

Market Price Monitor

Local Equity Markets

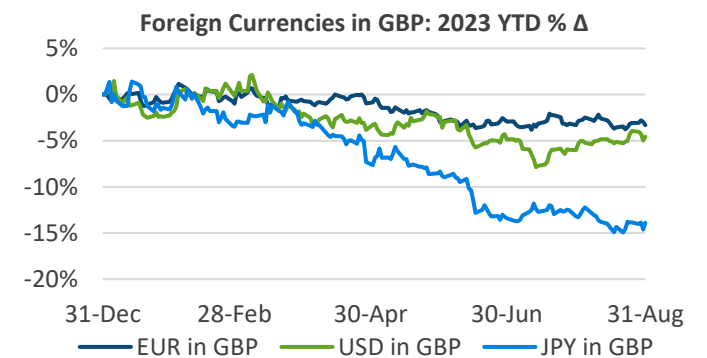
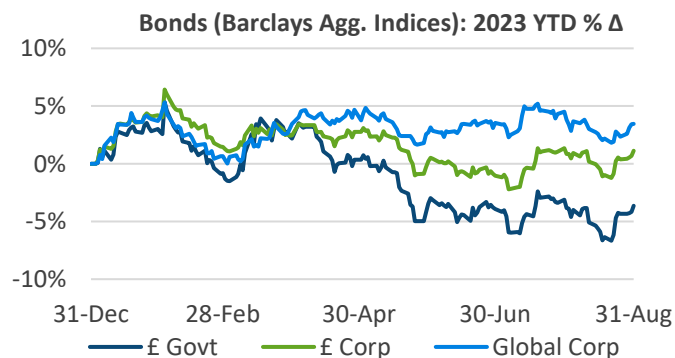
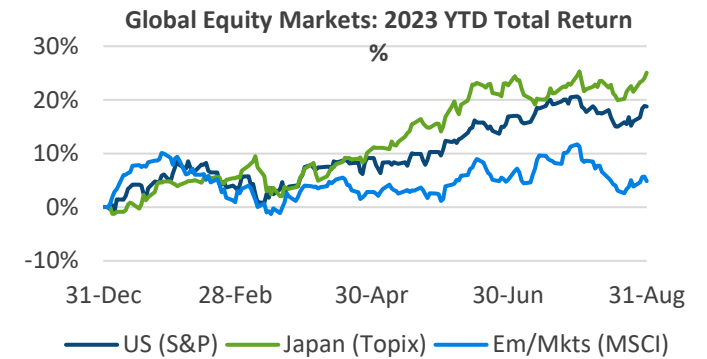
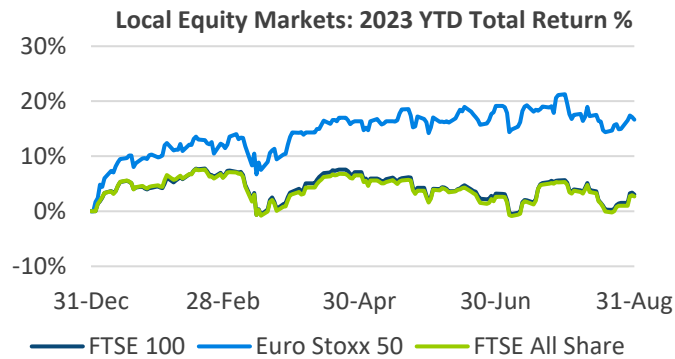
- Global equity markets had a negative performance in August, with concerns over weak economic data out of China and the country's stressed property market.
- The FTSE 100 was index down 2.5%, returning 3.0% year-to-date.
- The Euro Stoxx 50 index was down 3.8% in August, gaining 16.6% year-to-date.

Global Equity Markets

- Developed markets outperformed emerging markets, with the S&P 500 down 1.6% and the Topix index gaining 0.4%. Meanwhile, the MSCI Emerging Markets index was down 6.1%.

Bond/FX Markets

- The British government bond index ended the month down 0.5%, and the British corporate bond index fell by 0.2%.
- The global corporate bond index lost 1.0%.
- The British Pound had a mixed performance in August, losing 1.5% against the US dollar, whilst gaining 0.8% against the Japanese Yen. The British Pound ended the month flat against the Euro.



