

The outcome of the ECB's evaluation of its monetary policy strategy

In October 1998 the Governing Council of the ECB announced the main elements of its stability-oriented monetary policy. The strategy consists of a quantitative definition of price stability and a two-pillar framework for assessing risks to price stability. After more than four years, the Governing Council felt it would be useful to evaluate its strategy in the light of its experience. On 8 May 2003 it confirmed the definition of price stability as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%. Price stability is to be maintained over the medium term. The Council also clarified that, in the pursuit of price stability, it aims to maintain inflation rates below, but close to, 2% over the medium term. Furthermore, the Governing Council confirmed that its monetary policy decisions will continue to be based on a comprehensive analysis of the risks to price stability, comprising an economic analysis and a monetary analysis. It thereby retains the two-pillar approach to the organisation, assessment and cross-checking of policy-relevant information. The President's Introductory Statement to the ECB's monthly press conference has been restructured to better reflect this approach. Furthermore, the Governing Council decided to no longer review the monetary reference value on an annual basis.

I Introduction

On 8 May 2003 the Governing Council of the ECB announced the outcome of its evaluation of the ECB's monetary policy strategy.¹ This evaluation, which was carried out after more than four years of successfully conducting monetary policy for the euro area, took into account the public debate and a series of studies performed by ECB staff.² The outcome of the Governing Council's evaluation confirmed the main elements of the strategy originally announced in 1998, namely its quantitative definition of price stability and the two pillars underlying the overall assessment of the risks to price stability.³ However, the Governing Council also chose to clarify to the public some aspects of the strategy.

The Governing Council confirmed its definition of price stability "as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%", and that "price stability is to be maintained over the medium term". In addition, the Governing Council clarified the focus of its monetary policy within the definition by stating that in the pursuit of price stability the ECB aims to maintain the inflation rate below, but close to, 2% over the medium term. With this clarification, the Council underlined its commitment to maintain a sufficient safety margin to guard against the risks of deflation, while taking into account all other relevant considerations.

The Governing Council also confirmed that its monetary policy decisions will continue to be based on a comprehensive analysis of the risks to price stability founded on a two-pillar framework. The two pillars are: *economic analysis* to identify short to medium-term risks to price stability; and *monetary analysis* to assess medium to long-term trends in inflation, given the close relationship between money and prices over extended horizons. The Governing Council emphasised that, in seeking to make a unified judgement of the risks to price stability, it would continue to cross-check the information arising from these two approaches. As regards the monetary analysis, the Governing Council also decided to no longer review the reference value on an annual basis in order to stress the longer-term nature of the reference value for monetary growth

1 See the ECB press release entitled "The ECB's monetary policy strategy", 8 May 2003.

2 On the day of the announcement, the ECB published on its website a number of background studies prepared by its staff, which had served as input into the Governing Council's reflections on the ECB's monetary policy strategy. A note entitled "Overview of the background studies for the reflections on the ECB's monetary policy strategy" summarises the main conclusions from the background papers.

3 See the ECB press release entitled "A stability-oriented monetary policy strategy for the ESCB", 13 October 1998; the article entitled "The stability-oriented monetary policy strategy of the Eurosystem" in the January 1999 issue of the ECB's Monthly Bulletin; the article entitled "The two pillars of the ECB's monetary policy strategy" in the November 2000 issue of the ECB's Monthly Bulletin; and the book entitled "The Monetary Policy of the ECB", European Central Bank, 2001.

as a benchmark for assessing monetary developments.

