

Market Price Monitor

Local Equity Markets

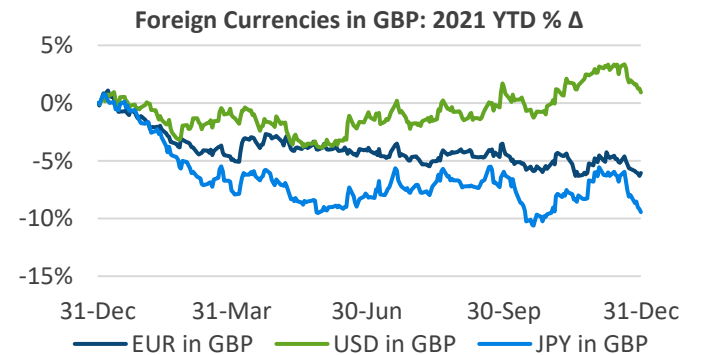
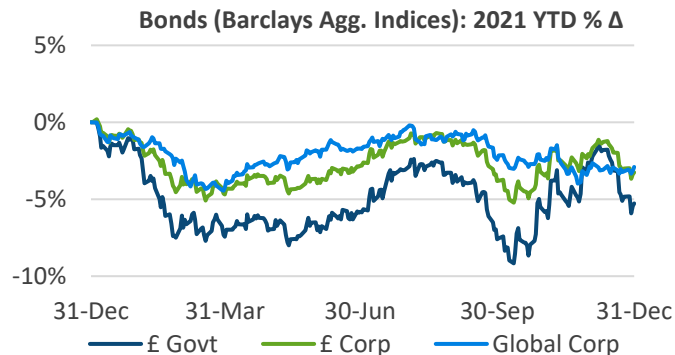
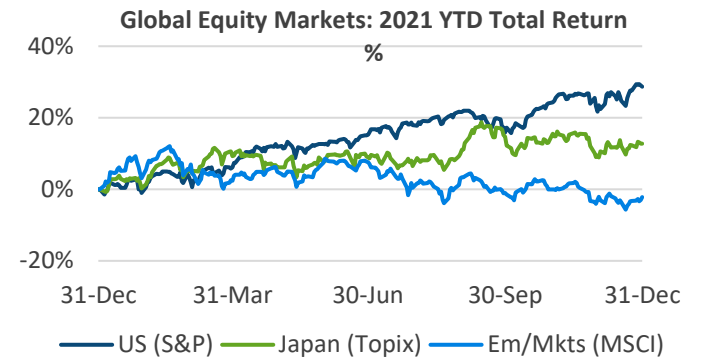
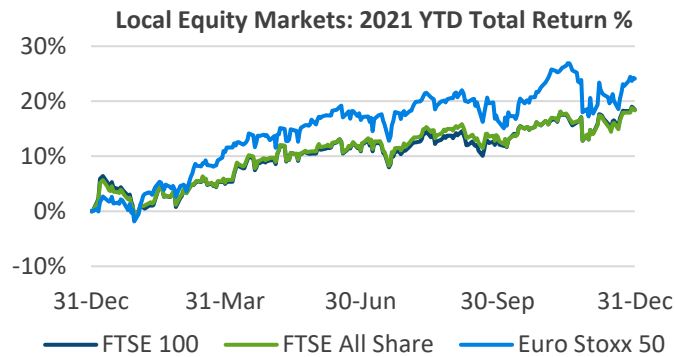
- After the market selloff in November, equity markets recovered in December to end the year strongly. This came as data showed a lower risk of serious illness within patients infected by the Omicron variant.
- The FTSE 100 gained 4.8%, up 18.4% for the year. The Euro Stoxx 50 index ended the month up 5.8%, up 24.1% in 2021.

Global Equity Markets

- Developed markets outperformed their emerging markets counterparts, with the S&P 500 and the Japanese Topix up 4.5% and 3.4%, respectively.
- The MSCI Emerging Markets index gained 1.9%. However, despite this gain, the index ended the year down 2.2%.

Bond/FX Markets

- The British government bond index was down 2.7%.
- The British corporate bond index lost 1.2%, while its global counterpart gained 0.3%.
- The British Pound had a strong month after the surprise rate hike by the Bank of England, which saw the Pound gain 1.3% and 2.0% against the Euro and the US Dollar, respectively. The British Pound was 3.7% stronger against the Japanese Yen.



