

Market Price Monitor

Local Equity Markets

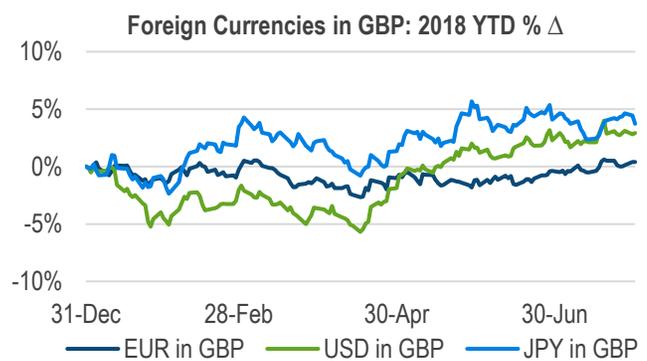
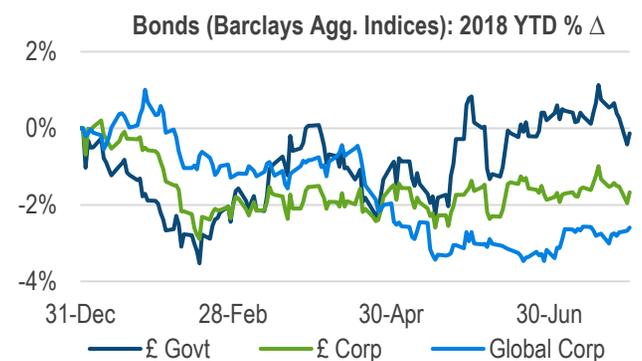
- European markets made healthy gains in July on the back of good second-quarter company earnings reports.
- Trade tensions between the US and Europe eased in the month, helping Eurozone equities to become one of the best performing markets.

Global Equity Markets

- Global equity markets also saw gains of more than 1%, as fears over a trade war abated.
- Despite this month's recovery, Emerging Markets equity remains one of the worst performing markets year-to-date.

Bond/FX Markets

- Global and Sterling corporate bonds made small gains in July, but remain negative for the year to date.
- UK government bonds broke the positive run in recent months, losing 0.3% in July.
- The British Pound continued to lose ground against both the US Dollar and Euro this month. All major currencies are now in the positive territory year-to-date against the Pound.



	Total Returns as of July 31, 2018											
	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	1.5%	1.3%	3.9%	3.7%	1.3%	2.2%	-0.3%	0.2%	0.6%	0.8%	0.6%	-0.4%
3 Month	4.1%	3.9%	1.1%	6.9%	-1.1%	-5.5%	0.8%	-0.1%	-0.6%	1.4%	4.9%	2.4%
1 Year	9.4%	9.2%	5.0%	16.2%	10.6%	4.4%	1.3%	-0.1%	-0.6%	-0.4%	0.5%	-0.8%
YTD	3.2%	3.0%	2.9%	6.5%	-2.4%	-4.6%	-0.1%	-1.7%	-2.6%	0.4%	2.9%	3.7%

