

**Market Price Monitor**

**Local Equity Markets**

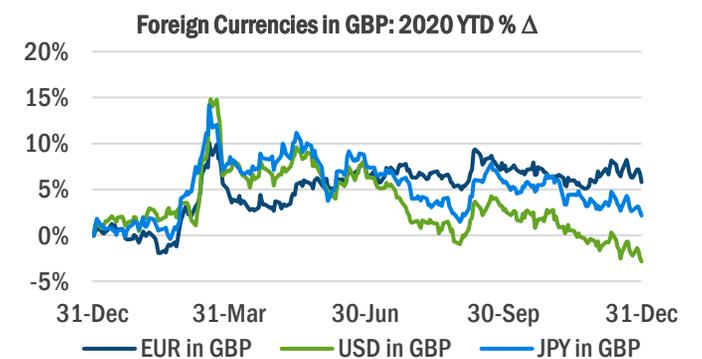
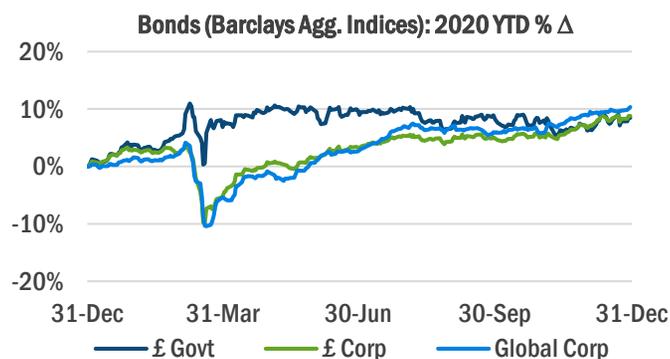
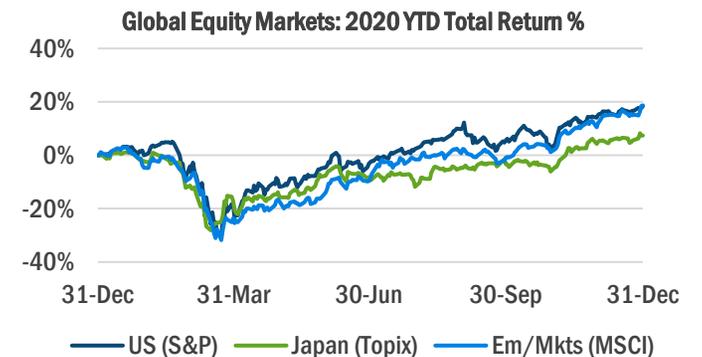
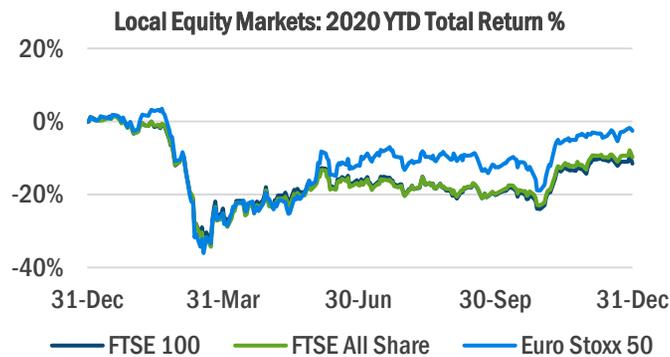
- Equity markets made gains in December, as optimism continued to grow with the COVID-19 vaccination programmes rolled out in parts of the world.
- Markets were also encouraged by the historic trade deal struck between the UK and EU before the Brexit transition deadline.
- The FTSE 100 index was up 3.3% by month-end, but ended 2020 down 11.5%.
- The Euro Stoxx 50 index gained 1.8%, ending the year down 2.6%.

**Global Equity Markets**

- Emerging markets outperformed their developed counterparts in December, with the MSCI Emerging Markets index returning 7.4%.
- Meanwhile, the S&P 500 and the Japanese Topix indices were up 3.8% and 3%, respectively.

**Bond/FX Markets**

- The British government bond index was up 1.7%.
- The British and global corporate bond indices returned 1.8% and 1.2% over the month, respectively.
- The British Pound gained 2.2% and 1.3% against the US Dollar and the Japanese Yen, respectively. Meanwhile the British Pound ended the month flat against the Euro.



