# Uncommon truths

## Can yields go much higher?

**The recent rise in long yields and bear steepening of yield curves has been painful. Whenever 10-year US yields have been much higher then now, either inflation or growth (or both) was higher. I doubt yields can go significantly higher for very long and favour longer maturities (despite the recent pain).**

Three days of meetings with investors in Spain this past week revealed confusion about the direction of long yields and where to be positioned on the maturity spectrum. I think it is fair to say that most investors are feeling battered and bruised by the recent bear steepening of yield curves.

The 10-year US treasury yield seemed to be heading for 5% in the past week (it peaked at 4.88% on 4 October and finished the week at 4.81%). It is barely believable that it was 3.31% just six months ago (6 April 2023), let alone 0.51% little more than three years ago (4 August 2020). It is now commonplace to see forecasts that it will reach 6%-7%.

Is that possible? Well, of course, anything is possible, especially given the build-up of momentum over recent weeks (and the weekend attack on Israel by Hamas that could, I think, push oil prices and inflation higher if tensions persist and other countries get involved). However, **Figure 1** shows how rare such an outcome would be. Outside of the 1970-2000 period, the 10-year US yield has rarely been above 6% (in fact not since the early 1860s). Even more striking is that it has hardly ever been above 5% since 1870 (except for that 1970-2000 period).

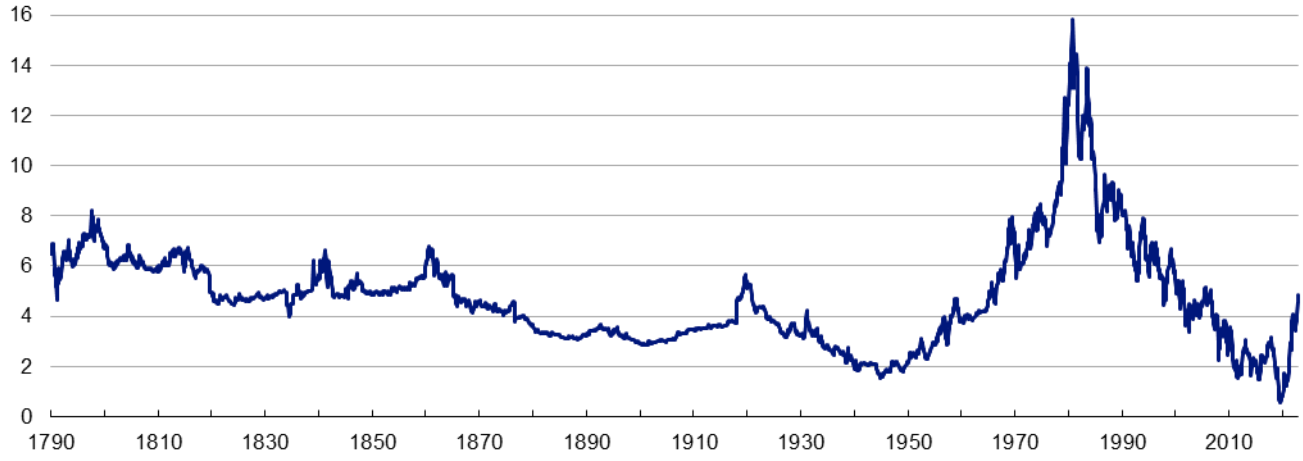
Turning to those periods when treasury yields were noticeably and durably higher than today, the cause seems to have been high inflation, high trend growth or a combination of the two. The 1970-2000 period was marked by high inflation, with the annualised 10-year rate of US consumer price inflation climbing from 2.6% at the start of the 1970s to a peak of 8.8% in mid-1982 (it is currently 2.7% but still rising due to lag effects).

The more usual 12-month CPI change was already 6.2% at the start of the 1970s and peaked at 14.8% in March 1980. On the other hand, the 10-year yield peaked at 15.8% in September 1981, a full 18 months after the peak in inflation (for reference, US CPI recently peaked at 8.9% in June 2022). The rate of inflation then trended down and had fallen to 3.4% in December 2000, when the 10-year yield was 5.12% (not too far from the current readings of 3.7% for CPI and 4.81% for the 10-year yield). The history of this period suggests that bond yields lag inflation on both the upside and the downside.

That 1970-2000 period also had much better economic growth than now (I believe that real yields are linked to trend growth, when central banks are not distorting markets). The annualised 10-year rate of US GDP growth was between 4.2% and 4.7% in the latter half of the 1960s and early 1970s. It remained between 2.5% and 3.5% during most of the rest of the period up to 2000 (and never went below the oil shock inspired 2.1% recorded in 1982). Looking back to the 1790s (the 10-year yield briefly topped 8.0% in 1798), the economy was growing strongly, with annualised GDP growth above 6% in the 10 years to 1800. That wasn't a fluke – the annualised 50-year growth rate was between 4.0% and 5.0% during the period up to 1900, when 10-year yields were usually between 5% and 7%.