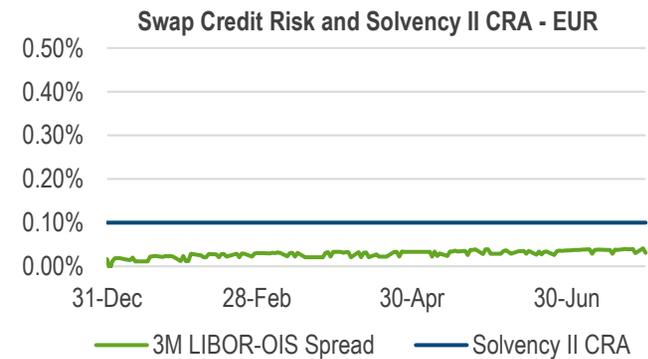
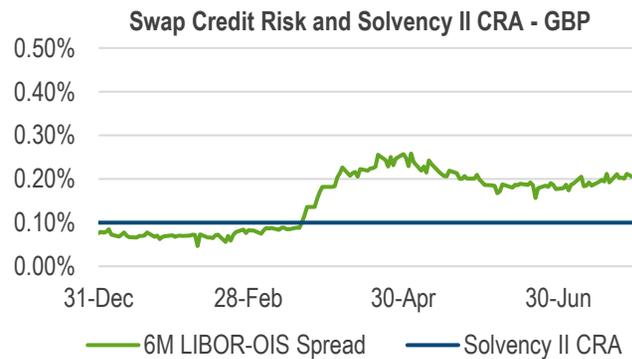
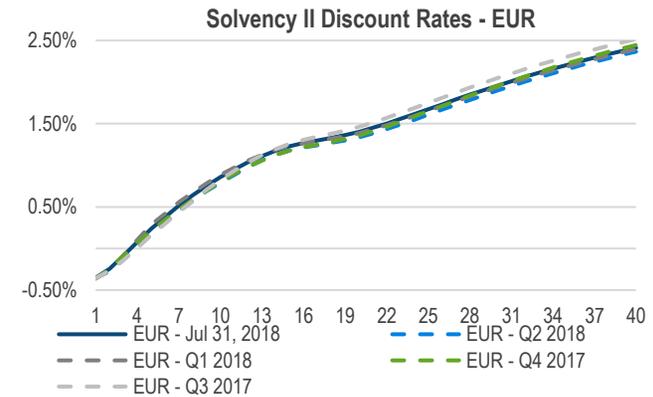
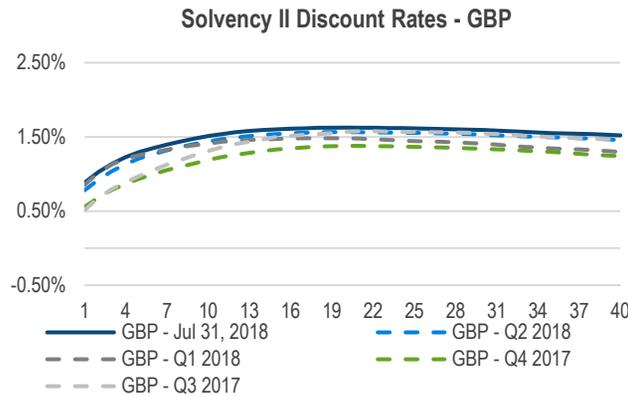
Solvency II Monitor - Rates

Risk Free Rates

- For GBP, there has been a rise of more than 5 basis points in interest rates across the term structure since last month. This rise is more pronounced at shorter terms, which results in a slight flattening of the curve.
- Similarly for EUR, the curve rose more than 5 basis points across all but the 1 year term. This resulted in the Euro curve steepening.

Credit Risk Adjustment

- GBP LIBOR-OIS spread continues to be above the CRA 10 basis point. However, this has still yet to lead to a rise in CRA above the minimum 10 basis point floor. This is because the CRA is based upon a historical average of the LIBOR-OIS spread.
- EUR LIBOR-OIS continues to remain below the 10 basis point floor.



Change in GBP Discount and CRA (bps)						
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2018	10	9	7	6	6	0
Since Q1 2018	3	4	10	14	18	0
Since Q4 2017	33	36	32	25	25	0
Since Q3 2017	37	32	20	6	4	-3

Change in EUR Discount and CRA (bps)						
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2018	0	7	7	7	6	0
Since Q1 2018	1	-5	-3	2	2	0
Since Q4 2017	1	3	6	5	0	0
Since Q3 2017	0	8	3	-6	-9	0

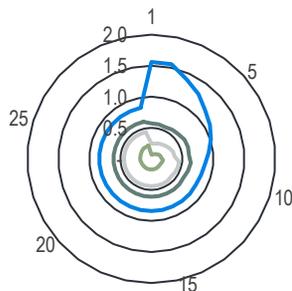
Solvency II Monitor - Spreads

Fundamental Spreads

- The fundamental spread data shown is for end of June.
- There were no material changes compared to the end of May.

