modest annualised decline of 1.1% in the US dollar against our basket of currencies. The Swiss franc is expected to continue being a strong currency, so that the impact on our median forecast for US equities is -3.6% and -2.7% for global ex-US equities[4].

To be sure, currency forecasting is a challenge. The probability of the US dollar depreciating over the next decade is around 75%, and the decline almost certainly will not prove linear.

A key risk to our outlook—more likely to affect the magnitude than the direction of the dollar's movement in the coming decade—revolves around cross-border differences in economic output per capita. Economic theory suggests that productivity differences should offset over long periods, but US worker productivity gains could continue to outstrip those of competing labour forces if, for example, US firms lead the adoption of artificial intelligence. If so, a stronger-than-expected rise in the dollar's fair value could narrow the valuation gap and result in less dollar depreciation.

The US dollar: Stronger than fundamentals warrant



The components of our forecasts for equity total returns

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Global ex-US equities	–0.1%		3.4%		3.7%		–2.7%		**4.3%**

Notes: Our US dollar index and fair-value estimates are proprietary measures that compare the US dollar with an equity market-capitalisation-weighted basket of the euro, the Japanese yen, the British pound, the Canadian dollar and the Australian dollar. The non-US dollar currencies' index weights reflect the relative weights of MSCI World Index constituent regions and countries that typically trade goods, services and securities in those currencies. The fair-value estimates are based on the portion of exchange rate movements that can be explained through differentials in relative economic strength, measured by productivity (GDP per capita at purchasing power parity) and long-term real rates.

The table reflects the distribution of 10,000 VCMM simulations of annualised nominal equity returns, in Swiss francs, over the 10-year period ending 30 September 2033. Nominal returns do not take into account management fees and expenses, or the effect of taxes. They do reflect the reinvestment of income and capital gains. Indices are unmanaged; therefore, direct investment is not possible. Any discrepancies in the total return sum are due to rounding.

Sources: Vanguard calculations, based on data from Refinitiv and the International Monetary Fund, as at 30 September 2023.

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3 Vanguard believes investors should accept currency risk in their international equity allocations. Doing so lowers the correlation between international and domestic equity returns and hedges domestic inflation risk. Alternatively, we believe the currency risk in international fixed income allocations should be hedged. If unhedged, the volatility of such holdings can increase to equity-like levels, reducing the ability of bonds to provide ballast in portfolios.

4 Our forecast corresponds to the distribution of 10,000 VCMM simulations for 10-year annualised changes in the US dollar against an equity market-capitalisation-weighted basket of the euro, the Japanese yen, the British pound, the Canadian dollar and the Australian dollar.

Thanks to higher interest rates, bonds are back

Short-term pain can lead to long-term gain. Bond investors should keep that adage in mind, having endured two years of negative total returns because of rising interest rates. But higher interest payments offset declines in bond prices, raising expected total returns over the long term. Reinvestments and new money going into fixed income are attractively valued.

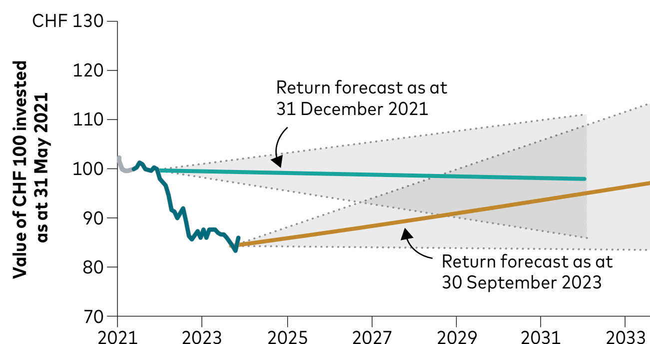
This doesn't mean volatility is behind us. Market participants eagerly anticipate policy rate cuts in 2024, which our economists foresee beginning in the second half of the year. However, we differ in our assessment of how far short-term rates will fall. Further, central banks' unwinding of their bond-buying programmes could reduce liquidity and raise the risk premium (investors' requirement for higher yield as compensation for the risk of interest rate changes over a bond's lifetime).

The transition to a higher real interest rate environment has challenged investors in the last few years, leading to negative bond returns in both 2021 and 2022. Central banks increased policy rates at the fastest pace in decades and yields increased by 300 basis points or more. Long-term yields—a strong predictor of expected returns over the long-term—are now back at levels last seen before the GFC in 2008.

