

**Market Price Monitor**

**Local Equity Markets**

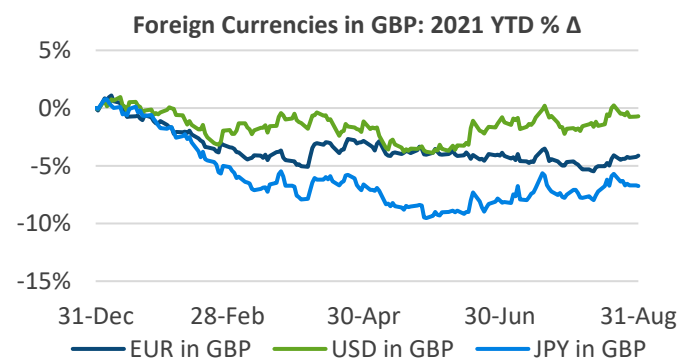
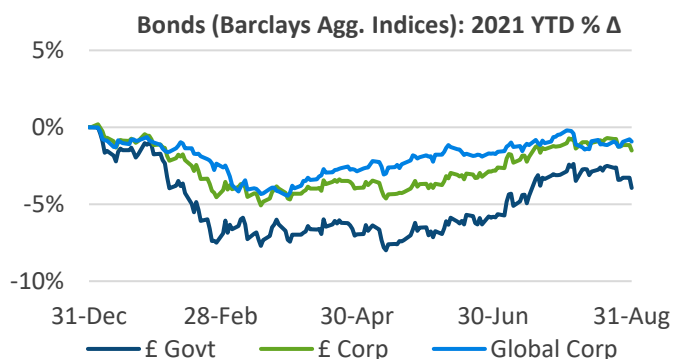
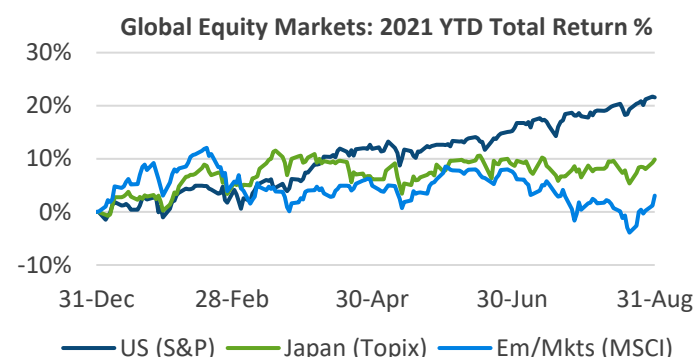
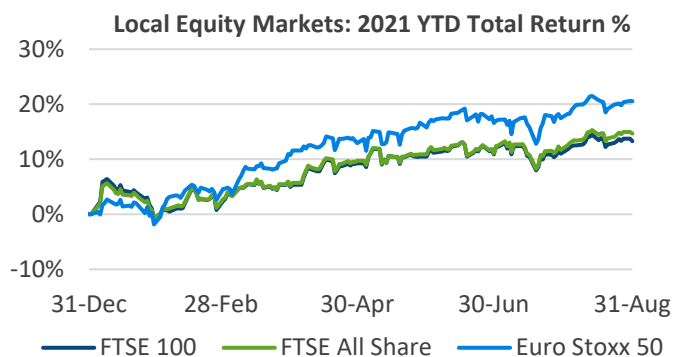
- Equity markets had another positive month in August on strong quarterly earnings and expectations that continued central bank support would sustain an economic recovery.
- The FTSE 100 ended the month up 2.1%, with a return of 13.3% year-to-date.
- The Euro Stoxx 50 index gained 2.6% over the month.

**Global Equity Markets**

- The Japanese Topix index was the best performer of the month, up 3.2%.
- The S&P 500 index was up 3.0% at month-end and the MSCI Emerging Markets index returned 2.6% in August

**Bond/FX Markets**

- Bond markets had a negative month. The British government and corporate bond indices were down 0.9% and 0.3% at month-end, respectively. The global corporate bond index lost 0.5%.
- The British Pound lost 0.6%, 0.8% and 1.1% against the Euro, the Japanese Yen, and the US Dollar, respectively.



