

Market Price Monitor

Local Equity Markets

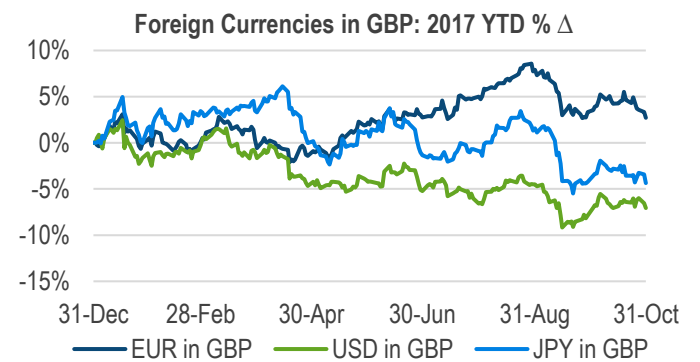
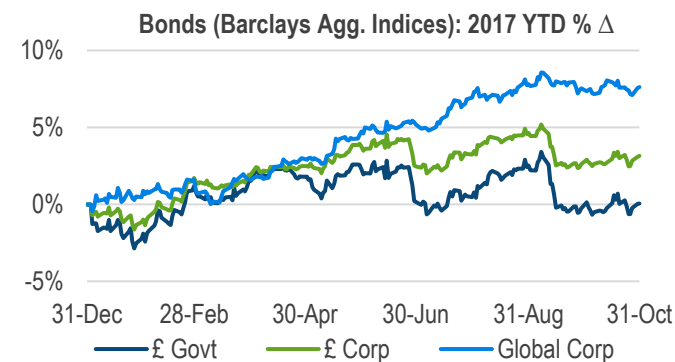
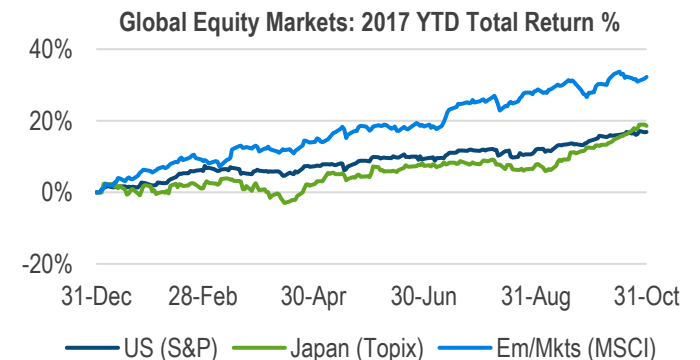
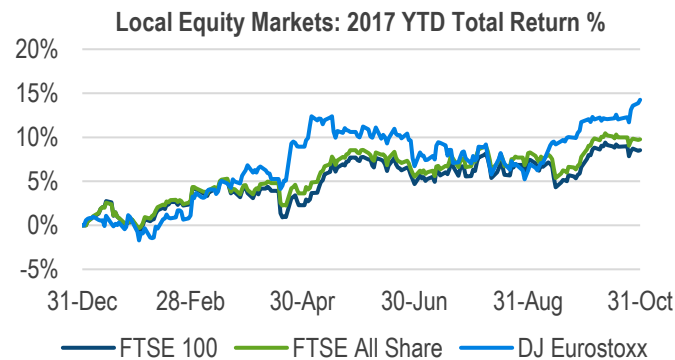
- European equity carried forward September's positive momentum to reach new highs in October.
- The Eurostoxx 50 index is at the peak for 2017 after returning over 2% for the month, as the Euro declined on the news of European Central Bank extending its bond purchasing plan.
- The FTSE 100 also topped its high in October, boosted by the £ Sterling weakening against the US Dollar, on the back of further uncertainty surrounding the Brexit negotiations.

Global Equity Markets

- The equity markets made positive gains in major markets across the globe in October.
- The Japanese market increased by more than 5% in October, buoyed by the sitting government's landslide win in the snap election.
- The Emerging Markets index has added nearly one third to its value since the start of the year.

Bond/FX Markets

- Corporate and government bond values increased in October. The UK government bonds are also now marginally higher than the start of the year.
- The £ Sterling weakened against the US Dollar, and gained modestly against other currencies.



