Research
Institute
DWS Long View

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Marketing material

Long View Q3: The discount rate

The importance of interest rates and inflation on equity fair value

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- Return forecasts for the next decade are higher versus Q2, reflecting less prohibitive valuations as a result of both macroeconomic risks and uncertainty around the stable level of discount rates.
- However, realising these higher return forecasts will depend on the the neutral level of the discount rate applied to equities, given the strong valuation sensitivity to said discount rate.
- Central bank credibility, term premium, and inflation risk premium are important components that will ultimately help to determine the discount rate, and consequently, the fair value on equity markets.
- The United Kingdom's "growth plan" proposal in October, while now in the rearview mirror, forewarns of the embedded leverage to low interest rates across the financial system. The credibility of policymakers in addressing inflationary pressures is also of utmost importance to investors.

Summary

In this report, we present the DWS long-term capital market assumptions for major asset classes as of the end of September 2022 while exploring the risks to these forecasts.

The third quarter of 2022 was, for the most part, a continuation of the volatile market conditions and stubborn price pressures the global economy has experienced since the middle of 2021. As inflation prints remained elevated, real and nominal interest rates have continued to climb higher, weighing down on sentiment across both risk-on and risk-off financial assets. Equity returns were again negative, reflecting both an anticipated downward revisions in corporate earnings estimates and more importantly, in our estimation, the risk of a higher neutral interest rate. The real economy remains robust for now, especially through measures of labor tightness. However, the knock-on effects of higher real costs of borrowing, exacerbated by the inversion of the yield curve in many developed markets are likely to play out in the coming quarters.

Although very short-lived, the United Kingdom's fiscal experiment jolted currency and UK gilt markets, highlighting the importance of central bank consistency and credibility. The liquidity event in the gilt market illustrates the increased use of carry and leverage across non-bank segments of the economy, and further rises in interest rates threaten to expose long borrowers and short lenders to disruptions in bond yields.

Despite these outstanding risks, in combination with continued geopolitical uncertainties in Europe and Asia, the correction in risk asset valuations and across bond yields makes investing more palatable for the patient investor. Across asset classes, the adjustment to valuations for equities and the higher starting yield levels for sovereign and corporate bonds is the largest driver of the increase in our expected ten-year return outlook.

Our models now forecast an annual return of 6.9% from the MSCI All Country World Index ("ACWI") over the next decade, versus 5.6% three months prior. At an aggregate level, we estimate the forecasted rate of return on a diversified portfolio of assets at 6.5%, also up by 0.6ppt from the level at the end of Q2*

*DWS Calculations for a strategic asset allocation that targets volatility of 10%

Table 1: DWS Ten-year annualized forecasted returns

	As of 30 Sep 2022	Δ since 30 Jun 2022
ACWI Equities	6.9%	0.3%
World Equities	6.8%	0.3%
EM Equities	8.0%	1.0%
US Equities	6.8%	0.2%
Europe Equities	6.7%	0.3%
Germany Equities	7.5%	0.2%
UK Equities	6.7%	0.3%
Japan Equities	5.0%	0.3%
EUR Treasury	2.2%	0.9%
EUR Corporate	4.0%	0.8%
EUR High Yield	7.0%	0.6%
US Treasury	3.9%	0.8%
US Corporate	5.1%	1.0%
US High Yield	7.4%	0.4%
EM USD Sovereign	8.3%	0.7%
EM USD Corporate	7.9%	0.8%
World REITS	5.5%	1.4%
United States REITS	6.2%	1.6%
Global Infra. Equity	6.5%	0.6%
US Infra. Equity	6.7%	0.8%
Private RE Equity US	4.8%	-0.9%
EUR Infrastructure IG	4.1%	0.8%
Private EUR Infra. IG	4.8%	0.6%
Hedge Funds: Composite	4.7%	0.7%
Broad Commodities Futures	3.0%	1.2%

Source: DWS Investments UK Limited. Forecasts from of 30 September 2022 to 30 September 2032. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.
This information is intended for informational and educational purposes only and does not constitute investment advice, a recommendation, an offer or solicitation. The opinions and forecasts expressed are those of the authors of this report as of the date of this report and may not actually come to pass. This information is subject to change at any time, based on market and other conditions and should not be construed as a recommendation of any specific security or investment strategy.
Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.
Any hypothetical results presented in this report may have inherent limitations. Among them are the sharp differences which may exist between hypothetical and actual results which may be achieved through investment in a particular product or strategy. Hypothetical results are generally prepared with the benefit of hindsight and typically do not account for financial risk and other factors which may adversely affect actual results of a particular product or strategy. Any forward looking statements (forecasts) are based on but not limited to assumptions, estimates, projections, opinions, models and hypothetical performance analysis. All of which are subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation.