Total Returns as of August 31, 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	-2.5%	-2.5%	-3.8%	-1.6%	0.4%	-6.1%	-0.5%	-0.2%	-1.0%	0.0%	1.5%	-0.8%
3 Month	1.2%	1.1%	2.1%	8.3%	9.6%	3.7%	-0.2%	0.9%	0.7%	-0.3%	-2.2%	-6.0%
1 Year	6.2%	5.2%	26.3%	15.9%	22.0%	1.7%	-10.3%	-1.5%	3.1%	-1.0%	-8.2%	-12.5%
YTD	3.0%	2.7%	16.6%	18.7%	25.1%	4.9%	-3.6%	1.1%	3.5%	-3.3%	-4.6%	-13.9%

Milliman Financial Risk Management

London Market Monitor – 31 August 2023

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

Insurance Monitor

Solvency II Risk Free Rates

- Short-term GBP risk-free rates decreased in August, whilst the rest of curve rose.
- The 1 and 5-year GBP risk-free rates declined by 7 and 2 basis points, respectively. In contrast, the 20 and 30-year rates increased by 12 basis points.
- The 1-year EUR risk-free rate increased by 5 basis points, whilst the 5-year declined by 7 basis points. The long-term EUR risk-free rates saw a slight increase.
- The EUR CRA was unchanged and 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.

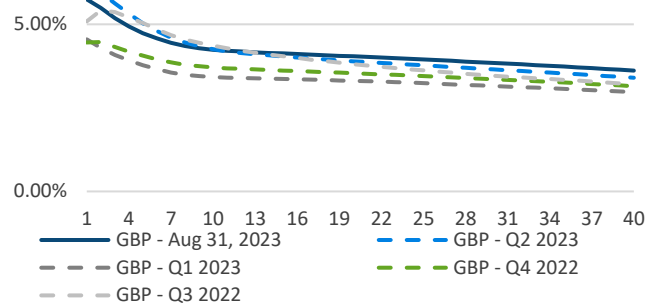
Solvency II Fundamental Spreads

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

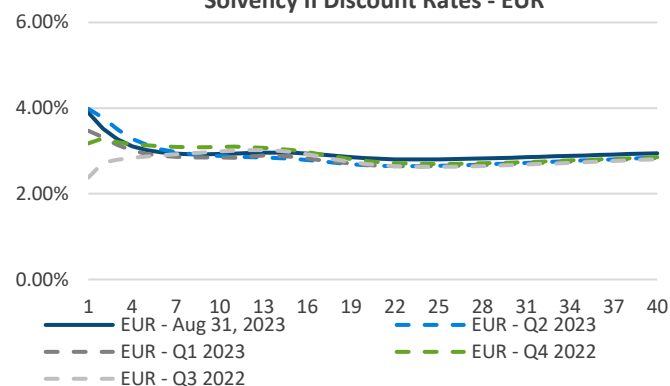
EIOPA fundamental spreads show the credit spread corresponding to the risk of default or downgrading of an asset. This is shown here across financial and non-financial assets, credit quality steps 0-3 and durations of 1-30 years. The data is provided by EIOPA.

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.

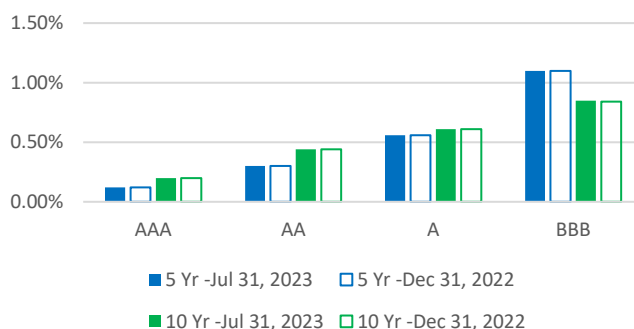
Solvency II Discount Rates - GBP



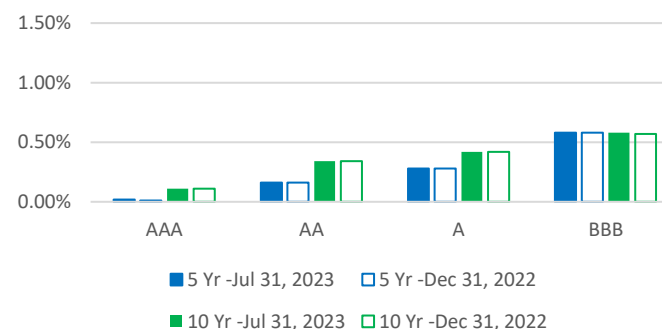
Solvency II Discount Rates - EUR



GBP Financial Fundamental Spreads



GBP Non-Financial Fundamental Spreads



Change in GBP Discount Rates (bps)

