

**Market Price Monitor**

**Local Equity Markets**

- Most major global equity markets had a positive performance in April as global growth generally trended to the upside.
- The FTSE 100 index gained 3.4%, returning 7.1% year-to-date.
- The Euro Stoxx 50 index was up 1.8% in April, gaining 16.3% year-to-date.

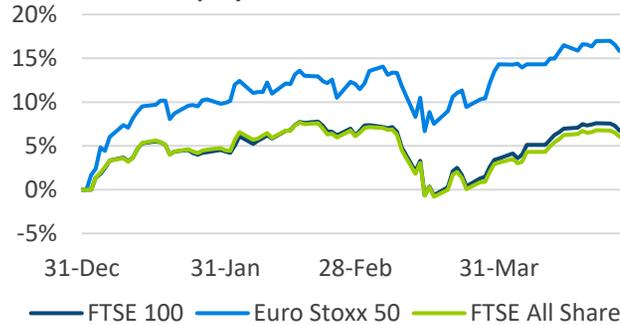
**Global Equity Markets**

- Developed market equities outperformed their emerging market counterparts, with the S&P 500 up 1.6% and the Topix index gaining 2.7%. Meanwhile, the MSCI Emerging Market index was down 1.1%.

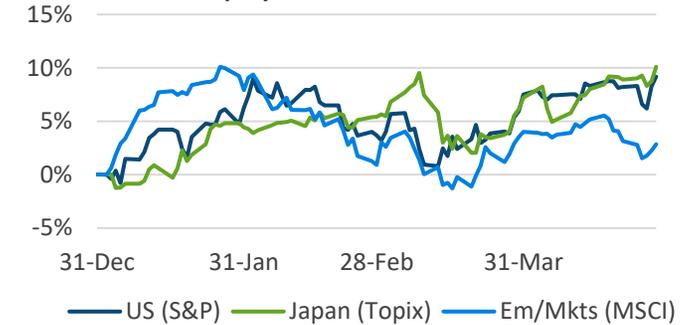
**Bond/FX Markets**

- Bond markets returns were mixed in April, with the British government bond index down 1.8%, whereas the British corporate bond index was up 0.3% and the global corporate bond index gained 1.2%.
- The British Pound had a positive performance in April, gaining 1.8% against the US dollar, 0.3% against the Euro and 4.3% against the Japanese Yen.

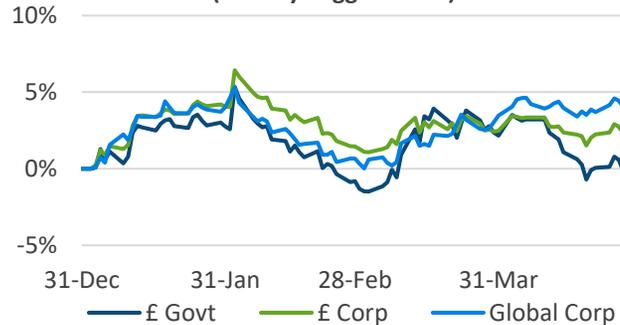
**Local Equity Markets: 2023 YTD Total Return %**



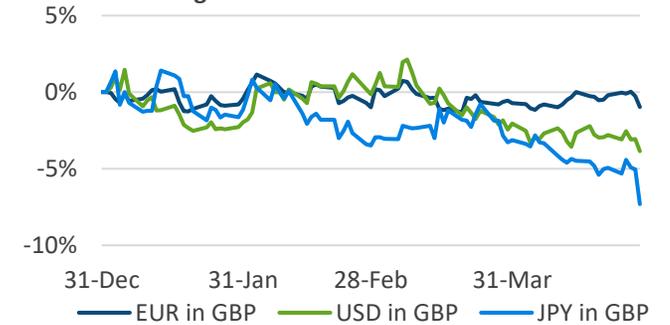
**Global Equity Markets: 2023 YTD Total Return %**



