

Market Price Monitor

Local Equity Markets

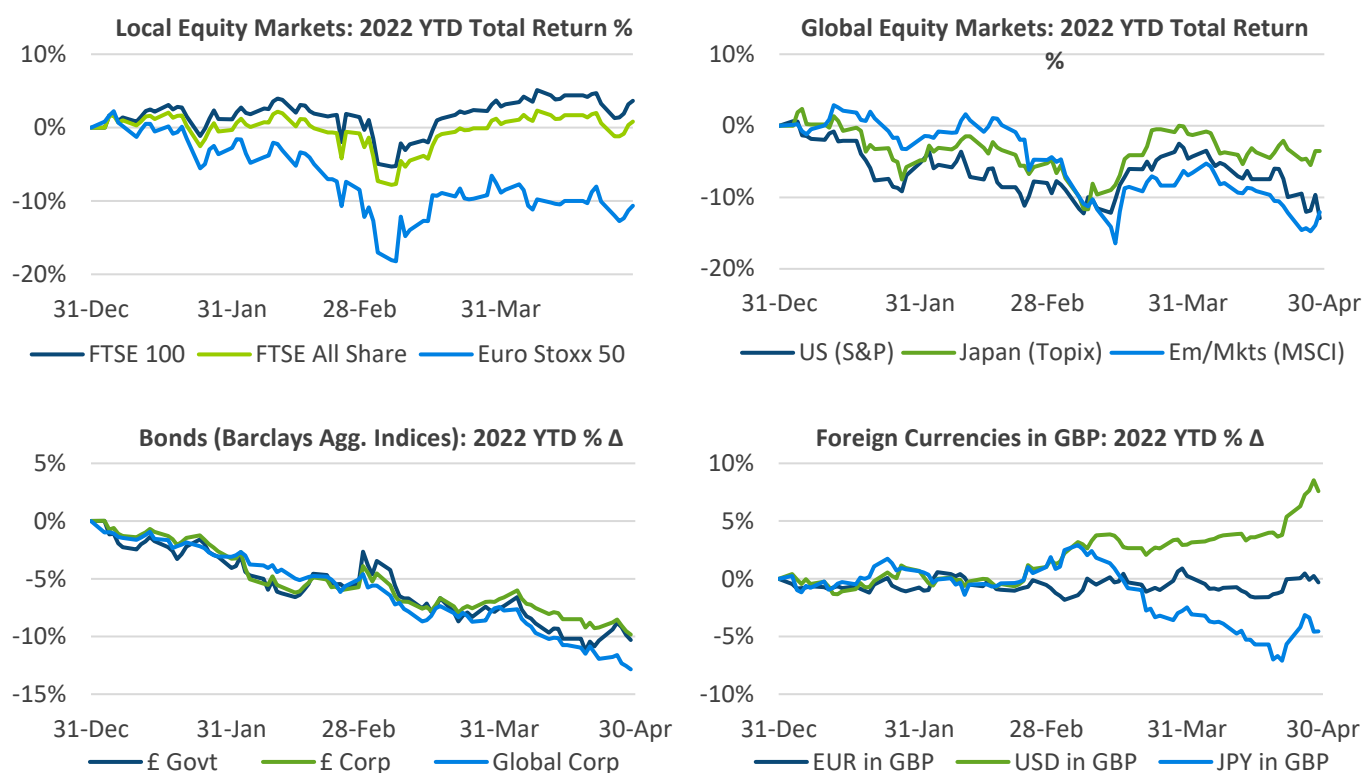
- The ongoing war in Ukraine, China's zero-covid policy and the prospects of tighter monetary policy around the globe continued to weigh on investor sentiment in April. This resulted in losses for most major global equity indices during the month.
- The FTSE 100 was yet again the outperformer of the month due to its heavy weighting in commodity companies, returning 0.8%, having gained 3.7% year-to-date.
- The Euro Stoxx 50 index ended the month down 2.0%.

Global Equity Markets

- The S&P 500 was the worst performer of the month, falling by 8.7%. Meanwhile, the Japanese Topix index lost 2.4%.
- The MSCI Emerging Markets index ended the month down 5.5%.

