

Market Price Monitor

Local Equity Markets

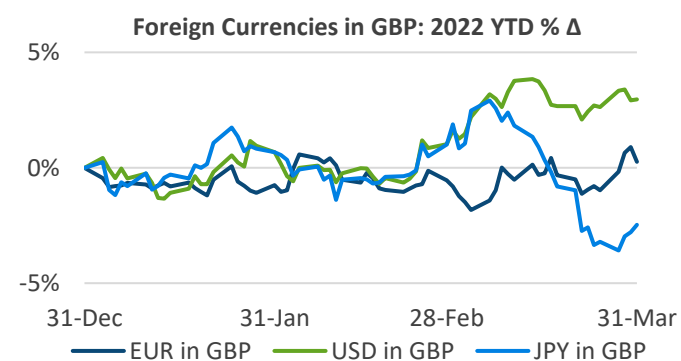
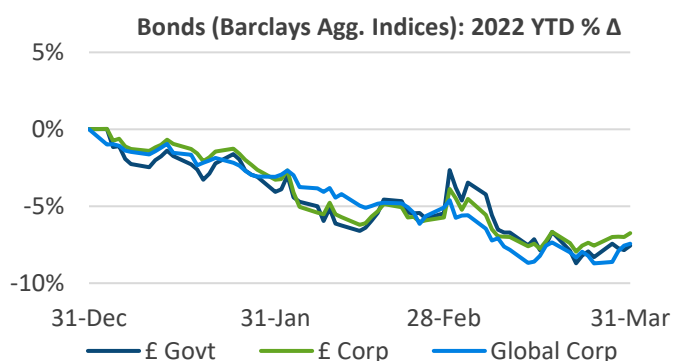
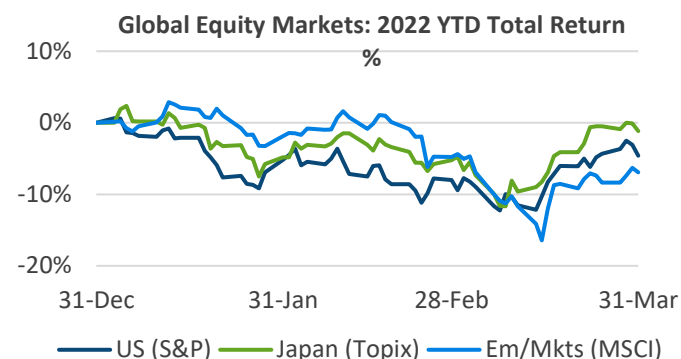
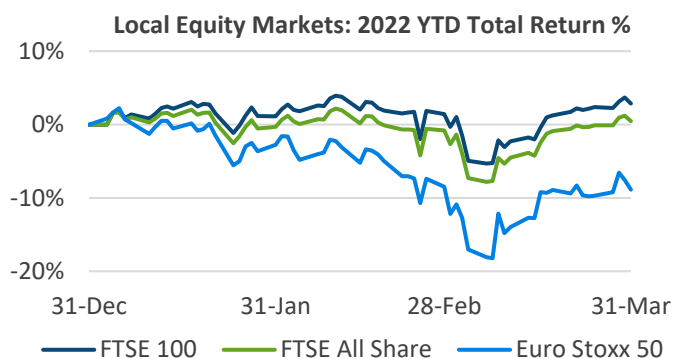
- Equity markets had a mixed performance in March, as the conflict between Russia and Ukraine, increasing inflation and tightening monetary policy continued to dominate the headlines and risk sentiment.
- The FTSE 100 gained 1.4% in March, up 2.9% year-to-date.
- The Euro Stoxx 50 was down 0.4%.

Global Equity Markets

- Developed economies outperformed their emerging markets counterparts in March.
- The S&P 500 and the Japanese Topix gained 3.7% and 4.3%, respectively.
- In contrast, the MSCI Emerging Markets index fell by 2.2%.

Bond/FX Markets

- The UK government bond index lost 2.2%.
- The British and global corporate bond indices ended the month down 1.1% and 2.5%, respectively.
- The British Pound had a mixed performance, losing 1.9% and 0.8% against the US Dollar and the Euro, respectively. Meanwhile, gaining 3.5% against the Japanese Yen.