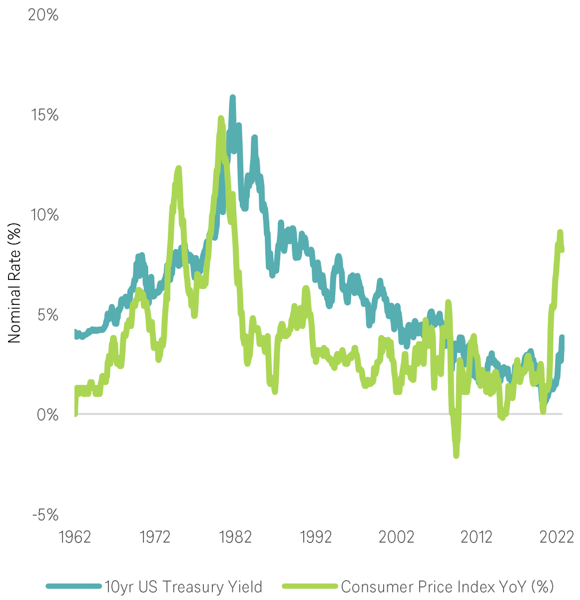
1 / Central banks and discount rates

1.1 Inflation and interest rates

Persistent inflation and its impact on rate policy

Since mid-2021, inflation has remained stubbornly persistent across most of the world. At first, central bankers and economists were convinced that much of the price pressures were transitory, a consequence of lingering supply chain-related issues stemming from the COVID-19 pandemic and the rapid resurgence in economic activity and economies reopened. Over a year later, the pace of inflation has further accelerated, and central bankers have shifted monetary policy in a very hawkish direction.

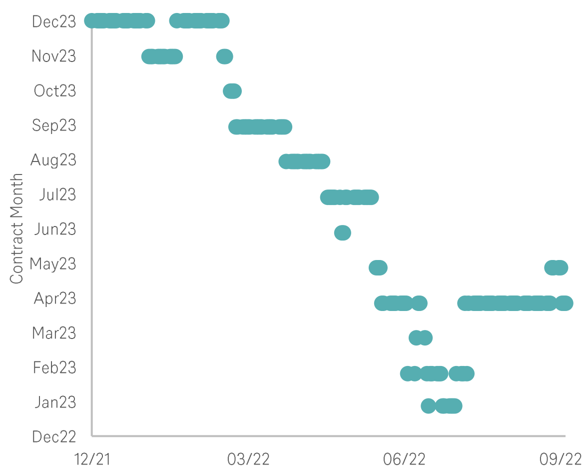
Figure 1: 10yr US Treasury Yield and Inflation YoY (%)



Source: Bloomberg as of 30 September 2022.

Federal Reserve ("Fed") Chairman Jerome Powell made clear in his May speech that the Fed would prioritize the inflation component of its dual mandate over the foreseeable future. Since that time, market pricing for both short-term and medium-term interest rates has correctly anticipated a very significant and rapid pace of monetary tightening. On the policy rate front, markets have both increased and pulled forward expectations of interest rate hikes, now pricing a Fed Funds rate of over 5% by the middle of 2023, followed by moderate easing in overnight interest rates.

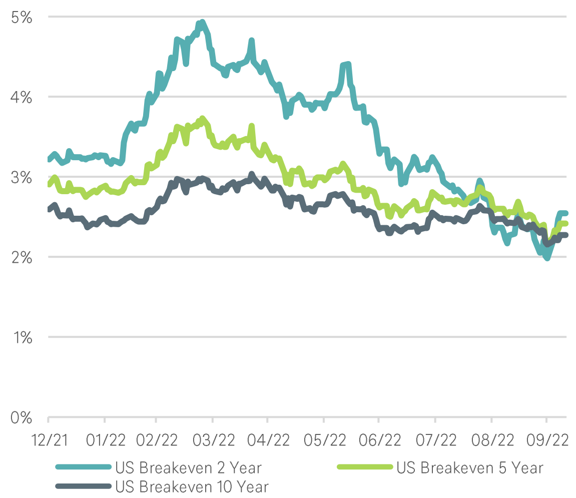
Figure 2: Market-implied peak month in Fed funds rate



Source: Bloomberg as of 30 September 2022.

