

**Market Price Monitor**

**Local Equity Markets**

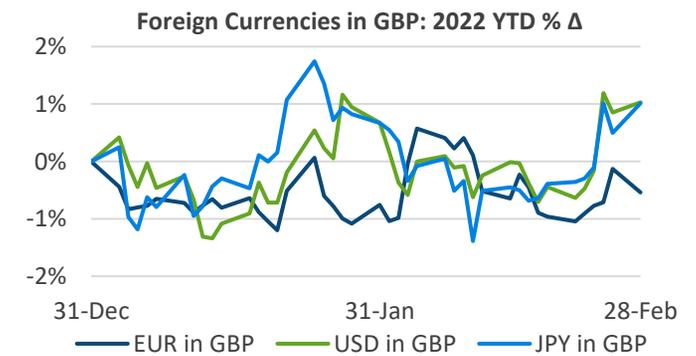
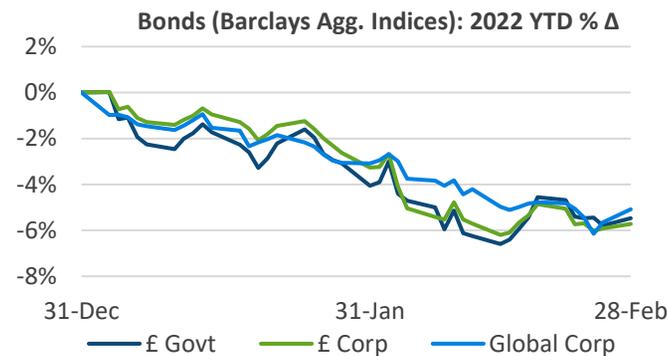
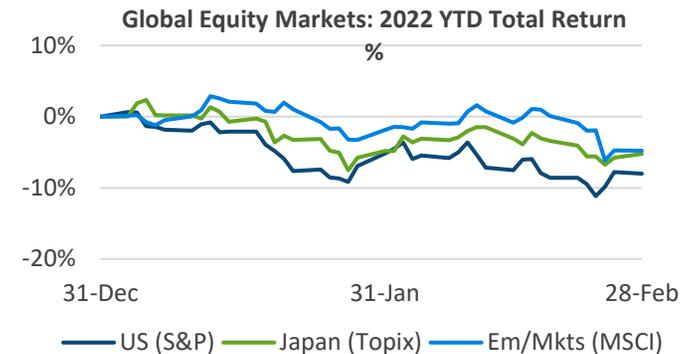
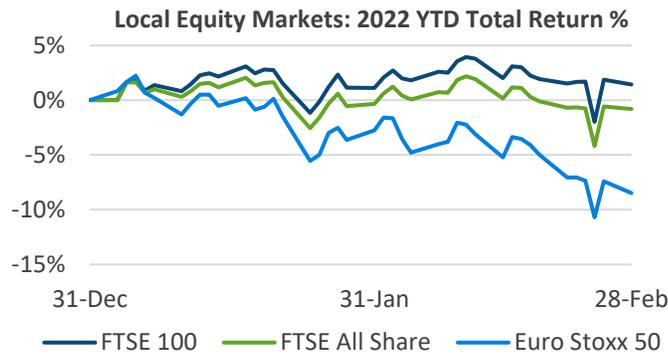
- Most major equity markets suffered losses in February as the conflict in Ukraine intensified, dampening the global growth outlook, and adding to concerns over inflation.
- The FTSE 100 outperformed for the second consecutive month, returning 0.3%.
- The Euro Stoxx 50 lost 5.9%.

**Global Equity Markets**

- The S&P 500 was down 3.0%, matching the losses suffered by the MSCI Emerging Markets index.
- The Japanese Topix dropped by 0.4%.

**Bond/FX Markets**

- The British government bond index fell by 1.5%.
- The British and global corporate bond indices lost 2.5% and 2.1%, respectively.
- The British Pound had a relatively flat month against major currencies.