Total Returns as of August 31, 2021												
	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	2.1%	2.7%	2.6%	3.0%	3.2%	2.6%	-0.9%	-0.3%	-0.5%	0.6%	1.1%	0.8%
3 Month	2.5%	3.4%	4.1%	8.0%	2.1%	-4.0%	2.7%	2.2%	0.9%	-0.3%	3.3%	2.8%
1 Year	23.6%	26.9%	31.2%	31.2%	23.8%	21.5%	-1.8%	3.0%	2.5%	-3.8%	-2.7%	-6.4%
YTD	13.3%	14.7%	20.6%	21.6%	9.9%	3.1%	-3.9%	-1.5%	-0.9%	-4.1%	-0.7%	-6.8%

## Milliman Financial Risk Management

London Market Monitor – 31 August 2021

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

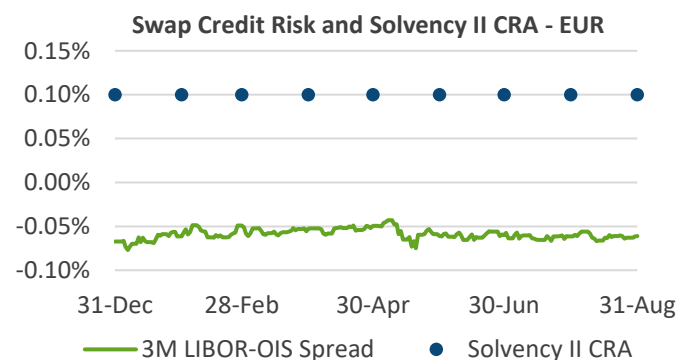
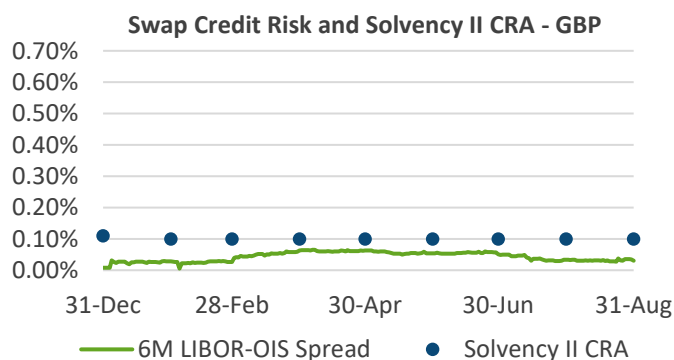
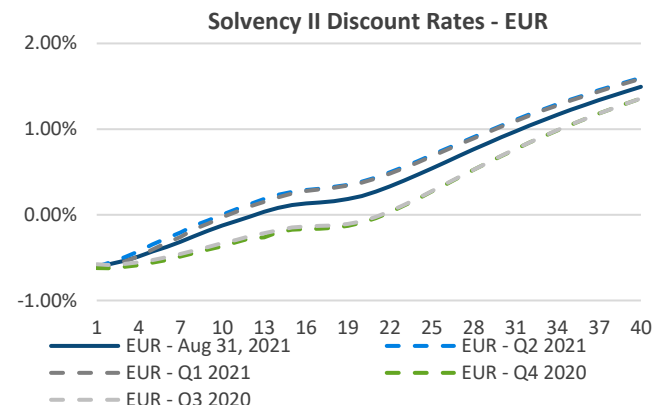
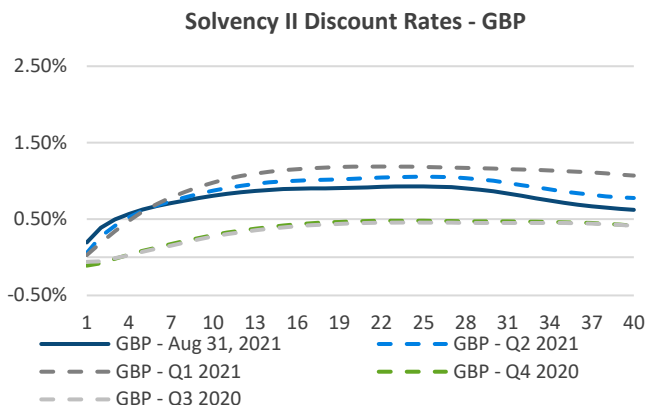
### Solvency II Monitor - Rates

#### Risk Free Rates

- GBP risk-free rates increased by more than 5 basis points across all terms in August.
- The 1 and 5-year GBP rates rose by 5 and 6 basis points.
- The 10, 20 and 30-year GBP rates climbed by 7 basis points.
- EUR risk-free rates increased across all terms over the month, with the exception of the 1-year EUR rate, which stayed unchanged.
- The 5, 10, 20 and 30-year EUR risk-free rates increased by 4, 5, 4 and 3 basis points.