Meanwhile, CPI swap rates and inflation breakeven levels across 2yr, 5yr, and 10yr tenors have stabilized and actually moved lower from peak levels in late March, indicating that markets believe the Fed's actions and forward guidance to be sufficient to keep inflation under at least some control.

Figure 3: TIPS inflation breakeven level



Source: Bloomberg as of 30 September 2022.

1.2 The importance of the discount rate

Interest rates impact on equity fair value

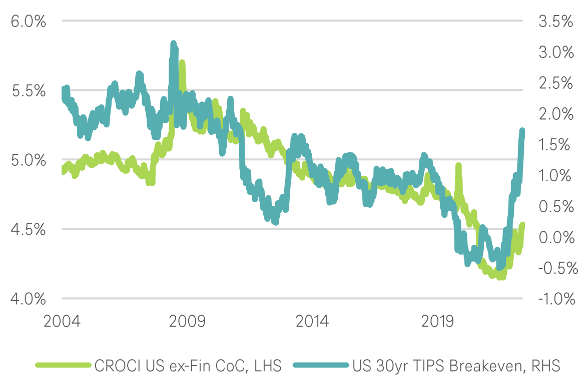
As real interest rates have repriced into positive territory across most of the developed world, strategic investors are hyperfocused on adjusting return expectations to potential new equilibrium levels on the real cost of capital. After over a decade of compressed term premium as a result of central bank balance sheet expansion, markets face the reality of higher terminal interest rates which imply meaningfully lower steady state equity multiples.

While financial markets surely care about the ongoing risks of economic and earnings recessions, determining the R-star–the real short-term interest rate expected to prevail when an economy is at full strength and inflation is stable–is indeed of greater strategic importance. In order to illustrate this point, a simple example can be shown comparing the impact in long term returns between earnings recessions and changes to the discount rate. Figure 5 shows sensitivity analysis of the equity market fair value as a function of changes to the discount rate and earnings recession scenarios. What is evident is that changes to the discount rate are far more meaningful for fair values than are temporary declines, even significant ones, to earnings.

The relationship between fair valuation levels in equities and the real discount rate are economically intuitive; should the rate at which you discount future cash flows rise, the net present value of those cash flows will fall, justifying a lower asset price. While short term risk sentiment can cause volatility in valuation levels that in our view are often unjustified, structural changes to the discount rate applied to a fair value model can be very impactful.

DWS's Cash Return on Capital Invested ("CROCI") framework evaluates the long-term cash flow streams of a company based on current profitability, which, combined with the CROCI book value of the company, implies a cost of capital. At the broad market level, this CROCI cost of capital is far more stable than even long term real interest rates. Still, both economic intuition (the increase in valuations throughout the decade of quantitative easing and zero interest rate policy) and the empirical data show the decline in both measures since the Global Financial Crisis ("GFC") and their subsequent increase over recent quarters as monetary policy has tightened.

Figure 4: CROCI US ex-Financials cost of equity and 30yr real treasury yield



Source: Bloomberg, DWS as of September 30 2022.

Figure 5: Scenario analysis: impact of decline in EPS and change in discount rate on market fair value

	Scenario A Pre-recession	Scenario B A repeat of 2008 with a 50% fall in EPS for 2 years			Scenario C Worse than 2008 with no EPS for 2 years		
Long term Earnings	100	100	100	100	100	100	100
Earnings Estimates for 2023 & 2024	100	50	50	50	0	0	0
Discount rate	5%	5%	6%	7%	5%	6%	7%
Fair price	2,000	1,907	1,575	1,338	1,814	1,483	1,248
Market move		-5%	-21%	-33%	-9%	-26%	-38%

Source: DWS as of 30 September 2022.

1.3 What influences the discount rate?

Factors impacting real interest rates

Since the GFC, both nominal and real interest rates across developed markets have hovered around historically low levels. The combination of central bank balance sheet expansion, benign levels of inflation across the economy, low volatility of inflation, and generally low market volatility sustained what now seems to be artificially low levels for discount rates.

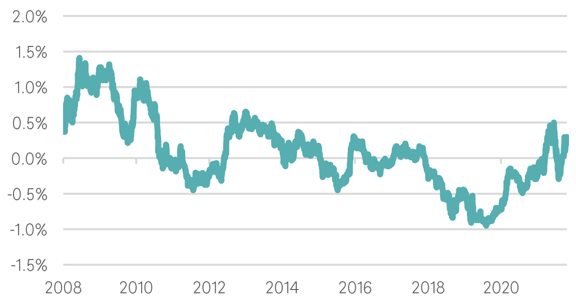
As we enter a new paradigm for interest rates, and by consequence fair values across financial assets, we can attempt to distill the components that will ultimately determine the stable discount rate and the outlook or variables for each of these components. Generally, we will address the risk-free rate via three main components:

- Term premium
- Inflation risk premium
- Country risk

Term premium

Following the GFC, global central banks have engaged in unprecedented levels of asset accumulation via various quantative easing programs. These actions have introduced stability to financial markets, compressing the cost of capital for individuals, institutions, and sovereignties alike. This compressed term premium, shown in Figure 6 allowed borrowers to access artificially low long-term interest rates. As term premium moves back to more normal levels, funding economics will likely be more challenging.