The President of the ECB emphasised on 8 May that these decisions reflect the overall successful experience with the ECB's monetary policy strategy since its inception and ensure full continuity with the past conduct of monetary policy. Most notably, as Chart 1 shows, longer-term inflation expectations have been firmly anchored at levels in line with the definition of price stability since January 1999, remaining in a range between 1.7% and 1.9%. This is a remarkable result against the background of considerable adverse price shocks, such as a substantial increase in oil prices between 1999 and 2000, a significant depreciation of

the euro exchange rate between July 1999 and October 2000 and strong food price increases in 2001.⁴

The general public's understanding of the ECB's monetary policy strategy has improved over time. This reflects the communication efforts made by the Eurosystem, the experience gained from the practical conduct of monetary policy, and the analytical progress made in underpinning and refining elements of the strategy. However, some aspects of the strategy have proved difficult to communicate effectively and have generated some controversy among observers. The Governing Council therefore also examined these aspects as part of its strategy review.

2 The quantitative definition of price stability

The main aspects of the definition

Article 105.1 of the Treaty establishing the European Community assigns to the ECB the primary and overriding objective of maintaining price stability in the euro area. In October 1998 the Governing Council of the ECB announced its quantitative definition of price stability as a key element of its monetary policy strategy.

By referring to "an increase in the HICP of below 2%", the definition of price stability makes clear that both inflation and deflation are incompatible with price stability. The upper bound was set clearly above zero, at 2%, in order to incorporate a safety margin against deflation. This insures the economy against the possibility of monetary policy reaching a situation where it can no longer adequately respond with its policy rate to negative shocks owing to the zero lower bound on nominal interest rates. The definition of price stability announced in October 1998 did not specify a lower bound for inflation rates, reflecting the uncertainty surrounding the size of a potential bias in HICP inflation and its possible variation over time. However, by setting the upper bound for inflation clearly

above zero, the policy takes into account the possibility of HICP inflation slightly overstating true inflation as a result of a small but positive measurement bias in the price index. At the same time, the upper bound of 2% is low enough to reap the benefits of price stability.

A fundamental aspect of the ECB's monetary policy is that it aims to pursue price stability over the medium term. This means that the ECB recognises that monetary policy cannot, and therefore should not, attempt to fine-tune price developments at short horizons. As Box 1 explains, the medium-term orientation also allows monetary policy to take into account concerns about output fluctuations, without prejudice to attaining the primary objective.

The Governing Council's decision to publish the quantitative definition of price stability provided a quantitative benchmark for the general public to form inflation expectations, and for the setting of prices and wages. As noted above, this has been conducive to a

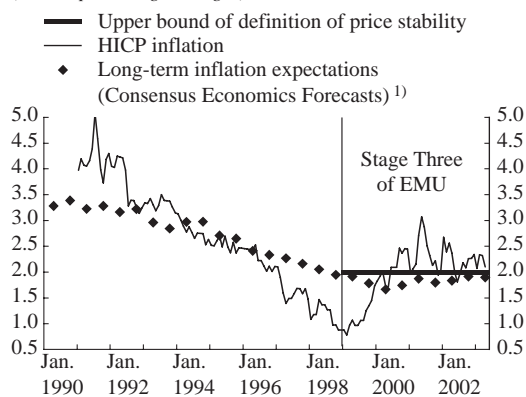
⁴ See the box entitled "The clustering of shocks to HICP inflation since the start of Stage Three of EMU" in the June 2002 issue of the ECB's Monthly Bulletin, p. 34.

Chart I

Euro area longer-term inflation expectations and inflation

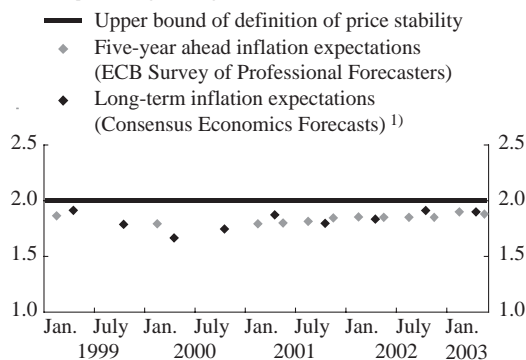
Panel A: Longer-term inflation expectations and inflation (1990-2003)

(annual percentage changes)



Panel B: Longer-term inflation expectations (1999-2003)

(annual percentage changes)



Sources: Eurostat, Consensus Economics Forecasts and ECB Survey of Professional Forecasters.