This development has raised our expectations for fixed income returns significantly, to around 1.5% on an annualised basis over the next decade, for US aggregate bonds and global aggregate bonds (hedged). With that, our outlook is better than it has been during the past decade.

We're now nearing the end of this structural shift and the permanence of higher real rates will provide a solid foundation for long-term investors. The bottom line: Rather than a bane, the rise in interest rates is the single best development for bond investors in 20 years.

Rising rates mean higher returns for long-term investors



Notes: The chart shows actual returns for the Bloomberg Global Aggregate Swiss Franc Hedged Bond Index along with Vanguard's forecast for cumulative returns over the subsequent 10 years as at 31 December 2021 and 30 September 2023. The dotted lines represent the 10th and 90th percentiles of the forecasted distribution. A hypothetical investor who had a lump sum invested in a bond portfolio similar to the Bloomberg Global Aggregate Swiss Franc Hedged Bond Index at the end of 2021 would have had steep declines in 2022. But according to our model, the annualised return outlook as at 30 September 2023 is significantly better than it would be in a hypothetical world where interest rates remained low.

Sources: Vanguard calculations, based on data from Bloomberg, as at 30 September 2023.

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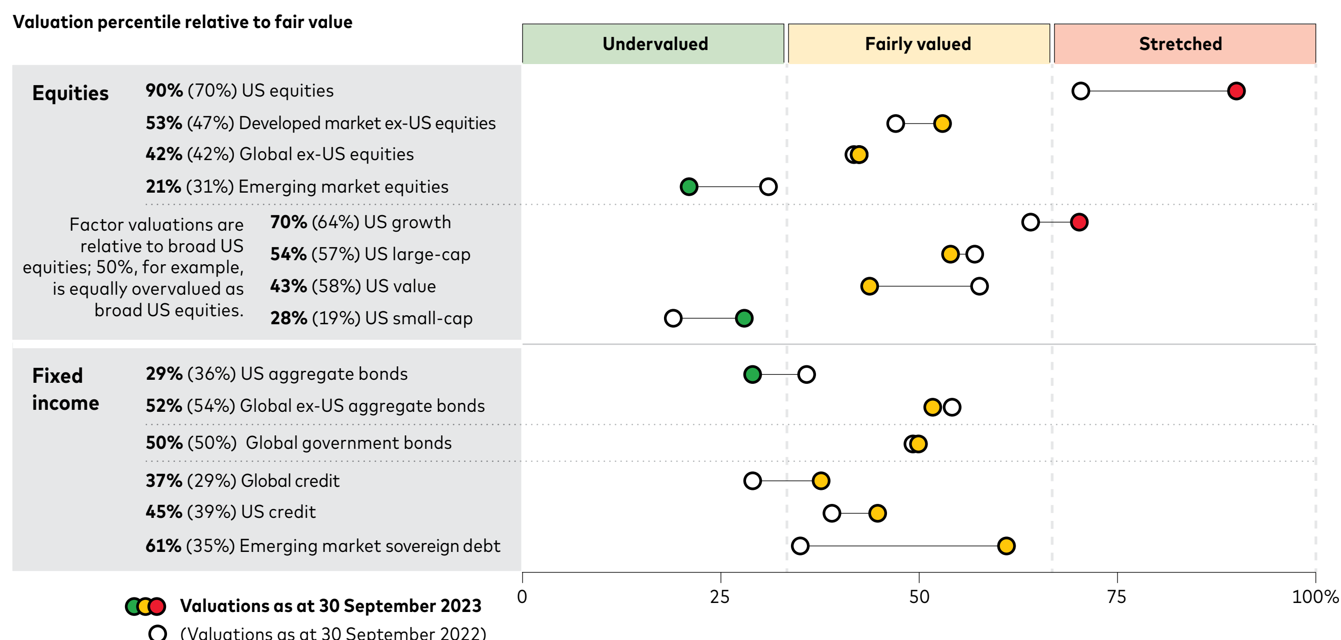
How equity and bond valuations have changed in the last year

Potential opportunities and cautionary signals for long-term investors



Notes: The US equity valuation measure is the current cyclically adjusted price/earnings ratio (CAPE) percentile relative to our fair-value CAPE estimate for the MSCI US Broad Market Index. The global ex-US equity and developed market ex-US valuation measures are the market-capitalisation-weighted CAPE percentiles relative to our fair-value CAPE estimate for the MSCI EMU Index, MSCI UK Index, MSCI Japan Index, MSCI Canada Index, MSCI Australia Index and MSCI EM Index. The valuation measure for the MSCI EM Index is only used for the global ex-US equity valuation measure. The emerging market valuation measure is based on the percentile rank based on our fair-value model relative to the market. Factor valuations are relative to US equities as the base at the 50th percentile. Growth, value and small-cap valuation measures are all based on the percentile rank based on our fair-value model relative to the market. The large-cap valuation measure is a composite valuation measure of the style factor to US relative valuations and the current US CAPE percentile relative to its fair-value CAPE.

