

Market Price Monitor

Local Equity Markets

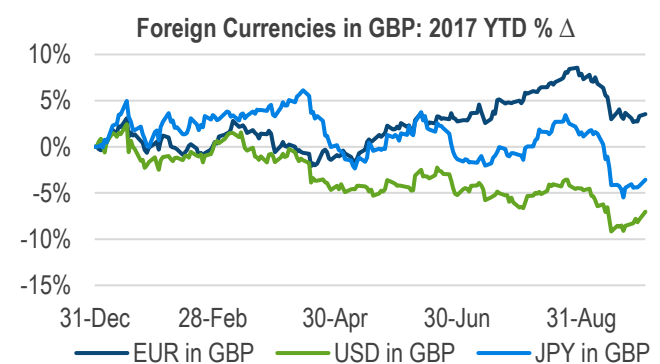
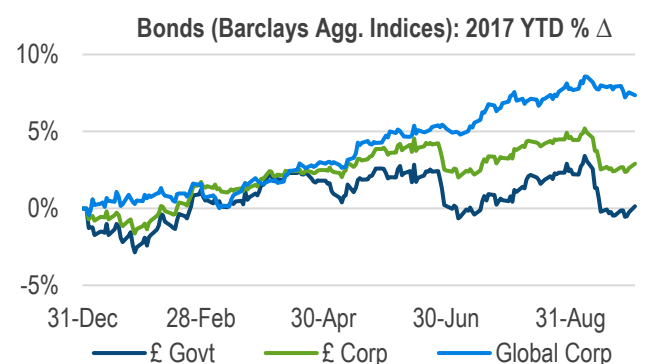
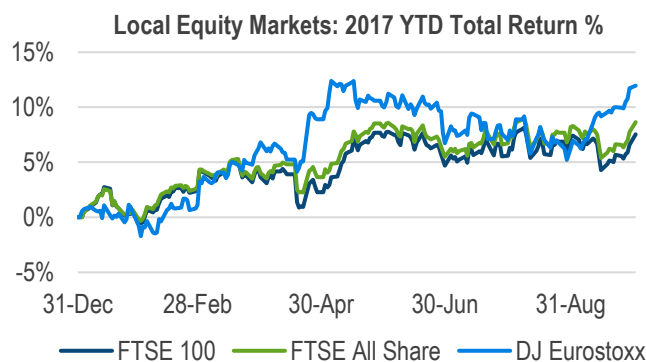
- The FTSE 100 dropped by 0.7% in September, as the £ Sterling recovered, due to an increasing likelihood of Bank of England raising its official bank rate earlier than expected.
- The Eurostoxx 50 index returned over 5% during the month, one of the strongest monthly gains in 2017, as geopolitical risks subsided and the Euro retreated against the US Dollar and the £ Sterling.

Global Equity Markets

- The US and the Japanese equity markets also made positive advances in the month, as tensions on the Korean peninsula eased.
- Emerging Markets equity was relatively flat in September, but remains the top performer for the year.

Bond/FX Markets

- Corporate and government bond values decreased in September.
- The £ Sterling made sizable recovery against the major currencies during the period, touching the year-high level against the US Dollar and the Japanese Yen.



	Total Returns as of September 30, 2017											
	FTSE 100	FTSE All Share	DJ Eurostoxx	US (S&P)	Japan (Topix)	Em/Mkts (MSCI)	£ Govt	£ Corp	Global Corp	EUR in GBP	USD in GBP	JPY in GBP
1 Month	-0.7%	-0.4%	5.2%	2.1%	4.3%	-0.4%	-2.7%	-1.9%	-0.2%	-4.2%	-3.5%	-5.7%
3 Month	1.8%	2.1%	4.7%	4.5%	4.7%	7.9%	-0.4%	0.1%	2.2%	0.6%	-2.8%	-2.9%
1 Year	11.2%	11.9%	22.8%	18.6%	29.3%	22.5%	-3.7%	0.2%	3.0%	1.8%	-3.1%	-12.8%
YTD	6.6%	7.8%	11.7%	14.2%	12.5%	27.8%	-0.3%	2.6%	7.5%	3.3%	-7.9%	-4.2%