However, things are now very different, with annualised 10-year GDP growth below 2.0% for much of the period since the global financial crisis (GFC), which should depress real yields versus those earlier periods.

**Figure 1 – US 10-year treasury yield since 1790 (%)**




Note: **Past performance is no guarantee of future results.** Based on monthly data from December 1790 to October 2023 (as of 6 October 2023). Source: Global Financial Data, Refinitiv Datastream and Invesco Global Market Strategy Office

Nevertheless, just as the very high yields of 1970-2000 were an aberration (seen in the context of longer history), so were the low rates of recent years. A 10-year treasury of 0.51% (with the real TIPS yield below -1.0%) could not be seen as anything other than transitory, caused by low inflation (after the collapse of commodity prices in 2020), anaemic trend growth rates (which depressed real yields) and central bank purchases of government debt (which further depressed those real yields).

Inflation has since moved higher but I expect it to continue normalising back towards central bank targets (as indicated by a 10-year inflation breakeven rate of 2.31%). At the same time, central banks are now less of a distorting influence -- Fed holdings of treasury securities have fallen by 14% since mid-2022. I believe the switch from quantitative easing to quantitative tightening has been a major factor in the rise in real treasury yields, which at 2.48% (10-year) are now above what I would expect over the long term (given my view that trend US GDP growth is unlikely to exceed 2.00% by any great margin).

Based on the above, I doubt that US long yields will go much higher for very long. Factors that could change my mind would be a significant boost to long-term inflation (a rerun of the aftermath of the Yom Kippur war, for example), a sustained rise in economic growth (due to the beneficial effects of AI, for example), a rise in investment relative to savings (due to climate change mitigation and adaptation spending, for example) or a rise in the risk premium applied to US government debt (due to rising indebtedness, say). All of these factors are possible but balancing them will be the depressing effect of long term global population deceleration.

My conclusion is that US government bond yields have moved back into "interesting" territory (we are Overweight US treasuries in our Model Asset Allocation – see **Figure 6**). But what about positioning on the yield curve? **Figure 2a** shows an uncanny correlation between turning points in the US unemployment rate and the 10y-2y yield curve. Despite the surprising strength in September payrolls (reported on Friday), there has been a mild upturn in unemployment in recent months. Hence, the steepening of the yield curve should come as no surprise.

More shocking is the nature of the steepening. **Figure 2b** shows that 10-year treasuries have outperformed 2-year treasuries on a trend basis. However, that trend is periodically interrupted. In particular, shorter maturities have tended to outperform when the Fed is raising interest rates, despite the flattening of the yield curve (because duration works against you when all rates are rising). This has certainly been the case over recent years, just as it was in the late-1970s/early 1980s when the US yield curve was last so inverted.

Looking ahead, **Figure 2b** shows that longer maturities have tended to outperform when the yield curve steepens. This has not been the case in recent weeks, perhaps because the recent steepening is perhaps unique: typically in the past, the steepening occurred after the last Fed rate hike, whereas the fear is that this Fed tightening cycle is not yet over (perhaps because it started so late – see **Figure 2a**). If I am right about 10-year yields now being attractive, I doubt that the recent bear steepening will continue for long (I think it makes recession more likely) and I prefer longer maturities.

*Unless stated otherwise, all data as of 6 October 2023.*

**Figure 2a – The Fed, unemployment & yield curve**

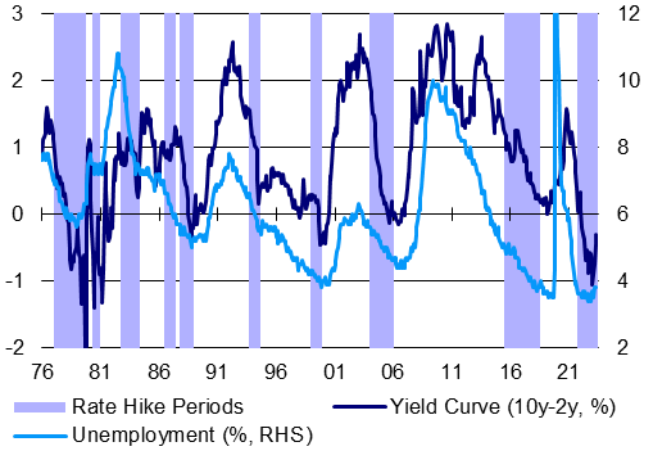
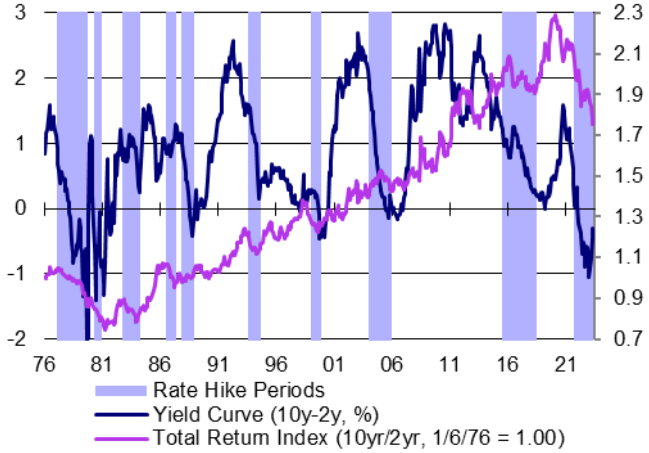



