

Market Price Monitor

Local Equity Markets

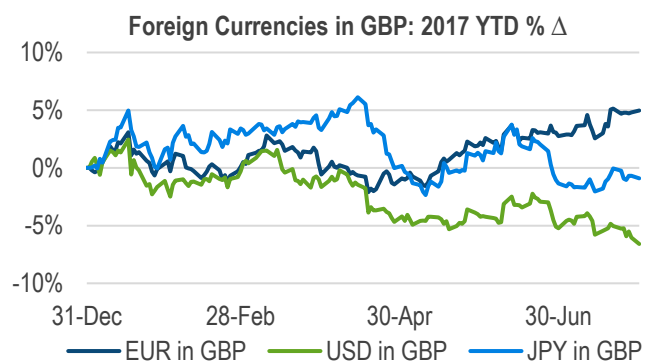
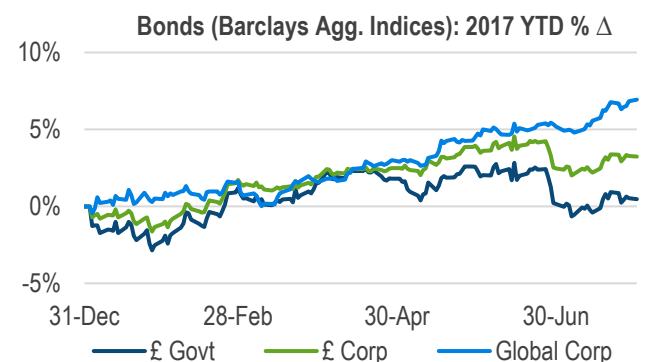
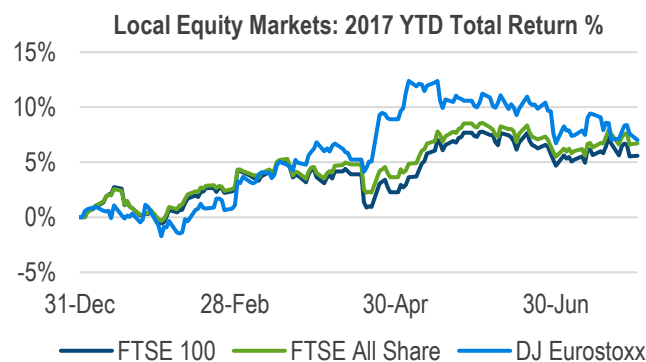
- European equity indices posted marginal gains in July, with the FTSE 100 up over 1% for the month.
- The DJ Eurostoxx 50 index ended the month close to flat from end of June, as an improving European economy and positive political developments were offset by a negative impact from a stronger Euro.

Global Equity Markets

- The S&P 500 index gained over 2% in the month, again posting record highs during the month.
- Emerging Markets equity made a sizeable gain of 6% in July. The index is now more than 25% higher than the start of 2017.

Bond/FX Markets

- The gilt market index gained marginally in July, remaining slightly positive for the year.
- The £ Sterling depreciated against the Euro and Japanese Yen this month, but made further gains against a weak US Dollar. It's now at its highest level against Dollar for the year.



	Total Returns as of July 31, 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	0.9%	1.2%	0.3%	2.1%	0.4%	6.0%	0.3%	0.7%	1.7%	2.2%	-1.4%	0.5%
3 Month	3.2%	3.0%	-1.7%	4.1%	5.9%	10.2%	-1.3%	0.7%	3.8%	6.5%	-2.0%	-0.9%
1 Year	14.0%	14.9%	18.3%	16.0%	25.1%	24.8%	-2.8%	2.3%	2.6%	6.1%	0.1%	-7.3%
YTD	5.6%	6.7%	7.0%	11.6%	7.8%	25.5%	0.5%	3.2%	6.9%	5.0%	-6.6%	-0.9%