Aggregate bond valuation measures are market-capitalisation-weighted averages of credit and government bond valuation percentiles for the US and global ex-US (which in turn is a market-capitalisation-weighted average of the euro area, the UK, Japan, Canada and Australia aggregate bond valuation measures that are calculated the same way). The global government bond valuation measure is based on a market-capitalisation-weighted average of the valuation measures for the US, the euro area, the UK, Japan, Canada and Australia, comparing current yields relative to the VCMM simulation of equilibrium yields in year 30 of our forecast. Credit and emerging markets sovereign debt valuation measures are based on current spreads relative to the VCMM simulation of equilibrium spreads in year 30 of our forecast, with global credit based on a market-capitalisation-weighted average of the valuation measures for the US, the euro area, the UK, Japan, Canada and Australia.

The valuation percentiles are as at 30 September 2023 and 30 September 2022 (in parentheses).

Sources: Vanguard calculations, based on data from Robert Shiller's website at aida.wss.yale.edu/~shiller/data.htm, the U.S. Bureau of Labor Statistics, the Federal Reserve Board and Refinitiv, as at 30 September 2023.

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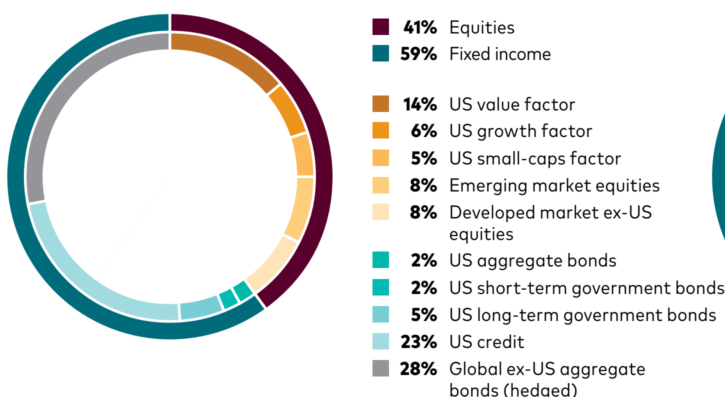
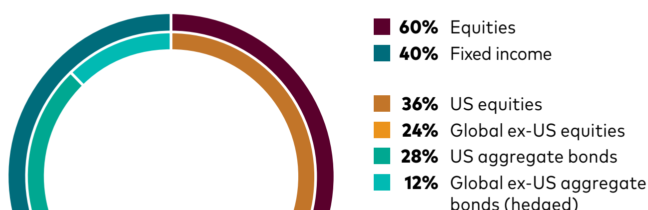
A strong tilt to bonds in our time-varying portfolio

Higher interest rates have led to substantially higher expected returns for fixed income and a compressed equity risk premium. The developments have produced a dramatic shift in the composition of our valuation-aware time-varying asset allocation, or TVAA. Our TVAA is geared to investors who are comfortable with model forecast risk, a type of active risk in which investors embrace our disciplined model for navigating changing market and economic environments.

Given changing risk/return tradeoffs, the TVAA portfolio (in USD) reflects a decrease of 19 percentage points in the equity allocation relative to a 60% stock/40% bond benchmark, a meaningful de-risking move. Notably, the TVAA, which includes additional sub-asset-class tilts, results in an expected return similar to that of the 60/40 benchmark, but with lower volatility. This comes at the expense of active risk (tracking error relative to the benchmark) of 3.4%.

