

Market Price Monitor

Local Equity Markets

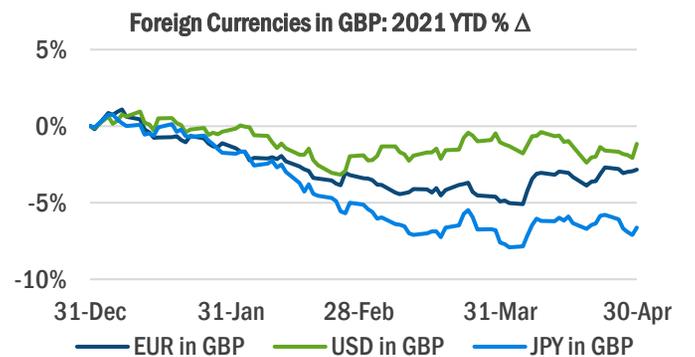
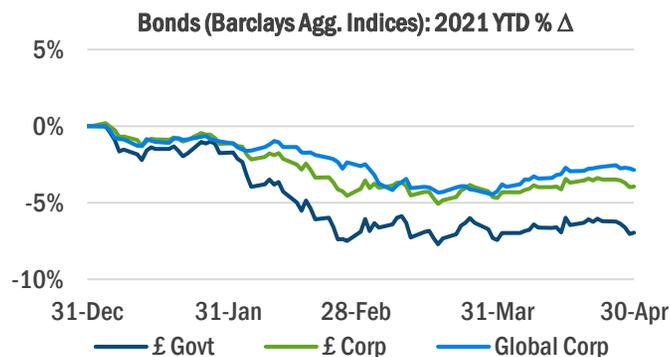
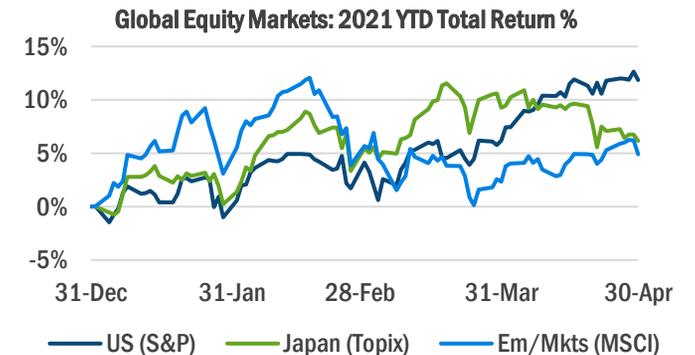
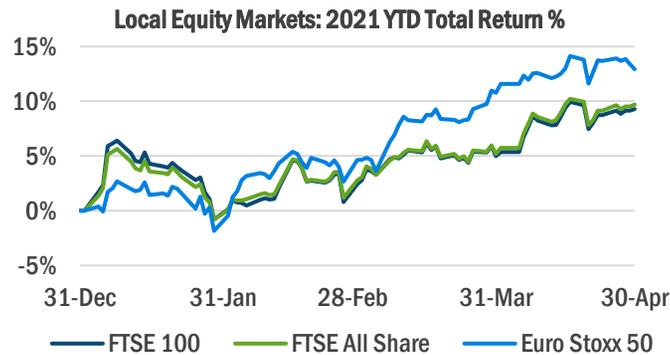
- Most major global equity markets continued to show a strong performance in April, as successful vaccine rollouts and strong economic data pointed to strong economic growth.
- The FTSE 100 ended the month up 4.1%, with a return of 9.3% year-to-date.
- Euro Stoxx 50 index gained 1.9% over the month.

Global Equity Markets

- The S&P 500 was the best performer of the month, up 5.3%. The MSCI Emerging Markets index returned 2.5% in April.
- In contrast, the Japanese Topix index declined by 2.8% during the month.

Bond/FX Markets

- The British government bond index was up 0.5% at month-end.
- Both the British and global corporate bond indices posted gains in April. The former was up 0.8% and the latter gained 1.4%.
- The British Pound lost 2.2% and 1.1% against the Euro and the Japanese Yen, respectively. Having ended the month relatively flat against the US Dollar.