1) Until December 2002, weighted average of five largest euro area countries, accounting for more than 80% of euro area GDP.

firm anchoring of inflation expectations in the euro area at levels that are very stable and in line with the definition of price stability (see Chart I). This firm anchoring of longer-term inflation expectations has contributed to the smooth functioning of monetary policy.

The clarification of 8 May 2003

In its announcement of 8 May 2003, the ECB's Governing Council confirmed its definition of price stability. At the same time, it made clear that, within the definition, it aims to maintain inflation rates "close to 2% over the medium term". With this clarification the Governing

Council underlined that this focus of monetary policy, i.e. below, but close to, the upper bound of the definition, "provides a safety margin to guard against the risk of deflation". The safety margin "also addresses the issue of the possible presence of a measurement bias in the HICP and the implications of inflation differentials within the euro area".

This clarification makes explicit the ECB's commitment to maintaining inflation below, but close to, 2% over the medium term. It is fully in line with the past conduct of monetary policy and is also consistent with the markets' understanding of the ECB's past monetary policy, as reflected in long-term inflation expectations in the euro area at levels below, but close to, 2% since 1999.

The elements in the evaluation of the definition of price stability

To reach its decision of 8 May, the ECB's Governing Council evaluated the experience with and the main aspects underlying the quantification of the price stability objective: the choice of the appropriate price measure for monetary policy, the costs of inflation, and the arguments for tolerating small rates of positive inflation.

The choice of the price index

For the purpose of setting a quantitative objective for monetary policy, a price index should have a number of essential properties. These include the credibility and transparency of the index (e.g. it should be easily understood by the general public) and a high level of reliability (e.g. it should be subject to only infrequent revisions). It should also be a precondition that the index is provided with sufficient timeliness and frequency. To choose a price index that meets these criteria for the euro area as a whole, in 1998 the ECB decided to use Eurostat's headline HICP for defining price stability, i.e. the overall consumer price index which has been harmonised across EU countries.

Box I

The medium-term orientation of the ECB's monetary policy

The economy is continuously subject to largely unforeseeable shocks that also affect price developments. At the same time, monetary policy can only affect price developments with significant time-lags.¹ Moreover, such lags are variable (e.g. they depend on the prevailing economic circumstances) and, like most economic relationships, highly uncertain. Therefore, it would be impossible for any central bank to keep inflation at a specific point target at all times or even to bring it back to a desired level in a very short time. Monetary policy is ill-equipped to fine-tune economic developments or control prices at short horizons. Instead, monetary policy needs to act in a forward-looking manner and can only maintain price stability over longer periods of time. This is the core of the ECB's medium-term orientation.

Against this background, the choice of a pre-specified, fixed horizon for the conduct of monetary policy would be arbitrary since the transmission mechanism spans a variable, uncertain period of time. Furthermore, the choice of a fixed horizon is problematic as the optimal monetary policy response to ensure price stability always depends on the specific nature and size of shocks affecting the economy. For a wide variety of shocks (e.g. demand shocks, moving output and prices in the same direction) a prompt reaction by monetary policy will not only preserve price stability but will also help to stabilise the economy. However, in the case of some other economic shocks (e.g. of a cost-push nature) output and prices tend to move in opposite directions. An excessively aggressive policy response to restore price stability in a very short span of time may, in these circumstances, risk imparting a significant cost in terms of output and employment volatility. In these cases, it is widely recognised that a gradual response of monetary policy is appropriate to avoid unnecessarily high volatility in real activity. Thus, the medium-term orientation gives the ECB the flexibility required to respond in an appropriate manner to the different economic shocks. In particular, it helps to avoid introducing unnecessary volatility into the economy and embodies a concern for and a contribution to the stabilisation of output and employment.

¹ For recent estimates for the euro area see the article entitled "Recent findings on monetary policy transmission in the euro area" in the October 2002 issue of the ECB's Monthly Bulletin.

