

Long View Q2: Inverted yield curves



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- Return forecasts for the next decade are relatively unchanged from the start of the year, with a modestly higher fixed income return outlook and modestly lower returns for equities and other risk assets.
- The inverted yield curve has been an important characteristic of the recent interest rate environment as a result of historically aggressive short-term interest rate hikes from global central banks.
- Despite higher short-term interest rates, empirical evidence suggests intermediate-to-long-term duration instruments have typically realized higher returns over 3, 5, and 10 year periods.
- Inverted yield curve regimes as a consequence of aggressive interest hikes are often short-lived and reinvestment risk can come back into play for strategic investors as short-term yields normalize.
- Particularly as we near the end of interest rate increases in the US, investors should reasonably expect to realize positive term premium over medium-to-long-term periods based on empirical results.

Summary

In this report, we present the DWS long-term capital market assumptions for major asset classes as of the end of June 2023 while exploring the risks to these forecasts.

As the global economy demonstrated resilience in the second quarter, risk assets continued their strong year-to-date performance, with global equities returning 6.2% in Q2, bringing returns to nearly 14% thus far this year. As economic growth forecasts continued to be revised higher amid a strong labor market and resilient consumer demand, interest rates also demonstrated a bias higher.

While the Federal Reserve (“the Fed”) only raised interest rates once in Q2, short-term interest rates moved measurably higher, with the 2-year US Treasury yield rising from 4.03% at the end of March to 4.90% to end June. The significant increase in the 2-year US Treasury yield reflects the significant shift in market pricing around short-term interest rates, where the first sign of interest rate cuts are not expected to occur until 2024 and the Fed Funds rate is now priced to exceed 5% through June of next year. As longer-term interest rates are typically less sensitive to short-term economic data, the increase in short-term interest rates has resulted in a significantly inverted US Treasury yield curve, which has driven strong

investment demand for short-duration fixed income instruments.

While current yields look attractive for short-duration fixed income markets for the next few quarters, reinvestment risk is top of mind for fixed income investors as the peak in short-term interest rates nears. Inverted yield curve environments rarely persist, and term premia are generally realized over medium-to-longer-term investment horizons. Despite some hawkish bias, it remains prudent for investors to manage their portfolio durations, particularly those who have longer-term liabilities.

Our 10-year forecasts reflect these empirical observations, where differentials between the return outlook for sovereigns and equities is less dramatic relative to previous years, and the nominal return outlook for a multi-asset strategic allocation reflects this more benign strategic return landscape.

Our models now forecast an annual local currency return of 6.6% for the MSCI All Country World Index (“ACWI”) over the next decade, versus 6.7% three months prior. At an aggregate level, we estimate the forecasted rate of return on a diversified portfolio at 6.2%, marginally lower from the level at the end of Q1.

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

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Table 1: DWS Ten-year annualized forecasted local currency returns

	As of 30 Jun 2023	Δ since 31 Mar 2023
ACWI Equities	6.60%	-0.20%
World Equities	6.50%	-0.20%
EM Equities	7.30%	-0.30%
US Equities	6.70%	-0.30%
Europe Equities	6.70%	0.10%
Germany Equities	6.80%	0.20%
UK Equities	8.60%	0.30%
Japan Equities	3.90%	-0.30%
EUR Treasury	2.60%	0.20%
EUR Corporate	3.90%	0.10%
EUR High Yield	6.10%	0.00%
US Treasury	4.20%	0.40%
US Corporate	5.00%	0.20%
US High Yield	6.30%	-0.10%
EM USD Sovereign	7.40%	-0.20%
World REITS	5.90%	0.10%
United States REITS	6.70%	0.20%
Global Infra. Equity	7.60%	0.60%
US Infra. Equity	7.90%	0.40%
Private RE Equity US	3.60%	0.00%
EUR Infrastructure IG	3.70%	0.10%
Private EUR Infra. IG	4.60%	-0.10%
Hedge Funds: Composite	5.70%	0.30%
Broad Commodities Futures	5.40%	0.70%

Source: DWS Investments UK Limited. Forecasts from of 30 June 2023 to 30 June 2033. 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.