	Total Returns as of October 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	1.8%	1.9%	2.3%	2.3%	5.4%	3.5%	0.3%	0.5%	0.1%	-0.6%	0.8%	-0.1%
3 Month	2.8%	2.8%	6.8%	4.8%	10.0%	5.4%	-0.4%	-0.1%	0.6%	-2.2%	-0.5%	-3.5%
1 Year	12.1%	13.4%	23.3%	23.6%	29.4%	26.5%	0.7%	4.3%	5.0%	-2.2%	-7.8%	-15.0%
YTD	8.5%	9.8%	14.3%	16.9%	18.6%	32.3%	0.1%	3.2%	7.6%	2.7%	-7.1%	-4.3%

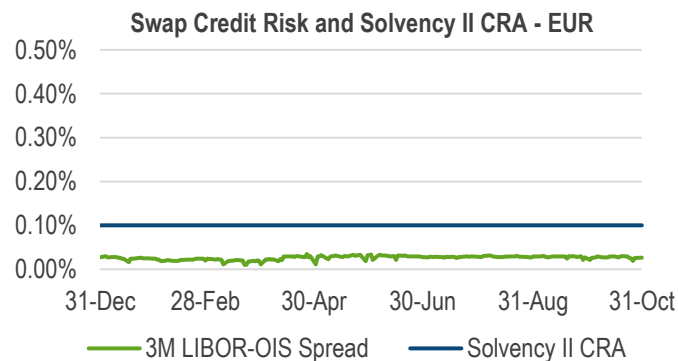
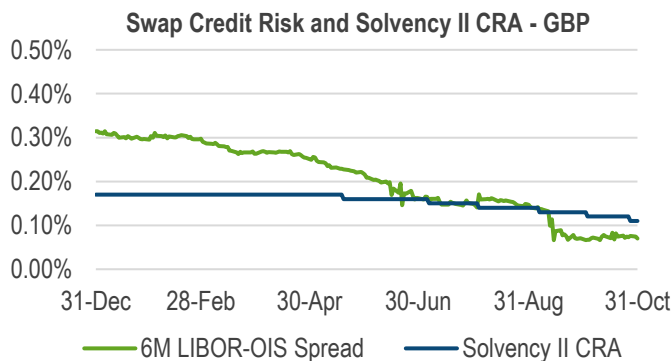
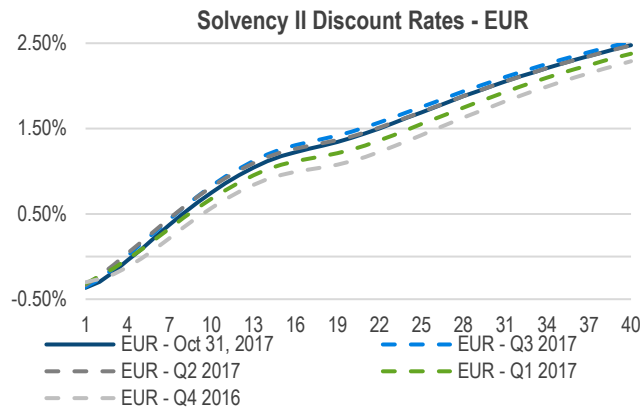
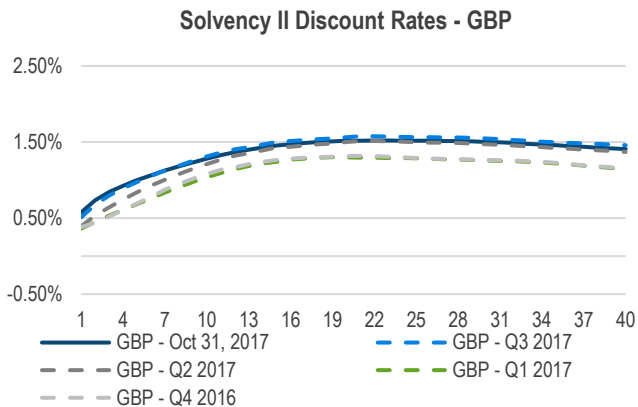
Solvency II Monitor - Rates

Risk Free Rates

- The GBP Solvency II discount rate increased by as much as 7 basis points in the short term, but decreased by around 5 basis point in the long term.
- The EUR interest rate curve decreased across all terms. The biggest decrease is observed at medium term, with an 8 basis point drop at the 10 year term.

