

Box 4

Measures of expected future price developments in the euro area

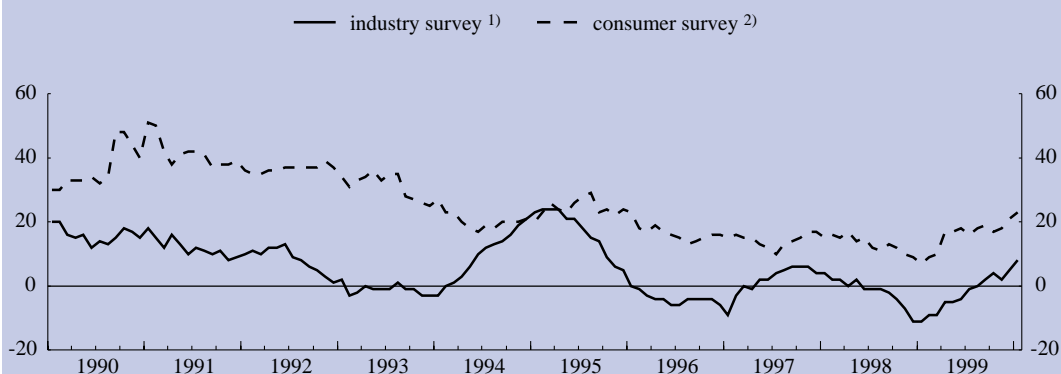
As part of its forward-looking assessment of the outlook for price stability, the ECB regularly monitors indicators that provide information about consumer, business and financial market expectations for future price developments. There are two main ways in which to obtain estimates of such expectations. First, economic agents can be surveyed directly regarding their views on the outlook for expected future price developments. Second, estimates of expected inflation can be extracted from the prices of various assets traded in financial markets. In general, the various measures of expectations may differ depending on the type of information extracted and the future time horizon to which they apply.

Survey-based indicators of expected price developments

There are various survey-based indicators of expected price developments available for the euro area. The European Commission includes a number of questions about expected price developments in its monthly Business and Consumer Surveys. In the manufacturing industry survey, the focus is on selling price expectations in the industrial sector. Respondents are asked whether they expect their selling price to remain unchanged, to rise or to fall “in the months ahead”. The responses are aggregated to form a balance (i.e. the difference between the percentage of respondents giving positive and those giving negative replies) and the variation in the resulting series provides an indication of how aggregate selling prices can be expected to develop in the near future. While the question is designed to measure expected short-term developments, this does not mean that it cannot be used to help form an assessment at a slightly longer horizon than just a few months ahead. In particular, this indicator has been useful as a signal of price increases in the industrial sector that may subsequently be passed through to prices at the consumer level (see also Chart 15 in the “Price developments” section of this issue of the ECB Monthly Bulletin). In the Consumer Survey respondents are asked to provide an assessment that relates directly to consumer prices. This indicator captures consumers’ expectations regarding price trends “in the next 12 months”. It is important to note that the question does not specify the exact manner in which prices are defined and, as a result, individual respondents may be taking account of factors that are excluded from common measures such as the Harmonised Index of Consumer Prices (HICP).

Producer and consumer price expectations in the euro area

(percentage balance of positive and negative replies; monthly data)



Source: European Commission Business and Consumer Surveys.

1) Selling price expectations for the months ahead.

2) Price trends in the next 12 months.

The chart above plots these survey-based indicators of expected price developments over the course of the 1990s. Although both short-term and trend movements in the two indicators appear to be correlated, it is evident from the chart that selling price expectations in the industrial sector exhibit greater volatility than

the expectations reported in the Consumer Survey. This perhaps reflects the greater influence of oil and non-oil commodity prices on actual producer price developments and, as a result, on selling price expectations in the industrial sector. In addition, the higher volatility of selling price expectations may reflect changes in demand conditions in the industrial sector that tend to be more variable than those for the whole economy. Selling price expectations also appear to have acted as a reasonable leading indicator of subsequent changes in price expectations reported in the Consumer Survey, in the sense that turning-points in the former have tended to precede turning-points in the latter. The most recent developments in both indicators show a gradual steady rise over the course of 1999. Both indicators are now above levels reached in late 1997, but are still below the levels reached in early or mid-1995.