Bond/FX Markets

- Bond markets continued to decline in April.
- The British government bond index lost 3.0%.
- The British and global corporate bond indices fell by 3.3% and 5.8%, respectively.
- The British Pound had a mixed performance in April, weakening against the US Dollar by 4.5%, as the greenback strengthened across the board. Meanwhile, the Pound gained 2.1% and 0.6% against the Japanese Yen and the Euro, respectively.



	Total Returns as of April 29, 2022											
	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	0.8%	0.3%	-2.0%	-8.7%	-2.4%	-5.5%	-3.0%	-3.3%	-5.8%	-0.6%	4.5%	-2.1%
3 Month	2.5%	1.1%	-8.2%	-8.2%	1.4%	-10.4%	-6.5%	-6.8%	-10.1%	0.5%	6.9%	-5.2%
1 Year	12.3%	8.7%	-1.8%	0.2%	2.4%	-18.1%	-8.7%	-9.2%	-12.9%	-3.6%	9.9%	-7.5%
YTD	3.7%	0.8%	-10.7%	-12.9%	-3.5%	-12.1%	-10.3%	-9.8%	-12.8%	-0.3%	7.6%	-4.6%

Milliman Financial Risk Management

London Market Monitor – 29 April 2022

Data sources: Bloomberg; Barclays; EIOPA; PRA; Oxford-Man Institute; ONS; Milliman FRM

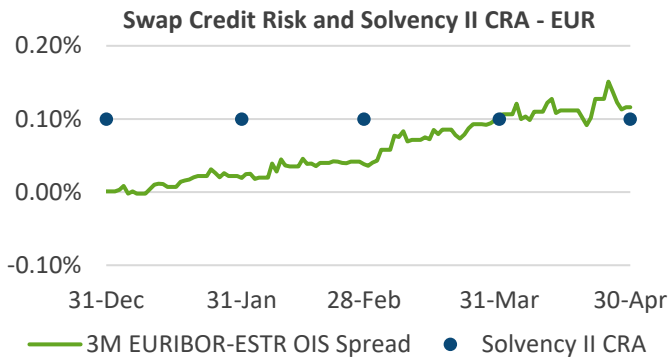
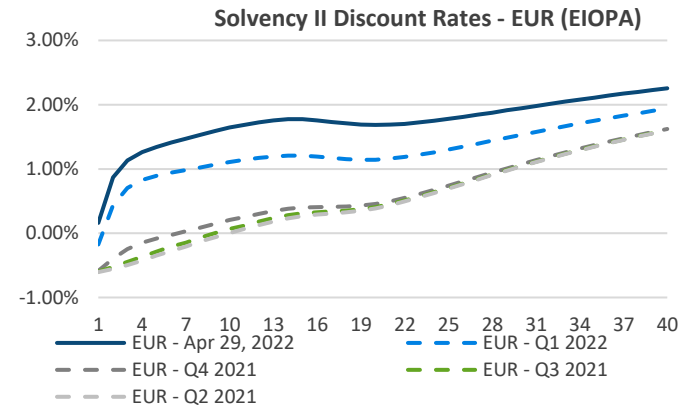
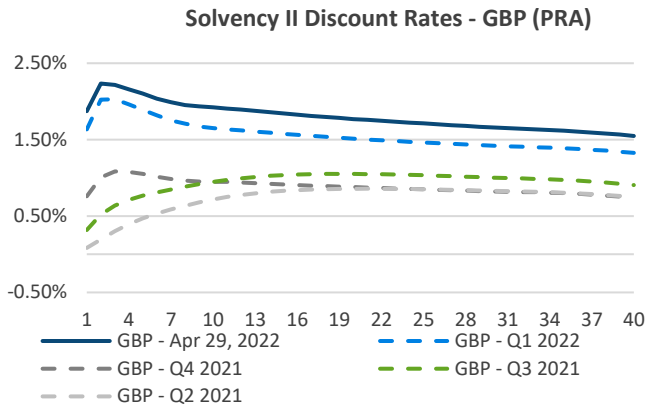
Solvency II Monitor - Rates

Risk Free Rates

- Both GBP and EUR risk-free rates increased at all terms for the third straight month in April.
- Both the 1-year and 30-year GBP risk-free rates rose by 24 basis points.
- The 10 and 20-year GBP risk-free rates climbed higher by 27 and 26 basis points, respectively. Meanwhile, EUR risk-free rates for the same terms increased by 53 and 54 basis points, respectively.