**Bonds (Barclays Agg. Indices): 2023 YTD % Δ**



**Foreign Currencies in GBP: 2023 YTD % Δ**



**Total Returns as of April 28, 2023**

	FTSE 100	FTSE All Share	Euro Stoxx 50	US (S&P)	Japan (Topix)	Em/Mkts (MSCI)	£ Govt	£ Corp	Global Corp	EUR in GBP	USD in GBP	JPY in GBP
1 Month	3.4%	3.4%	1.8%	1.6%	2.7%	-1.1%	-1.8%	0.3%	1.2%	-0.3%	-1.8%	-4.3%
3 Month	2.6%	1.9%	5.8%	2.7%	5.4%	-4.7%	-2.3%	-1.2%	0.7%	-0.5%	-1.9%	-6.2%
1 Year	8.2%	6.0%	18.8%	2.7%	11.3%	-6.1%	-16.2%	-8.0%	0.0%	4.5%	0.1%	-4.7%
YTD	7.1%	6.5%	16.3%	9.2%	10.1%	2.9%	0.4%	2.8%	4.7%	-1.0%	-3.9%	-7.3%

## Milliman Financial Risk Management

London Market Monitor – 28 April 2023

Data sources: Bloomberg; Barclays; EIOPA; PRA; ONS; Milliman FRM

### Insurance Monitor

#### Solvency II Risk Free Rates

- Both GBP and EUR risk-free rates increased at all terms in April.
- The 1 and 30-year GBP risk-free rates increased by 28 and 27 basis points, respectively.
- The 1 and 20-year EUR risk-free rates increased by 21 and 7 basis points, respectively.
- The EUR CRA was unchanged at remains floored at 10 basis points.

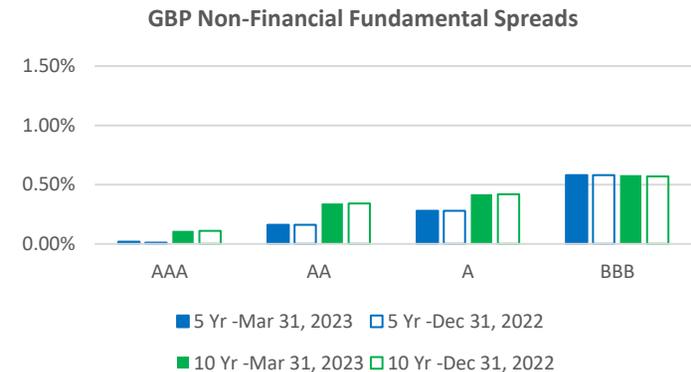
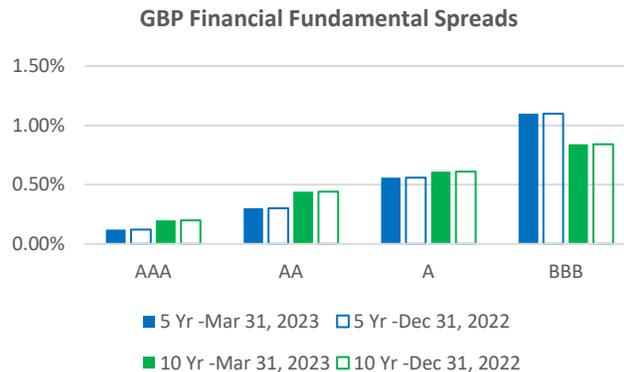
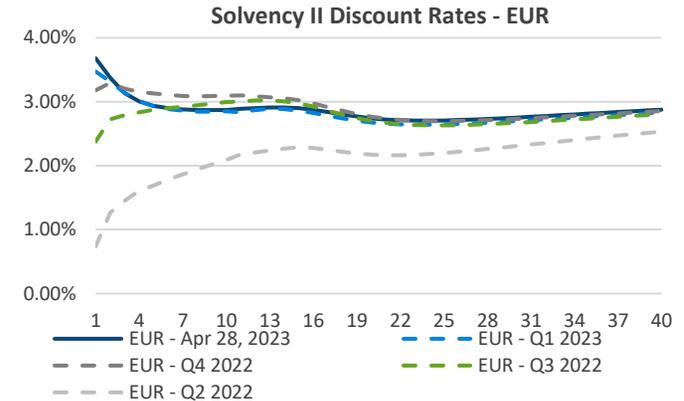
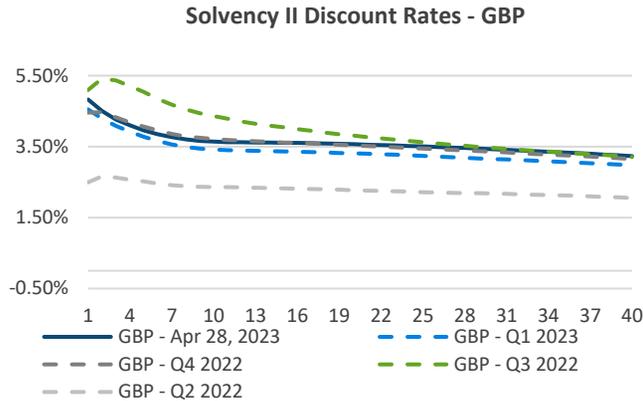
The **Solvency II risk-free discount rates** are calculated independently based on applying the Smith-Wilson Extrapolation to swap rates sourced from Bloomberg and applying the Credit Risk Adjustment as defined in the Technical Specs. For the official published curves please refer to [EIOPA](#) and [PRA](#) websites.