	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	4.8%	4.7%	5.8%	4.5%	3.4%	1.9%	-2.7%	-1.2%	0.3%	-1.3%	-2.0%	-3.7%
3 Month	4.7%	4.2%	6.5%	11.0%	-1.7%	-1.2%	2.5%	0.6%	-0.5%	-2.1%	-0.5%	-3.7%
1 Year	18.4%	18.3%	24.1%	28.7%	12.7%	-2.2%	-5.3%	-3.3%	-2.9%	-6.1%	0.9%	-9.4%
YTD	18.4%	18.3%	24.1%	28.7%	12.7%	-2.2%	-5.3%	-3.3%	-2.9%	-6.1%	0.9%	-9.4%

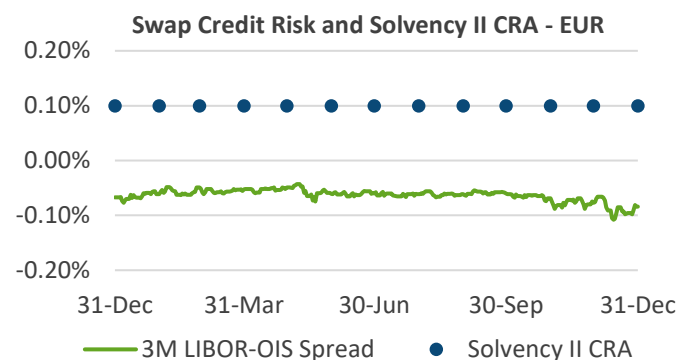
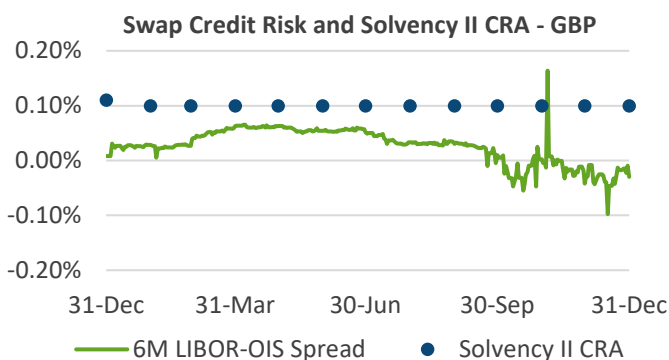
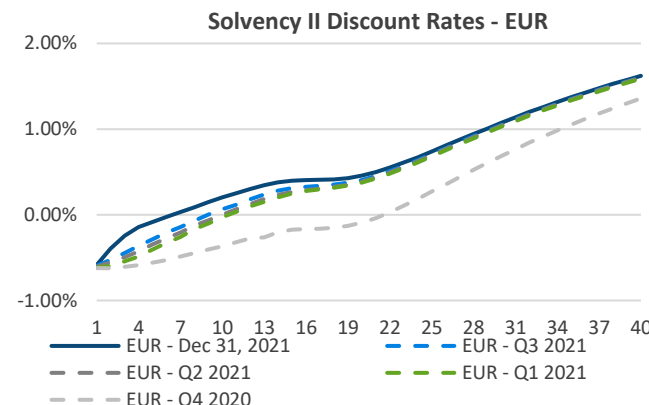
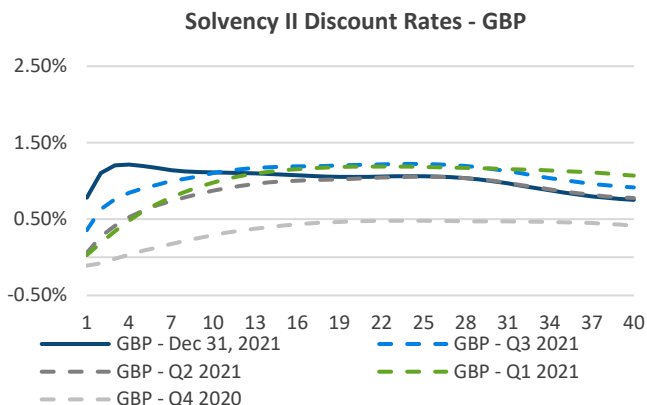
Solvency II Monitor - Rates

Risk Free Rates

- Both the GBP and EUR risk-free rates increased at all terms in December.
- Both the 1-year and 20-year GBP risk-free rates increased by 19 basis points, while the 30-year rate rose by 23 basis points.
- The increase was more pronounced at the longer-end of the EUR curve, with the 20-year EUR risk-free rate rising by 23 basis points, while the 30-year and 10-year rates increased by 19 and 18 basis points, respectively.
- We note that the GBP LIBOR benchmark printed for the final time on 31 December, and SONIA will become the main GBP interest rate swap benchmark going forward.

Credit Risk Adjustment

- Both the GBP and EUR CRAs were unchanged and remain floored at 10 basis points.