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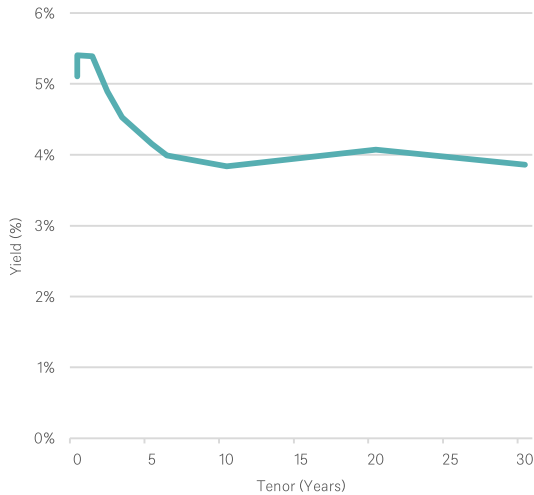
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1 / The current yield curve environment

1.1 The current inverted yield curve

Since the Federal Reserve (“the Fed”) started increasing its policy rate in March of last year, the Federal Funds rate has undergone 10 increases, amounting to a 5% increase in the overnight rate. Despite monetary tightening measures for longer tenors through quantitative tightening, the significant upward pressure on short-term interest rates has resulted in a significantly inverted US Treasury yield curve shown in [Figure 1](#).

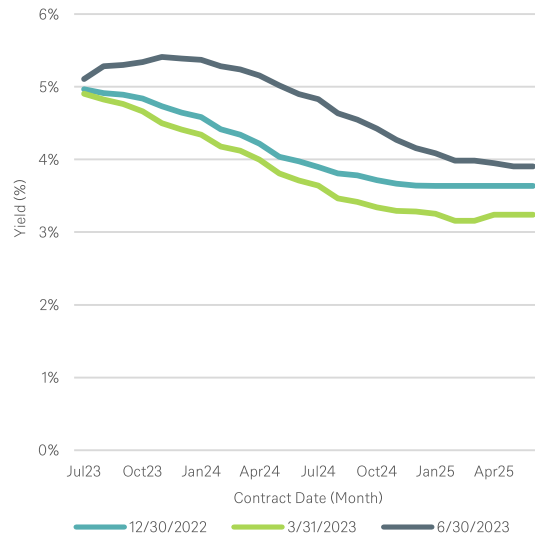
Figure 1: US Treasury Yield Curve (%)



Source: Bloomberg as of 30 June 2023.

As a result of the current yield curve inversion and uncertainty around the Fed’s management of inflationary pressures, investors have hesitated to invest in medium-to-long duration bond markets, instead opting for attractive coupons in short-term bonds. Further, the persistence of inflationary pressures that has pushed the peak Fed Funds rate expectation higher and further out has left investors hesitant to call the top for yields (see [Figure 2](#)).

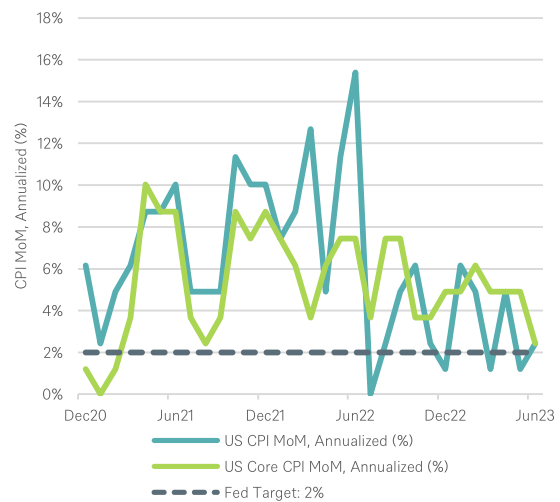
Figure 2: Fed Funds Futures Implied Rate (%)



Source: Bloomberg as of 30 June 2023.

Core inflation has remained consistently about the Fed’s 2% target levels (see [Figure 3](#)), and a tighter-than-expect labor market has helped to extend the timeline for elevated short-term rates.

Figure 3: Consumer Price Inflation MoM, annualized (%)



Source: Bloomberg as of 30 June 2023.

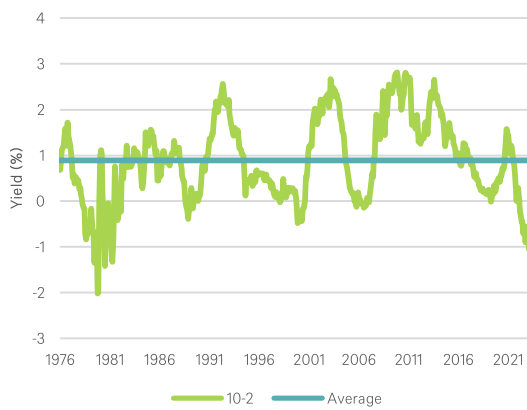
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2 / Historical returns across the curve

2.1 What is the average realized term premium?

Throughout modern history, yield curves have generally been positively sloping. Since May of 1976, the average differential between the 10yr and the 2yr US Treasury yields has been 0.89% as shown in Figure 4, with a positive slope observed in over 85% of the monthly observations.