#### Solvency II Fundamental Spreads

- There were no material changes since the start of the year.

**EIOPA fundamental spreads** show the credit spread corresponding to the risk of default or downgrading of an asset. This is shown here across financial and non-financial assets, credit quality steps 0-3 and durations of 1-30 years. The data is provided by EIOPA.

**Fundamental spread** = maximum (probability of default + cost of downgrade; 35% of long-term average spread). For fundamental spreads on other tenors please refer to the [EIOPA](#) website.

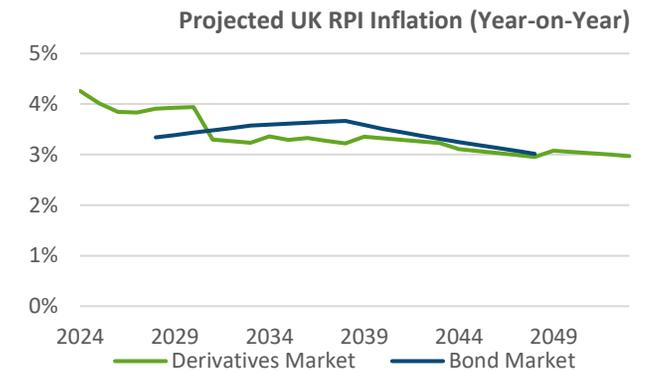
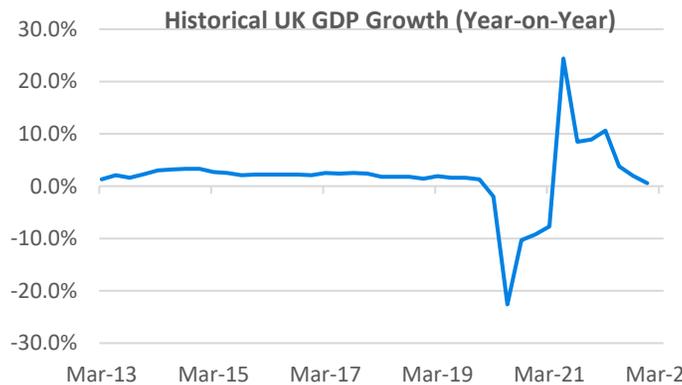
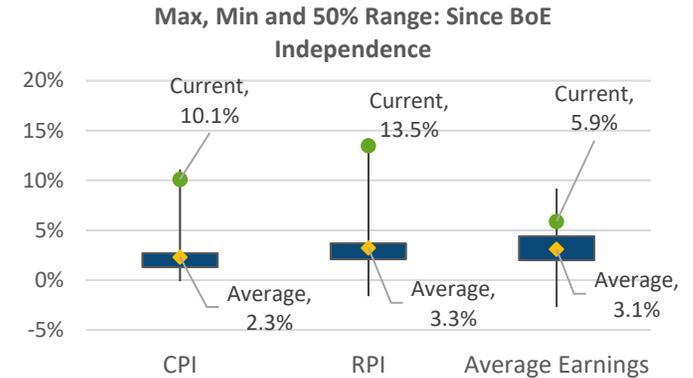
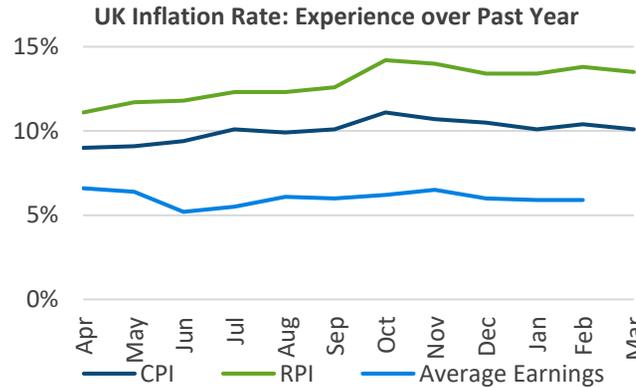