As an alternative to the Business and Consumer Surveys carried out by the European Commission, it is possible to survey experts in both financial and non-financial institutions with regard to their expectations for inflation over various horizons. Since the beginning of 1999 the ECB has conducted a quarterly survey of inflation expectations in the euro area: the Survey of Professional Forecasters (SPF). The inflation expectations obtained from the SPF are based on the responses to a questionnaire submitted to a sample of 83 forecasters throughout the EU. Respondents are asked to provide estimates of the expected rate of change in the euro area HICP, looking one and two years ahead. Once a year, in February, the SPF also requests expectations for five years ahead. The SPF can be viewed as a useful source of supplementary information compared either with other survey-based indicators of future price developments (e.g. from Consensus Economics) or with the forecasts produced by the main international institutions (i.e. the Organisation for Economic Co-operation and Development, the International Monetary Fund and the European Commission). There are, however, important differences to be taken into account when making such comparisons. For example, for analytical purposes some forecasters often make the working assumption that interest or exchange rates – or both – are fixed over the forecast horizon. By contrast, in the case of the SPF, respondents may have made particular assumptions about future changes in these variables that may be a significant factor in explaining their outlook. This difference is particularly important in the case of the five-year outlook surveyed in the February 2000 SPF, which indicates that inflation is expected to be below 2% in 2004. Such factors are also likely to be relevant in the case of the expectations extracted from financial market prices (see below). The latest outlook for 2000 and 2001 from the February 2000 SPF is reported in Box 5 in the “Output, demand and labour market developments” section of this issue of the ECB Monthly Bulletin.

Inflation expectations derived from financial market prices

Apart from survey methods, an alternative approach to assessing inflation expectations is to extract this information from financial asset prices. In comparison with expectations obtained from surveys, asset prices have the advantage of being able to provide, in a very timely manner, information on expectations that reflect the aggregate opinion of all agents participating in the market. Government bond yields may be particularly useful in providing up-to-date information on market inflation expectations. The nominal yield on a government bond with a specific time to maturity can typically be decomposed into three elements: the real interest rate required by investors for holding the bond until it matures, compensation for the average expected inflation rate during the life of the bond, and a component associated with various premia. Variations in long-term bond yields could therefore, in principle, be interpreted in terms of changes in one or more of these factors. The challenge lies in disentangling the component corresponding to expected inflation from the other factors.

As shown in Box 2 on page 16 of the February 1999 issue of the ECB Monthly Bulletin, the pricing of index-linked bonds relative to nominal bonds can be of assistance in this decomposition. In particular, index-linked bonds provide a measure of the long-term real interest rate required by investors. Furthermore, the differential between a long-term nominal bond yield and the real yield available on an index-linked bond of the same maturity – the “break-even” inflation rate – may capture trends in inflation expectations.

However, it is important to point out that this measure disregards the impact of possible premia in yields, such as liquidity or inflation risk premia. For this reason, it may be more reliable to study changes in the break-even inflation rate rather than the level itself, although it should be borne in mind that this presupposes that these premia change relatively slowly over time.

The only index-linked bonds available in the euro area have been issued by the French Treasury at 10-year and 30-year maturities. The break-even inflation rate of these bonds refers to a specific measure of the French Consumer Price Index (CPI) (namely the CPI excluding tobacco), and does not refer to the euro area HICP. Hence, even if risk premia and liquidity premia were negligible, the break-even inflation rate obtained from French index-linked bonds would not, in general, give rise to the same measure of inflation expectations as provided by surveys, such as the SPF, which focus on expectations defined in terms of the HICP for the euro area. There are also other important differences. First, the horizons typically differ, with the break-even inflation rate reflecting inflation expectations over a 10-year or 30-year horizon, while the surveys generally provide measures of inflation expectations for shorter horizons. Furthermore, while inflation expectations obtained from surveys refer to expected inflation at some future point in time, the break-even inflation rate reflects the expected average inflation between the current date and the maturity of the bonds in question. With regard to actual observed developments in the break-even inflation rate obtained from French index-linked bonds, it is notable that this rate has remained broadly stable since the early part of the summer of 1999. Recent developments at the 10-year maturity are discussed further in the “Monetary and financial developments” section of this issue of the ECB Monthly Bulletin.

Overall, considering the information available from consumer, business and financial market expectations regarding the outlook for price stability, the survey-based indicators for price expectations of producers and consumers may be considered to point to some upward pressure on prices in the short term. However, the evidence available from financial markets suggests that market expectations regarding long-run inflation have not increased, as the break-even inflation rate has remained within a narrow range since mid-1999. This is also supported by the five-year outlook from the SPF. Overall, this suggests that, despite upward pressures on prices in the short term, the ECB has a high degree of credibility as regards the maintenance of price stability in the medium term.