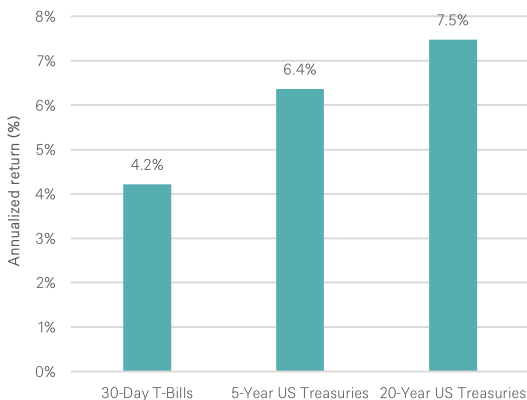
Figure 4: US Treasury 10-year versus 2-year interest rate differential (%)



Source: Bloomberg from 31 May 1976 to 30 June 2023.

The impact of positive-sloping yield curves on investment returns is quite intuitive: on average, investment into longer-tenor sovereign bonds have yielded higher nominal returns, with annual returns on 20-year and 5-year US Treasuries exceeding 30-day T-bills by 3.3% and 2.1%, respectively, since 1976 (see Figure 5).

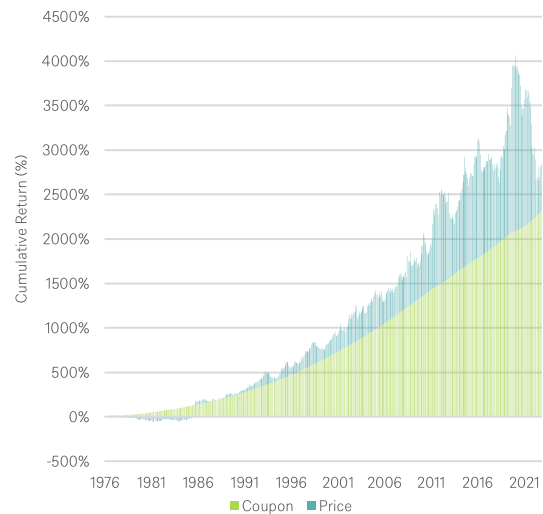
Figure 5: US Treasury annualized returns (%)



Source: Bloomberg from 31 May 1976 to 30 June 2023.

Ultimately, fixed-income investment returns, particularly in sovereign bonds, are driven primarily by interest levels (see Figure 6).

Figure 6: 20-Year US Treasuries contribution to total return (%)



Source: Morningstar, DWS Calculations from 31 May 1976 to 30 June 2023.

With term premia most frequently positive, income generation combined with a downward structural bias in yields as a result of demographics and the associated long-term disinflationary trends generally favors longer-duration sovereign bonds. As we explore in the following section, realized positive term premia is still quite consistent even in inverted yield curve environments, as inverted yield curves typically normalize rather quickly and investors are again compensated for owning longer-duration bonds.

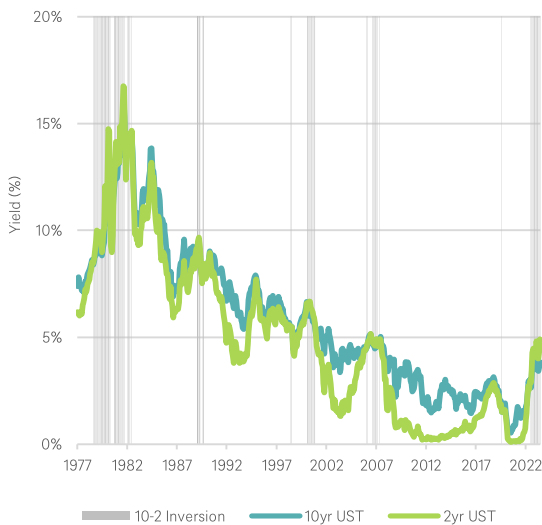
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2.2 Historical returns during inverted yield curve environments

Since the 1970s, the Fed has engaged in six interest rate hiking cycles including the current cycle. Inverted yield curve environments are not without precedent, and in fact have occurred with some frequency throughout modern history during these periods of aggressive interest rate hiking. Generally speaking, however, inverted yield curve environments have rarely persisted for more than a few quarters. The current inverted yield curve regime has lasted roughly a year to this point and is already the second longest such continuous period over our time series, second only to September 1980 to September 1981.

In order to illustrate these periods of yield curve inversion, we compare the 10-year US Treasury yield to the 2-year US Treasury yield, the latter being a less volatile measure of both the point-in-time level of short-term interest rates and the trajectory of said rates over the subsequent 2 years. Figure 7 shows the 10-year and 2-year Treasury yields and highlights the periods where the 2-year yield exceeded the 10-year yield.