	Change in GBP Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q3 2021	43	29	1	-16	-16	0
Since Q2 2021	73	59	24	2	0	0
Since Q1 2021	75	60	13	-13	-16	0
Since Q4 2020	89	111	82	58	53	-1

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q3 2021	1	20	14	5	2	0
Since Q2 2021	2	26	20	7	3	0
Since Q1 2021	3	32	23	8	5	0
Since Q4 2020	4	47	57	55	39	0

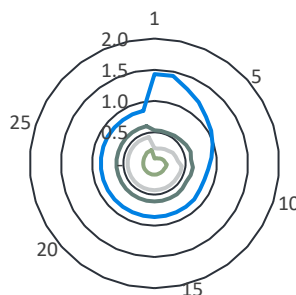
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

GBP - Financial

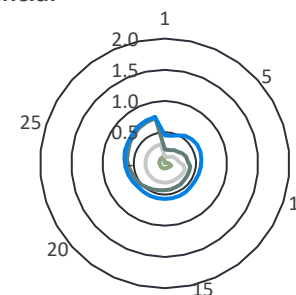


— AAA — AA — A — BBB

GBP Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.08	0.12	0.19	0.18	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	0.19	0.26
A	0.06	0.12	0.20	0.33	0.44
BBB	0.15	0.24	0.34	0.49	0.60

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	0.34	0.31	0.31
A	0.22	0.28	0.41	0.51	0.74
BBB	0.45	0.58	0.57	0.57	0.76

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	0.08	0.17	0.25
A	0.04	0.14	0.26	0.51	0.74
BBB	0.11	0.23	0.36	0.57	0.76

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 and as of 31/12/21.

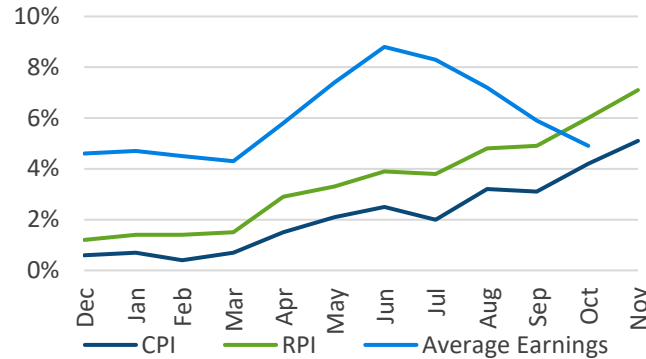
The **Credit Risk Adjustment** is a component of the risk-free discount curve defined by EIOPA. It is calculated from actual experience in the 'LIBOR-OIS' spread (3 months for EUR, 6 months for GBP), and is bounded between 0.10 and 0.35. We show actual LIBOR-OIS spread levels and the defined CRA, for both GBP and 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 31/12/21. **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.

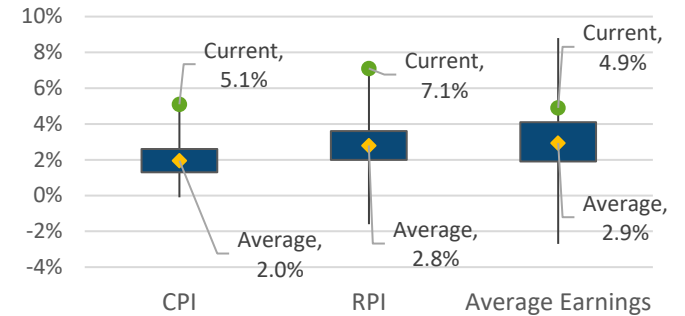
UK Inflation Monitor

- UK's inflation continued to trend higher in November.
- The CPI inflation measure rose by 90 basis points to 5.1%, and the RPI measure increased by 110 basis points, coming in at 7.1%. The November CPI figure was the highest reading in 10 years, while the headline RPI figure has not been this high since 1991.
- According to the ONS: "The upward contributions to the change were broad based, with the largest coming from transport (particularly motor fuels), and clothing and footwear. These were partially offset by a large downward contribution from restaurants and hotels."
- UK's average earning fell by 100 basis points to 4.9% in October, after the previous month's reading was revised higher by 10 basis points.
- 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."
- UK's Q3 2021 GDP growth figure was revised higher by 20 basis points to 6.8%.
- The projected UK RPI curve slightly declined at the near-term, but increased at the longer-