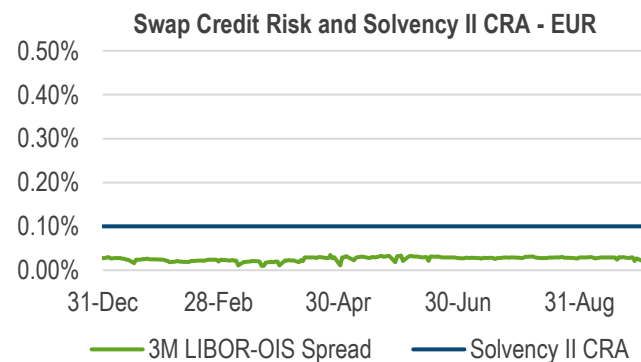
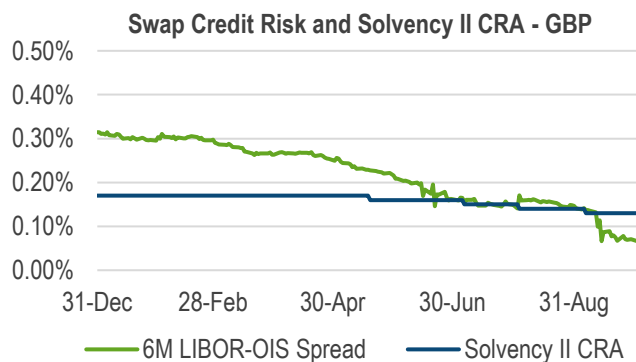
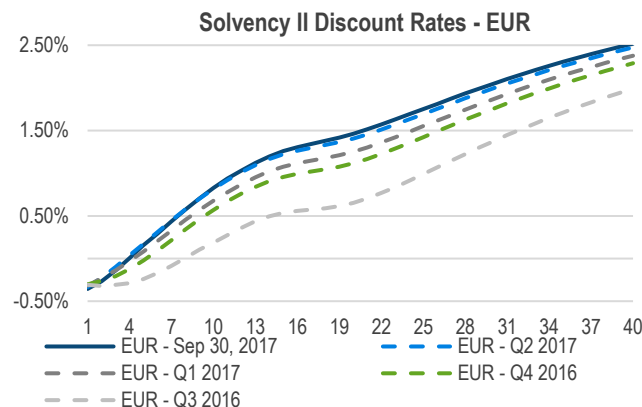
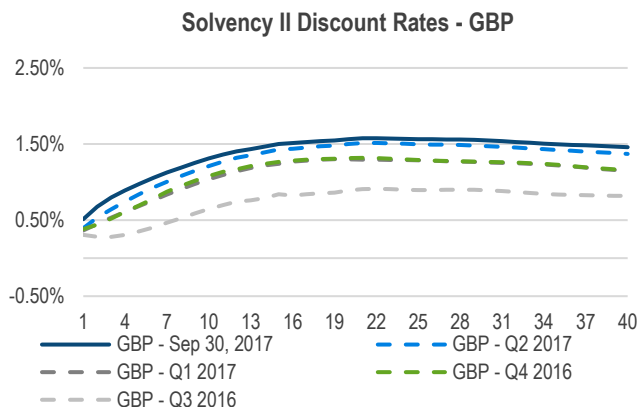
Solvency II Monitor - Rates

Risk Free Rates

- The GBP Solvency II discount curve increased by over 20 basis points across all terms in September. The significant increase pushed rates to their highest levels for 2017.
- The EUR interest rate curve also increased, but to a smaller degree in comparison. The large change was around 15 basis points, observed at terms between 10 and 20 years.

Credit Risk Adjustment

- The GBP CRA remained unchanged this month. The actual LIBOR-OIS spread has dipped below the CRA level, with a difference of over 5 basis points at month end.
- The EUR CRA continues to remain at the 10 basis points floor, with the actual LIBOR-OIS spread remaining close to 0%.



	Change in GBP Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2017	12	14	10	6	7	-3
Since Q1 2017	15	29	27	27	29	-4
Since Q4 2016	13	28	23	25	28	-4
Since Q3 2016	21	62	66	67	66	-3

	Change in EUR Discount and CRA (bps)					
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2017	-2	-2	1	6	5	0
Since Q1 2017	-4	8	15	21	18	0
Since Q4 2016	-5	18	26	35	29	0
Since Q3 2016	-5	40	64	81	67	0