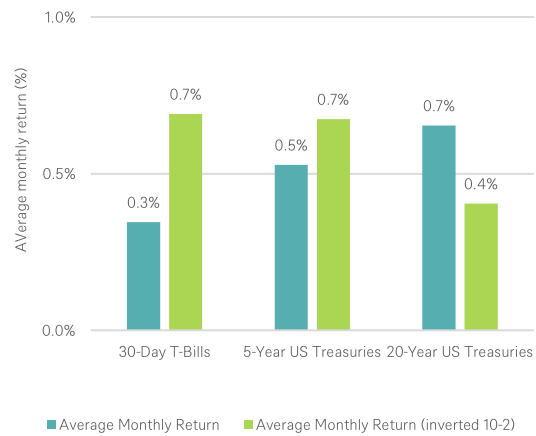
Figure 7: US Treasury 10-2 yield curve and inversion (%)



Source: Bloomberg from 31 May 1976 to 30 June 2023.

During these inverted yield curve environments, quite intuitively, the average monthly return for 30-Day T-Bills exceeded longer-tenor US Treasuries, although interestingly the differential between T-Bills and 5-year US Treasuries is quite small.

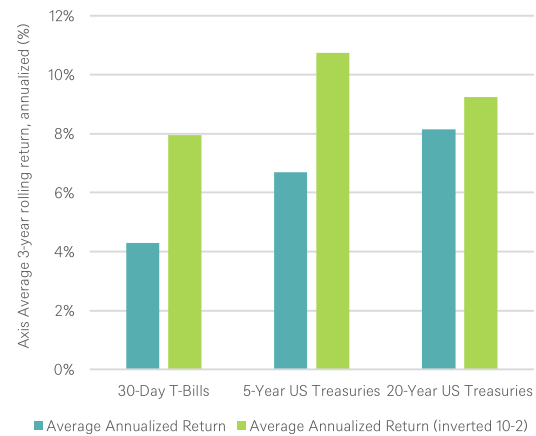
Figure 8: Average monthly returns during inverted 10-2 periods (%)



Source: Morningstar, DWS Calculations from 31 May 1976 to 30 June 2023.

When looking over a medium-to-longer time horizon, this return differential between short duration and longer duration Treasuries fades rather quickly. Over 3, 5, and 10-year rolling periods, the subsequent average annualized returns of different duration Treasuries during periods of yield curve inversion shows significantly higher average subsequent returns of 5-year and 20-year US Treasuries relative to 30-day T-Bills.

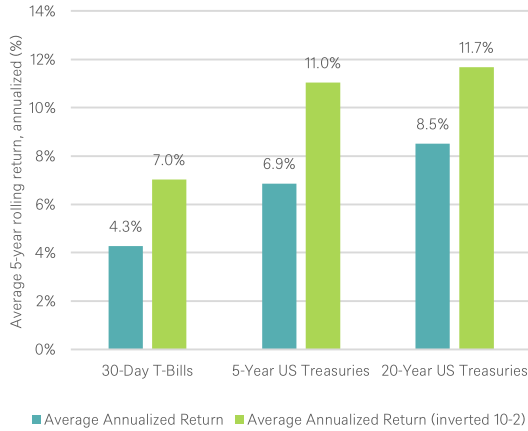
Figure 9: Average subsequent 3-year returns during inverted 10-2 periods, annualized (%)



Source: Morningstar, DWS Calculations from 31 May 1976 to 30 June 2023.

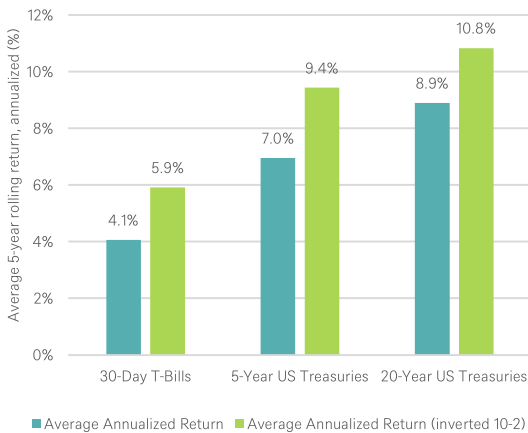
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Figure 10: Average subsequent 5-year returns during inverted 10-2 periods, annualized (%) (5/31/1976 – 6/30/2030)



Source: Morningstar, DWS Calculations from 31 May 1976 to 30 June 2023.

Figure 11: Average subsequent 10-year returns during inverted 10-2 periods, annualized (%) (5/31/1976 – 6/30/2030)



Source: Morningstar, DWS Calculations from 31 May 1976 to 30 June 2023.