**Figure 2b – The Fed, yield curve and bond returns**




Notes: **Past performance is no guarantee of future results.** Based on monthly data from June 1976 to October 2023 (as of 6 October 2023). "Rate hike periods" show periods when the US Federal Reserve was raising its policy rate. "Yield Curve (10y-2y, %) shows the difference between the US treasury 10-year yield and the US treasury 2-year yield. "Tot Ret (10yr/2yr, 1/6/76 = 1.00)" shows the ratio between the total return index for 10-year US treasuries and that of 2-year US treasuries, rebased to 1.0 on 1 June 1976. Total returns are calculated using movements in the respective yields on a daily basis to derive price movements, which are added to income flows assuming daily sales and repurchases to maintain constant maturities). Source: Refinitiv Datastream and Invesco Global Market Strategy Office

## Figure 3 – Asset class total returns (%)

| Data as at 06/10/2023 | | Current | Total Return (USD, %) | | | | | Total Return (Local Currency, %) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Index | Level/RY | 1w | 1m | QTD | YTD | 12m | 1w | 1m | QTD | YTD | 12m |
| **Equities** | | | | | | | | | | | | |
| World | MSCI | 654 | -0.4 | -3.6 | -0.4 | 10.1 | 16.1 | -0.2 | -3.2 | -0.2 | 11.4 | 15.0 |
| Emerging Markets | MSCI | 937 | -1.6 | -4.3 | -1.6 | 0.5 | 6.1 | -1.1 | -3.5 | -1.1 | 3.3 | 6.5 |
| China | MSCI | 57 | -1.8 | -5.5 | -1.8 | -8.8 | -0.1 | -1.7 | -5.6 | -1.7 | -7.7 | 0.2 |
| US | MSCI | 4102 | 0.5 | -3.4 | 0.5 | 14.1 | 16.8 | 0.5 | -3.4 | 0.5 | 14.1 | 16.8 |
| Europe | MSCI | 1796 | -1.6 | -3.4 | -1.6 | 6.9 | 24.3 | -1.2 | -1.7 | -1.2 | 7.6 | 16.0 |
| Europe ex-UK | MSCI | 2209 | -1.6 | -4.1 | -1.6 | 7.4 | 25.4 | -1.1 | -2.6 | -1.1 | 8.7 | 17.6 |
| UK | MSCI | 1091 | -1.6 | -1.0 | -1.6 | 5.1 | 20.7 | -1.5 | 1.5 | -1.5 | 3.7 | 10.9 |
| Japan | MSCI | 3333 | -2.7 | -5.7 | -2.7 | 8.6 | 17.3 | -2.6 | -4.6 | -2.6 | 23.0 | 20.9 |
| **Government Bonds** | | | | | | | | | | | | |
| World | BofA-ML | 3.71 | -1.1 | -2.8 | -1.1 | -5.1 | -1.2 | -0.9 | -2.0 | -0.9 | -2.1 | -2.5 |
| Emerging Markets | BBloom | 9.01 | -3.2 | -6.2 | -3.2 | -2.3 | 8.0 | -3.2 | -6.2 | -3.2 | -2.3 | 8.0 |
| China | BofA-ML | 2.57 | 0.0 | 0.0 | 0.0 | -1.5 | 0.4 | 0.0 | 0.0 | 0.0 | 3.5 | 3.5 |
| US (10y) | Datastream | 4.80 | -1.7 | -3.6 | -1.7 | -4.6 | -4.2 | -1.7 | -3.6 | -1.7 | -4.6 | -4.2 |
| Europe | Bofa-ML | 3.61 | -1.1 | -3.5 | -1.1 | -2.4 | 3.7 | -0.7 | -1.9 | -0.7 | -1.1 | -3.1 |
| Europe ex-UK (EMU, 10y) | Datastream | 2.85 | -0.8 | -3.1 | -0.8 | -1.4 | 3.1 | -0.3 | -1.6 | -0.3 | -0.1 | -3.7 |
| UK (10y) | Datastream | 4.58 | -1.1 | -2.4 | -1.1 | -2.2 | 8.1 | -0.9 | 0.1 | -0.9 | -3.4 | -0.7 |
| Japan (10y) | Datastream | 0.78 | -0.3 | -2.4 | -0.3 | -11.6 | -4.5 | -0.2 | -1.2 | -0.2 | 0.1 | -1.5 |
| **IG Corporate Bonds** | | | | | | | | | | | | |