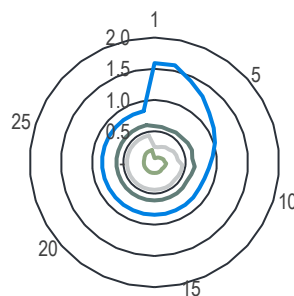
Solvency II Monitor - Spreads

Fundamental Spreads

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

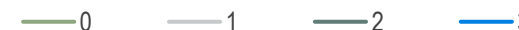
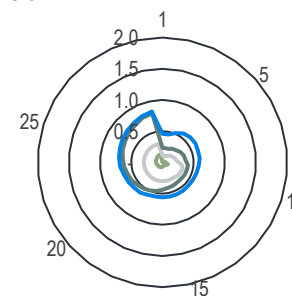
Fundamental Spreads %

GBP - Financial



GBP Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0.07	0.11	0.18	0.17	0.2
AA	0.25	0.31	0.45	0.44	0.44
A	0.58	0.59	0.62	0.61	0.61
BBB	1.59	1.18	0.84	0.84	0.84
GBP Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0	0.03	0.07	0.14	0.2
AA	0.04	0.07	0.11	0.19	0.28
A	0.07	0.14	0.22	0.37	0.5
BBB	0.18	0.29	0.4	0.57	0.7

GBP - Non-Financial



GBP Non-Financial Fundamental Spread %					
	1Y	Y5	Y10	Y20	Y30
AAA	0	0.02	0.09	0.09	0.13
AA	0.11	0.16	0.34	0.3	0.3
A	0.23	0.29	0.41	0.54	0.8
BBB	0.46	0.6	0.57	0.61	0.83
GBP Non-Financial 'Before Floor' %					
	1Y	Y5	Y10	Y20	Y30
AAA	0	0.02	0.04	0.09	0.13
AA	0	0.04	0.08	0.17	0.26
A	0.04	0.15	0.29	0.54	0.8
BBB	0.12	0.24	0.38	0.61	0.83

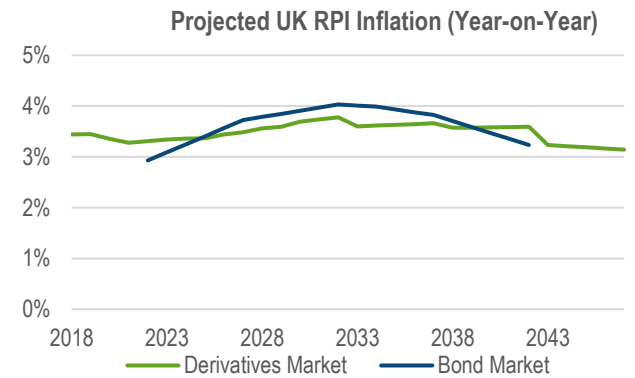
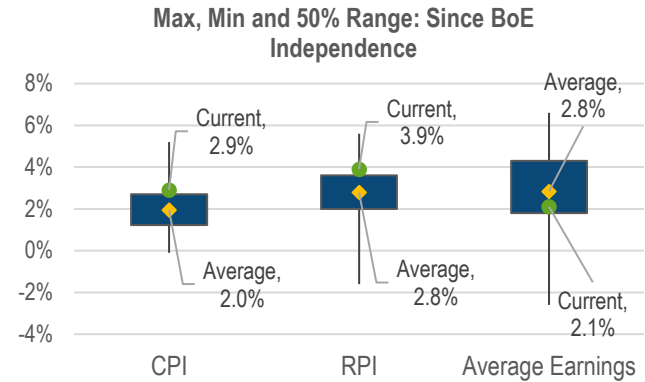
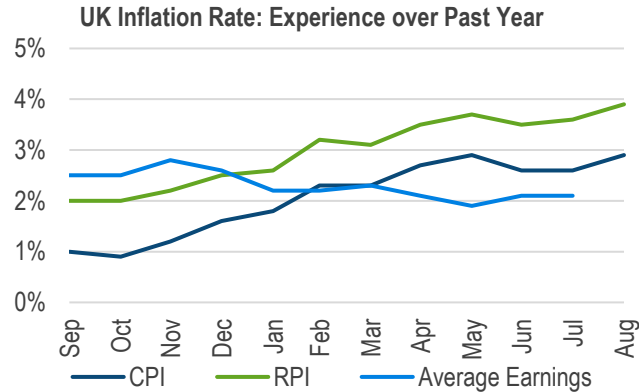
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Bloomberg (current curve is for 30/09/17) and applying the Credit Risk Adjustment as defined in the Technical Specs.