The HICP is the index that most closely approximates the changes over time in the price of a representative basket of consumer goods and services purchased by euro area households. The use of this index makes transparent the Eurosystem's commitment to the full and effective protection against losses in the purchasing power of money.

It is sometimes argued that central banks should use measures of "core" or "underlying" inflation to define their primary objective.⁵ These measures remove the more volatile components and/or temporary factors from headline inflation, with a view to uncovering more fundamental trends in price movements. However, choosing a measure of underlying inflation to define price stability would not be in line with the criteria for adequate price indices for monetary policy, particularly that of transparency.

Furthermore, it would be rather arbitrary, as there is no unique or uncontroversial method of deriving such measures.

In any case, it should be clear that, by defining the price stability objective in terms of headline inflation, the ECB is in no way paying excessive attention to short-term price developments in its monetary policy deliberations. The medium-term orientation of the ECB's monetary policy strategy ensures that the Governing Council will duly discount any short-term price volatility when taking decisions.

All the above reasons combine to confirm that headline HICP is the appropriate measure for defining price stability. At the same time, it is

⁵ For a more detailed discussion, see the article entitled "Measures of underlying inflation in the euro area" in the July 2001 issue of the ECB's Monthly Bulletin.

important for the ECB to continue, as part of its regular analysis, to look at the subindices of the HICP and at measures of “underlying inflation” as indicator variables. This may sometimes help to identify the nature of shocks driving price developments and longer-trend price dynamics. At the same time, this indicator role should not be confused with the role of the HICP as the relevant price index for specifying the quantitative definition of price stability.

The costs of inflation and the arguments for tolerating small positive inflation rates

Choosing a quantitative specification of the objective to be pursued by the central bank over the medium term requires striking a balance between the costs of inflation and the possible arguments for tolerating small positive inflation rates.

The costs of inflation

Inflation entails considerable welfare costs through a variety of channels.

- Inflation distorts the signalling role of relative prices, particularly in the presence of “nominal rigidities”, thus reducing the efficiency of market allocations.
- A higher rate of inflation may increase inflation uncertainty and thus the associated risk premia and welfare costs.
- As fiscal systems do not normally allow for the indexation of tax rates to the inflation rate, increases in inflation amplify the distortionary effects of taxation.
- Inflation increases the “shoe-leather” costs incurred by agents when looking for a way of storing value other than holding money balances, in order to protect themselves against real wealth losses.
- For certain goods and services, “menu costs” are incurred whenever prices are

changed, and higher rates of inflation require a higher frequency of price changes.

- As some groups of society have more limited possibilities for hedging against inflation, inflation has effects on the distribution of income and wealth (e.g. redistribution effects from creditors to debtors). In this respect, it is usually the weakest groups of society that suffer the most from inflation.

Empirical estimates of the size of inflation costs vary, but the evidence and available studies consistently confirm that inflation implies substantial welfare costs. More recent studies suggest that the costs of inflation may be higher than previously thought and show that even moderate rates of inflation could entail significant costs. There is therefore wide consensus that, barring the factors which caution against maintaining inflation close to zero (see below), there would be a strong case for literal price stability (i.e. zero inflation).

Arguments for tolerating small positive inflation rates

Despite the significant costs of inflation, a number of considerations suggest that maintaining a moderate positive rate of inflation would be desirable. Three main arguments are generally considered: the risks of deflation and the zero lower bound for nominal interest rates; the possibility of an upward measurement bias in measured inflation; and the presence of downward nominal rigidities in prices and labour compensation. In addition, if real convergence between regions in a currency union is incomplete, structural inflation differentials across the regions comprising the union may arise. In principle, such inflation differentials could exacerbate concerns for the smoothness of the adjustment process in some regions. The following sections explain the underlying arguments further.