| Global | BofA-ML | 5.81 | -1.3 | -2.5 | -1.3 | -0.5 | 4.3 | -1.1 | -2.0 | -1.1 | -0.1 | 2.3 |
| Emerging Markets | BBloom | 8.28 | -1.8 | -3.3 | -1.8 | -0.4 | 8.7 | -1.8 | -3.3 | -1.8 | -0.4 | 8.7 |
| China | BofA-ML | 3.31 | 0.1 | 0.1 | 0.1 | -1.6 | -0.5 | 0.1 | 0.1 | 0.1 | 3.4 | 2.5 |
| US | BofA-ML | 6.30 | -1.4 | -2.7 | -1.4 | -1.0 | 1.8 | -1.4 | -2.7 | -1.4 | -1.0 | 1.8 |
| Europe | BofA-ML | 4.60 | -0.9 | -2.1 | -0.9 | 0.6 | 10.1 | -0.4 | -0.6 | -0.4 | 1.9 | 2.8 |
| UK | BofA-ML | 6.42 | -1.3 | -2.5 | -1.3 | 1.3 | 17.0 | -1.2 | -0.1 | -1.2 | 0.0 | 7.5 |
| Japan | BofA-ML | 0.94 | -0.2 | -1.6 | -0.2 | -11.1 | -3.5 | -0.1 | -0.5 | -0.1 | 0.6 | -0.6 |
| **HY Corporate Bonds** | | | | | | | | | | | | |
| Global | BofA-ML | 9.30 | -1.3 | -2.0 | -1.3 | 4.0 | 9.4 | -1.2 | -1.6 | -1.2 | 4.2 | 7.7 |
| US | BofA-ML | 9.35 | -1.3 | -2.0 | -1.3 | 4.5 | 6.6 | -1.3 | -2.0 | -1.3 | 4.5 | 6.6 |
| Europe | BofA-ML | 7.89 | -1.2 | -2.1 | -1.2 | 4.0 | 16.9 | -0.7 | -0.6 | -0.7 | 5.3 | 9.1 |
| **Cash (Overnight LIBOR)** | | | | | | | | | | | | |
| US | | 5.06 | 0.1 | 0.4 | 1.4 | 3.8 | 4.7 | 0.1 | 0.4 | 1.4 | 3.8 | 4.7 |
| Euro Area | | 3.90 | 0.2 | -1.0 | -2.0 | 1.2 | 11.0 | 0.1 | 0.3 | 1.0 | 2.3 | 2.6 |
| UK | | 5.19 | 0.4 | -1.7 | -2.3 | 4.7 | 14.2 | 0.1 | 0.4 | 1.4 | 3.4 | 4.1 |
| Japan | | -0.02 | 0.0 | -1.1 | -3.4 | -12.2 | -2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Real Estate (REITs)** | | | | | | | | | | | | |
| Global | FTSE | 1412 | -1.8 | -6.6 | -1.8 | -6.1 | 0.7 | -1.4 | -5.1 | -1.4 | -5.0 | -6.0 |
| Emerging Markets | FTSE | 1186 | -2.0 | -5.6 | -2.0 | -9.4 | -1.9 | -1.6 | -4.1 | -1.6 | -8.3 | -8.4 |
| US | FTSE | 2628 | -1.8 | -7.2 | -1.8 | -4.0 | 1.7 | -1.8 | -7.2 | -1.8 | -4.0 | 1.7 |
| Europe ex-UK | FTSE | 1951 | -2.8 | -6.4 | -2.8 | -6.2 | 9.8 | -2.3 | -4.9 | -2.3 | -5.0 | 2.5 |
| UK | FTSE | 680 | -1.0 | -4.7 | -1.0 | -6.5 | 7.0 | -0.9 | -2.4 | -0.9 | -7.8 | -1.7 |
| Japan | FTSE | 2032 | -1.3 | -4.4 | -1.3 | -3.3 | -0.8 | -1.2 | -3.3 | -1.2 | 9.5 | 2.3 |
| **Commodities** | | | | | | | | | | | | |
| All | GSCI | 3549 | -5.3 | -3.7 | -5.3 | 1.5 | -2.5 | - | - | - | - | - |
| Energy | GSCI | 638 | -8.3 | -4.5 | -8.3 | 4.5 | -4.5 | - | - | - | - | - |
| Industrial Metals | GSCI | 1530 | -3.6 | -2.0 | -3.6 | -8.7 | -0.9 | - | - | - | - | - |
| Precious Metals | GSCI | 2062 | -1.2 | -4.9 | -1.2 | -0.8 | 6.5 | - | - | - | - | - |
| Agricultural Goods | GSCI | 526 | 1.9 | -3.1 | 1.9 | -5.9 | -6.1 | - | - | - | - | - |
| **Currencies (vs USD)*** | | | | | | | | | | | | |
| EUR | | 1.06 | 0.1 | -1.3 | 0.1 | -1.1 | 8.1 | - | - | - | - | - |
| JPY | | 149.33 | 0.0 | -1.1 | 0.0 | -12.2 | -2.8 | - | - | - | - | - |
| GBP | | 1.22 | -0.1 | -2.4 | -0.1 | 1.3 | 8.9 | - | - | - | - | - |
| CHF | | 1.10 | 0.5 | -2.1 | 0.5 | 1.6 | 8.8 | - | - | - | - | - |
| CNY | | 7.30 | 0.0 | 0.2 | 0.0 | -5.5 | -2.5 | - | - | - | - | - |