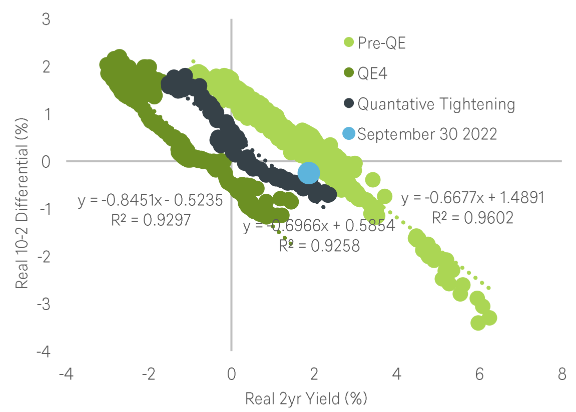
Figure 6: US term premium on a 10yr zero coupon bond



Source: Federal Reserve as of October 2022.

As we enter a period of quantitative tightening/shrinking balance sheets and rising global policy rates, the discount rate must find a new, and markedly higher, equilibrium level relative to the quantitative tightening regime. Looking at the shape of the 10-2 real yield differential in Figure 7, since the announcement of quantitative tightening by the Fed in early May, the level of the 10-year real treasury yield has moved about 100bps higher. As compared to the pre-QE level, the 10-year real yield still remains about 100bps below the theoretical level should the Fed's balance sheet shrink to zero.

Figure 7: 10-2 real yield differential versus 2yr real yield

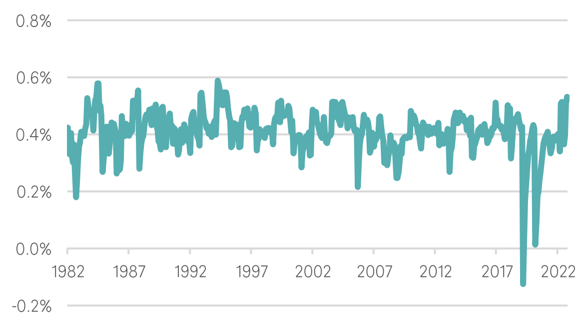


Source: Bloomberg, DWS Calculations as of 30 September 2022.

Inflation risk premium

As investors consider the longer term outlook for inflation, the uncertainty manifests in additional risk premia required by investors. While it is rare that a developed market central bank faces a crisis of credibility or is perceived to be "behind the curve", this scenario is not without precedent. The often-referenced 1970s stagflationary period in the US, for example, highlights the risk of the central bank being forced to hike interest rates well above the neutral level in order to regain credibility on their inflation mandate. This came at the expense of significant demand destruction and economic weakness. The Cleveland Fed estimates the premium investors require for the possibility that inflation may rise or fall more than they expect over the period in which they hold a bond.

Figure 8: Cleveland Fed 10yr inflation risk premium



Source: Federal Reserve Bank of Cleveland as of 30 September 2020.

While equities demonstrate inflationary qualities, a mean increase in inflation risk premia would impact the risk-free cost of borrowing or discount rate while not necessarily translating into nominal earnings for corporations. Higher costs of capital is then associated with inflation risk compensation.

Country risk

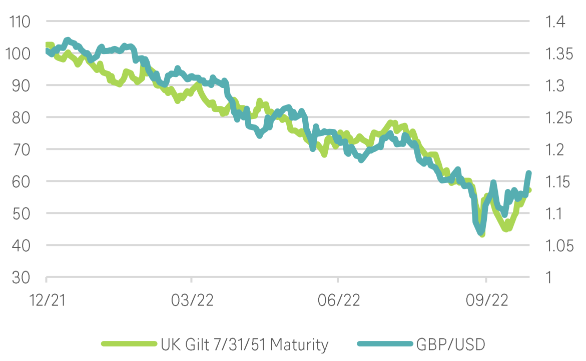
Estimating country risk can be far more complex than measuring credit default loss expectations for, say, a corporate bond. The timeframe for sovereign credibility issues to materialize into outright defaults can be quite extensive, and the lack of empirical data around developed markets defaults illustrates that sovereign credit risk is quite a complex problem even in the face of economic turmoil.

