

## Box 6

**MEASURES OF LONGER-TERM INFLATION EXPECTATIONS FROM THE ECB SURVEY OF PROFESSIONAL FORECASTERS: A MORE DETAILED ANALYSIS OF RECENT DEVELOPMENTS**

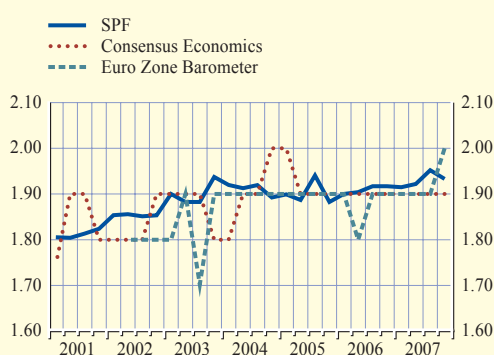
Recent economic developments, in particular rising oil and food prices, have highlighted the need to monitor closely the anchoring of longer-term inflation expectations. This box provides a deeper analysis of the data on longer-term inflation expectations from the ECB Survey of Professional Forecasters (SPF), focusing on the insight to be gained from considering the cross-sectional (i.e. individual) forecaster dimension.

**Aggregate indicators of longer-term inflation expectations**

Overall, aggregate SPF longer-term inflation expectations have fluctuated around 1.9% since the beginning of 2003. They reached a peak of 1.94% in the fourth quarter of 2003 and the second quarter of 2005. More recently, a slight upward movement since the beginning of 2006

**Chart A Longer-term inflation expectations from surveys of forecasters**

(annual percentage changes)



Sources: ECB, Consensus Economics and Euro Zone Barometer.

Note: The latest forecasts refer to 2012 in the SPF for the fourth quarter of 2007, 2013-2017 in the October 2007 issue of Consensus Economics, and 2011 in the October 2007 issue of the Euro Zone Barometer.

can be detected, with a new peak of 1.95% reached in the third quarter of 2007. However, as reported last month, aggregate longer-term (i.e. five years ahead) inflation expectations edged down slightly in the latest round of the SPF (for the fourth quarter of 2007), to 1.93%. Thus, using one decimal place, this slight downward revision leads to a change from 2.0% back to 1.9% (the level at which SPF longer-term inflation expectations had been for many consecutive rounds). These aggregate results are broadly in line with the information on euro area longer-term inflation expectations that can be obtained from other similar surveys: Consensus Economics and the Euro Zone Barometer (see Chart A).

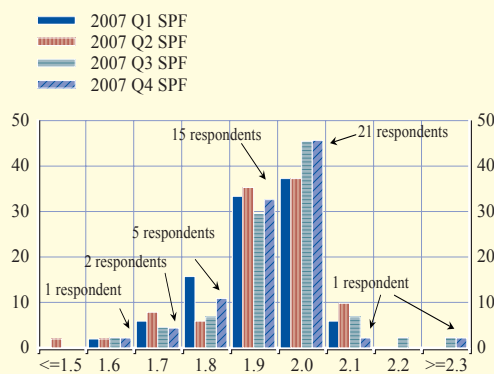
However, it should be noted that, although each of the surveys asks professional forecasters/economists about their longer-term inflation expectations, there are some differences between them, for example with regard to the reference period for longer-term expectations. The ECB SPF has the largest number of responses to the question on longer-term inflation expectations, with approximately 45 on average. An additional feature of the ECB SPF is that it collects both point estimates and probability distributions surrounding respondents' expectations. Finally, a potentially useful feature of the ECB SPF is that data on individual respondents' expectations are available (on an anonymised basis).

## Considering the information content of the cross-section of longer-term inflation expectations<sup>1</sup>

Developments in aggregate expectations may conceal changes in the cross-sectional distribution of point estimates. Looking at individual replies in the last two SPF rounds, the percentage of respondents reporting a point estimate of 2.0% has increased slightly (see Chart B). In the latest SPF round, almost half of the respondents reported an estimate of 2.0%. However, only two respondents reported longer-term inflation expectations of 2.1% or above.

**Chart B Distribution of longer-term inflation expectations among SPF respondents**

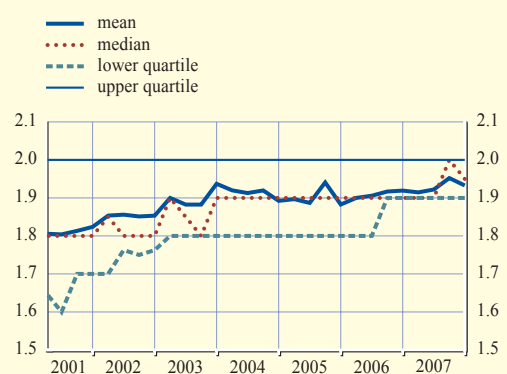
(percentage of respondents)



Source: ECB calculations.