As we approach the end of the current Fed hiking cycle, we can also analyze how different tenor US Treasuries performed subsequent to the peak in short-term interest rates.

Over our time series, from May 1976 to June 2023, there have, apart from temporary inversions, 4-major regimes of inversion between 10-year and 2-year US Treasury yields highlighted in Figure 7. At the point of most negative spread between 10-year and 2-year, we can examine the subsequent returns across different tenor Treasuries. Figure 12 illustrates that longer-duration US Treasuries have outperformed T-bills quite significantly over 3, 5, and 10-year periods following the peak in yield curve inversion.

Figure 12: Subsequent returns during peak inverted 10-2 periods, annualized (%)

	Peak inversion date	30-Day T-Bills	5-Year US Treasuries	20-Year US Treasuries
Next 3 years	2/29/1980	12.0%	17.7%	16.5%
	3/31/1989	6.9%	11.4%	12.4%
	3/31/2000	3.4%	10.5%	11.2%
Next 5 years	11/30/2006	2.2%	7.3%	6.9%
	2/29/1980	10.9%	14.3%	12.2%
	3/31/1989	5.4%	10.2%	12.1%
Next 10 years	3/31/2000	2.5%	6.7%	8.7%
	11/30/2006	1.4%	7.0%	9.4%
	2/29/1980	8.8%	12.7%	13.6%
	3/31/1989	5.2%	8.5%	11.0%
Next 10 years	3/31/2000	2.6%	6.1%	6.9%
	11/30/2006	0.7%	4.2%	6.4%

Source: Morningstar, DWS Calculations from 31 May 1976 to 30 June 2023.

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2.3 Historical term premium in Europe

Looking back prior to the establishment of the European Union, the German bund market has experienced three inverted yield curve regimes since September 1972 including the current regime. The previous two regimes lasted roughly three years, on average, although the most recent period of yield curve inversion was not continuous, while the currently inverted yield curve began in November of 2022. Figure 13 shows the periods of inversion between the 10-year and 2-year German Bund yields.

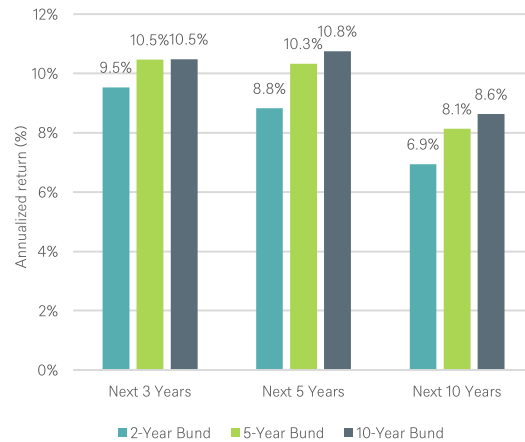
Figure 13: German Bund 10-2 yield curve and inversion (%)



Source: Deutsche Bundesbank, DWS Calculations from 30 September 1972 to 30 June 2023.

During these previous two periods of inversion between 10-year and 2-year German Bund yields, the subsequent 3, 5, and 10-year returns were, on average, higher for longer-tenor bonds despite higher short-term rates at the investment period. Figure 14 shows the average annualized returns of different tenor bonds across these subsequent timeframes.

Figure 14: Average annualized returns during inverted 10-2 periods (%)



Source: Deutsche Bundesbank, DWS Calculations from 30 September 1972 to 30 June 2023.

Looking specifically at the point of most negative spread between the 10-year and 2-year German Bund yields, Figure 15 shows that subsequent 3, 5, and 10-year returns were higher for medium-to-long-term bonds relative to shorter-duration fixed income.

Figure 15: Subsequent returns during peak inverted 10-2 periods, annualized (%)

	Peak inversion date	2-year German Bunds	5-Year German Bunds	20-Year German Bunds
Next 3 years	8/31/1981	11.77%	13.57%	13.44%
	7/31/1992	8.70%	10.03%	9.49%
Next 5 years	8/31/1981	10.60%	13.16%	14.46%
	7/31/1992	7.79%	10.36%	10.77%
Next 10 years	8/31/1981	7.86%	8.78%	8.84%
	7/31/1992	6.00%	7.76%	8.70%

Source: Deutsche Bundesbank, DWS Calculations from 30 September 1972 to 30 June 2023.