The risks around a country's credibility can be examined through the lens the United Kingdom, where recently fiscal policy missteps caused significant turmoil across currency and rate markets.

Central bank credibility and the United Kingdom

In early October, the new UK government introduced an aggressive economic plan intended to stimulate economic growth. Markets were perplexed by the plan, which proposed fiscal stimulus measures as well as permanent tax cuts on upper-middle income brackets in the midst of a global central bank tightening cycle. Supply side issues as a result of Brexit and COVID-19 risked intensifying inflation pressures from aggregate demand stimulus. What made the situation worse was that the new "growth "plan" was introduced without estimates of costs or considerations for the implications on debt sustainability, with the backdrop of high debt-to-GDP ratios and soaring Treasury funding costs. The result was a sharp fall in the British Pound and a sharp selloff in UK Gilt yields, particularly in the long end of the curve

Figure 9: 30 year UK Gilt and GBP price return YTD (%)



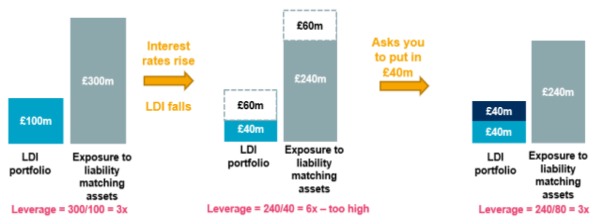
Source: Bloomberg as of 24 October 2022.

Since that time, the UK has replaced Liz Truss as the Prime Minister, appointing Rishi Sunak as the head of the Conservative Party. This, combined with immediate monetary intervention by the Bank of England ("BoE"), has seemingly stabilized UK gilt and currency markets. Nonetheless, what has happened over the past few weeks with the UK budget and subsequent market reaction has provided an interesting case study for central banks around the developed world as to the potential impacts of central bank crediblilty issues on liquidity across the financial system.

In our view, the implications of the market reaction to the announcement are twofold: 1. Highlighting the segments of the economy and the financial system that are susceptible to rising interest rates and interest rate volatility (which may differ meaningfully from previous financial crises) and 2. Emphasizing the importance of credibility for policymakers, particularly with the backdrop of high inflation and elevated fiscal deficits.

On the topic of financial leverage, the immediate effects of the selloff in long-term UK gilt yields was felt across the UK Liability-Driven Investing ("LDI") community, primarly consisting of pension plans that utilizes interest rate derivatives, in this case interest rate swaps, to increase the yield-generating capabilities of their portfolios in order to meet liability requirements. As the value of these swap agreements declined, LDI plans were forced to re-collaterlize with cash, a nuance that was perhaps previously underappreciated. In order to raise cash, these plans were forced to sell their gilt holdings, putting downward technical pressure on the price of UK gilts. The irony is that, would the swap agreements allow posting of high-quality general collateral, this forced selling could, in many cases, be avoided.

Figure 10: Illustration of impact of LDI leverage



Source: Lane Clark & Peacock LLP.

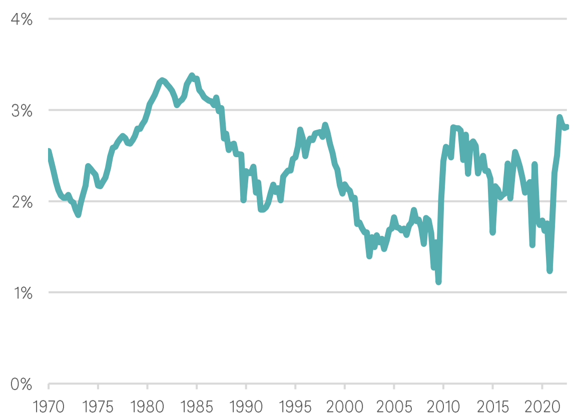
The ongoing funding issues with LDI plans is just one of many areas of the economy that has become increasingly exposed to financial leverage or carry (i.e. lending long and borrowing short). Traditionally a significant driver of traditional bank lending business, the decade-long compression of long-term cost of borrowing has resulted in elevated exposures across consumers, investors, and the UK government itself.

In contrast the US mortgage landscape, which largely consists of long-duration fixed-rate mortgages, mortgage lending in the UK typically have fixed terms of two to five years, with the remainder of the mortgage adjusting to a standard variable rate. As interest rates move higher, the estimated 1.8 million mortgage borrowers (according to estimates from UK Finance) scheduled for refinancing in 2023[1] will face significantly higher interest obligations. UK Finance estimates 1.7 million mortgages are already floating rate obligations.