Credit Risk Adjustment

- The GBP CRA reduced by 2 basis points in October. The actual LIBOR-OIS spread remained stable during the month, at around 7 basis points.
- 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 Q3 2017	7	2	-3	-5	-4	-2
Since Q2 2017	18	16	7	1	3	-5
Since Q1 2017	21	32	24	22	24	-6
Since Q4 2016	20	31	20	20	24	-6

Change in EUR Discount and CRA (bps)						
	1Y	Y5	Y10	Y20	Y30	CRA
Since Q3 2017	-1	-7	-8	-7	-5	0
Since Q2 2017	-3	-9	-7	-2	0	0
Since Q1 2017	-5	0	7	14	13	0
Since Q4 2016	-6	11	18	27	24	0

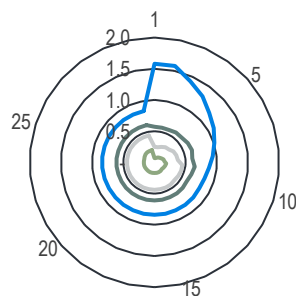
Solvency II Monitor - Spreads

Fundamental Spreads

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

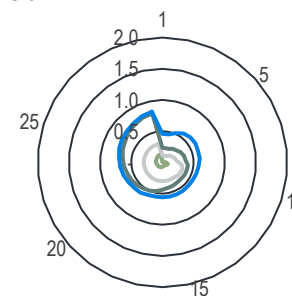
Fundamental Spreads %

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	0.57	0.59	0.62	0.61	0.61
BBB	1.58	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

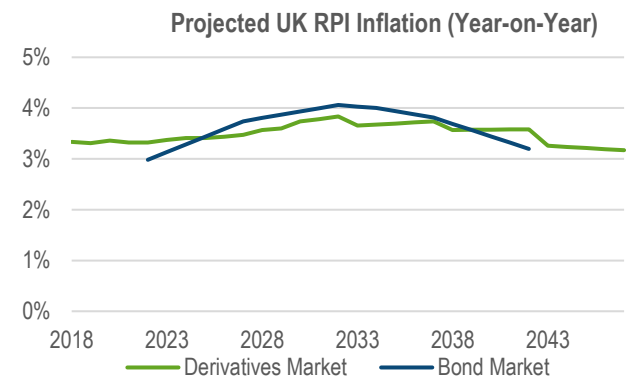
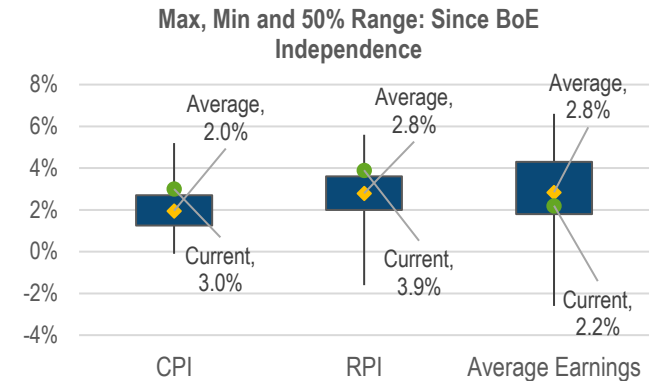
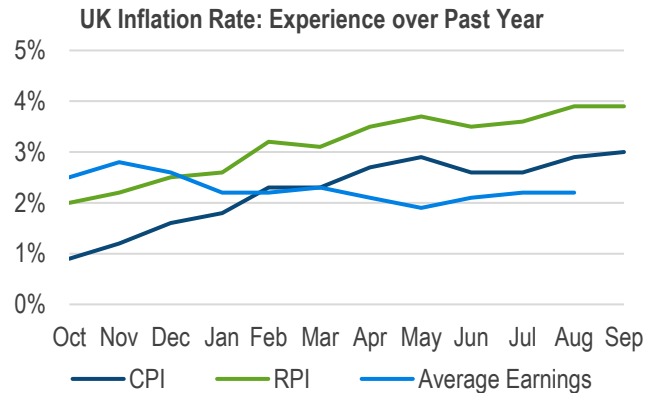
The **Solvency II risk-free discount rates** are based on applying the Smith-Wilson Extrapolation to LIBOR swap rates sourced from Bloomberg (current curve is for 31/10/17) and applying the Credit Risk Adjustment as defined in the Technical Specs.