	Total Returns as of December 31, 2020											
	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	3.3%	3.9%	1.8%	3.8%	3.0%	7.4%	1.7%	1.8%	1.2%	0.0%	-2.2%	-1.3%
3 Month	10.9%	12.6%	11.4%	12.1%	11.2%	19.8%	0.6%	4.0%	4.3%	-1.4%	-5.4%	-3.4%
1 Year	-11.5%	-9.8%	-2.6%	18.4%	7.4%	18.7%	8.9%	9.1%	10.4%	5.8%	-2.9%	2.1%
YTD	-11.5%	-9.8%	-2.6%	18.4%	7.4%	18.7%	8.9%	9.1%	10.4%	5.8%	-2.9%	2.1%

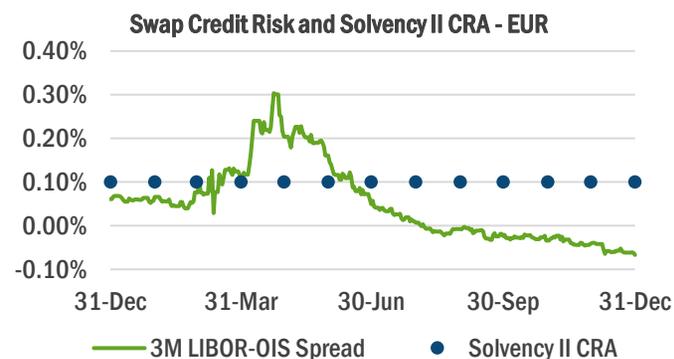
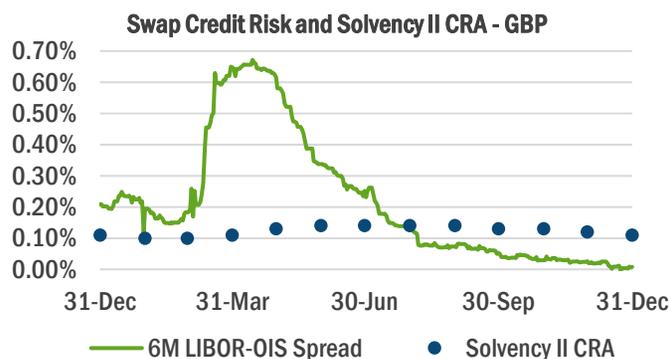
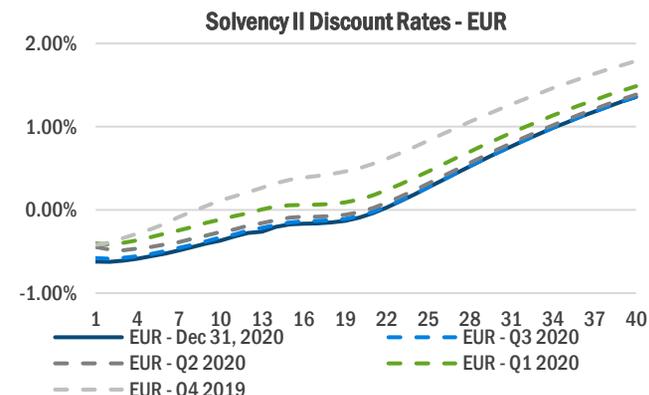
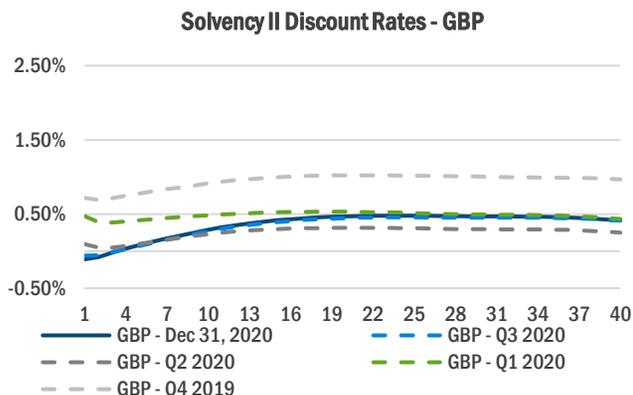
### Solvency II Monitor - Rates

#### Risk Free Rates

- GBP risk-free rates decreased at all terms in December.
- The 30, 20 and 10-year rates fell by 9, 8 and 7 basis points, respectively.
- EUR Risk-free rates were broadly unchanged in December.
- The 1, 10 and 20-year EUR risk-free rates decreased by 1 basis point.

#### Credit Risk Adjustment

- GBP CRA decreased by 1 basis point to 11 basis points.
- EUR CRA remained unchanged at the floor of 10 basis points.



