

Market Price Monitor

Local Equity Markets

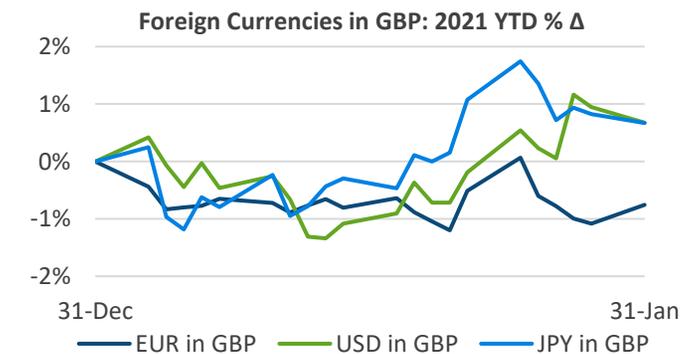
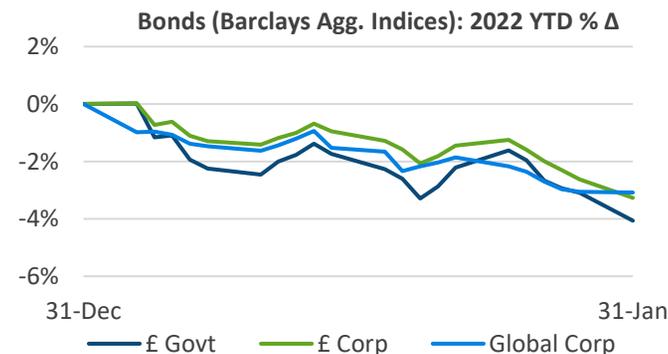
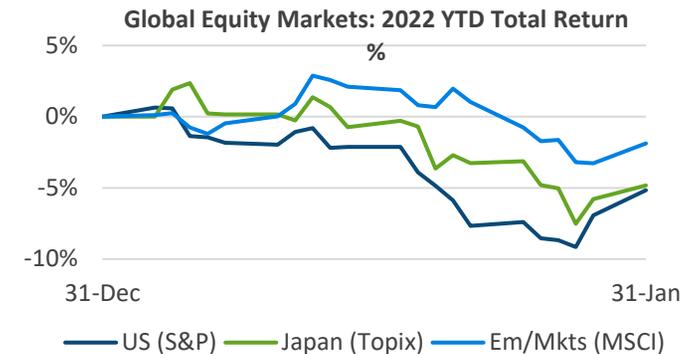
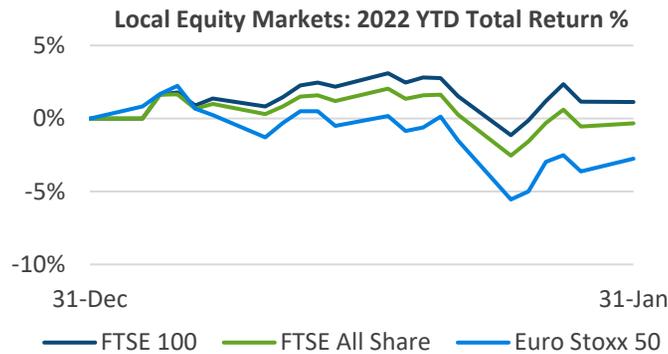
- After a strong end to 2021, most major equity markets suffered losses in January on the back of concerns over central banks tightening and geopolitical tensions in Europe.
- The FTSE 100 outperformed most global indices and gained 1.1%.
- The Euro Stoxx 50 lost 2.7%.

Global Equity Markets

- The S&P 500 and the Japanese Topix indices were down 5.2% and 4.8% at month-end, respectively.
- Emerging markets outperformed their developed market counterparts, with the MSCI Emerging Markets index ending the month down by only 1.9%

Bond/FX Markets

- The British government bond index lost 4.1% in January, whilst the British corporate bond index ended the month down 3.3%.
- The global corporate bond index fell by 3.1%.
- The British Pound had a mixed performance in January, losing 0.7% against the US Dollar and the Japanese Yen. In contrast, gaining 0.8% against the Euro.



