

About our expected returns

View from Janus Henderson's UK-based Multi-Asset Team – January 2021

In this document, we set out the team's expected longer-term returns for 31 major asset classes across equity, fixed income, currencies and commodities*. We then discuss the implication of these forecasts for each asset class and for diversified portfolios. 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 assist with the longer-term foundations of a strategy. We focus on the major asset classes, but the same methodologies could be applied to a broader range of asset classes and currencies.

Why look at long-term expected returns?

Long-term expected returns form an integral part of our investment process, representing 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.

* This document summarises the views of Janus Henderson's UK-based Multi-Asset Team. It may differ from the views of other individuals/teams at Janus Henderson Investors. Securities, funds, sectors and indices mentioned within this article do not constitute or form part of any offer or solicitation to buy or sell. Forecasts cannot be guaranteed and there is no assurance that the information supplied is complete or timely; nor are there any warranties with regards to any results obtained from its use.

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Our capital market assumptions

All assumptions below are shown in local currency except for Asia and EM equity, which are shown in USD. Returns and volatility are annualized expectations over the next 10 years.

Equity	Return	Volatility	Sharpe
US Equity	5.0%	18%	0.27
UK Equity	7.7%	17%	0.42
Eurozone Equity	4.5%	20%	0.23
Japan Equity	5.1%	21%	0.24
Asia ex Japan Equity	7.1%	22%	0.31
Emerging Market Equity	7.0%	23%	0.29

High Yield Debt	Return	Volatility	Sharpe
US Dollar	1.4%	11%	0.10
Euro	1.5%	13%	0.13

Emerging Market Debt	Return	Volatility	Sharpe
Hard Currency	1.9%	10%	0.16

Investment Grade Debt	Return	Volatility	Sharpe
US Dollar	0.9%	7%	0.10
Euro	-0.3%	4%	-0.03
Sterling	-0.7%	7%	-0.19

Government Bonds	Return	Volatility	Sharpe
US 10 Year	0.7%	9%	0.04
German 10 Year	-1.3%	6%	-0.21
UK 10 Year	-0.6%	7%	-0.19

Index Linked Bonds	Return	Volatility	Sharpe
US 10 Year Inflation Linked	-0.5%	5%	-0.14
UK 10 Year Inflation Linked	-0.8%	5%	-0.27

Commodity	Return	Volatility	Sharpe
Energy	-1.1%	29%	-0.05
Agriculture	-0.1%	21%	-0.02
Industrial Metals	-0.6%	23%	-0.04

Source; Janus Henderson Investors. Annualised expected returns are as of 31 December 2020 and cover a 10-year period. See page eight for details of relevant indices and proxies.

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Summary

"The more things change, the more they stay the same"
Jean-Baptiste Alphonse Karr

In a year where nothing has felt normal, the end outcome for financial markets has been, in many ways, more of the same. Despite the extreme volatility early in the year, 2020 has ended with equities and bonds both delivering strong returns at the asset class level. This represents a continuation of the past decade where easy monetary policy has boosted valuations across financial assets, resulting in strong returns. While this has been a tailwind for portfolios in recent years, high starting valuations represent a significant headwind going forward. Over the next decade, we expect investors to face several challenges:

- 1) Diminished expected returns versus the past: starting valuations are higher, reducing the potential for capital gains, particularly in fixed income.
- 2) An increased reliance on equity for investors targeting a total return: the decline in fixed income expected returns relative to equity means a larger weight in equity is required to hit return targets.

- 3) Harder to find diversification: With the yield on longer-term government debt close to multi-decade lows and minimal spreads available within higher quality fixed income it is hard to find diversifying or hedging assets with attractive expected returns.

In this world it becomes harder to achieve strong risk-adjusted returns with diversification alone. High-quality instrument selection and asset allocation can therefore have a more central role in generating attractive outcomes.