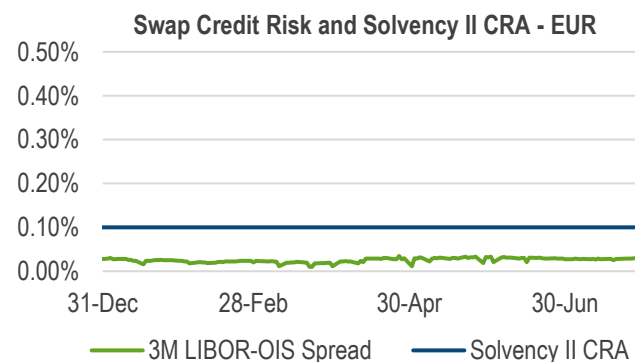
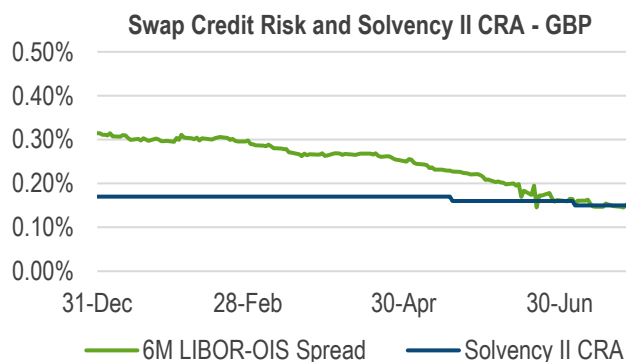
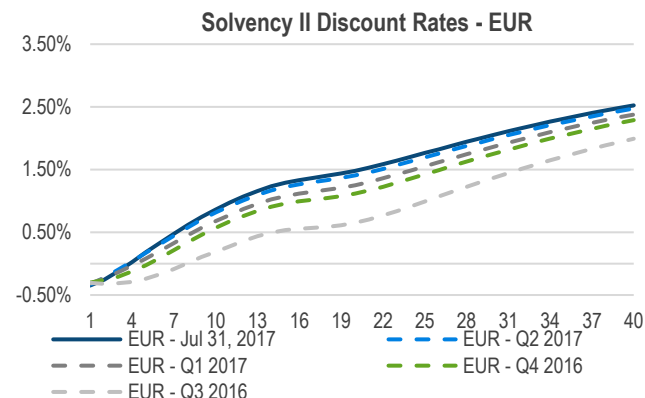
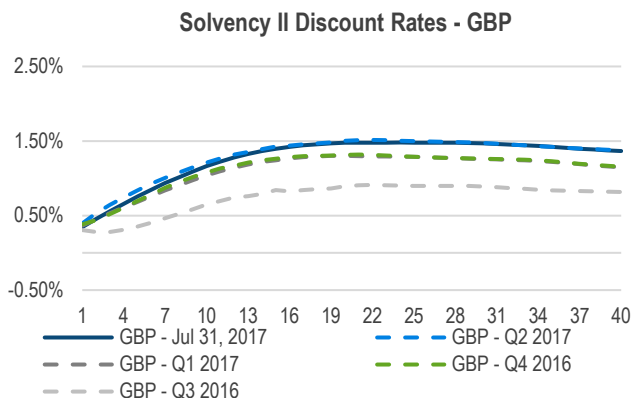
Solvency II Monitor - Rates

Risk Free Rates

- The GBP Solvency II discount curve decreased in July, with the bigger changes seen at shorter durations.
- In contrast, the EUR interest rate curve increased, with the bigger changes seen at the longer durations.

Credit Risk Adjustment

- The GBP CRA decreased by 1 basis point this month, while the LIBOR-OIS spread stabilised around the CRA level.
- The EUR CRA continues to remain at the 10 basis points floor, with the actual LIBOR-OIS spread remains close to 0%.