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 31/08/17. **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 CPI price inflation rate rose to 2.9% in August, matching its highest level for the year. The high inflation number is one factor that lead to Bank of England signalling it may to raise its official rate sooner.
- The annual earnings inflation remained the unchanged in July.
- According to ONS: *Rising prices for clothing and motor fuels were the main contributors to the increase in the rate...Air fares also rose between July and August but the rise was smaller than between the same two months a year ago and so resulted in a partially offsetting, downward contribution.*
- The market implied view shows expectation that RPI will remain above 3% for some years to come. This is broadly consistent with the view from the previous month.



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

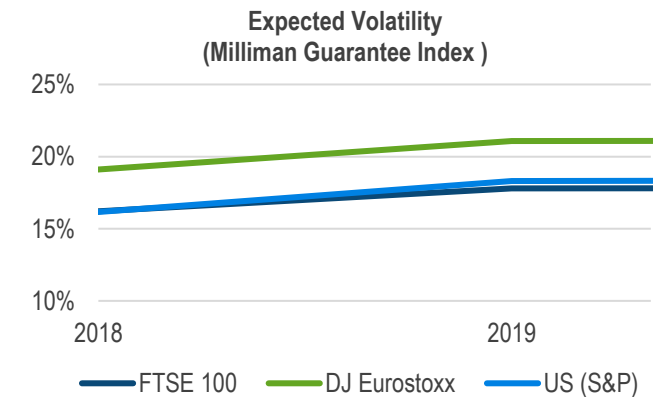
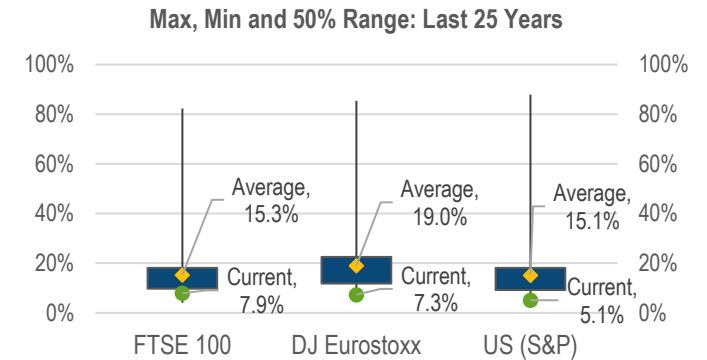
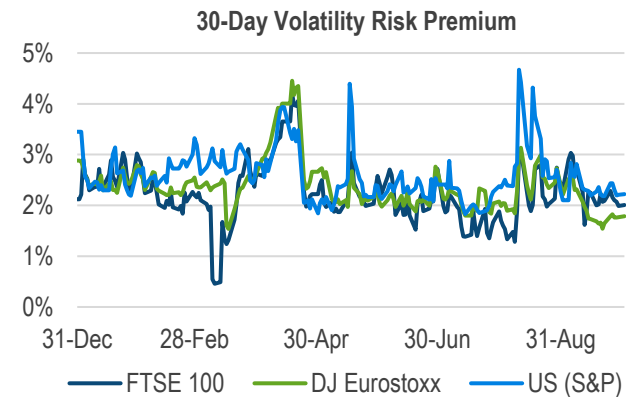
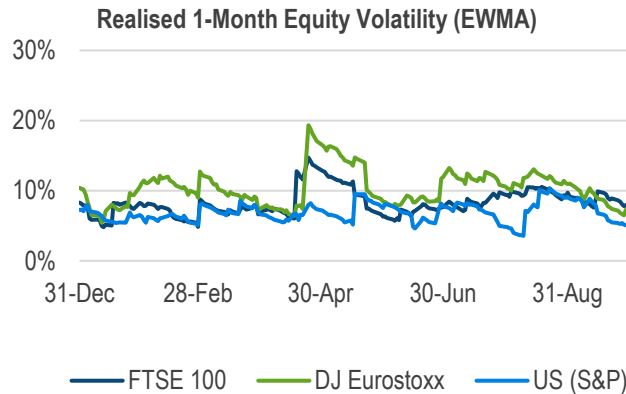
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average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

Volatility and Hedging Cost Monitor

- Realised volatility on the major equity indices fell steadily in September as geopolitical tensions eased.
- The implied volatilities also retreated from their highs in August, more so than the realised volatilities. Consequently, the volatility risk premiums have trended downwards in the month. The premium in the Eurostoxx 50 index is at its lowest for the year.



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.