Change in GBP Discount and CRA (bps)						
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q3 2020	-5	1	2	2	2	-2
Since Q2 2020	-21	-2	6	16	17	-3
Since Q1 2020	-58	-33	-19	-6	-3	0
Since Q4 2019	-83	-70	-63	-55	-54	0

Change in EUR Discount and CRA (bps)						
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q3 2020	-5	-3	-4	-2	0	0
Since Q2 2020	-18	-11	-10	-7	-4	0
Since Q1 2020	-22	-23	-25	-22	-17	0
Since Q4 2019	-20	-33	-48	-59	-52	0

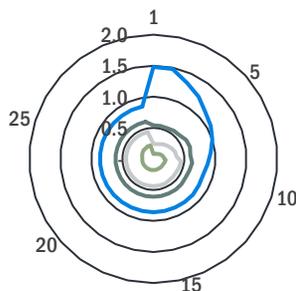
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

GBP - Financial



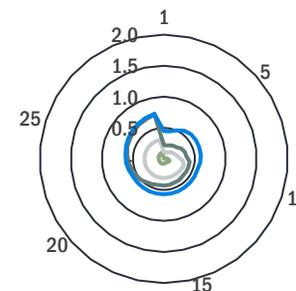
— AAA — AA — A — BBB

GBP Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.08	0.12	0.19	0.18	0.22
AA	0.24	0.31	0.44	0.44	0.44
A	0.54	0.57	0.61	0.61	0.61
BBB	1.48	1.13	0.84	0.86	0.86

GBP Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.04	0.08	0.16	0.22
AA	0.03	0.06	0.11	0.19	0.26
A	0.06	0.13	0.20	0.33	0.45
BBB	0.15	0.25	0.35	0.50	0.61

GBP - Non-Financial



— AAA — AA — A — BBB

GBP Non-Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.01	0.10	0.08	0.10
AA	0.11	0.16	0.34	0.31	0.31
A	0.22	0.28	0.42	0.50	0.73
BBB	0.45	0.59	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	0.10
AA	0.00	0.04	0.08	0.16	0.24
A	0.03	0.14	0.26	0.50	0.73
BBB	0.11	0.22	0.34	0.56	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 and as of 31/12/20.

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.

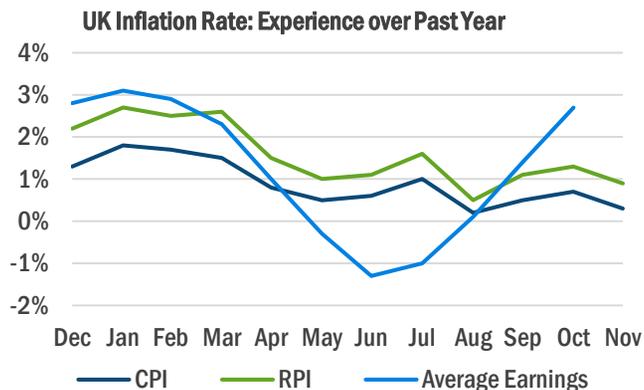
**EIOPA fundamental spreads** show the credit spread corresponding to the risk of default or downgrading of an asset. This is shown here across financial and non-financial assets, credit quality steps 0-3 and durations of 1-30 years. The data is provided by EIOPA and as of 31/12/20. **Fundamental spread** = 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

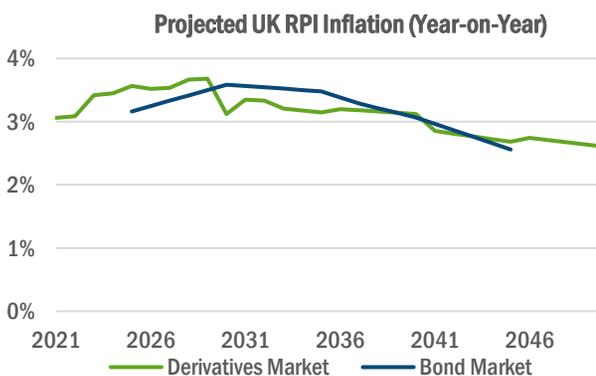
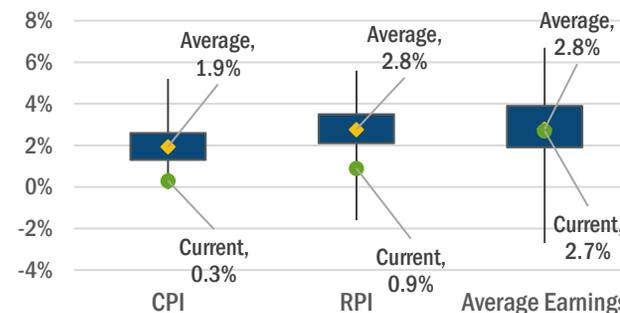
- UK's CPI and RPI inflation measures fell by 40 basis points in November to 0.3% and 0.9%, respectively.
- According to the ONS: "Falling prices for clothing, and food and non-alcoholic beverages resulted in the largest downward contributions. These were partially offset by upward contributions from games, toys and hobbies, and accommodation services."
- UK's average earnings continued to climb higher in October, with the headline figure at 2.7%. An increase of 130 basis points from the previous month, after the September figure was revised higher by 10 basis points to 1.4%.
- According to the ONS: "A notable proportion of the growth in average pay is because of a fall in the number and proportion of lower-paid employee jobs; other factors such as a fall in employees entering the labour market have also inflated average pay growth."
- UK's Q3 2020 GDP growth figure was revised higher by 100 basis points to -8.6%.
- The projected UK RPI curve was broadly unchanged from last month.