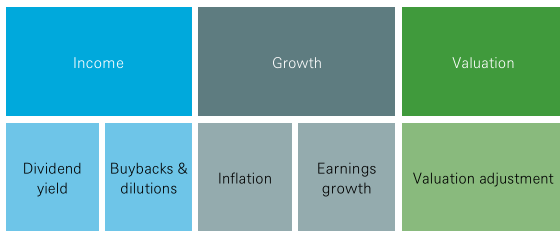
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3 / Long View Forecasts

3.1 Equity Forecasts

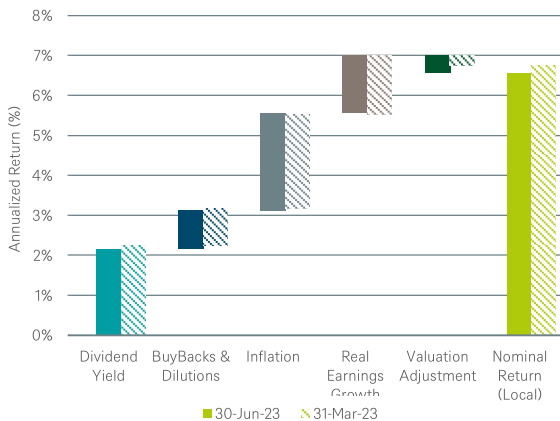
For our equity return forecasts, [Figure 17](#) illustrates the changes to our return pillars for 10-year MSCI All Country World local currency return forecast. Our return forecast for global equities declined incrementally to 6.6% from the 6.7% level at the end of March. Valuations became mostly more challenging in Q2, with the valuation adjustment going from -0.2% to -0.3%, reflecting the recent increase in equity multiples. Forecasted return contribution from net buybacks was modestly higher, going from 0.9% to 1.0% as of the end of Q2.

Figure 16: Pillar decomposition for equities



Source: DWS Investments UK Limited.

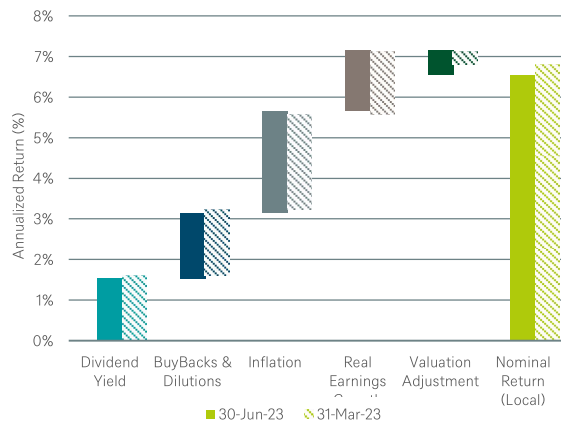
Figure 17: MSCI All Country World: Contribution to 10-year forecasted hypothetical annualized returns



Source: DWS Investments UK Limited. Data as of 30 June 2023.

Similarly, our US equity forecasts are modestly lower relative to the end of Q1. 10-year return forecasts for MSCI USA declined from 6.8% to 6.5%, driven primarily by more challenging valuations. The valuation adjustments declined from -0.3% to -0.6% as US equity valuations in particular experienced significant multiple expansion in Q2. Dividend yield contribution was also modestly reduced (from 1.6% to 1.5%), also reflecting higher equity prices throughout the quarter.

Figure 18: MSCI USA: Contribution to 10-year forecasted hypothetical annualized returns

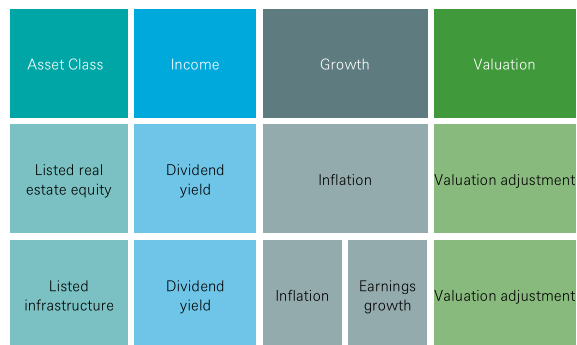


Source: DWS Investments UK Limited. Data as of 30 June 2023.

3.2 Liquid Real Assets Forecasts

While REITs and Infrastructure both leverage very similar pillars to equities (see [Figure 19](#)), returns are derived largely from income via dividend distributions as shown in [Figure 20](#) and [Figure 21](#).

Figure 19: Pillar decomposition for REITs and Infrastructure

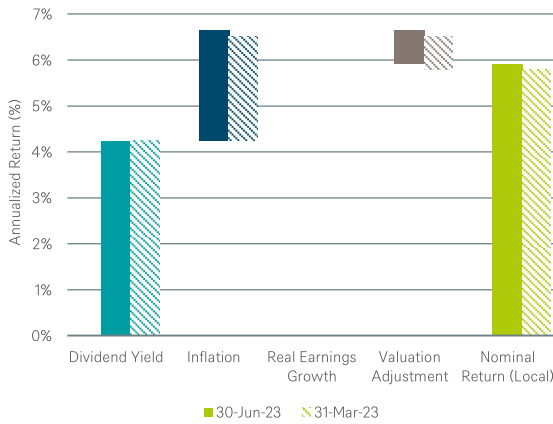


Source: DWS Investments UK Limited.