	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	0.3%	-0.5%	-5.9%	-3.0%	-0.4%	-3.0%	-1.5%	-2.5%	-2.1%	0.2%	0.3%	0.3%
3 Month	6.3%	3.8%	-3.2%	-3.9%	-2.0%	-3.0%	-8.1%	-6.9%	-4.8%	-1.9%	-1.0%	-2.7%
1 Year	19.2%	16.0%	10.6%	16.4%	3.4%	-10.4%	-3.2%	-4.5%	-5.6%	-3.5%	4.0%	-3.7%
YTD	1.4%	-0.8%	-8.5%	-8.0%	-5.2%	-4.8%	-5.5%	-5.7%	-5.1%	-0.5%	1.0%	1.0%

## Milliman Financial Risk Management

London Market Monitor – 28 February 2022

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

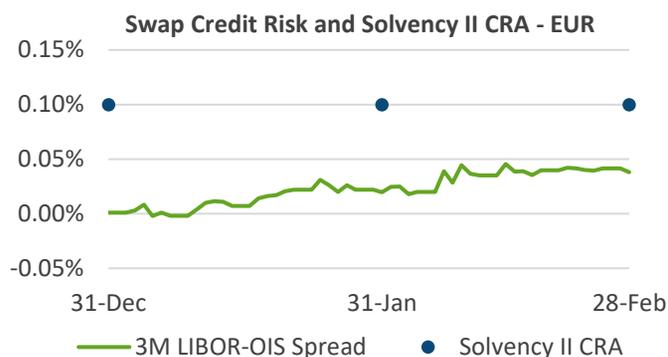
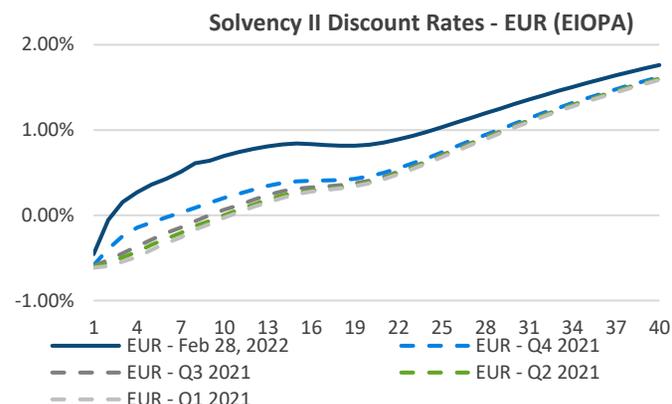
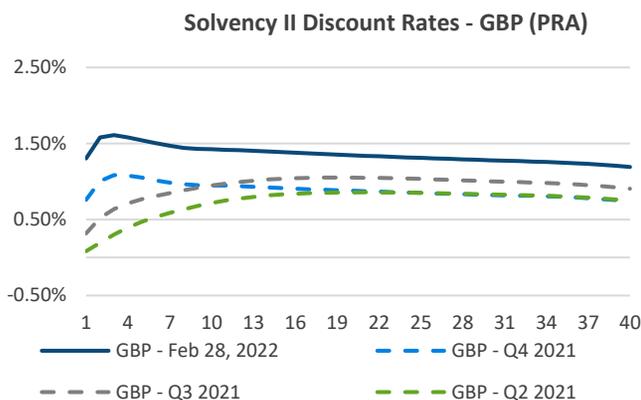
### Solvency II Monitor - Rates

#### Risk Free Rates

- Both GBP and EUR risk-free rates increased at all terms in February.
- The 1-year GBP risk-free rate increased by 26 basis points. The 5 and 10-year rates rose by 22 basis points, and the 30-year rate increased by 25 basis points.
- For the EUR risk-free rates, the largest increase came in the medium and long-end of the curve, with the 10 and 20-year EUR rates rising by 33 and 31 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 Q4 2021	54	49	48	47	46
Since Q3 2021	99	78	48	30	28
Since Q2 2021	122	107	71	49	45

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q4 2021	13	44	49	37	23	0
Since Q3 2021	14	65	63	42	26	0
Since Q2 2021	15	71	69	44	26	0
Since Q1 2021	16	77	72	45	28	0

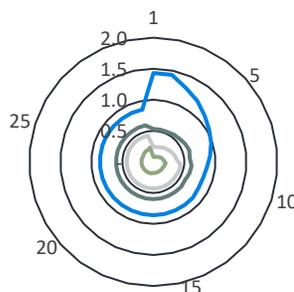
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

GBP - Financial



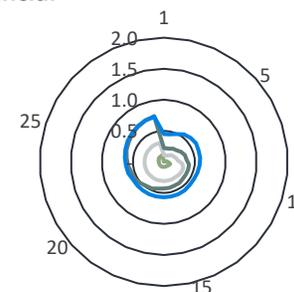
— AAA — AA — A — BBB

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	0.53	0.56	0.61	0.60	0.60
BBB	1.43	1.11	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	0.57