### House of Lords' Report

- There has been no further updates since the last report.
- Please note that since the government has concluded this debate, this section will be removed from the report as of next month.



### Max, Min and 50% Range: Since BoE Independence



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

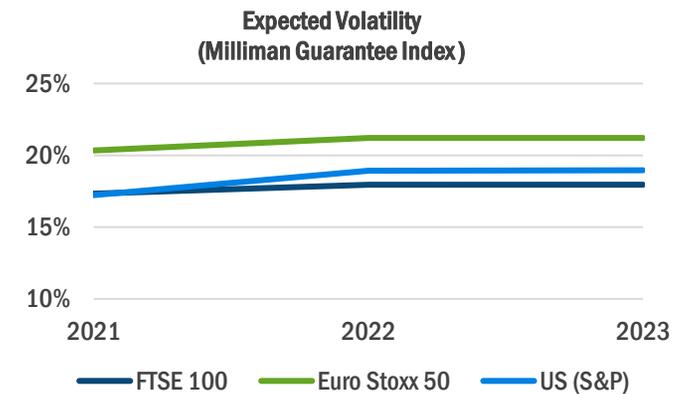
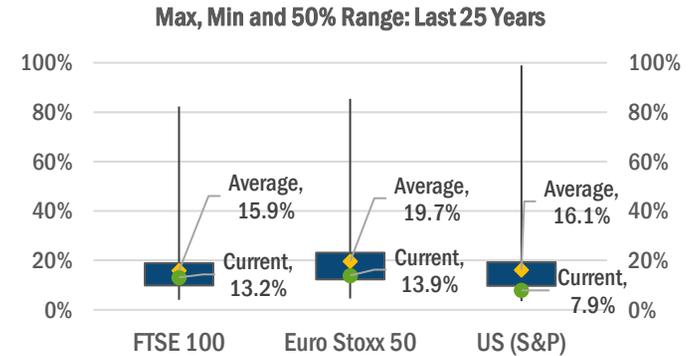
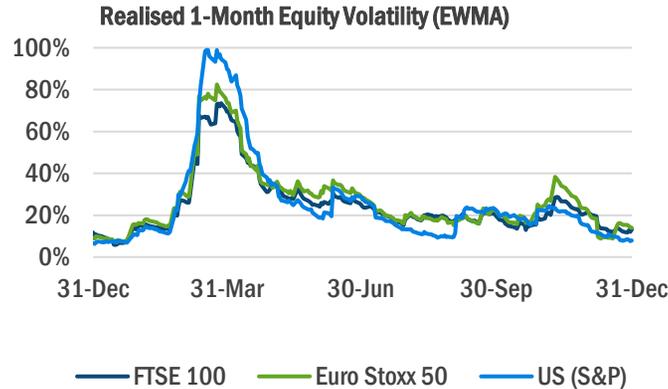
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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 declined sharply on all major indices in December, with most falling below their historical averages.
- The realised volatility of the FTSE 100 index was 13.2% at month-end. Meanwhile the realised volatility on the Euro Stoxx 50 and the S&P 500 indices stood at 13.9% and 7.9%, respectively.
- In contrast to realised volatilities, implied volatilities of most major indices increased by month-end, highlighting concerns over the rapid rising number of COVID-19 cases in parts of the world, despite ongoing vaccine programmes.
- As a result, volatility risk premiums increased. The FTSE 100 had a risk premium of 5% by month-end. Meanwhile the risk premiums on the Euro stoxx 50 and the S&P 500 were 4% and 6.2%, 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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