A more attractive risk/return trade-off means our asset allocation favours bonds





Notes: Time-varying portfolio allocations were determined by the Vanguard Asset Allocation Model (VAAM). The assets under consideration are US and non-US equities and fixed income, as well as real estate investment trusts (REITs), US high-yield corporate bonds and emerging market equities, to illustrate time-varying allocation not only within equities versus fixed income but also within sub-asset classes. A minimum home-bias constraint of 60% was applied for US equities and of 70% for US fixed income. The allocation to non-US equities would have been higher had there been no home-bias constraint, given our view that US equities are overvalued and expected returns are lower than for global ex-US equities. VCMM 10-year projections as at 30 September 2023 were used. See "Indices for VCMM simulations" on page 22 for additional details on asset class indices. The sum of individual sub-asset class allocations may not total 100% because of rounding.

Source: Vanguard calculations, as at 30 September 2023.

Portfolio characteristics (in USD)

	Equity allocation	10-year expected annualised return	10-year expected annualised volatility	Expected Sharpe ratio	Expected maximum drawdown	Tracking error compared with the benchmark	Probability of underperforming the benchmark
TVAA	41%	6.4%	7.5%	0.23	–4.8%	3.4%	50.8%
Benchmark	60%	6.4%	9.8%	0.18	–8.6%	—	—

Notes: Vanguard calculations are based on portfolios optimised by the VAAM, using return projections from the VCMM. Sharpe ratio is a measure of return above the risk-free rate that adjusts for volatility. A higher Sharpe ratio indicates a higher expected risk-adjusted return. Expected maximum drawdown is the median peak-to-trough drop in the portfolio's value in 10,000 VCMM simulations. The probability of underperforming the benchmark is in any given year.

Source: Vanguard calculations, as at 30 September 2023.

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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 importantly, the VCMM may be underestimating extreme negative scenarios unobserved in the historical period on which the model estimation is based.

The VCMM 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 VCMM 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.

The primary value of the VCMM is in its application to analysing potential client portfolios. VCMM asset-class forecasts—comprising distributions of expected returns, volatilities and correlations—are key to the evaluation of potential downside risks, various risk–return trade-offs and the diversification benefits of various asset classes. Although central tendencies are generated in any return distribution, Vanguard stresses that focusing on the full range of potential outcomes for the assets considered, such as the data presented in this paper, is the most effective way to use VCMM output.

The VCMM seeks to represent the uncertainty in the forecast by generating a wide range of potential outcomes. It is important to recognise that the VCMM does not impose "normality" on the return distributions, but rather is influenced by the so-called fat tails and skewness in the empirical distribution of modeled asset-class returns. Within the range of outcomes, individual experiences can be quite different, underscoring the varied nature of potential future paths. Indeed, this is a key reason why we approach asset-return outlooks in a distributional framework.

Indices for VCMM simulations

The long-term returns of our hypothetical portfolios are based on data for the appropriate market indices to 30 September 2023. 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 indices are as follows:

- **US equities:** MSCI US Broad Market Index.
- **Global ex-US equities:** MSCI All Country World ex USA Index.
- **Developed market ex-US equities:** MSCI World ex USA Index.
- **Emerging market equities:** MSCI Emerging Markets Index.
- **US REITs:** FTSE/NAREIT US Real Estate Index.
- **US aggregate bonds:** Bloomberg US Aggregate Bond Index.
- **Global ex-US aggregate bonds:** Bloomberg Global Aggregate ex-USD Bond Index.
- **Global aggregate bonds:** Bloomberg Global Aggregate Bond Index.
- **Global government bonds:** Bloomberg Global Treasury Bond Index.
- **Global credit:** Bloomberg Global Aggregate—Corporates.
- **US credit:** Bloomberg US Credit Bond Index.
- **US short-term government bonds:** Bloomberg US 1–5 Year Treasury Bond Index.
- **US long-term government bonds:** Bloomberg US Long Treasury Bond Index.
- **US TIPS:** Bloomberg US Treasury Inflation Protected Securities Index.
- **Emerging market sovereign debt:** Bloomberg Emerging Markets USD Sovereign Bond Index—10% Country Capped.

All equity indices below are weighted by market capitalisation:

- **US small-cap:** Stocks with a market cap in the lowest two-thirds of the Russell 3000 Index.
- **US large-cap:** Stocks with a market cap in the highest one-third of the Russell 1000 Index.
- **US growth:** Stocks with a price/book ratio in the highest one-third of the Russell 1000 Index.
- **US value:** Stocks with a price/book ratio in the lowest one-third of the Russell 1000 Index.

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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.

Some funds invest in emerging markets which can be more volatile than more established markets. As a result the value of your investment may rise or fall.

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.

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