29.10.15

MPC MEMBERS

From: (MFAD)

PRE-MPC FOLLOW UP, NOVEMBER 2015: MARKET IMPLIED INFLATION RATES

Question

- The Governor asked for a longer time series of 5 year, 5 year US inflation break-evens, to compare current levels with those prevailing around the time of Fed QE programmes.
- Ben Broadbent asked for a decomposition of UK OIS rates into real and inflation compensations for shorter maturities.

Main message

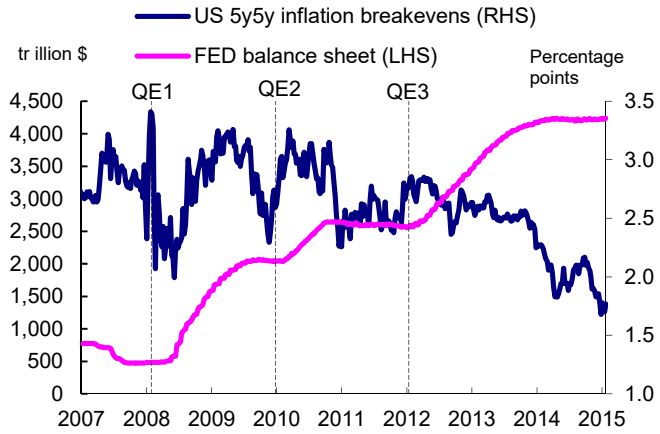
- **US 5y5y inflation break-evens remain at record low levels, much lower than in periods preceding any Fed QE programmes. This may reflect the significant decrease in the oil price, as it co-moved closely with 5y5y inflation break-evens in the past.**
- **Short term UK OIS rate decompositions imply that inflation compensation fell most at shorter maturities (1 year horizon). However short term inflation swaps are illiquid and a noisy instrument.**

5 year, 5 year inflation break-evens and QE programmes

1. US 5 year, 5 year inflation break-evens have reached their lowest level on record (since August 2004, weekly data). This level is around 40bps, 60bps and 100 bps lower than the lowest values observed in the run-up to QE1, QE2 and QE3, respectively (see **Chart 1**). The picture is similar for inflation swaps, although they have declined a little less recently.

2. But, 5 year, 5 year inflation break-evens also reflect liquidity premia and inflation risk premia and so do not give a clean read on inflation expectations .

Chart 1: US 5y5y inflation break-evens and FED balance sheet*



Source: NY FED, Bloomberg and Bank calculations
*Dashed lines denote starting dates of US QE programmes.

Table 1: US 5y5y inflation break-evens minima before QEs and respective oil prices.

	5y5y*	Crude oil price
QE1	2.1	53.6
QE2	2.3	75.4
QE3	2.7	92
Latest	1.7	46.6

Source: Datastream, Bloomberg and Bank calculations
*Numbers represent the lowest values of 5y5y inflation break-evens in a month preceding QEs. **WTI spot oil prices in $ per BBL.

3. Liquidity premia might have played a prominent role during the financial crisis (around QE1), manifested by sharp moves of the 5y5y inflation break-evens. It should also be noted that a decrease in market liquidity would be expected to push 5y5y inflation break-evens down, since break-evens are the difference between nominal and real bonds and the latter are less liquid.

4. 5y5y inflation break-even rates increased during QE1 and QE2 programmes, but decreased during QE3 (see **Chart 1**). Past analysis, for example a recent BU post, indicated that US 5y5y inflation break-evens are highly correlated with oil price changes. **Table 1** shows that oil prices increased between QE1 and QE2, and between QE2 and QE3, while they fell by more than a half since the introduction of the QE3. The fact that US 5y5y inflation break-evens are correlated with oil price changes might be partially explained by the fact that US long term inflation compensation co-moves with short term inflation compensation. Our colleagues at the NY Fed partly attribute this to market participants tending to express short term views in longer term, more liquid tenors.

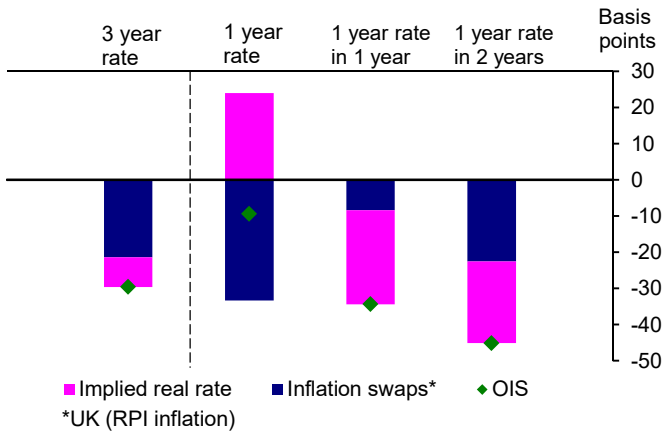
Decomposition of UK OIS rates into real and inflation compensations

5. The 3 year spot OIS rate has fallen since the August *Inflation Report*, largely due to a decrease in inflation compensation (for details please read Inflation compensation captures not only inflation expectations, but also liquidity premia and inflation risk premia.

6. **Chart 2** shows changes in 3 year rates broken down into 1 year spot rates and 1 year in 1 year and 1 year in 2 years forward rates. This decomposition shows that most of the decrease in 3 year spot OIS rates reflects decreases in the OIS rates beyond 1-year horizon. In contrast, the decrease in inflation compensation was most pronounced at the 1-year horizon.

7. However inflation swap rates might not be a good tool to read short term market inflation expectations. Our market intelligence indicates that short horizon inflation swap rates exhibit low liquidity . **Chart 3** shows that in particular 1 year inflation swap rates display significant volatility.

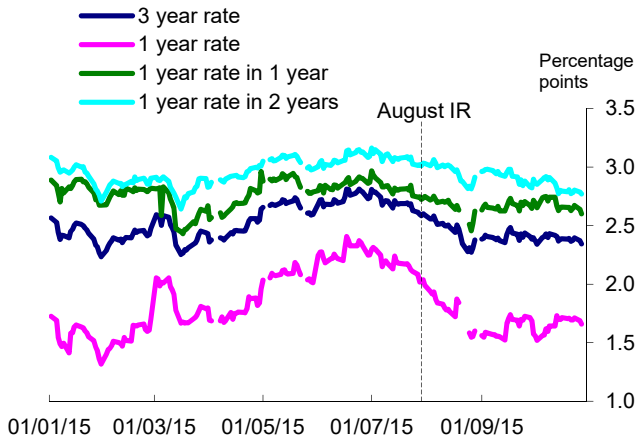
Chart 2: Decompositions of changes in different maturity UK OIS rates into real and inflation components (29 July to 26 Oct)*



Source: Bloomberg and Bank calculations

*3 year and 1 year rates are spot rates, while 1 year rate in 1 year and 1 year rate in 2 years are forward rates. Implied real rate is calculated as a residual from the difference between OIS rates and Inflation swaps.

Chart 3: UK inflation swap rates of different maturities*



Source: Bloomberg and Bank calculations

*3 year and 1 year rates are spot rates, while 1 year rate in 1 year and 1 year rate in 2 years are forward rates.

29 October 2015

(MFAD)