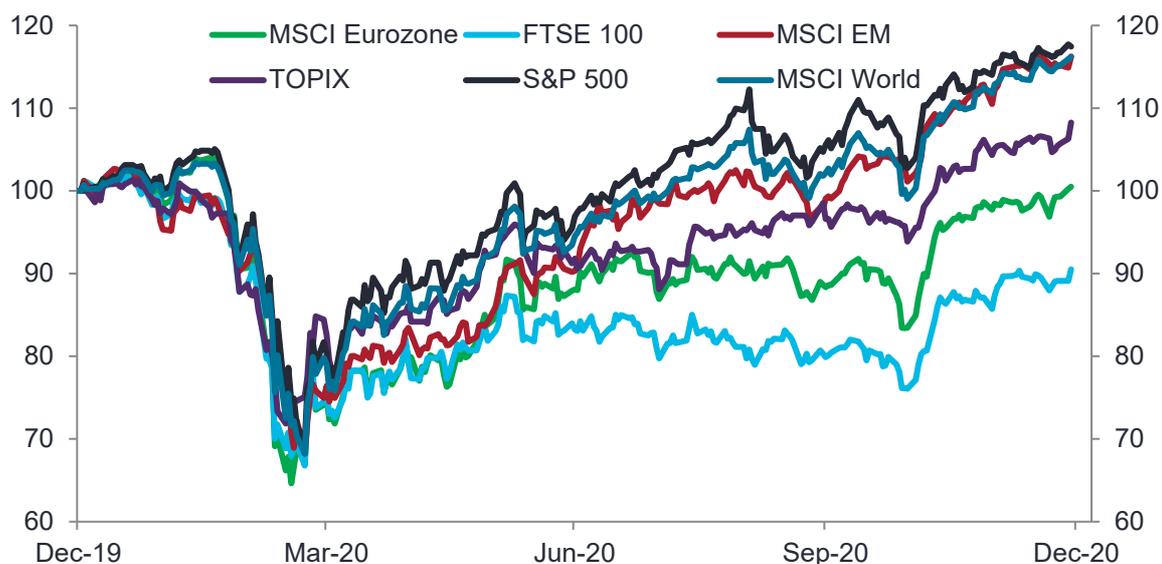
Equity long term expected returns

US equities expected returns at historical lows, but higher returns available in other markets.

The past year has been turbulent for all markets; however, those who held their nerve and did not sell out in March were rewarded in the subsequent three quarters. There has been a wide spread of returns, with the US and emerging markets making strong gains, but the UK finishing down for the year. This was mostly driven by large differences in fundamentals, with US and emerging market earnings significantly less impacted by the Coronavirus than elsewhere.

Regional equity market performance

Cumulative return in local currency



Source: Bloomberg, Janus Henderson Investors, 31 December 2019 to 31 December 2020. Rebased to 100 at start date. Notes: total returns. All returns shown in local currency. Past performance is not a guide to future performance. The value of an investment and the income from it can fall as well as rise and you may not get back the amount originally invested.

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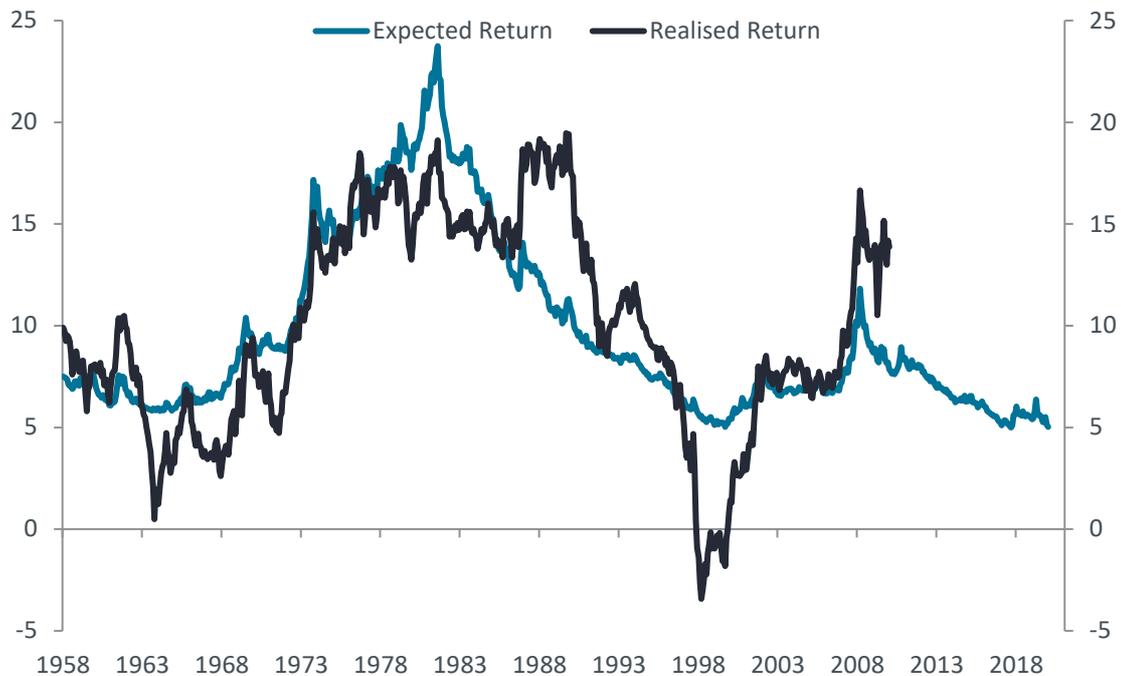
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With the strong price appreciation in US equities, valuations have increased further, and cyclically adjusted price-to-earnings ratios now sit at the highest level since the dot com era.