Fundamental Spreads %

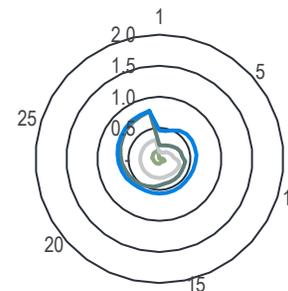
GBP - Financial



— AAA — AA — A — BBB

GBP Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.07	0.11	0.18	0.17	0.22
AA	0.25	0.31	0.45	0.44	0.44
A	0.57	0.59	0.62	0.61	0.61
BBB	1.56	1.17	0.84	0.84	0.84
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	0.27
A	0.07	0.14	0.22	0.36	0.48
BBB	0.17	0.28	0.39	0.57	0.69

GBP - Non-Financial



— AAA — AA — A — BBB

GBP Non-Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.02	0.09	0.09	0.14
AA	0.11	0.16	0.34	0.31	0.31
A	0.22	0.29	0.41	0.53	0.78
BBB	0.46	0.59	0.57	0.59	0.79
GBP Non-Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.00	0.02	0.04	0.09	0.14
AA	0.00	0.04	0.09	0.19	0.27
A	0.04	0.15	0.28	0.53	0.78
BBB	0.11	0.23	0.36	0.59	0.79

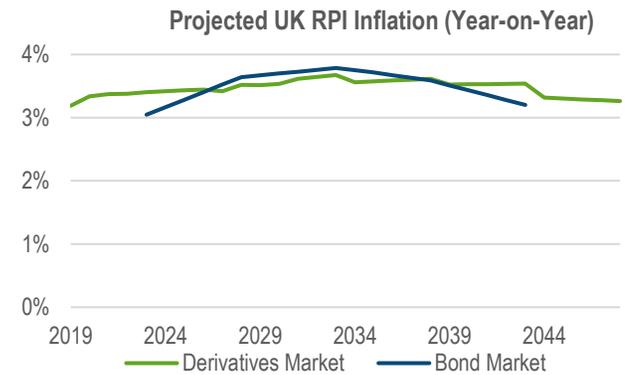
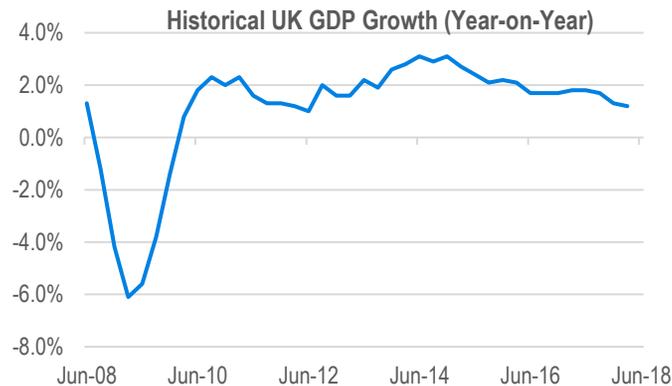
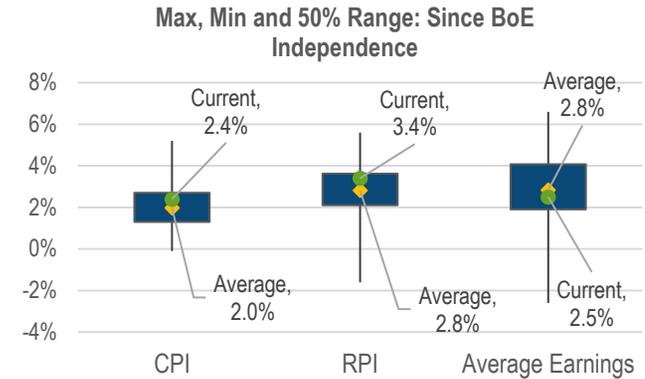
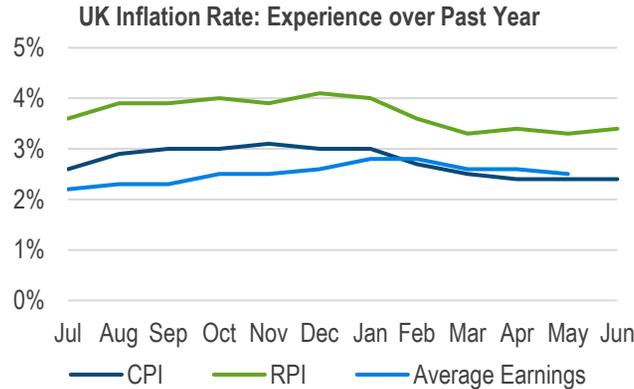
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Bloomberg (current curve is for 31/07/18) and applying the Credit Risk Adjustment as defined in the Technical Specs.