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 30/09/17. **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 3.0% in September, pushing to a new high for the year. The Bank of England is now very likely to raise the benchmark interest rate in November to curb further rises.
- The annual earnings inflation remained the unchanged in August.
- According to ONS: *The main contributors to the increase in the rate were rising prices for food and recreational goods, along with transport costs, which fell by less than they did a year ago. These upward effects were partially offset by downward contributions from a range of goods and services, in particular clothing prices, which rose by less than they did a year ago.*
- 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:

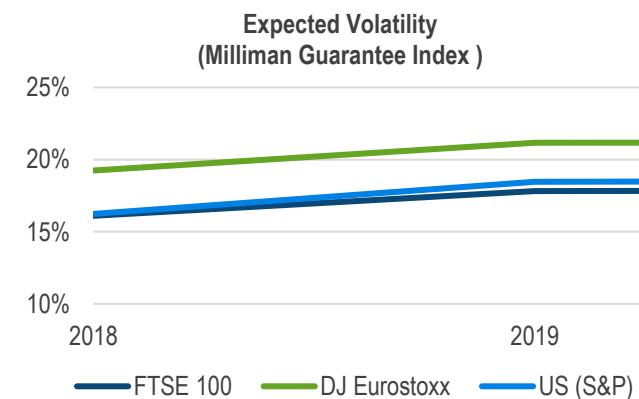
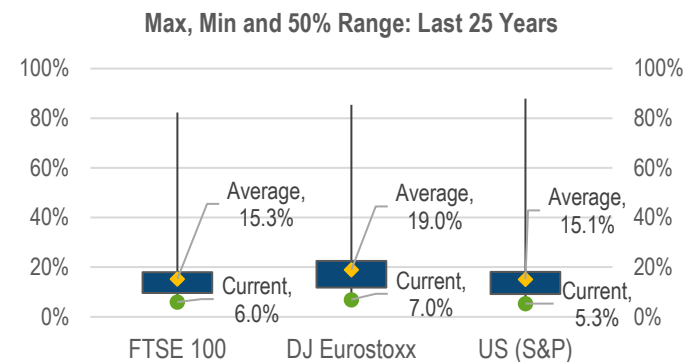
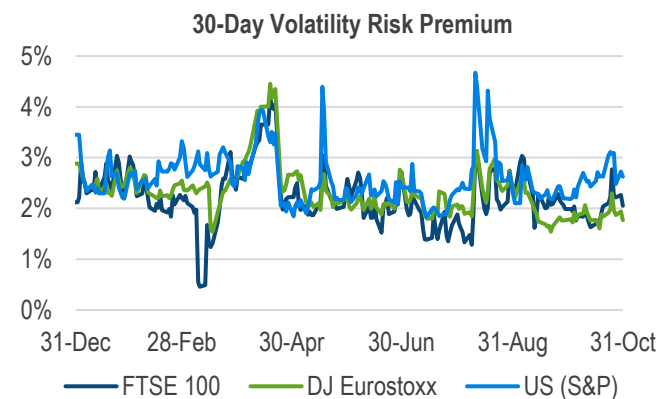
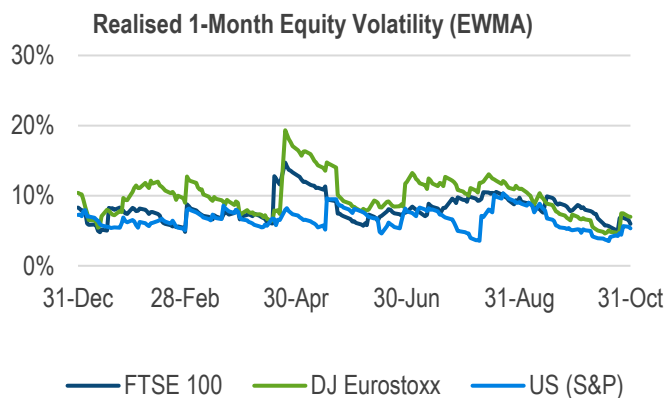
- **Consumer Price Index (CPI)** – measuring the monthly price of a basket of consumer goods and services
- **Retail Price Index (RPI)** – similar to CPI, but the main difference due the addition of mortgage payments, council tax and other housing costs
- **Average Earnings** – measuring the average 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 remained near historically low levels in October, as the global equity markets ratcheted higher.
- Implied volatilities also remained largely unchanged in the period, keeping close to their own historically low levels. Consequently, the volatility risk premiums have changed marginally during 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.