Notes: *The currency section is organised so that in all cases the numbers show the movement in the mentioned currency versus USD (+ve indicates appreciation, -ve indicates depreciation). **Past performance is no guarantee of future results.** Please see appendix for definitions, methodology and disclaimers.
Source: Refinitiv Datastream and Invesco Global Market Strategy Office

**Figure 4 – Global equity sector total returns relative to market (%)**

| Data as at 06/10/2023 | Global | | | | |
|---|---|---|---|---|---|
| | 1w | 1m | QTD | YTD | 12m |
| **Energy** | **-3.6** | **0.3** | **-3.6** | **-1.3** | **-5.4** |
| **Basic Materials** | **-1.8** | **-1.8** | **-1.8** | **-9.4** | **-4.8** |
| Basic Resources | -2.1 | -1.0 | -2.1 | -9.8 | -2.1 |
| Chemicals | -1.4 | -2.8 | -1.4 | -8.8 | -8.2 |
| **Industrials** | **-0.5** | **-1.8** | **-0.5** | **-3.5** | **1.4** |
| Construction & Materials | -0.7 | -0.3 | -0.7 | 5.0 | 8.8 |
| Industrial Goods & Services | -0.5 | -2.0 | -0.5 | -4.6 | 0.4 |
| **Consumer Discretionary** | **-0.2** | **-1.1** | **-0.2** | **4.9** | **-1.4** |
| Automobiles & Parts | 0.1 | 2.2 | 0.1 | 25.4 | 0.4 |
| Media | 1.5 | -0.6 | 1.5 | 0.2 | -1.9 |
| Retailers | -0.4 | -2.3 | -0.4 | 3.8 | -6.6 |
| Travel & Leisure | -1.2 | -3.0 | -1.2 | -0.3 | 3.2 |
| Consumer Products & Services | 0.1 | -0.9 | 0.1 | -2.0 | 2.6 |
| **Consumer Staples** | **-1.6** | **-1.2** | **-1.6** | **-13.3** | **-8.9** |
| Food, Beverage & Tobacco | -2.3 | -2.1 | -2.3 | -13.6 | -9.8 |
| Personal Care, Drug & Grocery Stores | -0.4 | 0.3 | -0.4 | -12.7 | -7.3 |
| **Healthcare** | **0.8** | **1.5** | **0.8** | **-9.2** | **-5.9** |
| **Financials** | **-0.3** | **2.4** | **-0.3** | **-4.8** | **-0.5** |
| Banks | -0.7 | 3.3 | -0.7 | -6.1 | -2.5 |
| Financial Services | -0.2 | 0.2 | -0.2 | -2.9 | -0.6 |
| Insurance | 0.9 | 3.9 | 0.9 | -4.1 | 5.0 |
| **Real Estate** | **-0.8** | **-2.8** | **-0.8** | **-14.0** | **-13.6** |
| **Technology** | **3.3** | **0.6** | **3.3** | **25.4** | **17.0** |
| **Telecommunications** | **-1.2** | **0.9** | **-1.2** | **-5.3** | **-3.9** |
| **Utilities** | **-2.2** | **-1.7** | **-2.2** | **-15.0** | **-12.5** |

Notes: Returns shown are for Datastream sector indices versus the total market index. **Past performance is no guarantee of future results.** Source: Refinitiv Datastream and Invesco Global Market Strategy Office