Change in GBP Discount and CRA (bps)						
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2017	-5	-8	-5	-3	-1	-1
Since Q1 2017	-2	7	13	18	21	-2
Since Q4 2016	-4	6	9	16	20	-2
Since Q3 2016	4	40	52	58	58	-1

Change in EUR Discount and CRA (bps)						
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q2 2017	-1	1	5	7	6	0
Since Q1 2017	-3	10	19	23	19	0
Since Q4 2016	-5	21	29	36	30	0
Since Q3 2016	-4	42	68	83	68	0

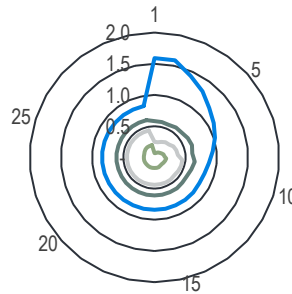
Solvency II Monitor - Spreads

Fundamental Spreads

- The fundamental spread data shown is for end of June.
- There were some marginal changes compared to the end of May.

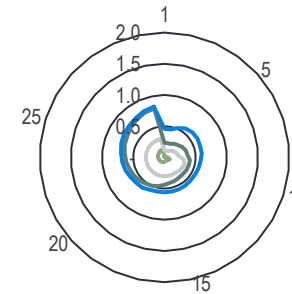
Fundamental Spreads %

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	0.04	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	0.51
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	0.55	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	0.55	0.8
BBB	0.12	0.24	0.38	0.61	0.83

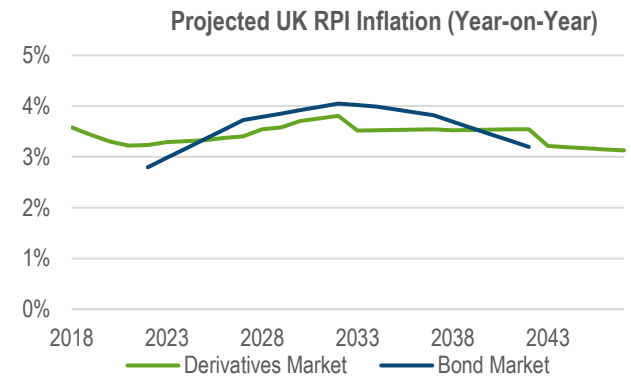
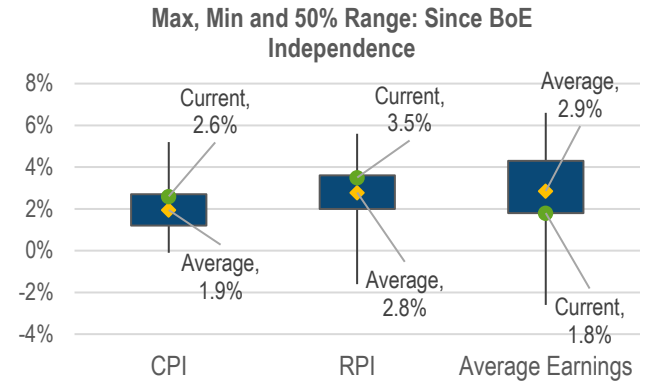
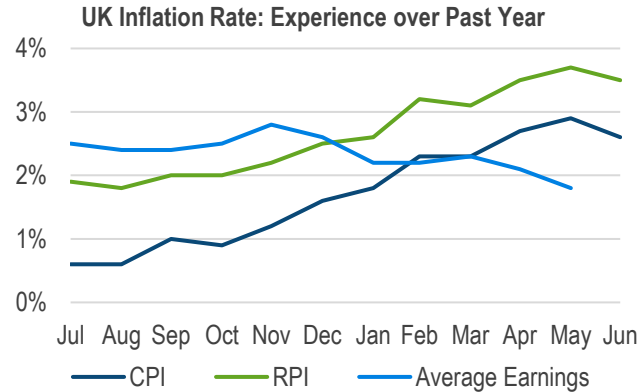
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Bloomberg (current curve is for 31/07/17) and applying the Credit Risk Adjustment as defined in the Technical Specs.

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 30/06/17. **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 price inflation rate fell in June, the first time since October 2016.
- The fall in May for annual earnings inflation further increased the gap between price and earning inflation.
- According to ONS: *Falling prices for motor fuels and certain recreational and cultural goods and services were the main contributors to the fall in the rate. These downward contributions were partially offset by rising prices for furniture and furnishings.*
- 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.
- The UK's GDP growth declined to 1.7% (year-on-year) in June, the lowest level in a year.