As bank regulations following the GFC placed greater restrictions around banking activities, alternative asset managers have stepped in to provide financing to non-traditional borrowers. Market makers have similarly expanded their businesses to take advantage of bid-ask spreads, utilizing cheap funding economics and facing fewer balance sheet limitations relative to their bank peers.

The UK as well as other developed market economies also faces the challenge of an increasing fiscal drag going forward. Net interest owed on sovereign debt is likely to increase significantly given high debt-to-GDP balances and the trend higher in real longer-term interest rates.

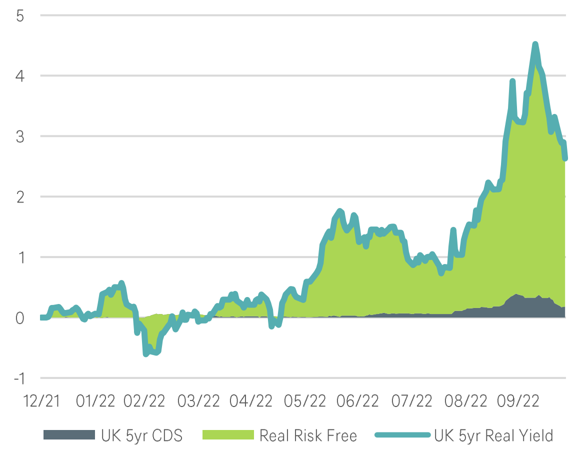
Figure 11: OECD United Kingdom net interest payments projection



Source: OECD projections as of 30 September 2022.

The market's reaction to the surprise stimulus proposal was somewhat nuanced. The sharp rise in real interest rates, for example, was not primarily driven by an increase in sovereign credit risk, but rather by a backup in the true risk-free cost of borrowing, which can be interpreted as a somewhat permanent tightening in financial conditions. The flexibility of the BoE to pivot into more dovish policy may be challenged going forward.

Figure 12: UK contribution to change in 5yr real yield, YTD (%)



Source: Bloomberg, DWS Calculations as of 30 September 2022.

Although this sharp rise in UK sovereign credit risk is relatively small as compared to the overall move in 5yr UK gilt yields, a 30bps structural increase in the real cost of capital would prove rather challenging. Should the credibility of the UK deteriorate, by virtue of soaring fiscal deficits or through pension-related liquidity issues, the impact on equity values could be rather impactful as previously shown in Figure 5.

[1] https://www.axios.com/2022/09/28/uk-homeowners-mortgage-rate-shock

2 / Long View Forecasts

2.1 Equity Forecasts

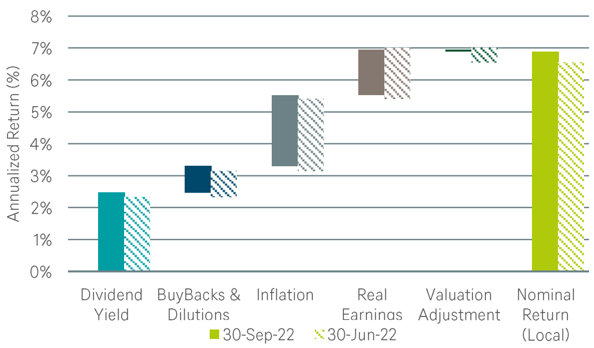
For our equity return forecasts, Figure 14 illustrates the changes to our return pillars (see Figure 13) for 10-year MSCI All Country World local currency return forecast. Our return forecast for global equities has increased to 6.9% from the 6.6% level at the end of Q1. As earnings multiples have continued to cheapen, the valuation headwind has further compressed to -0.1% from -0.5% at the end of June.

Figure 13: **Pillar decomposition for equities**

Income		Growth		Valuation
Dividend yield	Buybacks & dilutions	Inflation	Earnings growth	Valuation adjustment

Source: DWS Investments UK Limited.

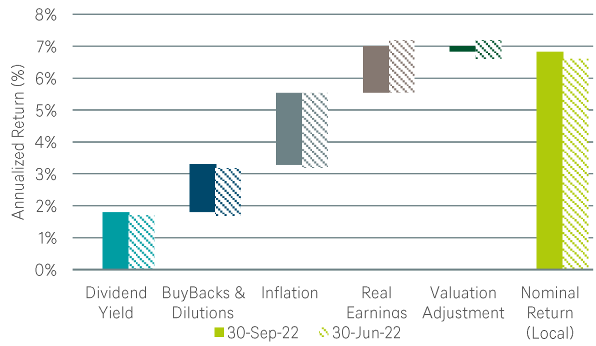
Figure 14: **MSCI All Country World: Contribution to 10-year forecasted hypothetical annualized returns**



Source: DWS Investments UK Limited. Data as of 30 September 2022.