	Total Returns as of April 30, 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	4.1%	4.3%	1.9%	5.3%	-2.8%	2.5%	0.5%	0.8%	1.4%	2.2%	-0.1%	1.1%
3 Month	10.1%	10.6%	15.0%	13.0%	5.9%	1.8%	-5.3%	-2.8%	-1.9%	-1.7%	-0.8%	-5.0%
1 Year	22.2%	25.9%	39.6%	46.0%	32.3%	49.2%	-8.1%	4.0%	8.1%	0.1%	-8.9%	-10.9%
YTD	9.3%	9.7%	12.9%	11.8%	6.2%	4.9%	-7.0%	-3.9%	-2.9%	-2.8%	-1.2%	-6.6%

Milliman Financial Risk Management

London Market Monitor – 30 April 2021

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

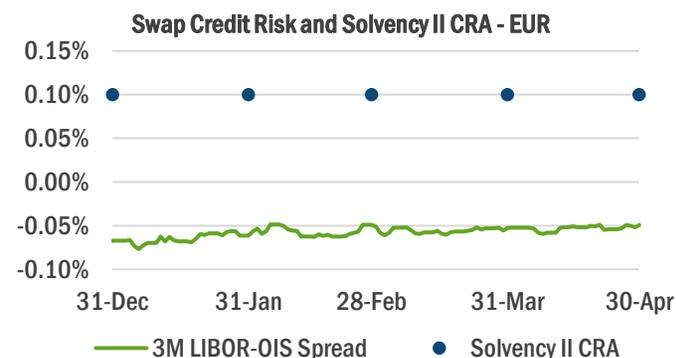
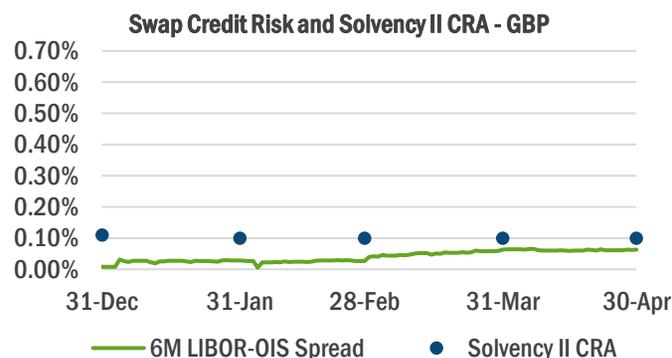
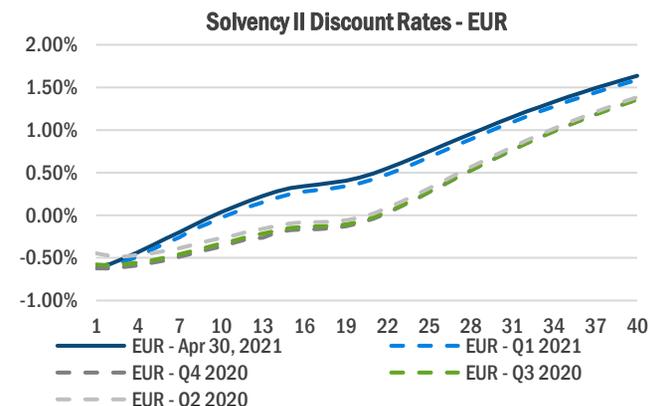
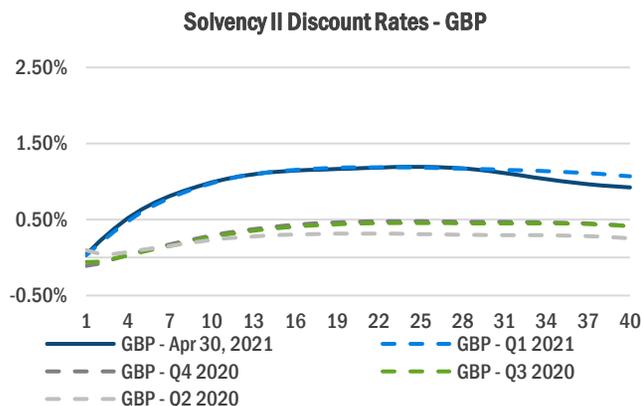
Solvency II Monitor - Rates