High valuations combined with low levels of inflation, which tends to be a key driver of long-term EPS growth, lead us to predict equity returns at close to historic lows

S&P 500 expected return

10 Year expected vs realized returns (% annualised)



Source: R. Shiller “US Stock Markets 1871-Present and CAPE Ratio” Janus Henderson Investors, 31 December 1958 to 31 December 2020. Notes: US Equity return is total return based on the S&P 500 in USD. Past performance is not a guide to future performance.

What is striking is that since the end of WW2 there have only been two periods when US equity expected returns have been similar to what we are predicting now.

- 1) The mid-1960s, when the following ten years yielded positive but unexciting results.
- 2) The late 1990s when there were negative returns over the following decade, as multiples reverted dramatically from their extreme highs.

Our base case is that the return outcome over the next decade is more like the 1960s; positive, but unexciting. Valuations, while expensive, are not as stretched as they were back in 2000 and look more comparable to the levels seen back in the 60s. It is also, with US interest rates at 0.25%, rational to value equities at a higher multiple of earnings, whereas at the peak of the dot com era, with interest rates in excess of 5%, valuations looked extremely expensive versus bonds.

Whilst a modest positive return is our base case, there are clearly risks, the most obvious being a steep increase in interest rates that would make current multiples untenable.

This stretch in valuations is, however, primarily a US story. Outside of the US valuations look less stretched and, as such, we see greater opportunities for return.

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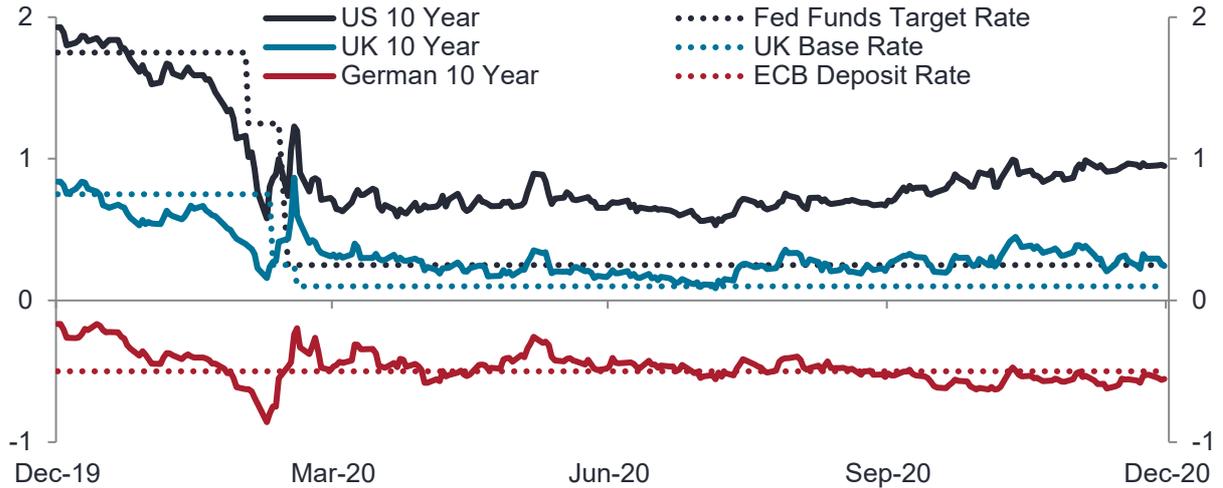
Government Bond long-term expected returns

US Treasury expected returns at close to historic lows and even more muted in other markets.