	Total Returns as of March 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	1.4%	1.3%	-0.4%	3.7%	4.3%	-2.2%	-2.2%	-1.1%	-2.5%	0.8%	1.9%	-3.5%
3 Month	2.9%	0.5%	-8.9%	-4.6%	-1.2%	-6.9%	-7.6%	-6.7%	-7.4%	0.3%	3.0%	-2.5%
1 Year	16.1%	13.0%	2.1%	15.6%	2.0%	-11.1%	-5.4%	-5.4%	-6.1%	-0.9%	5.0%	-4.4%
YTD	2.9%	0.5%	-8.9%	-4.6%	-1.2%	-6.9%	-7.6%	-6.7%	-7.4%	0.3%	3.0%	-2.5%

Milliman Financial Risk Management

London Market Monitor – 31 March 2022

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

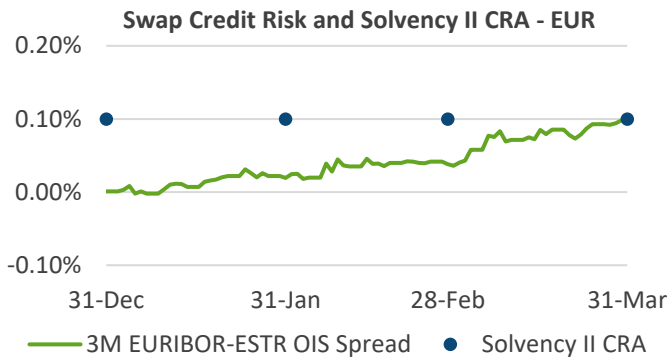
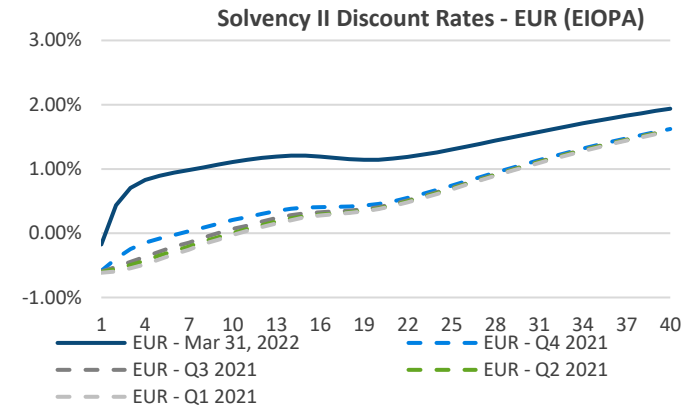
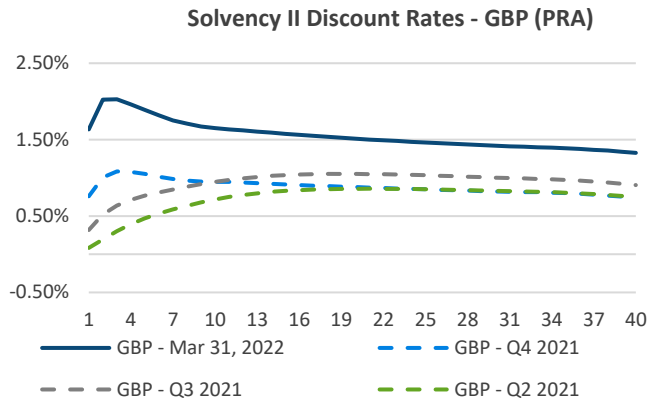
Solvency II Monitor - Rates

Risk Free Rates

- For the second consecutive month, both GBP and EUR risk-free rates rose at all terms in March.
- Shorter-term GBP risk-free rates saw the largest increase, with the 1 and 5-year rates rising by 33 and 35 basis points, respectively.
- The largest increase was in the short to medium part of the EUR curve, with the 5 and 10-year EUR risk-free rates climbing higher by 54 and 41 basis points, respectively.

Credit Risk Adjustment

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



	Change in GBP Discount (bps)				
	1Y	Y5	Y10	Y20	Y30
Since Q4 2021	87	84	70	63	60
Since Q3 2021	132	113	71	46	42
Since Q2 2021	155	142	93	66	59

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q4 2021	41	98	90	69	46	0
Since Q3 2021	42	118	104	74	48	0
Since Q2 2021	43	124	111	76	49	0
Since Q1 2021	44	130	114	77	51	0

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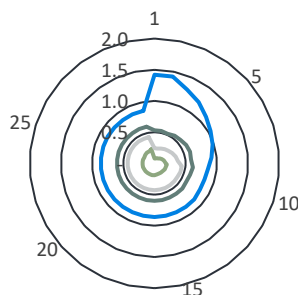
Solvency II Monitor - Spreads

Fundamental Spreads

- There were no material changes since the last report.