	1Y	Y5	Y10	Y20	Y30
Since Q2 2023	-31	-29	-2	14	19
Since Q1 2023	120	96	82	73	69
Since Q4 2022	129	68	53	51	49
Since Q3 2022	65	-30	-12	23	38

Change in EUR Discount Rates (bps)

	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2023	-9	-13	4	16	13	0
Since Q1 2023	42	9	8	16	15	0
Since Q4 2022	72	-11	-16	7	11	0
Since Q3 2022	152	15	-6	13	17	0

Milliman Financial Risk Management

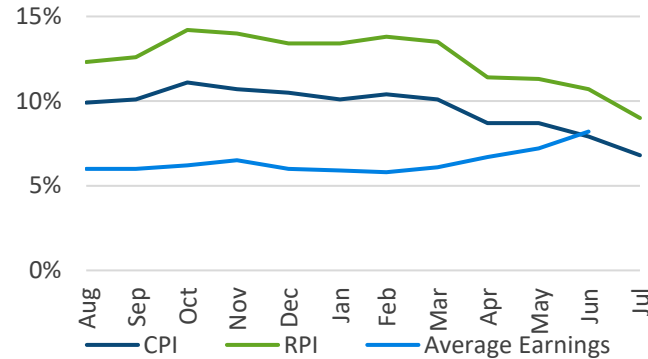
London Market Monitor – 31 August 2023

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

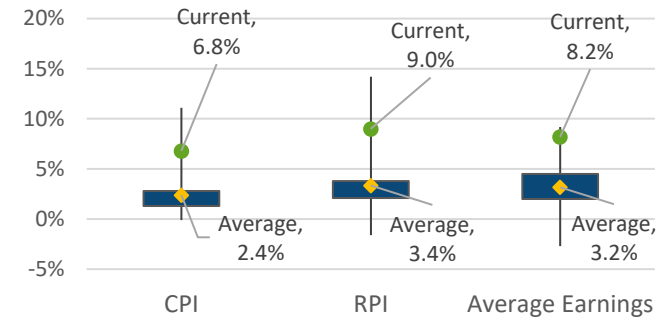
UK Inflation Monitor

- UK's CPI declined by 110 basis points in July to 6.8%.
- UK's RPI measure decreased by 170 basis points to 9.0% in July.
- According to the ONS: *"Falling gas and electricity prices provided the largest downward contributions to the monthly changes; food prices rose in July 2023 but by less than in July 2022, also leading to an easing in the annual inflation rates. Hotels and passenger transport by air were the classes that provided the largest offsetting upward contributions to the change in the rate."*
- Average earnings rose by 100 basis points to 8.2% in June after the previous month's reading was revised higher by 30 basis points.
- The projected RPI curve increased at the very short end, whilst the rest of the curve saw a marginal decrease in comparison to the previous month.

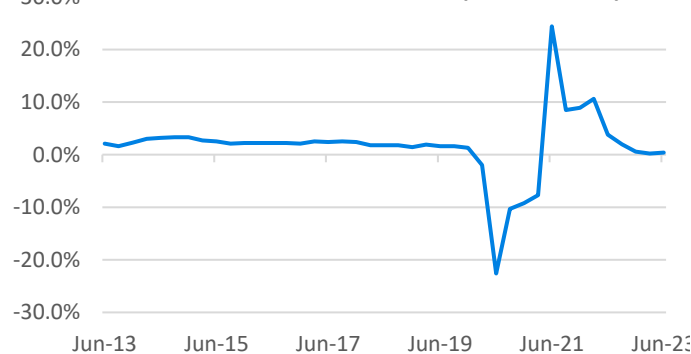
UK Inflation Rate: Experience over Past Year



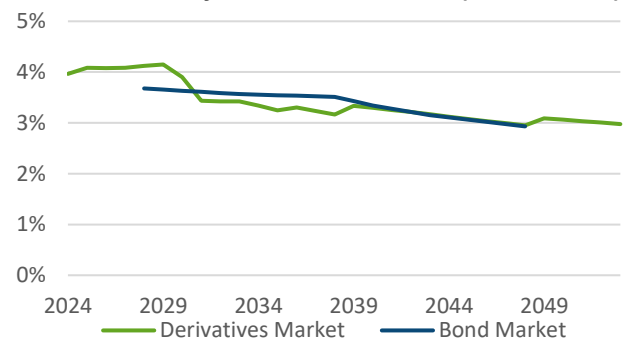
Max, Min and 50% Range: Since BoE Independence



Historical UK GDP Growth (Year-on-Year)



Projected UK RPI Inflation (Year-on-Year)



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.