The past 12 months have seen the US Federal Reserve cut interest rates by an unprecedented 150bp, from 1.75% down to 0.25% at the end of 2020. This has been a great environment for government bonds, with US Treasuries returning close to 8%, their best year since 2011, and positive returns across all regions.

Treasury returns and yields

10-year zero coupon yields and base rates (%)



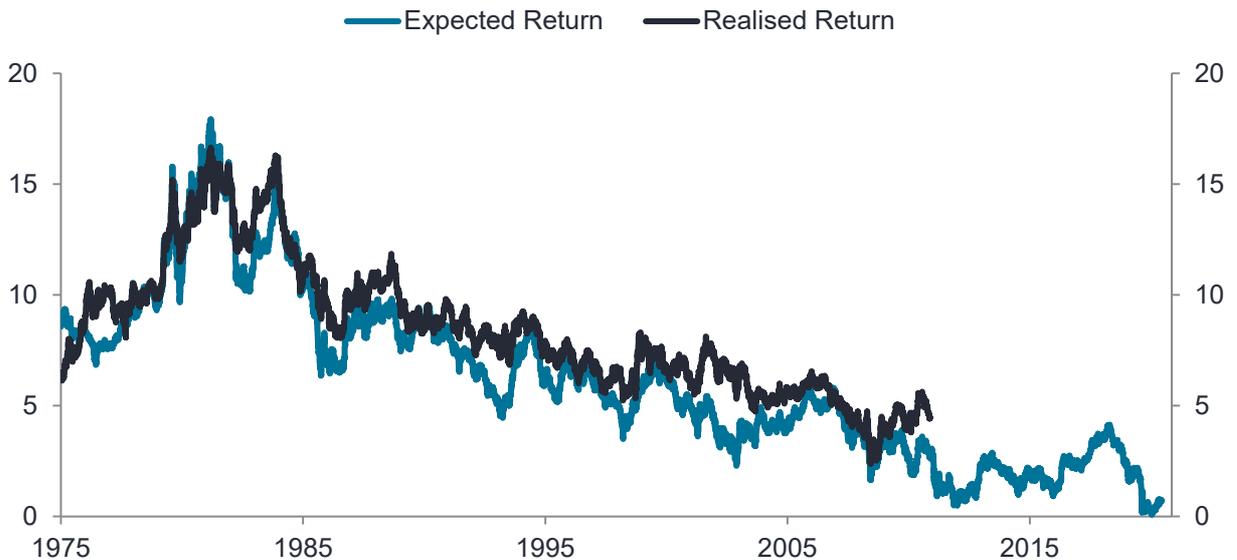
Source: Bloomberg, Janus Henderson Investors, 31 December 2019 to 31 December 2020.

Over the next 10 years we see muted, but still positive, returns for US Treasuries. Lower starting yields both reduce the income generated and make capital gains less likely as

there is less room for yields to fall further. This is a continuation of a longer-term trend, with expected returns falling for four decades and currently sitting at close to their lowest level in 40 years:

10-Year US Treasury returns

10 Year expected vs realised returns (% annualised)



Source: Bloomberg, Janus Henderson Investors, 21 September 1975 to 31 December 2020. Notes: 10 Year constant maturity zero coupon returns in US dollars.

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This assumes that the recent period of moderate inflation persists, allowing policy makers to support low yields. While this represents a sensible base case, it is possible that we may see materially higher inflation if, for instance, there were a meaningful pick up in global fiscal expenditure, trade wars escalated or there was a material change in central bank inflation targeting. In such a scenario yields could rise leading to capital losses and worse returns than predicted. Outside the US the picture is even starker, with 10-year yields significantly lower and offering a negligible premium to cash. As a result, we expect to see negative returns from government bonds in both Europe and the UK.