Risk Free Rates

- Short-term GBP risk-free rates increased in April. In contrast, medium to longer-term GBP risk-free rates saw a marginal decline.
- The 5-year GBP risk-free rate increased by 4 basis points. Meanwhile, the 30-year rate declined by 2 basis points.
- EUR risk-free rates increased at all terms during the month, with medium to longer-term rates witnessing the largest increase.
- The 20-year EUR risk-free rate increased by 7 basis points. The 30 and 10-year EUR rates increased by 6 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 Q1 2021	1	4	1	-1	-2	0
Since Q4 2020	15	55	70	70	67	-1
Since Q3 2020	10	56	72	73	69	-3
Since Q2 2020	-6	53	76	86	84	-4

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q1 2021	1	5	6	7	6	0
Since Q4 2020	2	20	40	54	40	0
Since Q3 2020	-3	17	37	52	40	0
Since Q2 2020	-16	9	30	47	36	0

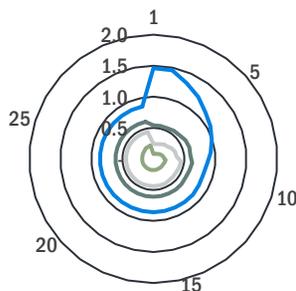
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

GBP - Financial

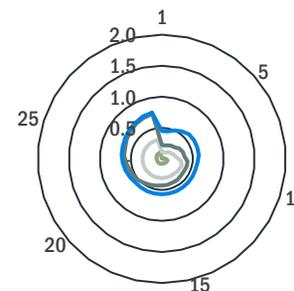


— AAA — AA — A — BBB

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	0.54	0.57	0.61	0.61	0.61
BBB	1.46	1.13	0.84	0.86	0.86

GBP Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.04	0.08	0.15	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	0.10	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	0.36	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 30/04/21.

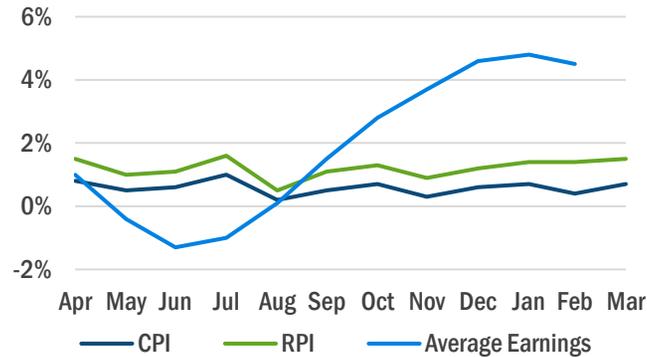
The **Credit Risk Adjustment** is a component of the risk-free discount curve defined by EIOPA. It is calculated from actual experience in the 'LIBOR-OIS' spread (3 months for EUR, 6 months for GBP), and is bounded between 0.10 and 0.35. We show actual LIBOR-OIS spread levels and the defined CRA, for 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 30/04/21. **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 increased by 30 basis points in March, posting a reading of 0.7%.
- UK's RPI inflation rose by 10 basis points to 1.5%.
- According to the ONS: "Rising prices for motor fuels and clothing resulted in the largest upward contributions. These were partially offset by falls in the price of food."
- UK's average earnings declined by 30 basis points in February, with the headline figure coming in at 4.5%.
- The Projected RPI curve increased at the very short-term in comparison to the previous month, while the rest of the curve was relatively unchanged.

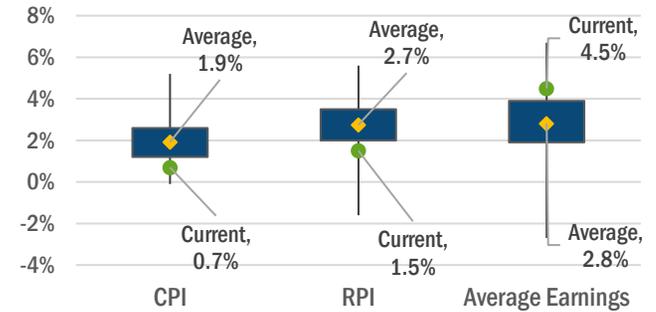
UK Inflation Rate: Experience over Past Year



