

#### **Thomas Werner**

Head of Capital Markets/ Financial Structure Division Directorate Monetary Policy European Central Bank Recent developments in marked-based indicators of inflation expectations

### ECB Bond Market Contact Group 19 January 2016

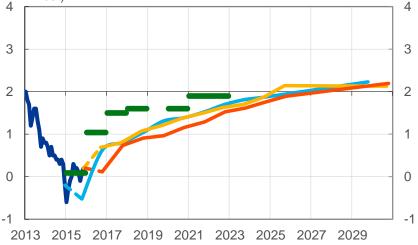


- Market-based indicators of inflation expectations are strongly affected by movements in the inflation risk premium
- The declining trend in longer-term inflation swap rates seen in the second part of 2014 has been stopped
- Deflation risk derived from inflation options remains low

#### Expected path of inflation

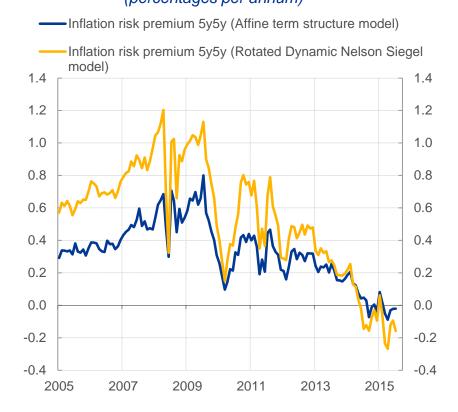
(percentages per annum)

- Realised y-o-y HICP inflation
- Swap-implied HICP inflation path (21 Jan 15)
- Swap-implied HICP inflation path (3 Dec 15)
- Swap-implied HICP inflation path (12 Jan 16)
- Consensus Forecast (Dec.15 for 2015 and 2016, Oct15 for the rest)



Sources: Consensus Economics, ECB and Thomson Reuters. Note: The latest observation is for 12 January 2016.

#### Model estimates of the inflation risk premium (percentages per annum)



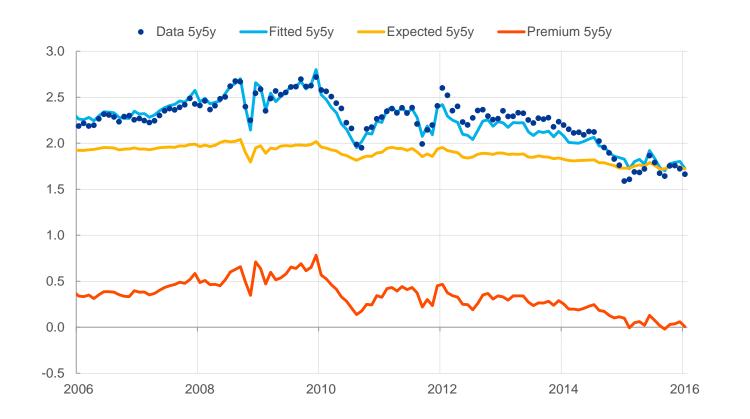
#### Sources: ECB and Thomson Reuters.

Notes: The blue line shows the premium estimate from and ATSM (Affine term structure model), and the yellow line shows the estimate from a Rotated Dynamic Nelson-Siegel model. Both models are fitted to the euro area zero-coupon inflation linked swap curve.

Last observation: December 2015.

### Model based decomposition of 5y5y rates into premium and expectations

(percentages per annum)



Sources: ECB and Thomson Reuters.

Notes: Decomposition based on an ATSM (Affine term structure model) fitted to the euro area zero-coupon inflation linked swap curve. The estimation method follows Joslin, Singleton and Zhu (2011).

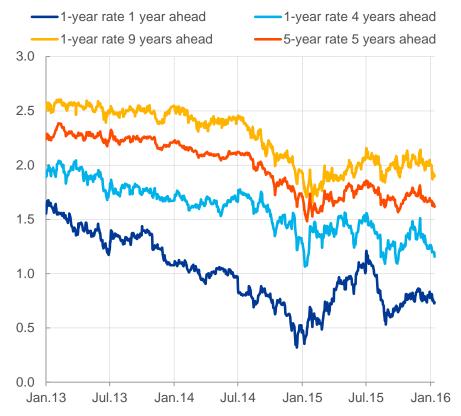
Last observation: January 2016

#### The declining trend of longer-term inflation swap rates has been stopped

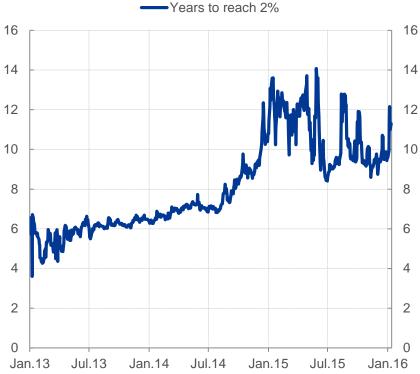
#### Forward inflation-linked swap rates (percentages per annum)

# Years for euro area inflation to reach 2%

(years)



Sources: Thomson Reuters and ECB calculations. Notes: Vertical line denotes last GC meeting on 3 December 2015. The latest observation is for 12 January 2016.



Sources: Thomson Reuters and ECB calculations.

Notes: The index referenced is the HICP ex tobacco that historically has been around 0.1% lower than HICP.

The latest observation is for 12 January 2016.

### Price of inflation/deflation protection

(basis points)

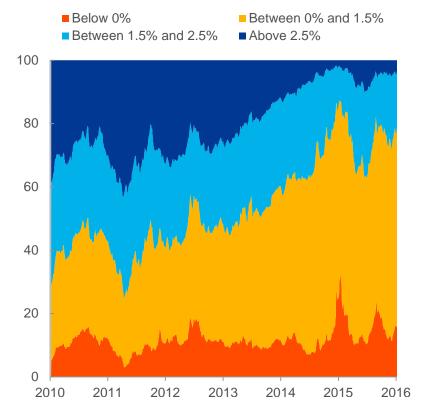
## Option-implied risk-neutral distribution of inflation expectations

(percentages)



Sources: Thomson Reuters and ECB calculations.

Notes: Price of inflation (deflation) protection refers to the price of a year-onyear inflation option with a 4% cap (0% floor) for a horizon of five years. The latest observation is for 12 January 2016.



Sources: Bloomberg, Reuters and ECB calculations.

Notes: Probabilities implied by five-year zero-coupon inflation options. Riskneutral probabilities may differ significantly from physical, or true, probabilities. The latest observation is for 12 January 2016.