#### 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 Q2 2021	14	2	-7	-12	-14	0
Since Q1 2021	17	3	-17	-28	-30	0
Since Q4 2020	30	54	52	44	39	-1
Since Q3 2020	25	56	53	46	41	-3

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2021	-1	-8	-13	-17	-14	0
Since Q1 2021	0	-2	-10	-16	-12	0
Since Q4 2020	1	13	24	31	22	0
Since Q3 2020	-4	10	21	30	22	0

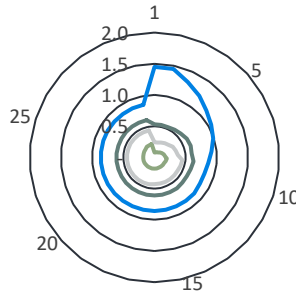
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

GBP - Financial



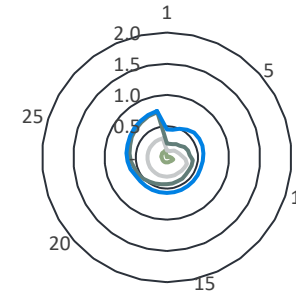
— AAA — AA — A — BBB

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	0.44	0.44
A	0.53	0.57	0.61	0.61	0.61
BBB	1.45	1.12	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	0.32	0.44
BBB	0.15	0.24	0.34	0.47	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	0.42	0.51	0.74
BBB	0.45	0.59	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	0.35	0.57	0.76

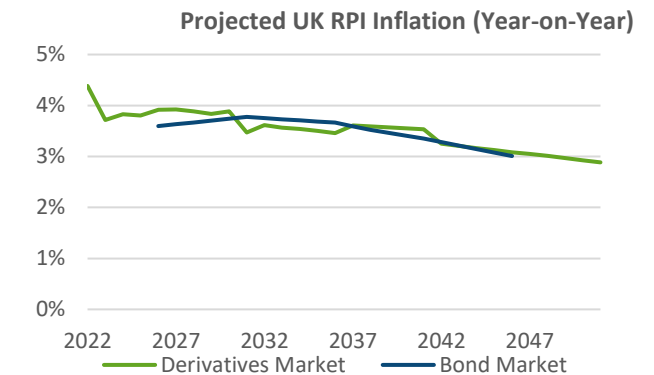
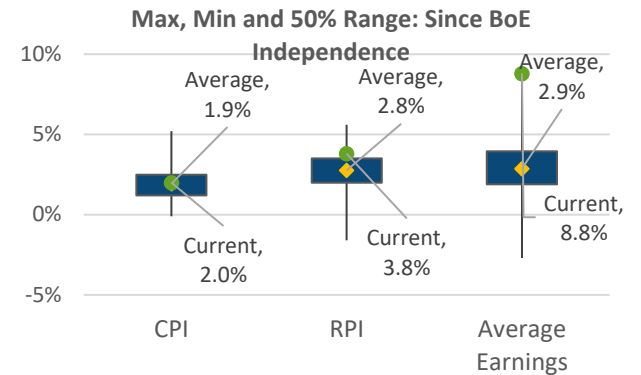
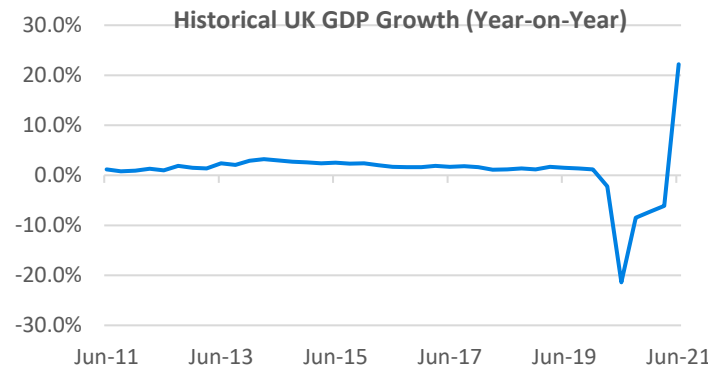
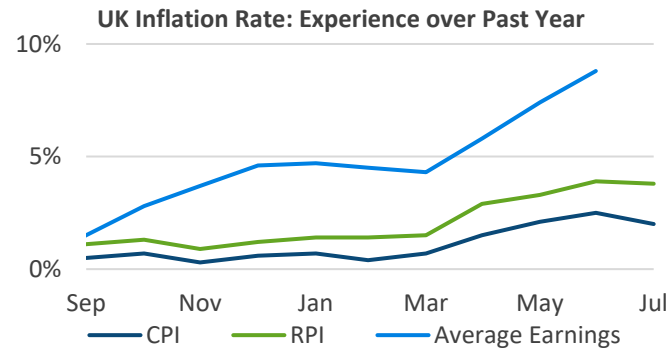
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Refinitiv and applying the Credit Risk Adjustment as defined in the Technical Specs. The data is provided by EIOPA and as of 31/08/21.