Across liquid real assets, our return forecasts are roughly comparable to traditional markets. Global REIT returns provide less of a buffer given higher real interest rates while our Infrastructure equity outlook provides a return outlook commensurate to or modestly above traditional public equity markets.

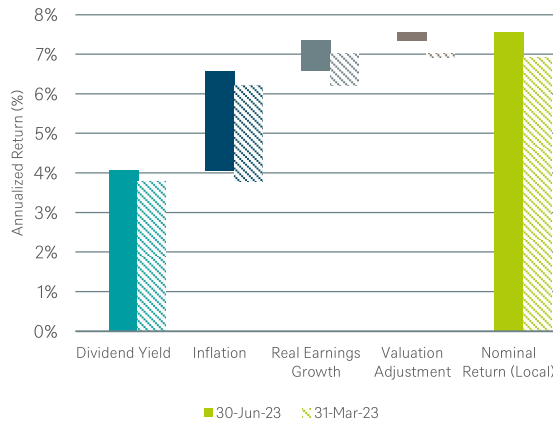
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Figure 20: Global REITs: Contribution to 10-year forecasted hypothetical annualized returns



Source: DWS Investments UK Limited. Data as of 30 June 2023.

Figure 21: Global Infrastructure: Contribution to 10-year forecasted hypothetical annualized returns



Source: DWS Investments UK Limited. Data as of 30 June 2023.

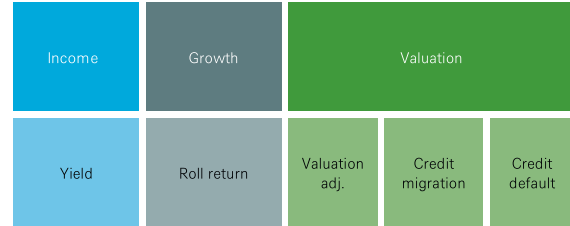
3.3 Fixed Income Forecasts

Throughout the second quarter, interest rates exhibited a modestly higher bias, with the Fed Funds rates experiencing one additional hike in early May. Particularly as inflationary pressures persisted and economic growth has remained resilient, market pricing around the Fed’s monetary policy pushed expectations around short-term interest rates higher for longer, with the Fed Funds rate now pricing in its peak through the end of this year. Medium-to-long-term interest rates also reflect a more hawkish monetary outlook relative to the end of March, with the 10-year US Treasury yield rising 36bps from 3.48% to 3.84%.

The net effect of the modest move higher in interest rates is reflected in higher yield contribution to our strategic return outlook for sovereign bonds. Starting yield is by far

the most important driver of return contribution in our building blocks shown in Figure 22.

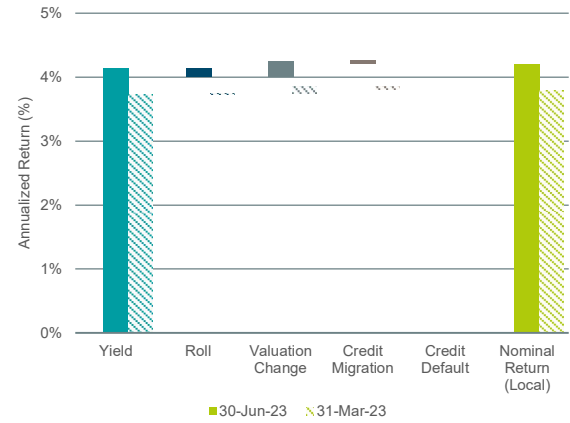
Figure 22: Pillar decomposition for Fixed Income



Source: DWS Investments UK Limited.

The move in the 10-year US Treasury yield from 3.48% at the end of March to 3.84% at the end of June increased yield contribution from 3.7% to 4.1% for the US Treasury Bond Index. This has modestly increased our US Treasury return forecasts from 3.8 to 4.2% as shown in Figure 23.

Figure 23: US Treasury Bond Index: Contribution to 10-year forecasted hypothetical annualized returns

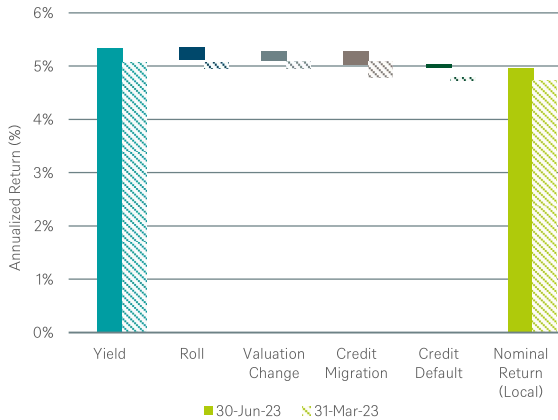


Source: DWS Investments UK Limited. Data as of 30 June 2023.