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	0.11
AA	0.11	0.16	0.33	0.31	0.31
A	0.22	0.28	0.41	0.51	0.75
BBB	0.45	0.58	0.57	0.57	0.74

GBP Non-Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.01	0.04	0.07	0.11
AA	0.00	0.04	0.09	0.16	0.26
A	0.04	0.15	0.27	0.51	0.75
BBB	0.11	0.21	0.34	0.55	0.74

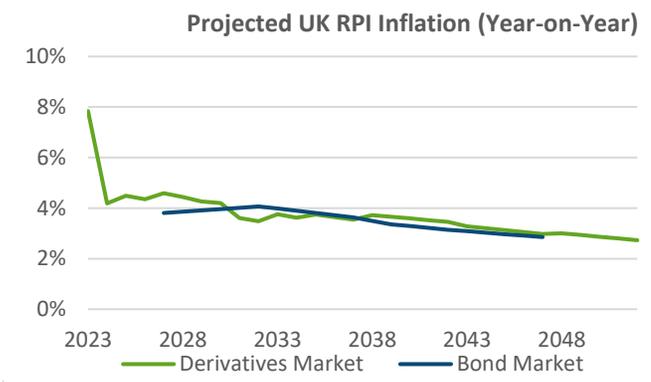
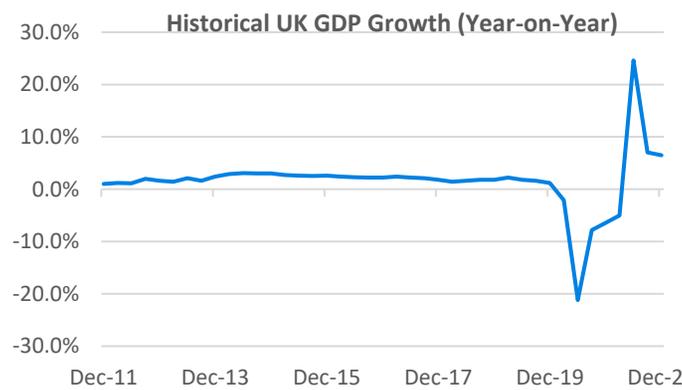
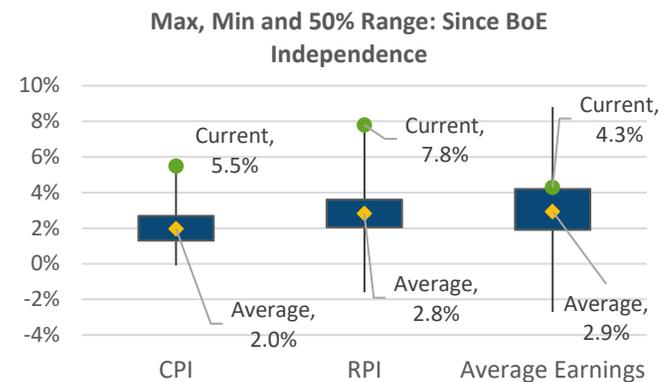
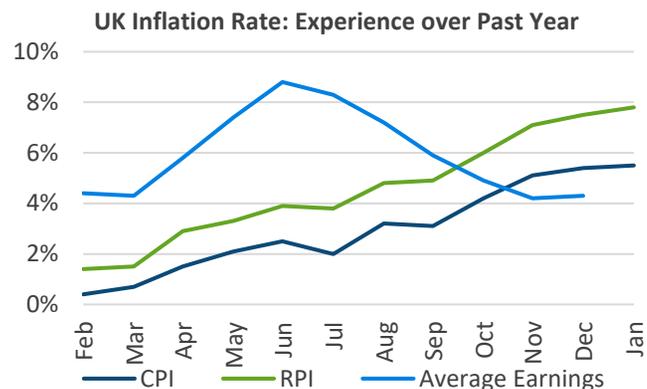
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Refinitiv and applying the Credit Risk Adjustment as defined in the Technical Specs. The data is provided by EIOPA for EUR, and by PRA for GBP, as of 28/02/22.