	Change in GBP Discount Rates (bps)				
	1Y	Y5	Y10	Y20	Y30
Since Q1 2023	28	18	22	26	27
Since Q4 2022	37	-10	-7	3	7
Since Q3 2022	-26	-108	-72	-24	-4
Since Q2 2022	234	144	128	130	125

	Change in EUR Discount Rates (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q1 2023	21	1	2	7	6	0
Since Q4 2022	50	-20	-22	-2	2	0
Since Q3 2022	130	6	-12	4	8	0
Since Q2 2022	294	125	78	57	45	0

**UK Inflation Monitor**

- UK's CPI declined by 30 basis points in March to 10.1%.
- Similarly, the RPI measure decreased by 30 basis points to 13.5% in March.
- According to the ONS: *“The largest downward contributions to the monthly change came from motor fuels, and housing and household services (particularly liquid fuels), partially offset by upward contributions from food, and recreation and culture.”*
- Average earnings were unchanged at 5.9% in February, after the previous month's reading was revised higher by 20 basis points.
- The projected RPI curve was relatively unchanged from the previous month.



Historical year-on-year inflation rate is assessed by the % change on:

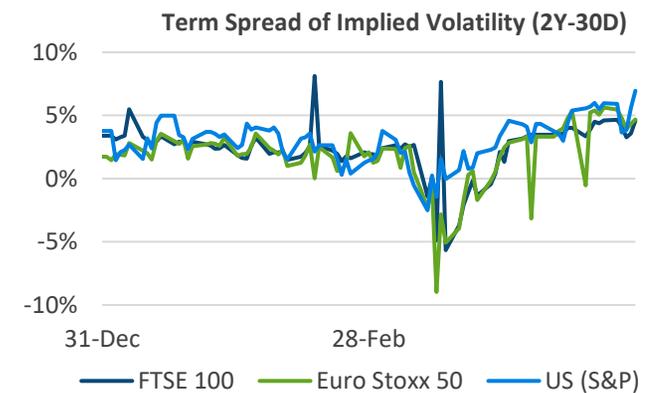
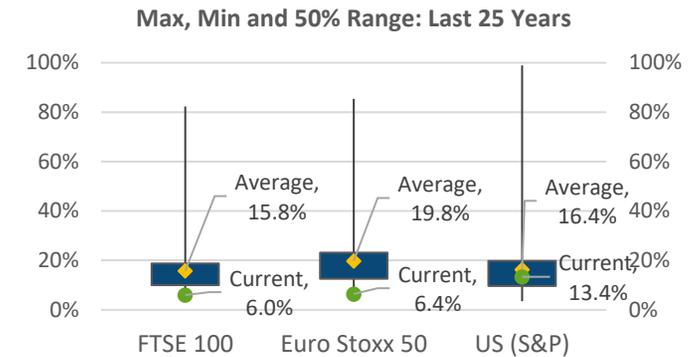
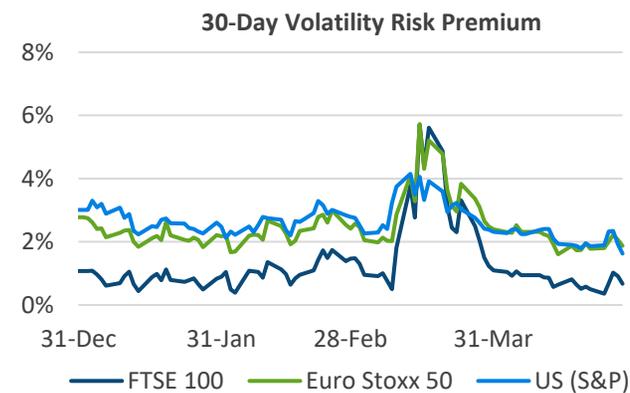
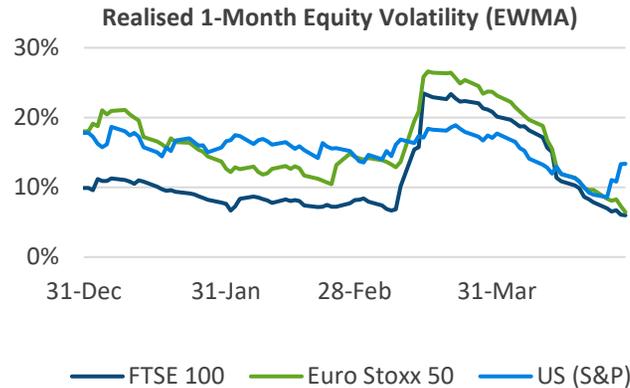
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average total weekly employee remuneration over the previous 3 months.

Projection year-on-year inflation rate is the forward rate calculated from market data:

- **Derivatives Market View** – constructed from zero coupon inflation par swap rates against the RPI index at various tenors
- **Bond Market View** – constructed from the difference between the nominal rates implied by the conventional gilts and the real rates implied by the index-linked (RPI) gilts.