UK Inflation Rate: Experience over Past Year



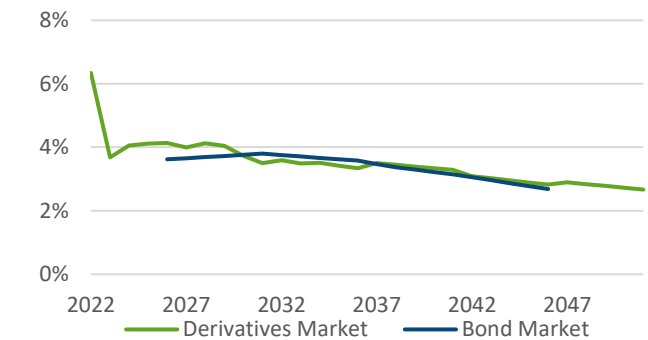
Max, Min and 50% Range: Since BoE Independence



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:

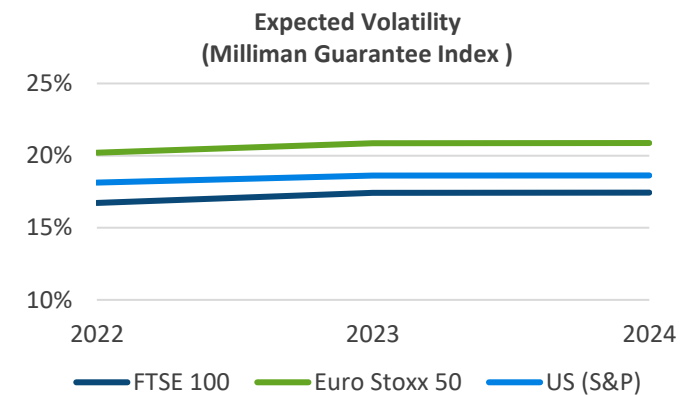
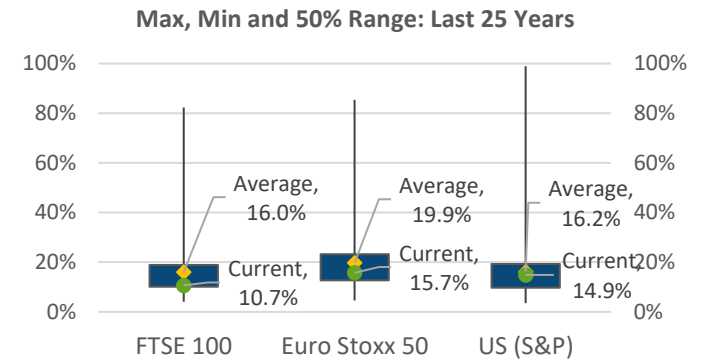
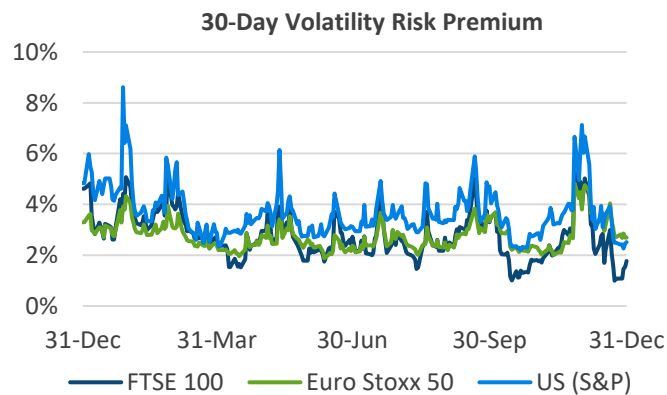
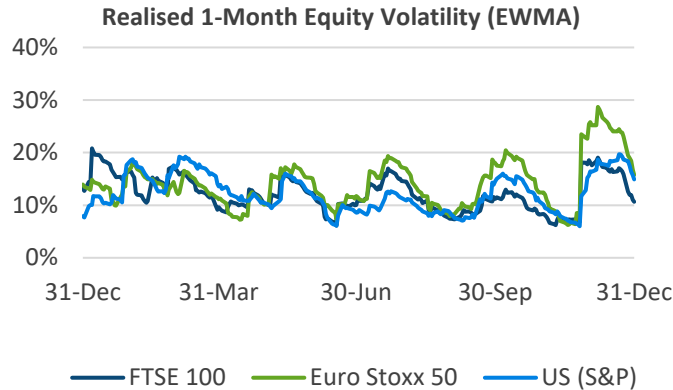
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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 volatility on major indices rose at the start of the month but peaked and declined for the rest of the month.
- The realised volatility on the FTSE 100 was 10.7% at month-end. The measure stood at 15.7% and 14.9% for the Euro Stoxx 50 and the S&P 500, respectively.
- Volatility risk premiums also followed a similar pattern to realised volatilities as they declined into the month-end.
- The volatility risk premium on the FTSE 100 was 1.8% at month-end. The Euro Stoxx 50 and the S&P 500 had a volatility risk premium of 2.7% and 2.5%, 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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