Milliman Financial Risk Management

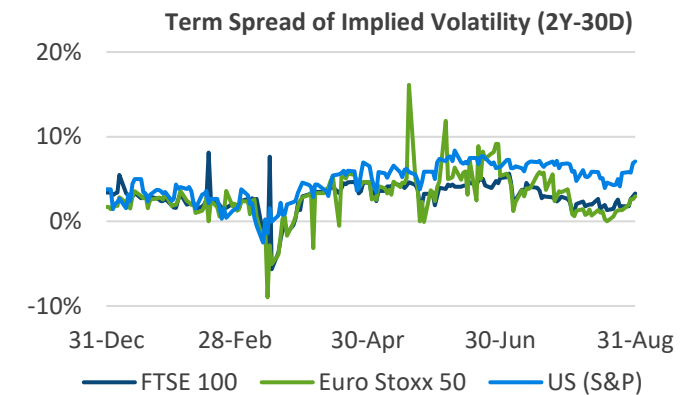
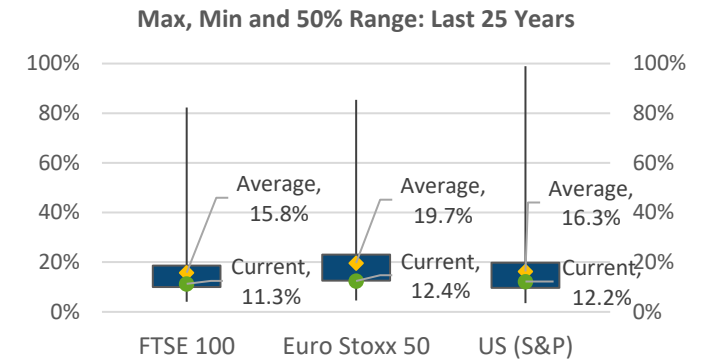
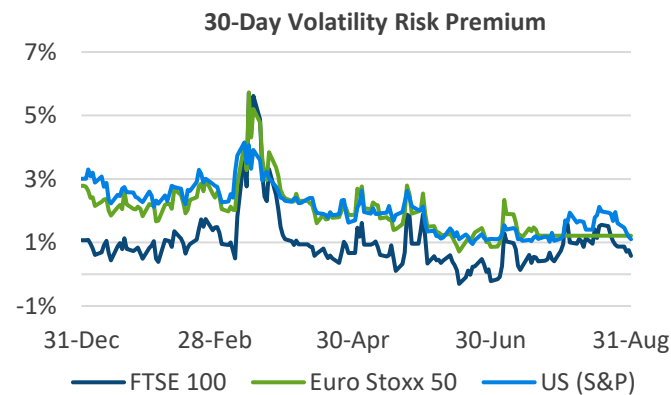
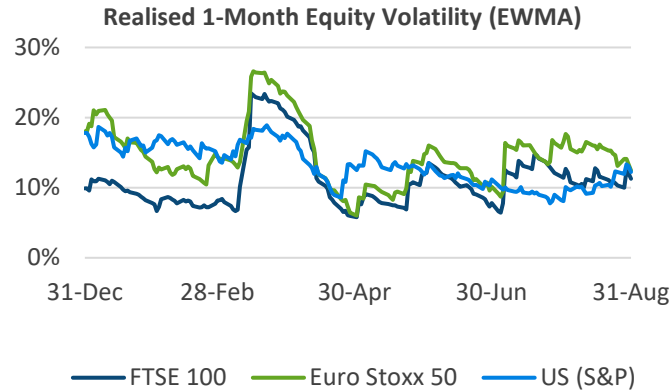
London Market Monitor – 31 August 2023

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

Volatility and Hedging Cost Monitor

- Realised volatilities declined for the FTSE 100 and Euro Stoxx 50 but increased for the S&P500 in August, remaining below historical long-term averages for all major indices.
- The FTSE 100 ended the month with a realised volatility of 11.3%. The same measure stood at 12.4% and 12.2% on the Euro Stoxx 50 and the S&P 500, respectively.
- Volatility risk premiums on major indices decreased in August. The FTSE 100 had a volatility risk premium of 0.6% at month-end. The volatility risk premium on the Euro Stoxx 50 and the S&P 500 was 1.2% and 1.1%, respectively.
- The change in spread between implied volatility of 2-year and 30-day at-the-money options was mixed but remained positive for all major indices.

Please contact Milliman for more information on the basis and methodology used for these results.



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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Established in 1998, the practice includes professionals operating from four trading platforms around the world (Chicago, London, Amsterdam and Sydney).

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