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# About our long-term expected returns

## View from the UK-based multi-asset team – January 2023

In this document, we set out our expected longer-term returns for 20 major asset classes across equity, fixed income, currencies and commodities. We then discuss the implication of our forecasts for each asset class. Forecasting asset class returns over an average market cycle, which we take to be around 10 years, helps both to frame shorter-term investment views and to construct the longer-term foundations of a portfolio. We focus on the major asset classes, but the same methodologies could be applied to a broader range of asset classes and currencies. We are looking to create expected returns that are good predictions, but also transparent and easily understood.

## Why look at long-term expected returns?

Long-term expected returns form an integral part of our investment process. They are a key source of trade ideas and a useful anchor for understanding the potential returns that we may reasonably expect from a portfolio over the longer term. They are also an essential part of solutions design where they are used, together with our long-term estimates of risk, to formulate strategic asset allocations expected to deliver client objectives.

Thinking longer term has several benefits:

**Greater predictability**

Predictability improves as time horizons expand, allowing us to estimate returns with greater precision

**Greater stability**

Over long periods of time, returns, and therefore expected returns, are less volatile, resulting in a more stable strategic allocation

**Capturing long-term themes**

The determinants of long-term return can differ from the determinants of return over shorter time horizons.

## Our philosophy

We believe that for a methodology to forecast returns going forward, past accuracy is important, but not enough. Markets are constantly evolving and what once was true may no longer be. Understanding why and when a forecast has worked is, we believe, essential for understanding whether it will continue to.

We examine our methodologies going back, in some cases more than a century, so we can learn how they have behaved over time, when they have worked and when they have struggled. We look to select methodologies that have accurately forecasted returns across a wide range of different market environments.

All our methodologies are based on cutting edge academic and central bank research, with clear economic rationale. We rely on equilibrium concepts, with a simple set of underlying assumptions, allowing us to better understand what the numbers are telling us and why. We believe a qualitative assessment of whether a methodology's assumptions still apply is a key part of assessing its appropriateness going forward.

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## Our long-term expected returns

All assumptions below are shown in shown in USD, with fixed income hedged. Returns show annualised expectations over the next 10 years.

| Equity | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| World Equity | 7.1 | 5.1 | 2.0 |
| US Equity | 6.5 | 4.8 | 1.7 |
| UK Equity | 7.2 | 6.6 | 0.6 |
| Eurozone Equity | 7.6 | 5.6 | 2.0 |
| Japan Equity | 8.0 | 6.3 | 1.6 |
| Asia ex Japan Equity | 10.3 | 8.0 | 2.3 |
| Emerging Market Equity | 11.5 | 7.6 | 3.9 |

| Global bonds | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| Global Bond | 4.3 | 1.5 | 2.8 |

| High Yield Debt | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| US Dollar | 6.0 | 1.6 | 4.4 |
| Euro | 6.7 | 2.6 | 4.1 |

| Emerging Market Debt | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| Hard Currency | 7.7 | 3.1 | 4.6 |

| Investment Grade Debt | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| US Dollar | 4.8 | 1.7 | 3.1 |
| Euro | 4.5 | 1.2 | 3.4 |
| Sterling | 5.0 | 0.5 | 4.5 |

| Government Bonds | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| US 10 Year | 4.5 | 1.5 | 3.1 |
| German 10 Year | 3.8 | 0.4 | 3.4 |
| UK 10 Year | 4.7 | 0.6 | 4.1 |

| Index Linked Bonds | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| US 10 Year Inflation Linked | 4.4 | -0.9 | 5.3 |
| UK 10 Year Inflation Linked | 4.2 | -1.5 | 5.7 |

| Cash | 2023 (%) | 2022 (%) | Change (%) |
|---|---|---|---|
| USD Cash | 2.4 | 0.9 | 1.5 |

Source; Janus Henderson Investors. 2023 expected returns are as of 6 January 2023. 2022 expected returns are as of 30 December 2021. Returns are annualised and cover a 10-year period. See page six for details of relevant indices and proxies.

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## 2022 Summary

Coming into 2022 with valuations expensive across most asset classes, particularly in fixed income, last year had all the hallmarks of being a difficult one for investors. This was ultimately borne out in a very difficult period for global markets. Inflation, which was high and rising coming into 2022, increased further following the Russian invasion of Ukraine, as energy prices rocketed. This led to increasing hawkishness from central banks to fight inflation and government bond yields rising dramatically. The resulting move in global sovereign yields was unprecedented in recent decades, with the yield of the Bloomberg US Treasury index increasing by close to 3%, the largest annual rise since the inception of the index back in 1971. This caused significant damage across markets with both fixed income and equity down sharply. The performance of fixed income was particularly challenged relative to history, with US Treasuries, previously considered a low-risk asset class, dropping by 12.5%. The simultaneous decline in both equities and bonds is rare with government bonds normally providing a cushion in risk-off equity market.