Fundamental Spreads %

GBP - Financial

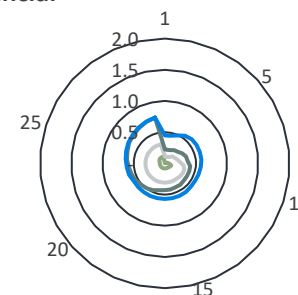


— AAA — AA — A — BBB

GBP Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.08	0.12	0.19	0.19	0.23
AA	0.24	0.30	0.44	0.43	0.43
A	0.53	0.56	0.60	0.60	0.60
BBB	1.42	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	0.23
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	0.75

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	0.26
A	0.04	0.15	0.27	0.51	0.75
BBB	0.11	0.22	0.34	0.55	0.75

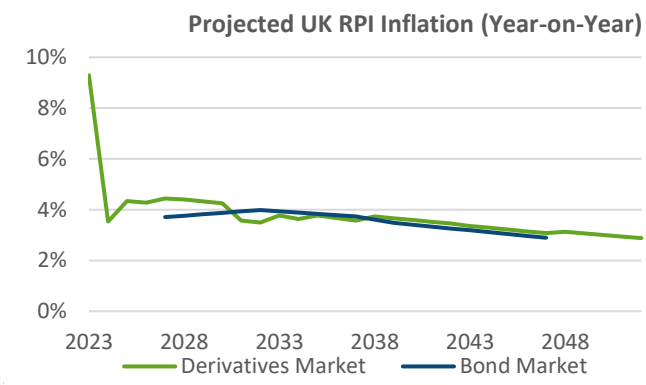
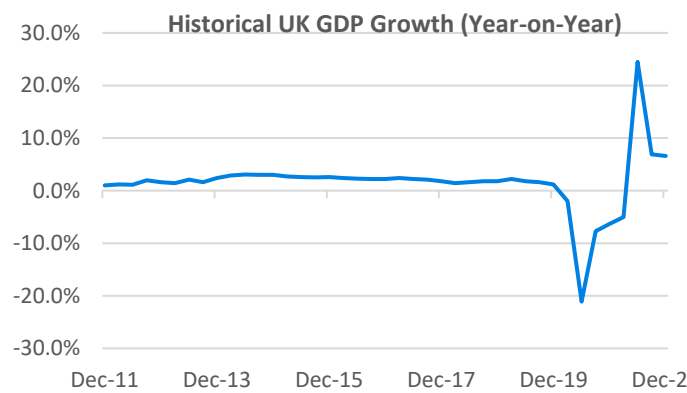
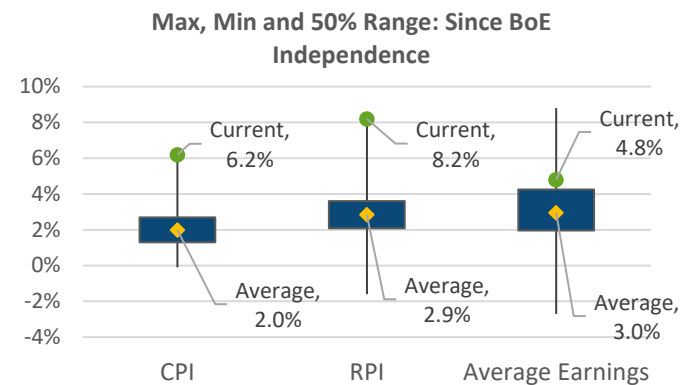
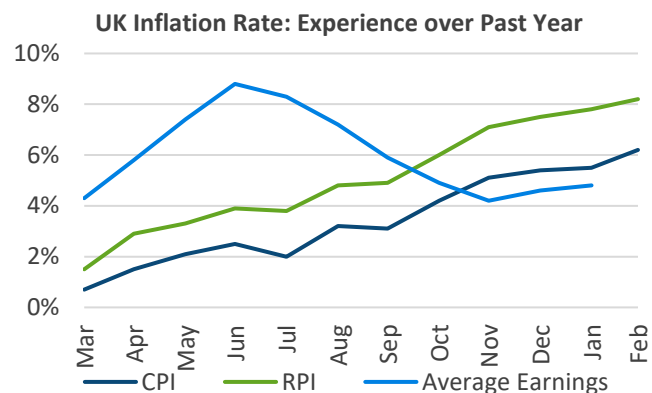
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Refinitiv and applying the Credit Risk Adjustment as defined in the Technical Specs. The data is provided by EIOPA for EUR, and by PRA for GBP, as of 31/03/22.

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 31/03/22. **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 70 basis points to 6.2% in February.
- The UK RPI inflation measure increased by 40 basis points to 8.2%.
- According to the ONS: *"The upward contributions to the change between January and February 2022 were diverse, with the largest coming from a variety of recreational and cultural goods and services (principally games, toys and hobbies), and clothing and footwear. There were no large offsetting downward contributions to change."*
- UK's average earnings rose by 50 basis points to 4.8% in January.
- According to the ONS: *"strong bonus payments over the past 6 months have kept recent real total pay growth positive. Previous months' strong growth rates were affected upwards by base and compositional effects. These initial temporary factors have worked their way out."*
- The projected RPI curve continued to trend higher at the near-term, with the 1-year forward RPI above 9.0% at month-end. However, the rest of the curve remains 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.