Credit Risk Adjustment

- The EUR CRA was unchanged and remains floored at 10 basis points.



	Change in GBP Discount (bps)				
	1Y	Y5	Y10	Y20	Y30
Since Q1 2022	24	21	27	26	24
Since Q4 2021	111	105	97	89	84
Since Q3 2021	156	134	98	72	66
Since Q2 2021	179	164	121	91	83

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q1 2022	34	45	53	54	41	0
Since Q4 2021	75	143	144	123	87	0
Since Q3 2021	76	163	158	128	90	0
Since Q2 2021	77	169	164	130	91	0

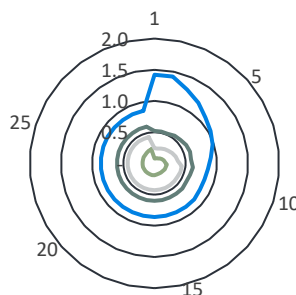
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

GBP - Financial

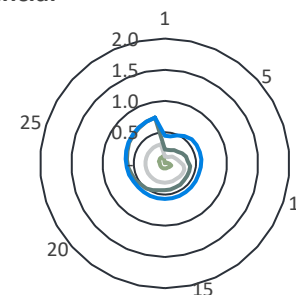


— AAA — AA — A — BBB

GBP Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.08	0.12	0.19	0.19	0.23
AA	0.24	0.30	0.44	0.43	0.43
A	0.52	0.56	0.60	0.60	0.60
BBB	1.42	1.10	0.84	0.86	0.86

GBP Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.04	0.08	0.15	0.23
AA	0.04	0.07	0.11	0.18	0.26
A	0.06	0.12	0.18	0.31	0.42
BBB	0.15	0.24	0.33	0.47	0.58

GBP - Non-Financial



— AAA — AA — A — BBB

GBP Non-Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.01	0.11	0.08	0.12
AA	0.11	0.16	0.33	0.31	0.31
A	0.22	0.28	0.41	0.51	0.75
BBB	0.44	0.58	0.57	0.57	0.75

GBP Non-Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.01	0.04	0.07	0.12
AA	0.00	0.04	0.09	0.17	0.26
A	0.04	0.15	0.27	0.51	0.75
BBB	0.11	0.22	0.34	0.55	0.75

The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Refinitiv and applying the Credit Risk Adjustment as defined in the Technical Specs. The data is provided by EIOPA for EUR, and by PRA for GBP, as of 30/04/22.

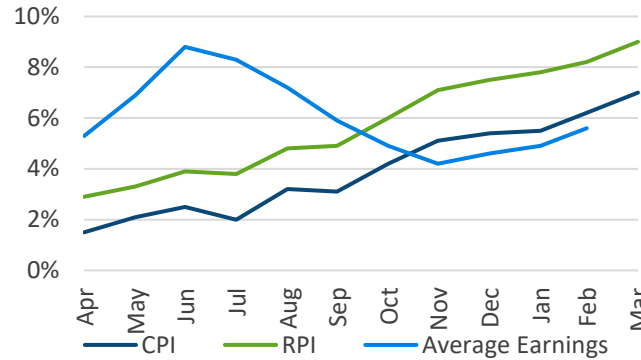
The **Credit Risk Adjustment** is a component of the risk-free discount curve defined by EIOPA. It is calculated from actual experience in the 'LIBOR-OIS' spread (3 months for EUR), and is bounded between 0.10 and 0.35. We show actual LIBOR-OIS spread levels and the defined CRA, for EUR.