	Total Returns as of January 31, 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	1.1%	-0.3%	-2.7%	-5.2%	-4.8%	-1.9%	-4.1%	-3.3%	-3.1%	-0.8%	0.7%	0.7%
3 Month	3.6%	2.0%	-1.5%	-1.6%	-5.1%	-4.1%	-3.8%	-3.3%	-3.6%	-1.1%	1.9%	0.9%
1 Year	20.7%	18.9%	22.9%	23.3%	7.0%	-6.9%	-7.5%	-5.3%	-4.9%	-5.7%	2.0%	-7.2%
YTD	1.1%	-0.3%	-2.7%	-5.2%	-4.8%	-1.9%	-4.1%	-3.3%	-3.1%	-0.8%	0.7%	0.7%

Milliman Financial Risk Management

London Market Monitor – 31 January 2022

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

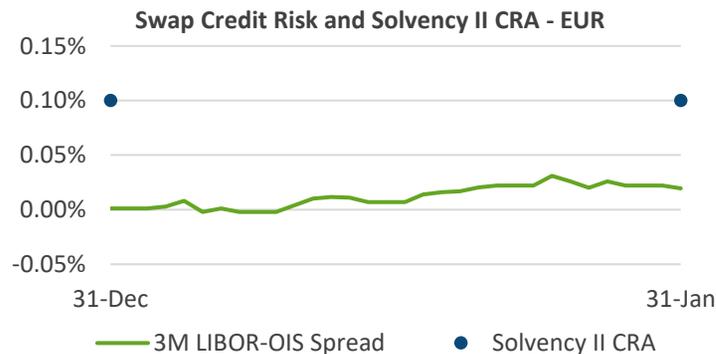
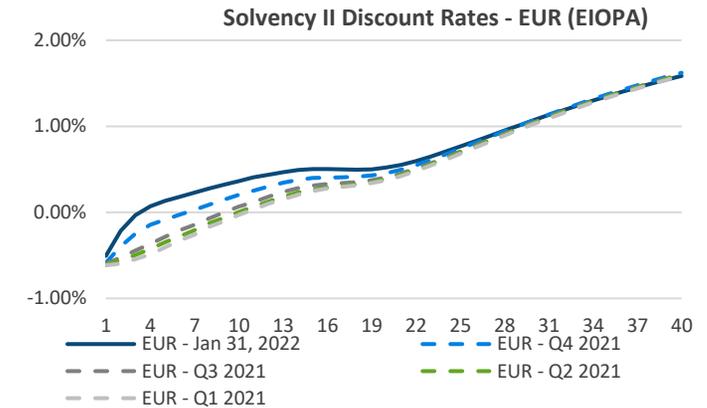
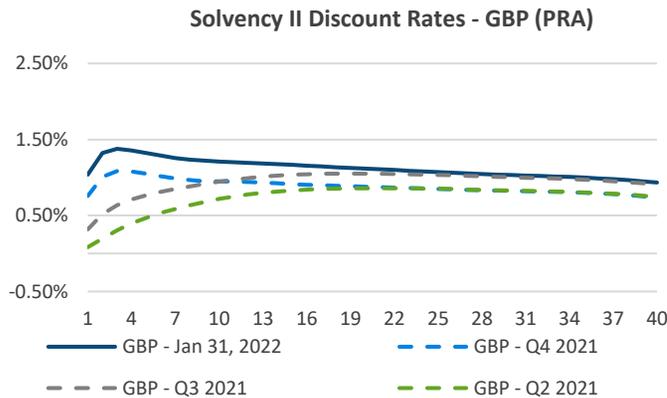
Solvency II Monitor - Rates

Risk Free Rates

- The monitor will show SONIA based GBP SII curves published by PRA and EURIBOR based EUR curves published by EIOPA going forward.
- Note the Q2 2021 curve was an indicative curve that was published
- GBP risk-free rates increased at all terms in January.
- The 1-year rate saw the largest move, increasing by 28 basis points. The 5-year and 10-year GBP rates rose by 27 and 26 basis points, respectively.
- EUR risk-free rates increased at most terms in January, with the exception of the very long-end of the curve.
- The 5 and 10-year EUR risk-free rates rose by 22 and 16 basis points, respectively, while the 30-year rate was unchanged.

Credit Risk Adjustment

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



	Change in GBP Discount (bps)				
	1Y	Y5	Y10	Y20	Y30
Since Q4 2021	28	27	26	24	21
Since Q3 2021	72	56	26	7	3
Since Q2 2021	95	85	49	26	20

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q4 2021	8	22	16	6	0	0
Since Q3 2021	9	42	30	11	2	0
Since Q2 2021	10	48	36	13	3	0
Since Q1 2021	11	54	39	15	5	0

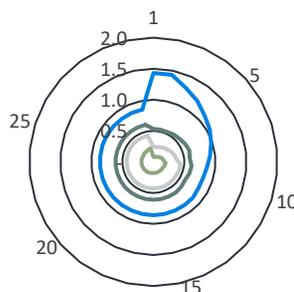
Solvency II Monitor - Spreads

Fundamental Spreads

- There was a mix of marginal increases and declines in the mid-term and long-term fundamental spreads for both Financials and Non-Financials.