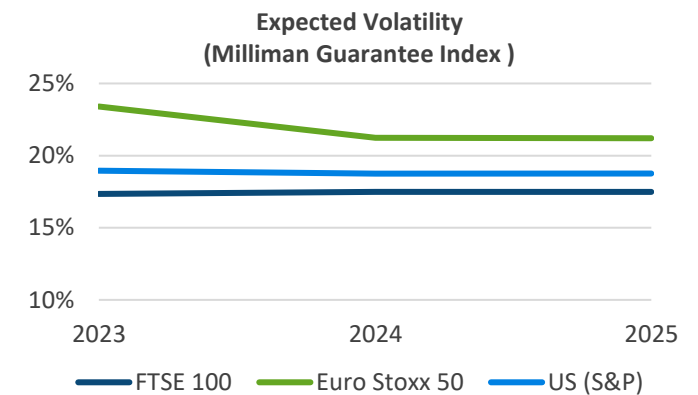
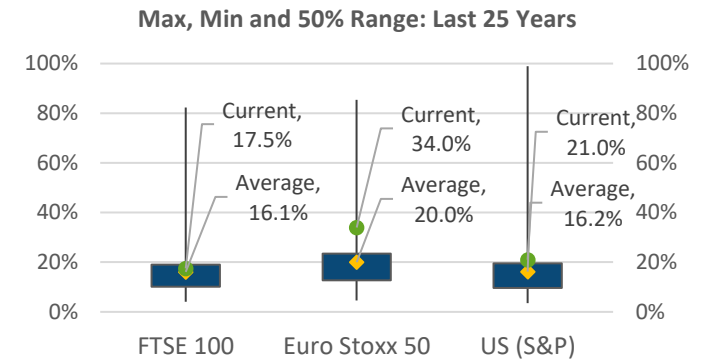
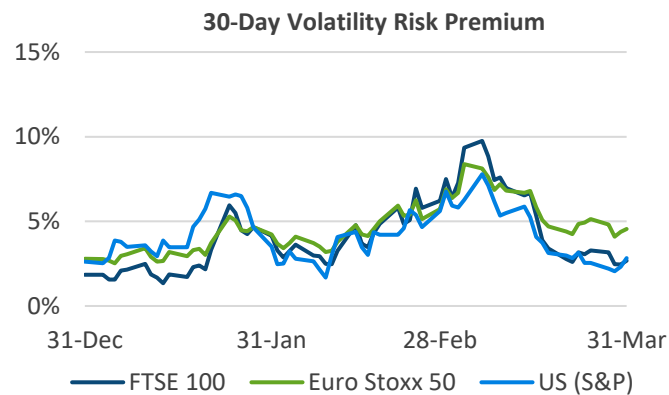
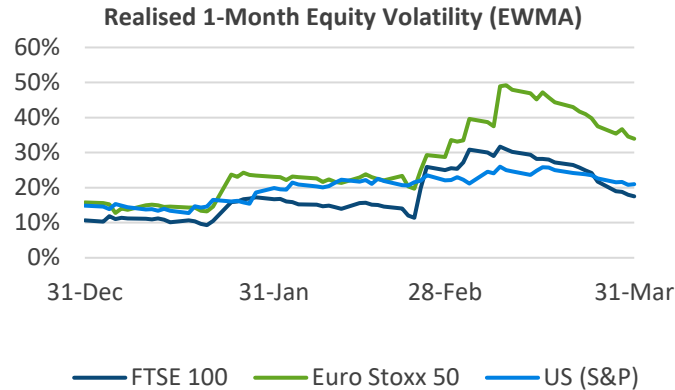
Milliman Financial Risk Management

London Market Monitor – 31 March 2022

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

Volatility and Hedging Cost Monitor

- Realised volatility on major indices increased during the month, having spiked higher at the start of the month, and then pared gains to some extent during the second half of the month.
- The realised volatility on the FTSE 100 was 17.5% at month-end, the measure stood at 34.0% on the Euro Stoxx 50 and the S&P 500.
- Volatility risk premiums on major indices were lower at month-end in comparison to the previous month, as implied volatilities declined sharper than realised volatility. The volatility risk premium on the FTSE 100 was 2.7%, whilst the measures on the Euro Stoxx 50 and the S&P 500 were 4.5% and 2.8% 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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