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 30/06/18. **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

- CPI price inflation has stayed at 2.4% in June, and RPI price inflation has crept up to 3.4% in the same month. Both rates remain close to their lowest levels for the past 12 months.
- The earnings inflation in May was 2.5% with the figure for April revised to 2.6%.
- According to the ONS: *Rising prices for motor fuels and domestic gas and electricity produced the largest upward contributions to change in the rate between May and June 2018. Falling prices for clothing and games, toys and hobbies provided the largest downward effects.*
- Q2 GDP growth has not yet been published.
- The market implied view of future inflation shows little change since June. The derivatives market implies an RPI inflation rate of 3% for very short terms, rising to higher levels in future years.



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

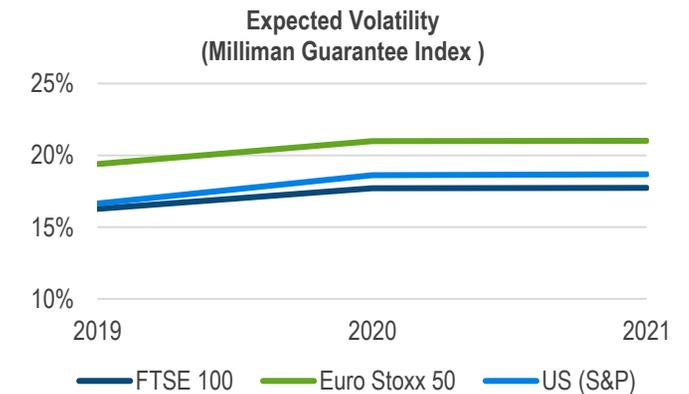
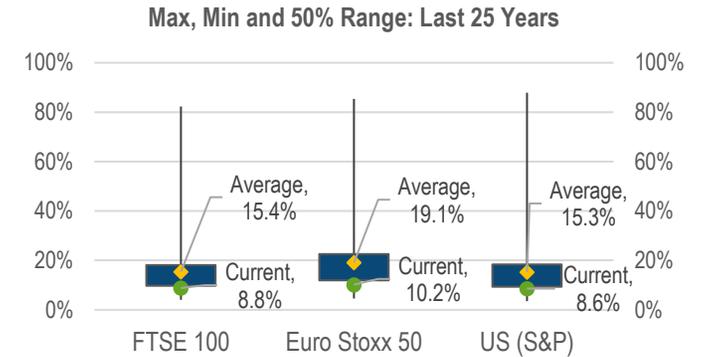
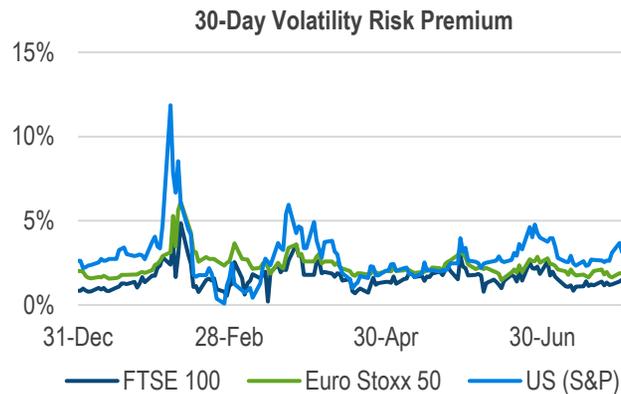
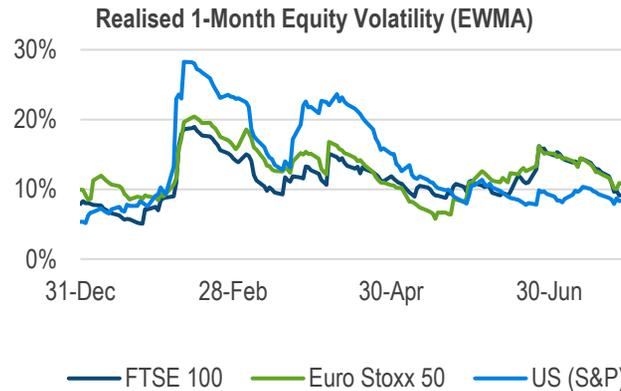
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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

- For European indices, realised volatility declined in July, to reach 10% for the Euro Stoxx. S&P volatility remained below 10% during the month.
- There was a slight decline in volatility risk premium for all indices. The premium for the S&P ended the month around 3%, while the Euro Stoxx and FTSE are closer to 2%.



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.