**Chart C Measures of central tendencies of SPF longer-term inflation expectations**

(annual percentage changes)



Source: ECB calculations.

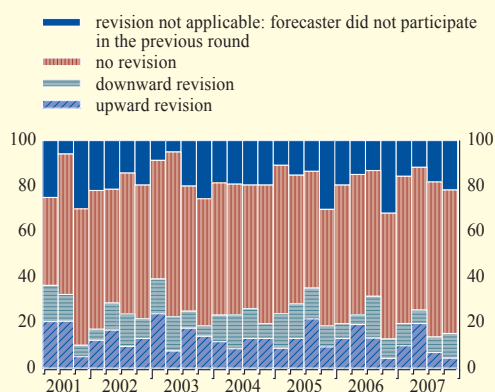
Taking a longer-term perspective, various measures of central tendencies suggest that inflation expectations have been relatively stable since the review and clarification of the ECB's monetary policy strategy (in the second quarter of 2003), when the ECB announced that price stability was defined as inflation being not only "below" but also "close to" 2%. Since mid-2006 longer-term inflation expectations have been concentrated within the 1.9% to 2.0% interval (see Chart C). The upper quartile of the SPF longer-term inflation point estimates has remained unchanged at 2.0%, i.e. at least 25% of the forecasters have always expected longer-term inflation to be at or above 2.0%. The lower quartile increased steadily until the first quarter of 2003 and remained flat at 1.8% from the second quarter of 2003 until the second quarter of 2006. It has narrowed to 1.9% since the third quarter of 2006, indicating that at least 50% of the forecasters expect longer-term inflation to be between 1.9% and 2.0%. The median of the longer-term inflation expectations was stable from the first quarter of 2004 until the third quarter of 2007, when it increased to 2.0%, before retreating to 1.95% in the fourth quarter, indicating that half of the point estimates were above 1.95% in the latest SPF round.

Looking at the revisions of the longer-term inflation expectations, since the first quarter of 2001 on average 24% of forecasters have revised their longer-term inflation expectations in a

<sup>1</sup> For additional analysis of the cross-sectional dimension of the ECB SPF, see Bowles et al., "The ECB Survey of Professional Forecasters (SPF): a review after eight years' experience", ECB Occasional Paper No 59, April 2007.

**Chart D Revisions to longer-term inflation expectations from one SPF round to the next**

(as a percentage of respondents who have provided a point estimate)



Source: ECB calculations.

expectations of those who had reported expectations in the previous round, or some combination of both.

**Conclusions and cross-checking against information from financial market-based indicators of inflation expectations**

Although aggregate point estimates for longer-term inflation expectations from the ECB SPF have remained broadly unchanged at around 1.9%, changes can be observed in both the cross-sectional distribution and the probability distribution underlying these expectations. The percentage of respondents reporting 2% as their longer-term inflation expectation has increased, although it is still the case that very few report point expectations above 2%. Furthermore, as reported last month, the risk of an outcome of above 2% has also increased. In the latest SPF round, the probability associated with an outcome of longer-term inflation of below 2% (52%) was almost as high as the probability associated with an outcome at or above 2% (48%).

Thus, developments in survey indicators of inflation expectations, combined with the fact that indicators of longer-term inflation expectations extracted from financial instruments<sup>2</sup> have risen significantly since early 2007 (see developments in the five-year forward break-even inflation rate five years ahead (seasonally adjusted) in Chart 22 of this issue of the Monthly Bulletin), point to the need to monitor closely longer-term inflation expectations.

2 Indicators of longer-term inflation expectations extracted from financial instruments are not pure measures of inflation expectations as they may also contain an inflation risk premium and be impacted by other market factors. For more information, see the article entitled "Measures of inflation expectations in the euro area" in the July 2006 issue of the Monthly Bulletin.

given round (see Chart D). In the latest SPF round, two-thirds of the respondents did not revise their forecast from the previous round, while five revised down and two revised up their point estimates. Ten of the participants in the latest round had not participated in the previous round, and revisions cannot therefore be calculated for them. On average, 18% of respondents in a given survey round did not participate in the previous round; when analysing the aggregate results of longer-term inflation expectations, it is thus important to keep in mind these changes in the composition of the panel from one round to another. The changes in the average point estimates of longer-term inflation expectations from one round to the next may sometimes reflect changes in the panel composition rather than changes in the actual longer-term inflation