Fundamental Spreads %

GBP - Financial

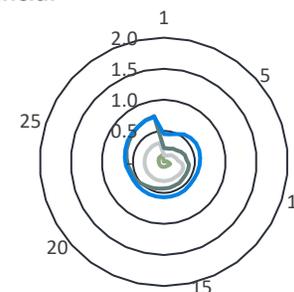


— AAA — AA — A — BBB

GBP Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.08	0.12	0.19	0.19	0.22
AA	0.24	0.30	0.44	0.43	0.43
A	0.53	0.56	0.61	0.61	0.61
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	0.22
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	0.25
A	0.04	0.15	0.27	0.51	0.75
BBB	0.11	0.21	0.34	0.55	0.74

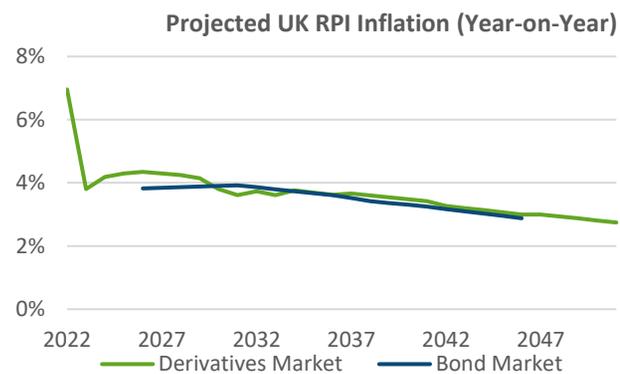
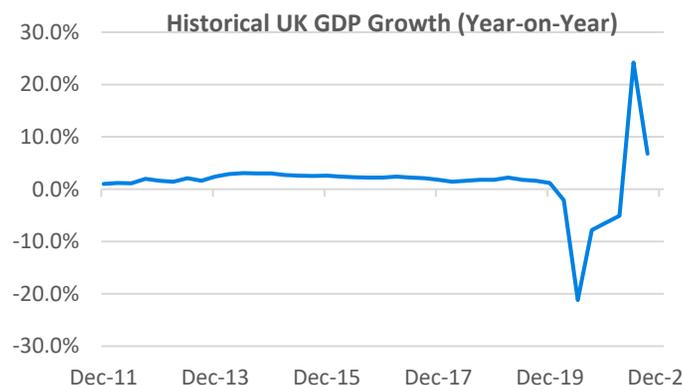
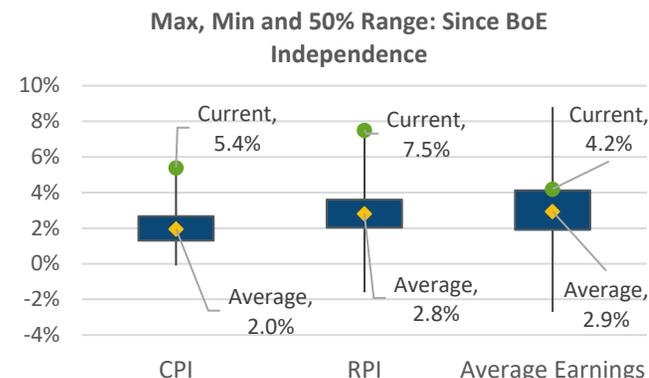
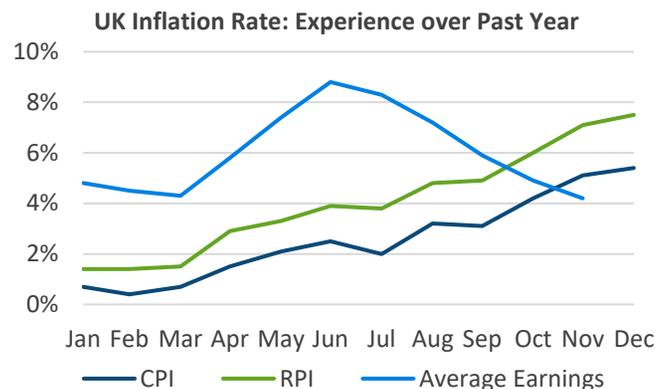
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Refinitiv and applying the Credit Risk Adjustment as defined in the Technical Specs. The data is provided by EIOPA for EUR, and by PRA for GBP, as of 31/01/22.