**Figure 5a – US factor index total returns (%)**

| Data as at 06/10/2023 | Absolute | | | | | Relative to Market | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1w | 1m | QTD | YTD | 12m | 1w | 1m | QTD | YTD | 12m |
| **Growth** | -0.1 | -5.2 | -0.1 | 14.6 | 17.7 | -0.6 | -1.8 | -0.6 | 0.8 | 0.5 |
| **Low volatility** | -0.8 | -3.7 | -0.8 | -5.3 | 4.0 | -1.3 | -0.3 | -1.3 | -16.7 | -11.1 |
| **Price momentum** | -0.1 | -5.4 | -0.1 | -0.2 | 6.9 | -0.6 | -2.1 | -0.6 | -12.2 | -8.6 |
| **Quality** | -1.5 | -4.7 | -1.5 | 8.7 | 17.8 | -2.0 | -1.4 | -2.0 | -4.4 | 0.7 |
| **Size** | -2.7 | -7.5 | -2.7 | -2.2 | 2.8 | -3.2 | -4.2 | -3.2 | -14.0 | -12.1 |
| **Value** | -2.2 | -4.1 | -2.2 | -4.6 | 2.2 | -2.7 | -0.8 | -2.7 | -16.0 | -12.7 |
| **Market** | 0.5 | -3.4 | 0.5 | 13.7 | 17.0 | | | | | |
| **Market - Equal-Weighted** | -1.2 | -5.1 | -1.2 | 0.6 | 7.1 | | | | | |

Notes: **Past performance is no guarantee of future results**. All indices are subsets of the S&P 500 index, they are rebalanced monthly, use data in US dollars and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in US dollars. Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the S&P 500 index.
Source: Refinitiv Datastream and Invesco Global Market Strategy Office

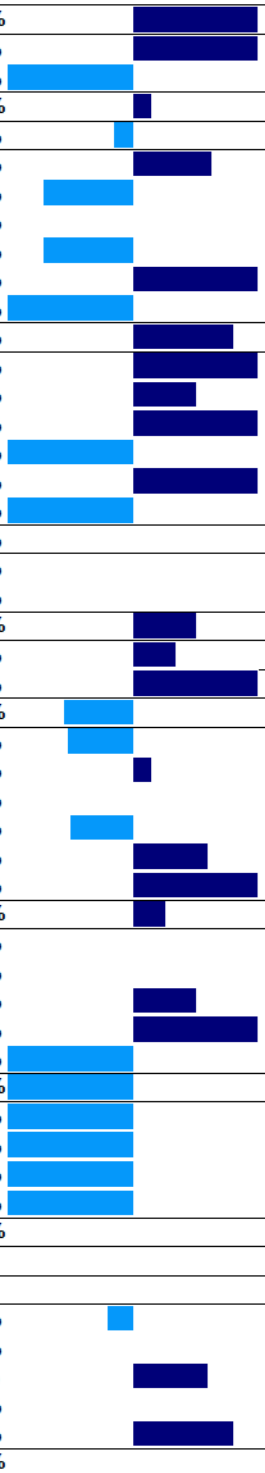
**Figure 5b – European factor index total returns relative to market (% annualised)**

| Data as at 06/10/2023 | Absolute | | | | | Relative to Market | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1w | 1m | QTD | YTD | 12m | 1w | 1m | QTD | YTD | 12m |
| **Growth** | -1.6 | -4.4 | -1.6 | 1.1 | 9.1 | -0.4 | -2.5 | -0.4 | -6.2 | -5.9 |
| **Low volatility** | -1.2 | -1.9 | -1.2 | 5.7 | 12.0 | 0.0 | 0.0 | 0.0 | -2.0 | -3.4 |
| **Price momentum** | -1.8 | -2.5 | -1.8 | 1.6 | 7.8 | -0.7 | -0.5 | -0.7 | -5.8 | -7.1 |
| **Quality** | -2.1 | -2.3 | -2.1 | 5.2 | 16.4 | -1.0 | -0.4 | -1.0 | -2.4 | 0.4 |
| **Size** | -2.6 | -4.5 | -2.6 | -1.5 | 10.2 | -1.4 | -2.6 | -1.4 | -8.7 | -5.0 |
| **Value** | -2.7 | -2.6 | -2.7 | 4.9 | 21.1 | -1.5 | -0.7 | -1.5 | -2.8 | 4.4 |
| **Market** | -1.2 | -2.0 | -1.2 | 7.9 | 16.0 | | | | | |
| **Market - Equal-Weighted** | -1.9 | -3.5 | -1.9 | 3.9 | 13.2 | | | | | |

Notes: **Past performance is no guarantee of future results.** All indices are subsets of the STOXX 600 index, they are rebalanced monthly, use data in euros and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in euros; Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the STOXX 600 index.
Source: Refinitiv Datastream and Invesco Global Market Strategy Office