The result was a very difficult year for investors. Lower-risk portfolios, which tend to have significant fixed income weights, particularly struggled to weather the storm. It was a market where to make returns investors had to look outside the mainstream to asset classes such as commodities and hedge funds.

## Outlook for expected returns

Whilst 2022 was a hard year for investors, the silver lining is that we expect things to be better going forward, with higher returns forecast across the board.

The increase in expected returns has been most notable across fixed income, with the increase in yields pushing up the expected return of global bonds to 4.3%, an increase of 2.8% from the previous year. This has made fixed income significantly more attractive, both in absolute terms and relative to equities and cash. While not as large as bonds, equities also experienced a pickup in expected returns, with world equity expected returns increasing 2% to 7.1%.

This environment has several implications for portfolios:

1. Investors require less risk when aiming for return targets – with expected returns significantly higher than last year less risk is required to hit return targets.
2. More diversified portfolios – with increasing returns, the diversification fixed income offers has become more attractive in a multi asset portfolio.
3. The inverse barbell – with both credit spreads and yields increasing significantly, mid-risk assets look particularly attractive, with high yield and emerging market debt expected to deliver similar returns to equities, but with a lower expected risk.

Whilst 2022 was an exceptional year, the result has been, ironically, that balanced portfolios are back in fashion again. With a diversified portfolio spread across equity and core fixed income expected to offer attractive risk-adjusted returns going forward.

## Equities

Equity expected returns have increased across all major regions as valuations have cheapened. We see the US with an expected return of 6.5% as the lowest performing market, with more attractive returns and valuations available elsewhere. The expected return of emerging markets at 11.5% looks particularly attractive, with valuations significantly lower after the weak price performance in 2022.

## Government bonds

2022 was an extraordinary year for government bonds, with yields on US Treasuries increasing by close to three percent. Aside from the direct benefit of higher yields, we also expect some capital growth in government bonds. Unless inflation proves persistent the current level of yields may decline as we return to a more normal inflationary environment.

## Credit

The significant increase in credit spreads means that we see corporate debt offering a material premium to government bonds. This is most notable in higher-risk fixed income asset classes, where the move out in credit spreads has been the greatest. In fact, these assets offer expected returns like equities, surpassing the expected return of US stocks.

# Appendix

## Methodology

The key drivers of all estimates are a combination of current valuations together with expectations of the future economic environment.

## Asset class forecasts

### Equity

**Equity expected return** = cyclically adjusted earnings yield + Inflation.

Campbell (2007) shows that "When return on equity equals the expected return, as might be the case in long-run equilibrium", this implies that the expected real return equals the earnings yield. We combine earnings yield with forecast inflation to get a nominal expected return. For the earnings yield we use a cyclically adjusted measure similar to Shiller (2000). We take earnings over the previous 10 years, using inflation gross up to current-day price levels and then divide by the price to get a yield. The idea is to get an impression of whether prices look cheap based on where real earnings should be at this point in the cycle. The merits of this approach are:

- It relies on one equilibrium condition and is not dependent on a wide range of assumptions (future growth, dividend payments, etc) and because of this can be relied upon to give sensible results
- It is easier to compare across different markets than dividend-based models, as different markets can have markedly different pay-out ratios due to differential tax treatment of dividends.
- Empirically it has been an excellent predictor of long-term equity returns going back well over a century.

### Fixed Income

Our fixed income model splits returns for each fixed income security into four components:

1. Cash return – the estimated long-term return of cash (we assume a 10-year period)
2. Term premium – the excess return paid to holders of longer-term bonds
3. Credit premium – the excess return paid for holding higher risk bonds
4. Inflation premium – the excess return paid to holders of securities whose cash flows are linked to inflation

Each bond is therefore a function of cash return and the different premia to which it is exposed. For the main types of fixed income securities, these premia are:

**Developed government expected return** = Cash return + Term premium

**Inflation linked expected return** = Cash return + Term premium + Inflation premium

**Credit expected return** = Cash return + Term premium + Credit premium

**Floating rate loans expected return** = Cash return + Credit premium

### Cash Return

We estimate cash return by taking the current yield curve and removing the estimated term premium for different maturities of debt.

### Term premium

**Term premium** = Treasury yield + Roll return

We start by estimating the term premia by comparing longer-term implied spot rates with our expectations of the equilibrium cash rate (see Rebonato 2015). If implied spot rates are above equilibrium, this indicates an excess return and vice versa. For shorter-term spot rates we shrink the term premia, as term tends to be greater further up the curve (we use an approach similar to the affine model of Piazzesi et al to determine the magnitude of the shrinkage). Once we have term premia for the whole curve, we combine these estimates with current yields to estimate return, taking into account the roll return.