We see similar changes in the US, with our return forecast for MSCI USA (see Figure 15) increasing to 6.8% from 6.6% in Q2, with valuation adjustment detracting just -0.2% from return forecasts versus -0.6% as of the previous quarter. Real earnings growth contracted from 1.7% to 1.5% partially offsetting the reduced valuation hurdle from the end of Q2.

Figure 15: **MSCI USA: Contribution to 10-year forecasted hypothetical annualized returns**



Source: DWS Investments UK Limited. Data as of 30 September 2022.

2.2 Liquid Real Assets Forecasts

While REITs and Infrastructure both leverage very similar pillars to equities (see Figure 16), returns are derived largely from income via dividend distributions as shown in Figure 17 and. Figure 18.

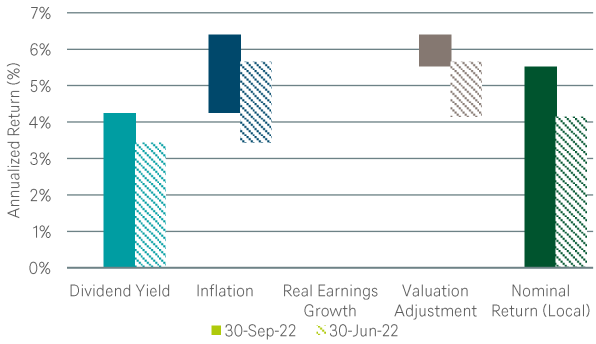
Figure 16: **Pillar decomposition for REITs and Infrastructure**

Asset Class	Income	Growth		Valuation
Listed real estate equity	Dividend yield	Inflation	Earnings growth	Valuation adjustment
Listed infrastructure	Dividend yield	Inflation	Earnings growth	Valuation adjustment

Source: DWS Investments UK Limited.

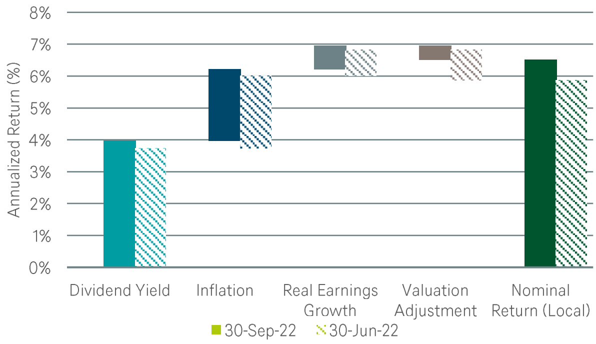
Across liquid real assets, our return forecasts have also moved higher versus Q2. In global REITs, our return forecast increases to 5.5% from 4.2% in June, driven primarly by an increase in dividend yield contribution (4.2% versus 3.4% in Q2) as well as a reduction in the valuation adjustment drag (-0.9% versus -1.5% in Q2). Similarly our global listed infrastructure equity return forecast increased to 6.5% from 5.9% in June, driven by modestly higher dividend contribution (4.0% versus 3.7% in Q2) and less challenging valuations (-0.4% versus -1.0% in Q2).

Figure 17: **Global REITs: Contribution to 10-year forecasted hypothetical annualized returns**



Source: DWS Investments UK Limited. Data as of 30 September 2022.

Figure 18: **Global Infrastructure: Contribution to 10-year forecasted hypothetical annualized returns**

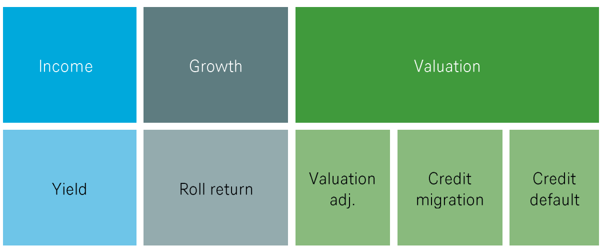


Source: DWS Investments UK Limited. Data as of 30 September 2022.

2.1 Fixed Income Forecasts

In Q3, interest rates continued to their move higher, increasing starting yield levels across fixed income assets. While inflationary pressures have persisted longer than previously expected, which would typically pose a significant hurdle to fixed yields, the more recent increase in medium to longer term sovereign bond yields has actually been in real yields rather than in forward-looking inflation expectations. As a result, these higher starting yield levels across the fixed income complex have improved the outlook for 10-year returns. Our return pillars for fixed income are shown in Figure 19.