The zero lower bound of nominal interest rates and the risks of deflation

Many of the sources of inflation-related costs, such as distortions in relative prices, are also relevant if there is a sustained decline in the level of prices. However, situations of protracted deflation – although very unlikely in economies exhibiting no major macroeconomic imbalances – could entail specific risks for the stability of economic developments. Most notably, a protracted period of deflation at a time of faltering growth may constrain the central bank in the conduct of its monetary policy, since nominal interest rates cannot be reduced below zero. Indeed, any attempt to bring the nominal interest rate significantly below zero would fail, as the public would prefer to hold cash rather than to lend or hold deposits at a negative rate. In a deflationary situation, the existence of a lower bound for nominal interest rates limits the room for manoeuvre of the central bank to reduce real interest rates in order to stimulate demand and counteract deflationary pressures. Deflation may in addition increase the real burden of debt of households and firms and thereby augment the risks of financial instability.

Although various monetary policy actions are possible even at zero nominal interest rates and different solutions for escaping from a deflationary trap have been proposed, the effectiveness of these alternative policies is not certain. This indicates that monetary policy is well advised to maintain a safety margin against deflation by aiming at a small positive rate of inflation rather than at zero inflation.

A number of studies have tried to assess the likelihood of hitting the zero lower bound for nominal interest rates and for various levels of inflation targeted by the central bank. Most of the studies show that this likelihood decreases to very low levels when the central bank aims to maintain the inflation rate above 1% over the medium term.⁶

Measurement bias in the price index

For various reasons, consumer price indices may be subject to measurement errors. Such errors may arise if prices are not adequately adjusted for changes in quality or if relevant transactions remain systematically out of the sample used to construct the index. In the past, these systematic errors (or *bias*) have usually been estimated as positive but small for some industrialised countries, suggesting that a rate of measured inflation at zero could imply a slight decline in the actual price level.

Evidence of a measurement bias in the euro area HICP remains scarce, reflecting its short history. Some studies indicate that the size of the bias is likely to be limited, even though the level of uncertainty that still surrounds the estimates of the measurement bias would advise against pointing to a specific figure. In addition, taking into account the continuous improvements in the HICP's properties by Eurostat, the bias is likely to further decline in the future. Overall, the possibility of there being a measurement bias is of minor importance for setting a safety margin for inflation rates above zero when viewed against considerations relating to the risks of deflation.

Downward nominal rigidities in prices and labour compensation

Movements of relative prices are a key element for the efficient allocation of resources in a market economy. The economic adjustment of relative prices to shocks could become too sluggish if wages and prices were subject to downward nominal rigidities, i.e. a resistance to accept nominal reductions in prices and wages. In this respect, it has been argued that some inflation may actually “grease” the adjustment of relative prices and thus also the real adjustment of the economy to various shocks.

⁶ Other studies come to different results but seem to overestimate the risk of hitting the zero lower bound for nominal interest rates, as they assume a real equilibrium interest rate that appears unrealistically low or assume that monetary policy does not react optimally when faced with deflationary risks.

However, the importance in practice of downward nominal rigidities is highly uncertain and the empirical evidence is not conclusive, particularly for the euro area. The analysis is considerably clouded by several factors, most notably the scarcity of evidence due to the rarity of prolonged periods of low inflation in most countries.

On the price-setting side, evidence based on the distribution of changes in euro area price indices indicates that nominal price cuts are relatively frequent. On the wage-setting side, the results of empirical studies generally find some concentration of wage changes around the zero mark, but also show a substantial portion of wage earners taking wage cuts. The latter probably reflects the increasing importance of flexible components in workers' compensation (e.g. a more widespread use of performance-based systems of compensation, or overtime payments), which should soften the stringency of any downward nominal rigidities. Moreover, the assessment of such rigidities should take into account the effect of positive productivity growth on unit labour costs. A positive trend in productivity growth enables firms to reduce labour costs per unit of output without necessarily cutting nominal wages. Furthermore, it may be argued that these rigidities could tend to decline and even vanish in the context of a permanent and credible move to a low inflation environment.