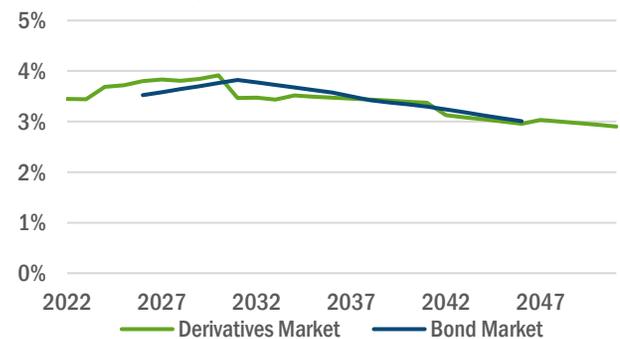
Historical UK GDP Growth (Year-on-Year)



Max, Min and 50% Range: Since BoE Independence



Projected UK RPI Inflation (Year-on-Year)



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

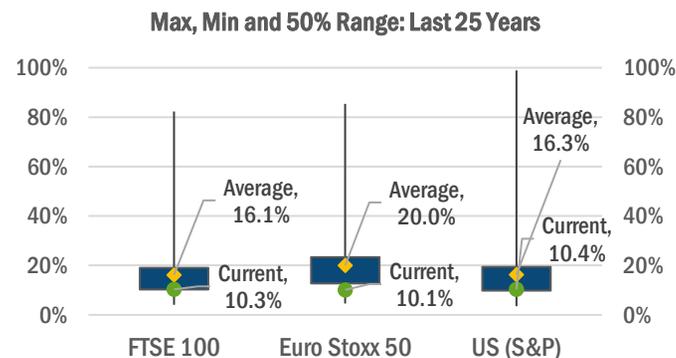
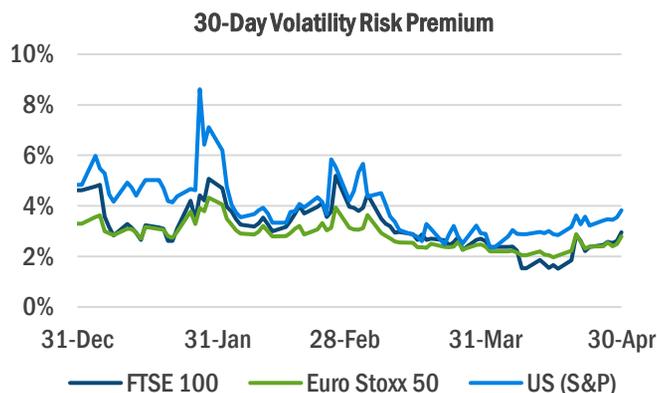
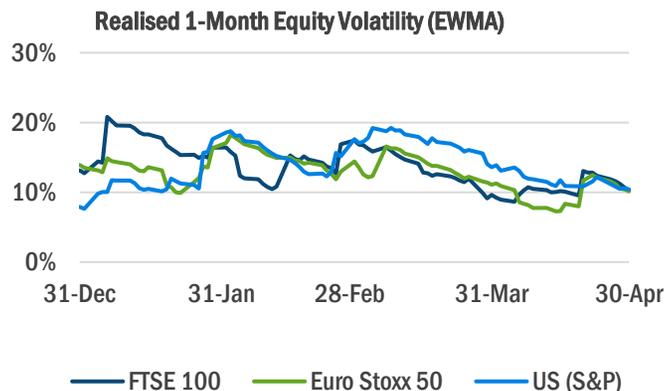
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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 of major indices continued to stay low and below historical averages.
- The FTSE 100 had a realised volatility of 10.3% at month-end, while the measure stood at 10.1% and 10.4% for Euro Stoxx 50 and the S&P 500, respectively.
- Implied volatilities on major indices rose slightly in the month, in contrast to the fall in realised volatilities, resulting in an increase in volatility risk premium.
- The volatility risk premium for the FTSE 100 index was 3% at the end of April. The premiums for S&P 500 and Euro Stoxx 50 indices stood at 3.8% and 2.8% 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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