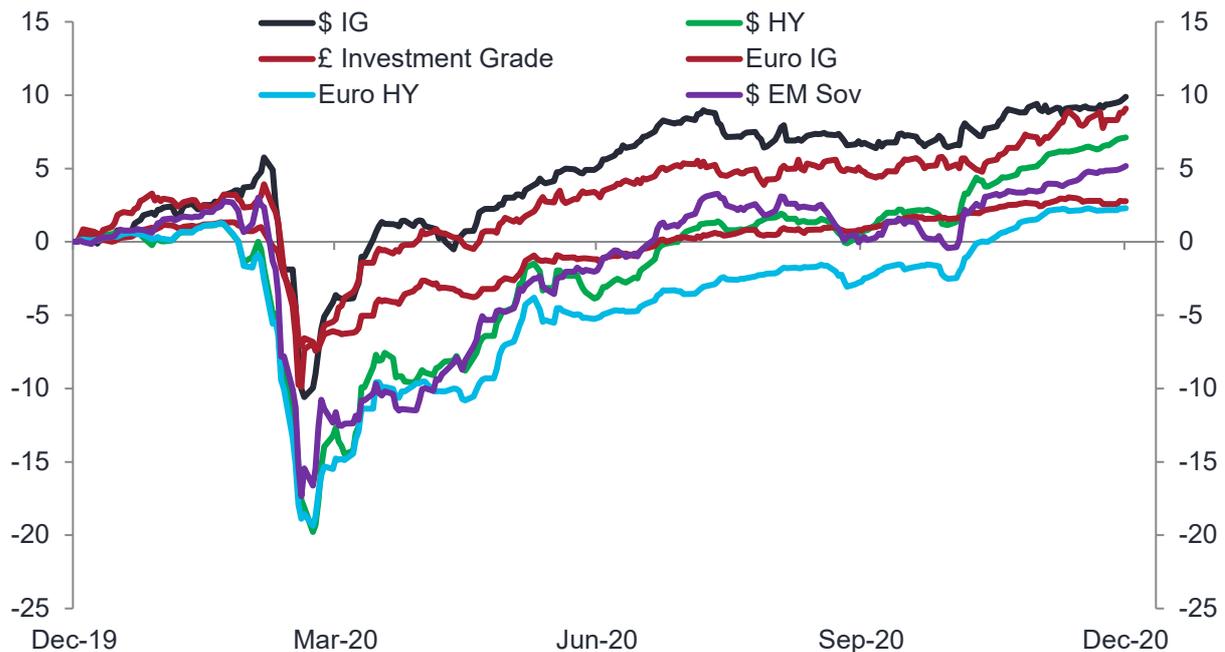
Credit long term expected returns

Lower yields and tight spreads push expected returns to multi-decade lows and make credit unattractive versus government bonds even with modest losses from defaults and downgrades

It has been a remarkably turbulent year for credit, with the largest default and downgrade cycles since the Global Financial Crisis as many firms struggled with collapsing economic activity. This has meant the additional rewards from owning credit versus government bonds have been de minimis, with any additional yield being eaten by capital losses. Despite this, most markets have seen positive performance as falling interest rates have more than compensated. This has been most pronounced for higher quality credits, with US dollar and sterling investment grade debt up close to 10% over the year.

Credit returns

Cumulative return in local currency



Source: Bloomberg, Janus Henderson Investors, 31 December 2019 to 31 December 2020.

Rebased to 100 at start date. Notes: total returns. All returns shown in local currency. Past performance is not a guide to future performance.

Despite the significant macro risk, credit spreads remain only marginally above where they were at the end of 2019. Indeed, the spreads available from both US dollar and euro investment grade debt are at close to decade lows. This, combined with the significant fall in treasury yields, has meant that in one of the most turbulent years on record, yields have fallen for most credit indices. These expensive