### Volatility and Hedging Cost Monitor

- Realised volatilities on major indices decreased in April.
- The FTSE 100 ended the month with a realised volatility of 6.0%. The same measure stood at 6.4% and 13.4% on the Euro Stoxx 50 and the S&P 500, respectively.
- Volatility risk premiums on major indices also declined in April. The FTSE 100 had a volatility risk premium of 0.7% at month-end. The volatility risk premium on the Euro Stoxx 50 and the S&P 500 was 1.9% and 1.6%, respectively.
- The spread between implied volatility of 2-year and 30-day at-the-money options on major indices increased.



**Actual realised equity volatility** is measured by the weighted standard deviation of 1 month daily index change. The Exponentially Weighted Moving Average (EWMA) methodology places more importance to the recent returns in the calculation of the volatility.

**Volatility Risk Premium** is estimated as the difference between 30-day implied volatility and projected realised volatility. This reflects the additional cost of hedging from purchasing a basket of options, in comparison to managing a dynamic delta hedge with futures (ignoring rolling transaction costs).

**Volatility Term Premium** is calculated as the difference between the implied volatility of an at-the-money 2-year maturity option and the implied volatility of an at-the-money 30-day option. This gives an indication of market demand for protection over the longer term, relative to demand for protection in the shorter-term. Bloomberg as the source of the data interpolates between listed options to provide implied volatility data for these fixed terms.

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