**Figure 6 – Model asset allocation**

| | Neutral | Policy Range | Allocation | | Position vs Neutral | Hedged | Currency |
|---|---|---|---|---|---|---|---|
| **Cash Equivalents** | **5%** | **0-10%** | | **10%** | | | |
| Cash | 2.5% | | | 10% | | | |
| Gold | 2.5% | | | 0% | | | |
| **Bonds** | **40%** | **10-70%** | ↓ | **45%** | | | |
| Government | 25% | 10-40% | ↑ | 22% | | | |
| US | 8% | | ↑ | 13% | | | |
| Europe ex-UK (Eurozone) | 7% | | | 2% | | | |
| UK | 1% | | | 1% | | | |
| Japan | 7% | | | 2% | | | |
| Emerging Markets | 2% | | | 4% | | | |
| China** | 0.2% | | | 0% | | | |
| Corporate IG | 10% | 0-20% | | 18% | | | |
| US Dollar | 5% | | | 10% | | 40% | JPY |
| Euro | 2% | | | 3% | | | |
| Sterling | 1% | | | 2% | | | |
| Japanese Yen | 1% | | | 0% | | | |
| Emerging Markets | 1% | | | 3% | | | |
| China** | 0.1% | | | 0% | | | |
| Corporate HY | 5% | 0-10% | ↓ | 5% | | | |
| US Dollar | 4% | | ↓ | 4% | | | |
| Euro | 1% | | ↓ | 1% | | | |
| **Bank Loans** | **4%** | **0-10%** | ↑ | **6%** | | | |
| US | 3% | | ↑ | 4% | | | |
| Europe | 1% | | ↑ | 2% | | | |
| **Equities** | **45%** | **25-65%** | | **34%** | | | |
| US | 25% | | | 12% | | | |
| Europe ex-UK | 7% | | ↑ | 8% | | | |
| UK | 4% | | | 4% | | | |
| Japan | 4% | | ↓ | 2% | | | |
| Emerging Markets | 5% | | | 8% | | | |
| China** | 2% | | | 4% | | | |
| **Real Estate** | **4%** | **0-16%** | | **5%** | | | |
| US | 1% | | ↓ | 1% | | | |
| Europe ex-UK | 1% | | ↑ | 1% | | | |
| UK | 1% | | | 1% | | | |
| Japan | 1% | | ↑ | 2% | | | |
| Emerging Markets | 1% | | ↓ | 0% | | | |
| **Commodities** | **2%** | **0-4%** | | **0%** | | | |
| Energy | 1% | | | 0% | | | |
| Industrial Metals | 0.3% | | | 0% | | | |
| Precious Metals | 0.3% | | | 0% | | | |
| Agriculture | 0.3% | | | 0% | | | |
| **Total** | **100%** | | | **100%** | | | |
| | | | | | | | |
| **Currency Exposure (including effect of hedging)** | | | | | | | |
| USD | 52% | | ↑ | 43% | | | |
| EUR | 19% | | ↑ | 20% | | | |
| GBP | 7% | | ↓ | 11% | | | |
| JPY | 13% | | ↓ | 13% | | | |
| EM | 9% | | ↓ | 15% | | | |
| **Total** | **100%** | | | **100%** | | | |



Notes: **China is included in Emerging Markets allocations. This is a theoretical portfolio and is for illustrative purposes only. See the latest The Big Picture document for more details. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy. Arrows indicate the direction of the most recent changes.
Source: Invesco Global Market Strategy Office

**Figure 7 – Model allocations for global sectors**

| | Neutral | Invesco | Preferred Region |
|---|---|---|---|
| **Energy** | **7.3%** | **Underweight** | **EM** |
| **Basic Materials** | **4.1%** | **Neutral** ↑ | **Europe** |
| Basic Resources | 2.3% | Neutral ↑ | Europe |
| Chemicals | 1.8% | Neutral | US |
| **Industrials** | **13.0%** | **Neutral** | **Europe** |
| Construction & Materials | 1.6% | Underweight | US |
| Industrial Goods & Services | 11.4% | Neutral | Europe |
| **Consumer Discretionary** | **14.9%** | **Neutral** ↓ | **Europe** |
| Automobiles & Parts | 2.9% | Underweight ↓ | Japan |
| Media | 1.0% | Underweight ↓ | Japan |
| Retailers | 4.8% | Overweight | Europe |
| Travel & Leisure | 2.2% | Underweight | EM |
| Consumer Products & Services | 4.0% | Neutral ↓ | Europe |
| **Consumer Staples** | **6.1%** | **Overweight** | **Europe** |
| Food, Beverage & Tobacco | 4.0% | Overweight | Europe |
| Personal Care, Drug & Grocery Stores | 2.1% | Overweight | US |
| **Healthcare** | **9.7%** | **Overweight** | **US** |
| **Financials** | **14.7%** | **Neutral** ↑ | **Europe** |
| Banks | 7.1% | Neutral ↑ | Europe |
| Financial Services | 4.7% | Underweight | US |
| Insurance | 2.9% | Neutral | Europe |
| **Real Estate** | **2.9%** | **Overweight** ↑ | **US** |
| **Technology** | **20.5%** | **Neutral** ↓ | **US** |
| **Telecommunications** | **3.3%** | **Overweight** ↑ | **Europe** |
| **Utilities** | **3.4%** | **Underweight** | **Europe** |