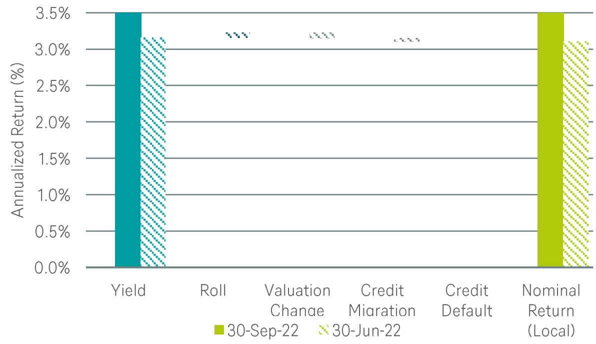
Figure 19: **Pillar decomposition for Fixed Income**



Source: DWS Investments UK Limited.

Over the third quarter, the selloff in both shorter term and longer-term US Treasury yields continued. The 10-year US Treasury yield moved from just 3.01% at the end of June to 3.83% to close out Q3, which has significantly increased yield contribution to our nominal return forecasts shown in Figure 20.

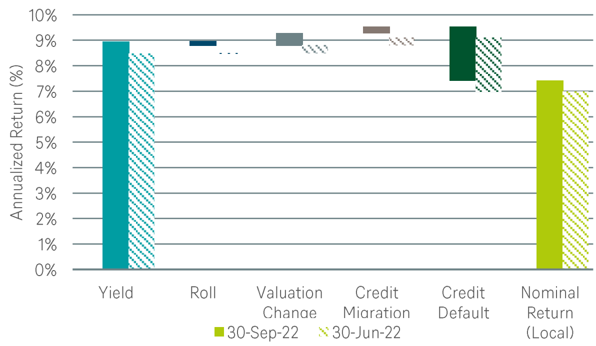
Figure 20: **US Treasury Bond Index: Contribution to 10-year forecasted hypothetical annualized returns**



Source: DWS Investments UK Limited. Data as of 30 September 2022.

Corporate bond spreads are flat to tighter relative to the end of June–investment grade spreads (5bps wider) are modestly higher while high yield spreads (83bps tighter) have tightened–although the selloff in interest rates has increased starting yields across credit asset classes. In aggregate, our forecast for US High Yield returns has increased to 7.4% from 7.0% at the end of Q2. Figure 21 shows US High Yield return forecast pillars.

Figure 21: **US High Yield Bond Index: Contribution to 10-year forecasted hypothetical annualized returns**



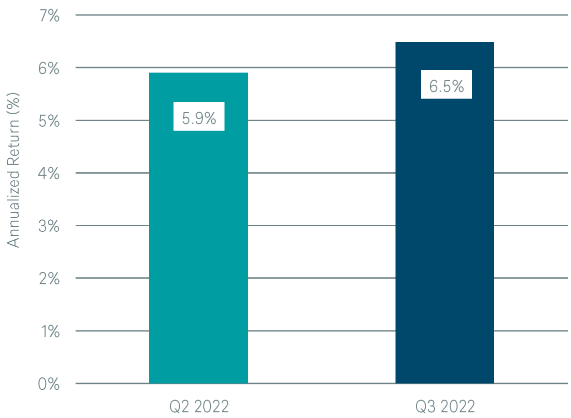
Source: DWS Investments UK Limited. Data as of 30 September 2022.

3 / Conclusion

The third quarter of 2022 remained challenging in terms of interest rate volatility and the performance of risk assets. Monetary conditions continued to tighten as global central banks remained focused on addressing stubbornly high inflation. The reaction of the market to the UK surprise stimulus proposal was a referendum of sorts on the direction of monetary policy going forward. While these tightening credit conditions continue to bring about the risks of an economic slowdown over the next couple of years, the longer term picture for asset class returns looks more sanguine given less challenging valuations and yield levels across financial markets.

Figure 22 illustrates how our 10-year return forecasts for a moderate strategic asset allocation multi-asset[2] have changed over the most recent quarter. **Our moderate strategic portfolio return forecast increased to 6.5% from 5.9% at the end of Q2.**

Figure 22: **10 year forecasted hypothetical annualized returns of moderate strategic asset allocation**



Source: DWS Investments UK Limited. Data as of 30 September 2022.

[2] Moderate strategic asset allocation refers to a portfolio that targets annualized volatility of roughly 10%

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