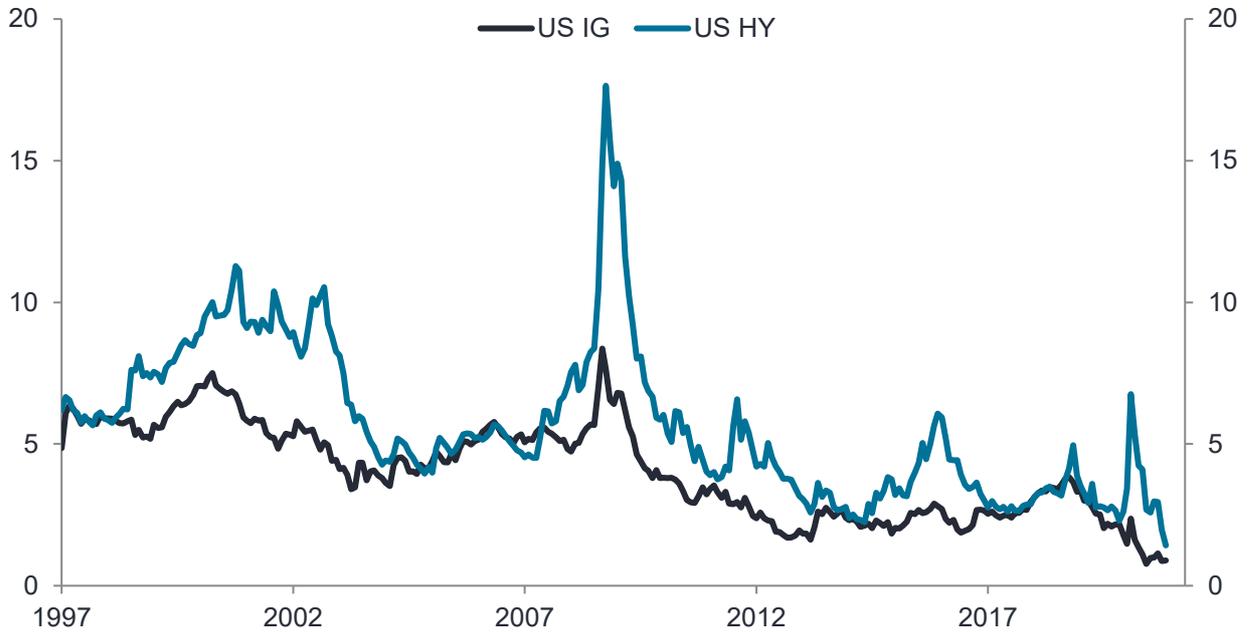
valuations mean that, even when we assume reasonably benign default and downgrade losses, prospective credit returns look low compared to history and the additional return versus government bonds look unattractive versus the risks. If we were to see a material pick up in macroeconomic risk from, for instance, the vaccine proving ineffective due to the virus mutating, then the outcome could be materially worse.

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US credit expected returns

10 Year expected (% annualised)



Source: Bloomberg, Janus Henderson Investors, 28 February 1997 to 31 December 2020. All returns shown in USD.

Within investment grade, we see euro and sterling bonds returning less than their US dollar equivalents. Credit spreads are at similar levels, but government yields are significantly lower than in the US. In the higher yielding

space, we see emerging market sovereign bonds having the highest expected return. Yields are 50bps below high yield, but we anticipate significantly lower default losses as the credit quality is higher.

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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 realised capital loss over the previous cycle, which we calculate by taking the difference between the realised 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 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 + β_{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 + β_{Term} * Term premium + β_{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

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Indexes and proxies

Equity	Index
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
High Yield Debt	Index
US Dollar	Bloomberg Barclays US Corporate High Yield
US Dollar 0-5 Year	Bloomberg Barclays US High Yield 1-5 Year
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
US Dollar 0-5 Year	Bloomberg Barclays US Corporate 1-5 Year
Euro	Bloomberg Barclays Euro Aggregate Corporate
Euro 1-5 Year	Bloomberg Barclays Euro Corporate Bonds 1-5 Year
Sterling	Bloomberg Barclays Sterling Corporate
Sterling 1-5 Year	Bloomberg Barclays Sterling Corporate 1-5 Year
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
Commodity	Index
Energy	Bloomberg Energy Total Return Index
Agriculture	Bloomberg Agriculture Total Return Index
Industrial Metals	Bloomberg Industrial Metals Total Return Index
Gold	Bloomberg Gold Total Return Index

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About the team

Janus Henderson's UK-based Multi-Asset Team has a 10-year track record of managing multi-manager/multi-asset portfolios. Led by Paul O'Connor, Head of Multi-Asset, UK, the team consists of 10 specialists with considerable expertise across all areas vital to this type of investing: asset allocation (strategic and dynamic), quantitative and qualitative analysis, manager and instrument selection, as well as in-depth knowledge of both traditional and alternative assets.

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