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 31/08/21. **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 CPI inflation was 2.0% in July, a decline of 50 basis points from the previous month.
- UK's RPI inflation measure decreased by 10 basis points to 3.8%.
- Both UK inflation indices continued to trend higher above their long-term average levels.
- According to the ONS: *"clothing and footwear, and a variety of recreational goods and services made the largest downward contributions to the change. Price rises for second-hand cars, compared with falls a year ago, resulted in the largest, partially offsetting, upward contribution to change"*
- UK's average earnings continued to tick higher in June, seeing an increase of 140 basis points from the previous month to 8.8%, the highest since records began in 2001, after the previous month's reading was revised higher by 10 basis points.
- According to the ONS: *"Annual growth in average employee pay is being affected by temporary factors that have inflated the increase in the headline growth rate. These are compositional effects where there has been a fall in the number and proportion of lower-paid employee jobs so increasing average earnings and base effects where the latest months are now compared with low base periods when earnings were first affected by the pandemic."*
- The Q2 2021 GDP growth figure for the UK came in at 22.2% year on year.
- The projected UK RPI was 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 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.

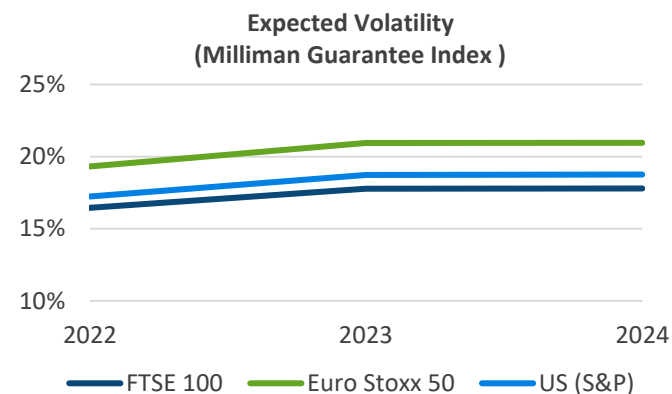
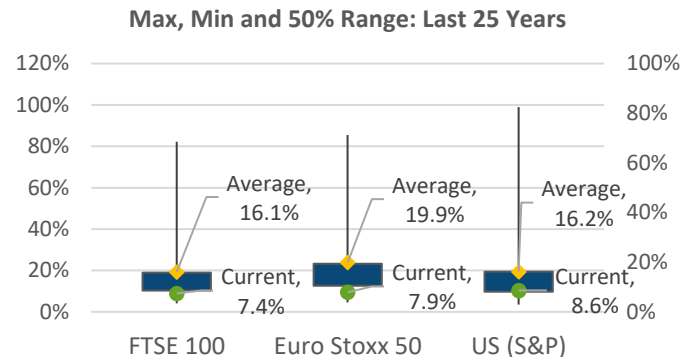
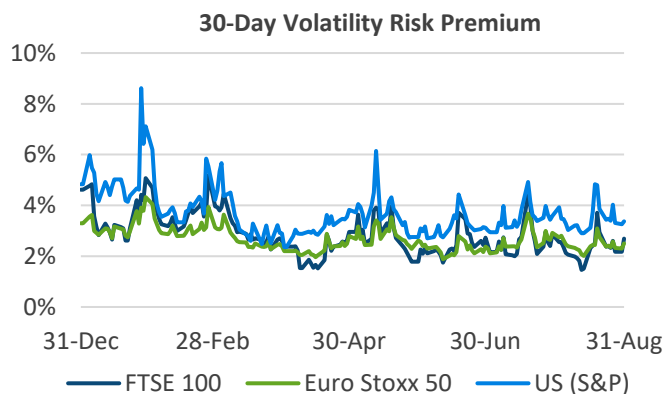
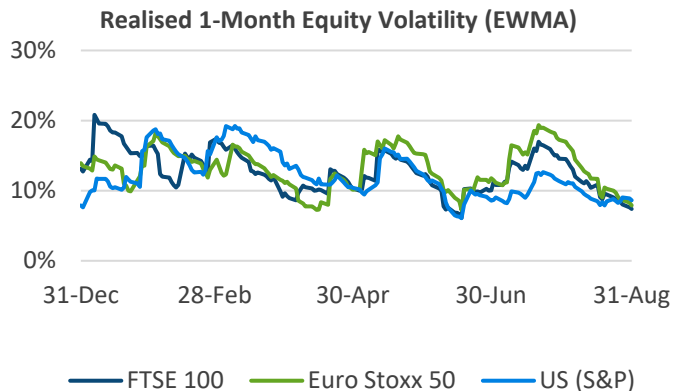
## Milliman Financial Risk Management

London Market Monitor – 31 August 2021

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

### Volatility and Hedging Cost Monitor

- Realised volatilities on major indices decreased in August.
- The FTSE 100 recorded a realised volatility of 7.4% at month-end. The measure stood at 7.9% and 8.6% for the Euro Stoxx 50 and S&P 500 indices, respectively.
- Volatility risk premiums decreased in August. The volatility risk premium on the FTSE 100 was 2.7%. The Euro Stoxx 50 and the S&P 500 indices had a volatility risk premium of 2.5% and 3.4% at month-end, 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 three trading platforms around the world (Chicago, London, and Sydney).

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