### Credit premium

**Credit Premium** = Spread + Spread roll return – Estimated losses from default and losses/gains from downgrade/upgrade

Spread is simply the excess yield of a bond relative to a relevant government bond. Roll returns represents the expected capital gain or loss as the bond moves towards maturity. To estimate default and downgrade losses we use the realized capital loss over the previous cycle, which we calculate by taking the difference between the realized returns and an estimate of what historical returns would have been in the absence of default and ratings changes. This approach avoids making a wide range of assumptions (default probabilities, capital losses, etc.), which is very difficult to do accurately, particularly for lower grade debt.

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## Inflation premium

**Inflation premium** = Forecast inflation – Breakeven inflation

To estimate the inflation premium, we compare longer-term breakeven inflation with the forecast, shrinking the inflation premium for shorter debt in line with what we do for term.

## Currencies

**Currency expected return** = Forecast domestic inflation – Forecast foreign inflation

This is equivalent to assuming PPP over/under valuation remains unchanged and you do not get convergence to parity. This assumption yields a stable equilibrium where you cannot get arbitrarily large purchasing power deviations between different countries. It also accounts for the fact that some countries trade at a permanent discount/premium versus others (for example emerging markets have always traded at a discount versus the US dollar). A corollary is that the highest-inflation countries are predicted to depreciate the most; Venezuela is a good example of this in practice.

## Commodities

### Energy, agriculture and metals

**Energy, agriculture and metals expected return** = Cash return + $\beta_{Inf}$*Inflation premium

Commodities with high storage costs tend to be linked to current inflation and demand, so we treat them as giving exposure to the inflation premia (see Fixed Income section). Generally, priced inflation, even for longer durations, is significantly less volatile than most commodities, so we leverage the inflation premium to reflect this. Leveraged inflation and commodities have behaved in a very similar way over the past decade as commodity prices, particularly oil, form one of the most volatile parts of the CPI basket.

## Gold

**Gold expected return** = Cash return + $\beta_{Term}$*Term premium + $\beta_{Inf}$* Inflation premium

As storage costs are lower for gold than other commodities it is more effective as a store of real purchasing power. These characteristics give it a similar risk and return profile to longer dated inflation-linked bonds and, as such, we use the same expected return methodology for both. In line with our approach for other commodities we leverage the premia to reflect the differences in risk.

## Specialist equities and hedge funds

For specialist equity and hedge funds we use a regression model to determine exposure to each of the asset premia listed above and then calculate an expected return consistent with this. We select the combination of relevant premia using proprietary machine learning techniques.

## Economic forecasts

**Long-term inflation forecasts**
We forecast inflation using a 'through-the-cycle' average. There has been a lot of academic work that finds average inflation, although simple, has been a better forecast of future inflation than many more complicated models.

**Long-term real interest rates**
We follow the work of Bauer and Rudebusch, who show that a varying equilibrium real rate produces a better prediction of future rates than a simple static estimate. This makes intuitive sense; the world we are in today is very different to the world in of the 1970s, and there is far more flexibility in labour markets, a more internationalised economy, higher debt burden, etc. As such, we base the equilibrium real rate on the relationship between interest rates and inflation over the past cycle.

**Equilibrium cash rate**

**Equilibrium cash rate** = Long-term inflation forecast + Long-term real rates

## Indexes and proxies

| Equity | Index |
|---|---|
| World Equity | MSCI World |
| UK Equity | FTSE All Share |
| US Equity | S&P 500 |
| Japan Equity | TOPIX |
| Eurozone Equity | MSCI Eurozone |
| Asia ex Japan Equity | MSCI AC Asia Pacific ex Japan |
| Emerging Market Equity | MSCI Emerging Markets |

| Global Bond | Index |
|---|---|
| Global bond | Bloomberg Barclays Global Aggregate |

| High Yield Debt | Index |
|---|---|
| US Dollar | Bloomberg Barclays US Corporate High Yield |
| Euro | Bloomberg Barclays Pan-European High Yield (Euro) |

| Emerging Market Debt | Index |
|---|---|
| Hard Currency | Bloomberg Barclays Emerging Markets Sovereign |

| Investment Grade Debt | Index |
|---|---|
| US Dollar | Bloomberg Barclays US Corporate |
| Euro | Bloomberg Barclays Euro Aggregate Corporate |
| Sterling | Bloomberg Barclays Sterling Corporate |

| Government | Index |
|---|---|
| US 10 Year | US 10 Year Zero Coupon |
| German 10 Year | German 10 Year Zero Coupon |
| UK 10 Year | UK 10 Year Zero Coupon |

| Index Linked | Index |
|---|---|
| US 10 Year Inflation Linked | US 10 Year Inflation Linked Zero Coupon |
| UK 10 Year Inflation Linked | UK 10 Year Inflation Linked Zero Coupon |

| Cash | Index |
|---|---|
| USD Cash | Bloomberg 3 Month USD LIBOR Cash |

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