Notes: These are theoretical allocations which are for illustrative purposes only. They do not represent an actual portfolio and are not a recommendation of any investment or trading strategy. See the latest Strategic Sector Selector for more details.
Source: Refinitiv Datastream and Invesco Global Market Strategy Office

# Appendix

**Methodology for asset allocation, expected returns and optimal portfolios**

**Portfolio construction process**

The optimal portfolios are theoretical and not real. We use optimisation processes to guide our allocations around "neutral" and within prescribed policy ranges based on our estimations of expected returns and using historical covariance information. This guides the allocation to global asset groups (equities, government bonds etc.), which is the most important level of decision. For the purposes of this document the optimal portfolios are constructed with a one-year horizon.

**Which asset classes?**

We look for investibility, size and liquidity. We have chosen to include equities, bonds (government, corporate investment grade and corporate high yield), bank loans, REITs to represent real estate, commodities and cash (all across a range of geographies). We use cross-asset correlations to determine which decisions are the most important.

**Neutral allocations and policy ranges**

We use market capitalisation in USD for major benchmark indices to calculate neutral allocations. For commodities, we use industry estimates for total ETP market cap + assets under management in hedge funds + direct investments. We use an arbitrary 5% for the combination of cash and gold. We impose diversification by using policy ranges for each asset category (the range is usually symmetric around neutral).

**Expected/projected returns**

The process for estimating expected returns is based upon yield (except commodities, of course). After analysing how yields vary with the economic cycle, and where they are situated within historical ranges, we forecast the direction and amplitude of moves over the next year. Cash returns are calculated assuming a straight-line move in short term rates towards our targets (with, of course, no capital gain or loss). Bond returns assume a straight-line progression in yields, with capital gains/losses predicated upon constant maturity (effectively supposing constant turnover to achieve that). Forecasts of corporate investment-grade, high-yield and bank loan spreads are based upon our view of the economic cycle (as are forecasts of credit losses). Coupon/interest payments are added to give total returns. Equity and REIT returns are based on dividend growth assumptions. We calculate total returns by applying those growth assumptions and adding the forecast dividend yield. No such metrics exist for commodities; therefore, we base our projections on US CPI-adjusted real prices relative to their long-term averages and views on the economic cycle. All expected returns are calculated in local currency and then, where necessary, converted into other currency bases using our exchange rate forecasts.

**Optimising the portfolio**

Using a covariance matrix based on monthly local currency total returns for the last 5 years and we run an optimisation process that maximises the Sharpe Ratio. Another version maximises Return subject to volatility not exceeding that of our Neutral Portfolio. The optimiser is based on the Markowitz model.

**Currency hedging**

We adopt a cautious approach when it comes to currency hedging as currency movements are notoriously difficult to accurately predict and sometimes hedging can be costly. Also, some of our asset allocation choices are based on currency forecasts. We use an amalgam of central bank rate forecasts, policy expectations and real exchange rates relative to their historical averages to predict the direction and amplitude of currency moves.

**Definitions of data and benchmarks for Figure 3**

**Sources:** we source data from Refinitiv Datastream unless otherwise indicated.

**Cash:** returns are based on a proprietary index calculated using the Intercontinental Exchange Benchmark Administration overnight LIBOR (London Interbank Offer Rate). From 1st January 2022, we use the Refinitiv overnight deposit rate for the euro, the British pound and the Japanese yen. The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1 January 2001 with a value of 100.

**Gold:** London bullion market spot price in USD/troy ounce.

**Government bonds:** Current levels, yields and total returns use Datastream benchmark 10-year yields for the US, Eurozone, Japan and the UK, and the ICE BofA government bond total return index for the World and Europe. The emerging markets yields and returns are based on the Barclays Bloomberg emerging markets sovereign US dollar bond index.

**Corporate investment grade (IG) bonds:** ICE BofA investment grade corporate bond total return indices, except for in emerging markets where we use the Barclays Bloomberg emerging markets corporate US dollar bond index.

**Corporate high yield (HY) bonds:** ICE BofA high yield total return indices

**Equities:** We use MSCI benchmark gross total return indices for all regions.

**Commodities:** Goldman Sachs Commodity total return indices

**Real estate:** FTSE EPRA/NAREIT total return indices

**Currencies:** Global Trade Information Services spot rates

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