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 and as of 30/04/22. **Fundamental spread** = maximum (probability of default + cost of downgrade; 35% of long-term average spread). In the tables we show the **'before floor'** measure = probability of default + cost of downgrade.

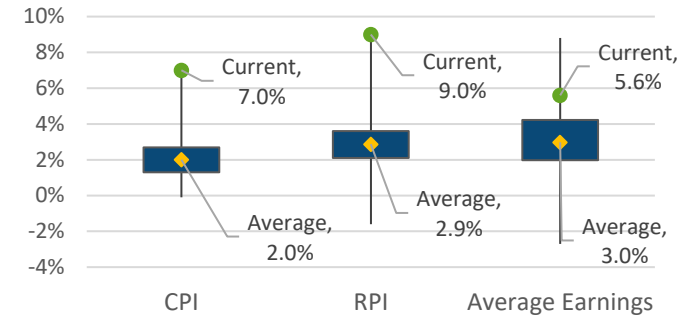
UK Inflation Monitor

- UK's CPI inflation rose to 7.0% in March, an increase of 80 basis points from the previous month.
- UK's RPI inflation also increased by 80 basis points to 9.0% in March.
- According to the ONS: *"The upward contributions to the change came from many categories, with the largest from motor fuels, with no large offsetting downward contributions."*
- UK's average earnings came in at 5.6% in February, 70 basis points higher than the previous month, after the January number was revised higher by 10 basis points.
- According to the ONS: *"Strong bonus payments over the past six months have kept recent real total pay growth positive. Previous months' strong growth rates were affected upwards by base and compositional effects. These initial temporary factors have worked their way out. However, we are now comparing the latest period with a period where certain sectors had increasing numbers of employees on furlough because of the winter 2020 to 2021 lockdown. Therefore, a small amount of base effect will be present for these sectors."*
- Similar to the previous month, the projected RPI curve increased at the very near-term, with the 1-year forward at 10.0% at month-end.

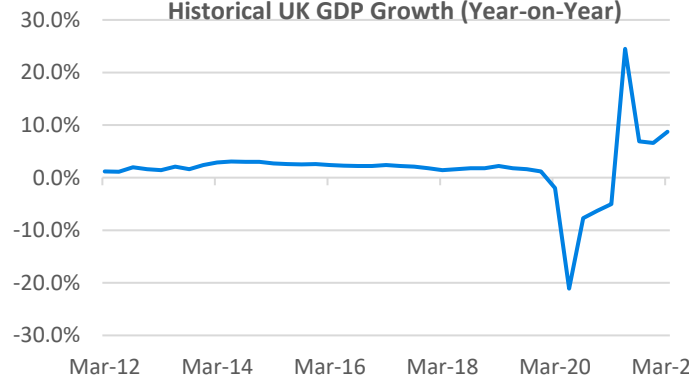
UK Inflation Rate: Experience over Past Year



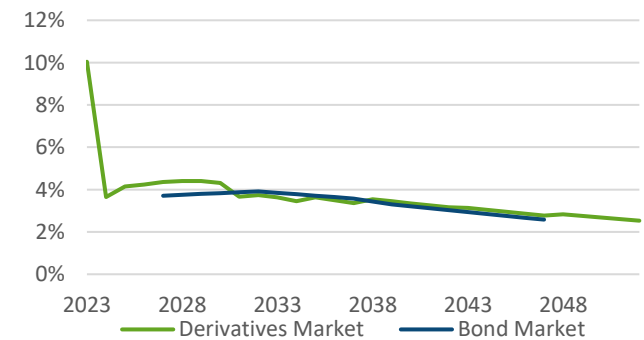
Max, Min and 50% Range: Since BoE Independence



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:

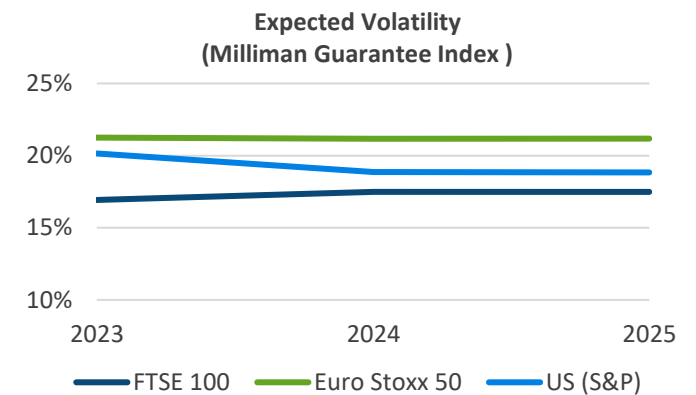
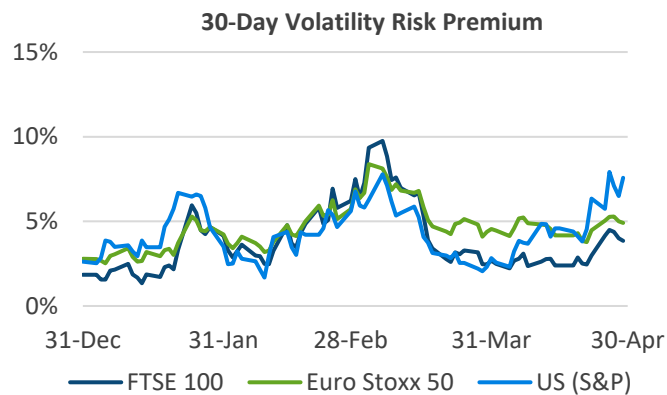
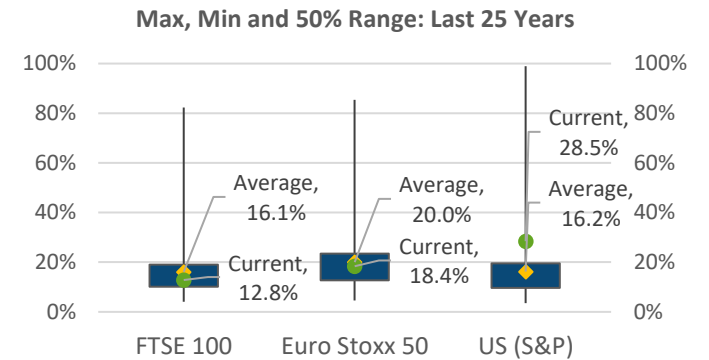
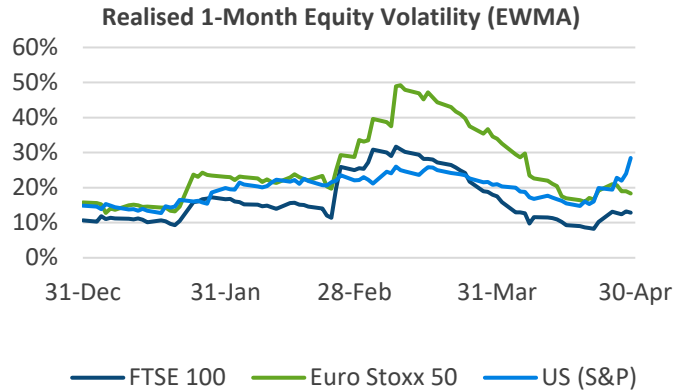
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average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

Volatility and Hedging Cost Monitor

- Realised volatilities on major indices declined at the start of the month and then ticked back up during the second half of the month. The measure stood at 12.8% on the FTSE 100, 18.4% on the Euro Stoxx 50 and 28.5% on the S&P 500 at month-end.
- Volatility risk premiums on major indices increased in April, as implied volatilities rose. The FTSE 100 had a volatility risk premium of 3.9% at month-end. The volatility risk premium on the Euro Stoxx 50 and the S&P 500 was 4.9% and 7.6%, respectively.



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 (on data from the Oxford-Man Institute). 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).

Expected realised volatility is an intermediate result from the [Milliman Guarantee Index™ \(MGI\)](#), which provides volatility parameters for variable annuity guarantee (VA) valuation and risk management. The levels shown are on an expected basis, and do not reflect any risk adjustment.



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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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