Alongside generally strong performance across risk assets, corporate bond spreads ended Q2 lower, with the US Investment Grade Corporate OAS moving from 1.38% to 1.23% and the US High Yield Corporate OAS moving from 4.55% to 3.90%. The move lower in corporate bond spreads partially offset the increase in risk-free interest rates, with a modest increase in yields for longer-duration, less credit-sensitive bonds. The longer duration, higher quality US IG Corporate index return forecast increased from 4.7% to 5.0%, driven by an increase in yield from 5.1% to 5.3%, whereas the shorter-duration, more speculative US High Yield Corporate index return forecast slightly declined from 6.4% to 6.3%, reflecting a marginally increase in yield from 8.4% to 8.5% being offset by modest lower roll yield (-20bps change) and valuations (-10bps change). Figure 24 and Figure 25 shows US Investment Grade and US High Yield return forecasts, respectively.

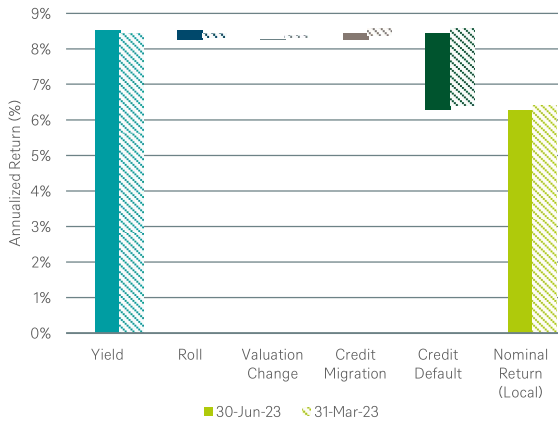
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Figure 24: US Investment Grade Corporate Bond Index: Contribution to 10-year forecasted hypothetical annualized returns



Source: DWS Investments UK Limited. Data as of 30 June 2023.

Figure 25: US High Yield Bond Index: Contribution to 10-year forecasted hypothetical annualized returns



Source: DWS Investments UK Limited. Data as of 30 June 2023.

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3 / Conclusion

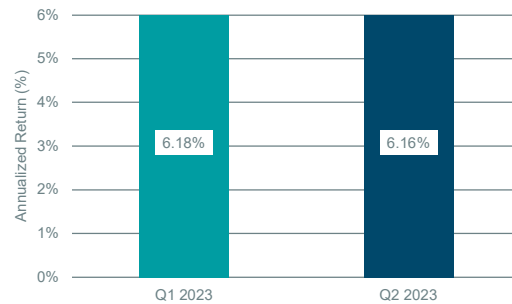
Return forecasts are relatively unchanged relative to the end of Q1, with equity forecasts slightly lower while core and longer-duration fixed income asset class returns are modestly higher. In the alternatives space, listed infrastructure equity and REITs forecasts are modestly higher relative to the end of March.

These changes in 10-year return forecasts largely reflect continued price appreciation across global equity markets, driven by more expensive multiples, and modest repricing higher in interest rates, benefitting sovereign bonds and other core fixed income asset classes. As markets adjust to what appears to be structurally higher interest rates relative to decade following the Global Financial Crisis, higher sovereign bond yields, particularly as inflation is showing signs of slowing, positions fixed income quite favorably on a strategic basis. Although the current inverted yield curve environment has made bond investors cautious about owning full-duration fixed income assets, higher nominal and real longer-duration Treasury yields provide a much more favorable strategic return outlook than they have in some time.

The second quarter has continued to prove the difficulties in predicting the pace of inflation and growth slowdown and the implications of this macroeconomic data on the Treasury yield curve. While these short-term uncertainties

can sometimes give pause to expressing strong tactical views, the drivers of strategic returns remain the same: more favorable starting yield levels are the most important driver of strategic fixed income returns. Our 10-year return forecasts shown in Figure 26 illustrates how our 10-year return forecasts for a moderate strategic asset allocation multi-asset¹ have changed over the most recent quarter.

Figure 26: 10 year forecasted hypothetical annualized returns of moderate strategic asset allocation in local currency



Source: DWS Investments UK Limited. Data as of 30 June 2023.

¹ Moderate strategic asset allocation refers to a portfolio that targets annualized volatility of roughly 10%

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