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 31/01/22. **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 by 30 basis points to 5.4% in December, recording the highest reading seen since 1992.
- UK's RPI inflation measure increased by 40 basis points to 7.5% in December.
- According to the ONS: "The largest upward contributions to the change came from food and non-alcoholic beverages, restaurants and hotels, furniture and household goods, and clothing and footwear. These were partially offset by large downward contributions to change from transport, and recreation and culture."
- UK's average earnings declined by 70 basis points to 4.2% in November.
- 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 UK RPI curve increased at the very near-term in January, but the rest of the curve remained broadly unchanged from the previous month.



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

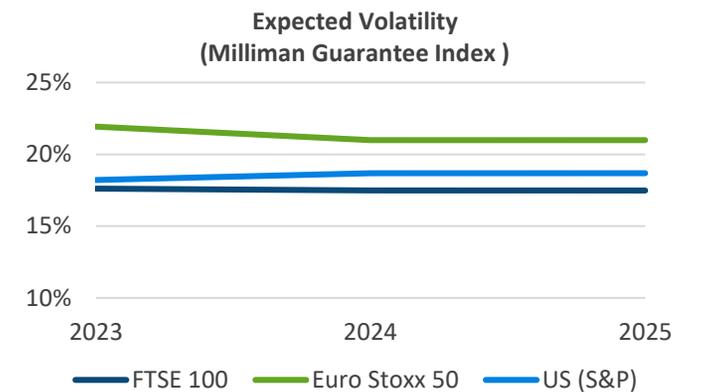
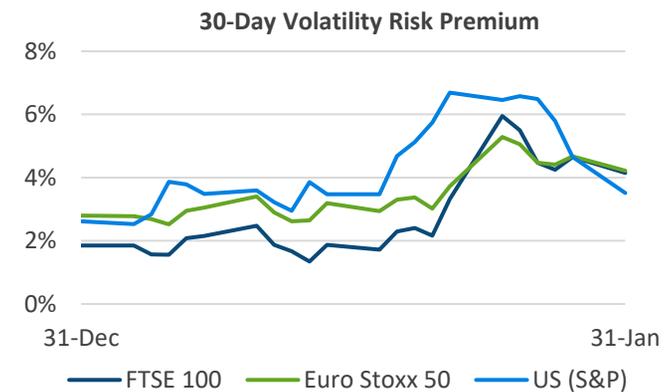
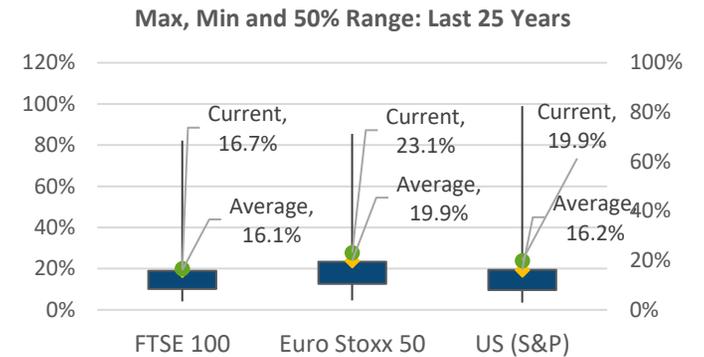
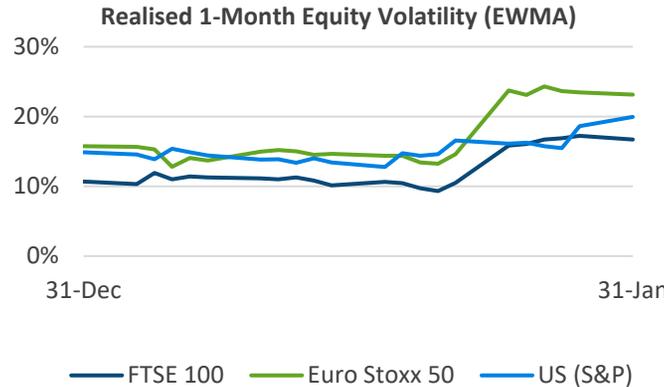
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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 volatility on major indices increased in January and ended the month above long-term averages.
- The realised volatility on the FTSE 100 was 16.7% at month-end. The measure stood at 23.1% and 19.9% for the Euro Stoxx 50 and the S&P 500, respectively.
- Similar to realised volatilities, volatility risk premiums on major indices increased during the month. Ending the month at 4.2% for both the FTSE 100 and Euro Stoxx 50 indices. The measure was 3.5% on the S&P 500 at month-end.



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 three trading platforms around the world (Chicago, London, Amsterdam and Sydney).

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