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 28/02/22. **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 increased by 10 basis points to 5.5% in January.
- The RPI inflation measure rose by 30 basis points to 7.8% in January.
- According to the ONS: "The largest upward contributions to the change came from clothing and footwear, housing and household services, and furniture and household goods. These were partially offset by large downward contributions to change from restaurants and hotels, and transport."
- UK's average earnings increased by 10 basis points to 4.3% in December.
- According to the ONS: "Previous months' strong growth rates were affected upwards by base and compositional effects. These temporary factors have largely worked their way out of the latest growth rates, however, a small amount of base effect for certain sectors may still be present."
- The projected RPI curve continued to rise sharply at the very near-term, with the 1-year forward RPI rate almost at 8.0%. However, the rest of the curve remained broadly unchanged in comparison to the previous month.



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

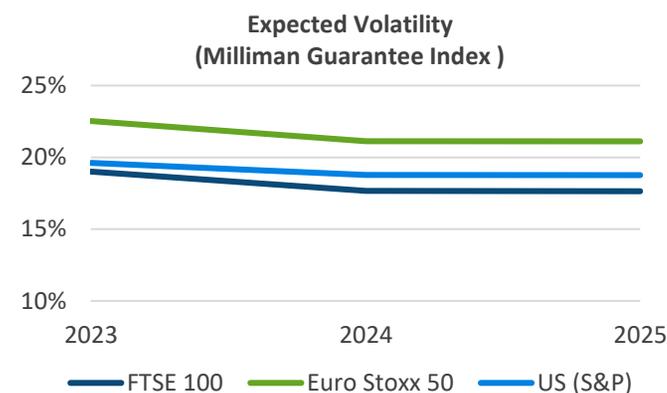
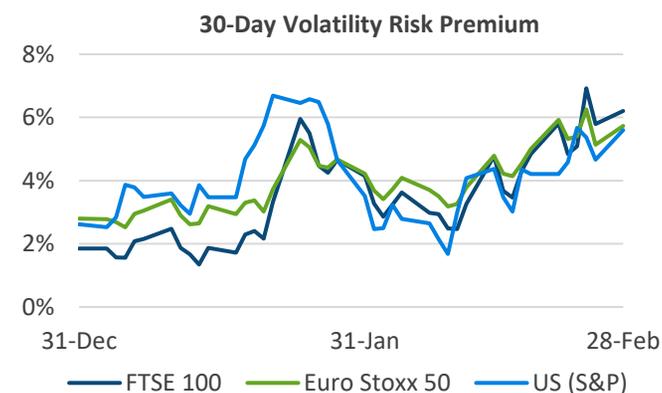
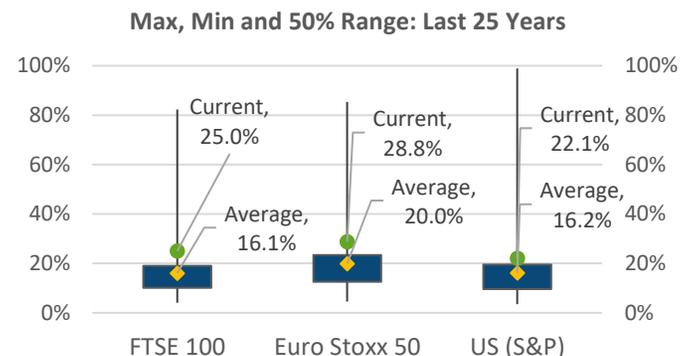
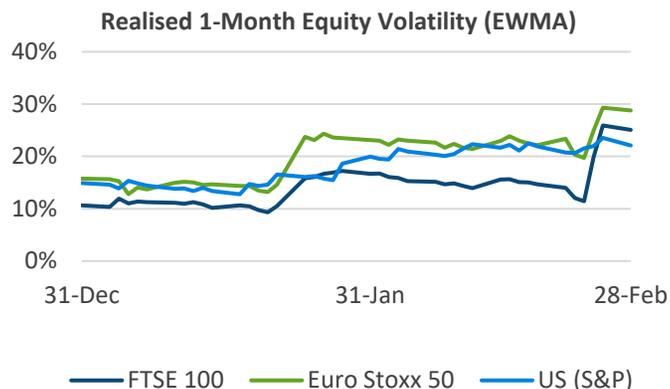
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due to the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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 volatility on major equity indices remained elevated in February.
- The realised volatility of the FTSE 100 stood at 25.0% at month-end. The Euro Stoxx 50 and S&P 500 ended the month with a realised volatility of 28.8% and 22.1%, respectively.
- Volatility risk premiums on global equity indices trended higher throughout the month. The measure stood at 6.2% on the FTSE 100 at month-end. The volatility risk premium on the Euro Stoxx 50 and the S&P 500 stood at 5.7% and 5.6%, 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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