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

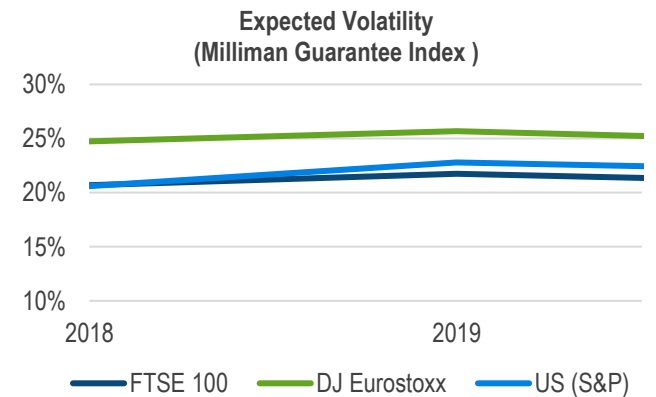
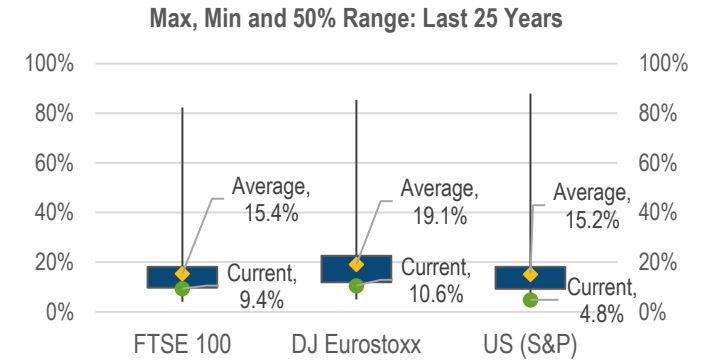
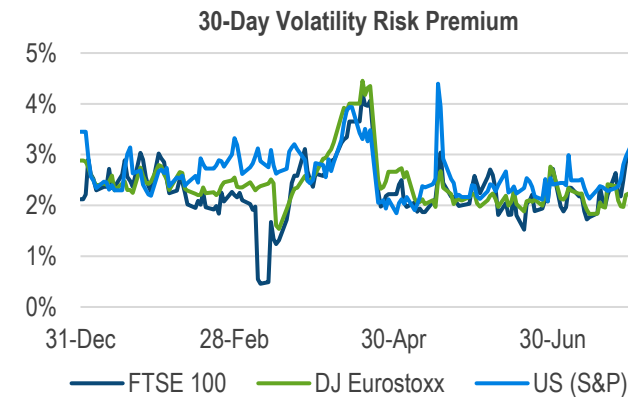
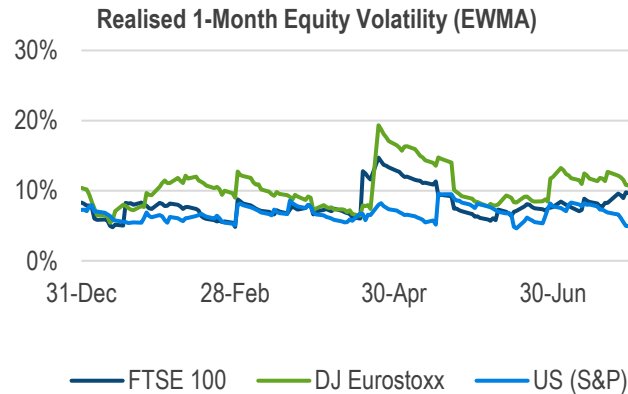
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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 on the major equity indices remained at historically low levels. The S&P index's volatility declined the most, reaching close to its lowest level in 25 years.
- The S&P and FTSE's implied volatility didn't decrease as much as its projected volatility. This caused the risk premium for the two indices to tick up at the end of the month.



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.