Finally, even if certain downward nominal rigidities still exist, "accommodating" them with a higher inflation rate could risk this undesirable structural feature of some economies becoming even more entrenched. On the contrary, it is crucial that structural reforms seek to increase the flexibility of product and labour markets and to fully reap the benefits of price stability in all euro area countries.

These considerations combine to suggest that the relevance of downward nominal rigidities should not be overemphasised as regards their impact on the safety margin for tolerable rates of inflation.

Sustained inflation differentials in a monetary union

In principle, inflation differentials across regions are and should be considered a normal feature of any monetary union.⁷ They are an integral part of the adjustment mechanism resulting from demand and supply shocks in the regions' economies. In any currency area – be it a currency union or a single country – monetary policy cannot and should not try to reduce inflation differentials across regions or cities. Instead, depending on the sources and causes of the inflation differentials, regional remedies may be needed to prevent them from resulting in developments that are harmful for the regions concerned.

Despite this, inflation differentials may have a structural component in every currency union, e.g. due to differences in income levels and an ongoing process of catching-up in standards of living. Given these unavoidable inflation differences, it has been argued that monetary policy should aim to achieve over the medium term an inflation rate for the area as a whole that is high enough to prevent regions with lower inflation rates from facing significant costs of downward nominal rigidities or entering periods of a protracted decline in prices. In assessing sustained inflation differentials in the euro area, much prominence is often given to the Balassa-Samuelson hypothesis⁸. This hypothesis argues that, under certain conditions, sustained inflation differentials between two regions can be caused by differences in the relative rate of productivity growth in each region's tradable and non-tradable goods sectors. Such differentials in productivity growth may result from a process of convergence of living standards within the euro area. The Balassa-Samuelson effect thus

7 In the euro area, the current dispersion of inflation rates across countries is broadly comparable to that observed across large regions in the United States. See the box entitled "The dispersion of inflation rates across the euro area countries and the US metropolitan areas" in the April 2003 issue of the ECB's Monthly Bulletin, pp. 22-24.

8 See Balassa, B., "The purchasing power parity doctrine: a reappraisal", *The Journal of Political Economy*, 72, 584-596, December 1964; and Samuelson, P., "Theoretical notes on trade problems", *Review of Economics and Statistics*, 46, 1964.

reflects an “equilibrium phenomenon” which, in principle, would not call for corrective action by economic policies.

Empirical studies for the euro area suggest that the scale of the Balassa-Samuelson effect, although difficult to estimate with great precision, is limited. Most empirical estimates of the Balassa-Samuelson effect indicate that the average inflation rate in lower-inflation countries would be, at most, half a percentage point lower than the average inflation rate for the euro area as a whole. In addition, the size of the Balassa-Samuelson effect in the current euro area regions is likely to gradually diminish over time, given the ongoing convergence in per capita GDP among countries.

Looking forward to a possibly enlarged euro area, the overall relevance of this effect is also likely to remain limited, not least given the small relative weight of acceding countries’ economies in an enlarged euro area. In addition, acceding countries will have to fulfil the convergence criteria in order to

adopt the euro. This requires them to demonstrate that they have converged sufficiently and meet the conditions needed to sustain a low inflation environment prior to the adoption of the euro.

Moreover, it appears highly unlikely that a single country or region in the euro area would fall into a situation of a persistent decline in prices while the euro area as a whole exhibits price stability. Such a situation in a single region or country would lead to significant gains in its competitiveness. The ensuing positive effects on demand for its products would then counteract contemporaneous downward price pressures, thereby dispelling any expectations that such a situation could be sustained over time. From this point of view, a period of falling prices in a country within a monetary union should be mainly seen as an adjustment of relative prices within the currency union. In this respect, the concern for the conduct of monetary policy is to avoid situations where there are risks of deflation in the area as a whole.

3 The analysis of risks to price stability

The main aspects of the framework

The ECB has always explained that its approach to organising, evaluating and cross-checking the information relevant for assessing the risks to price stability was based on two analytical perspectives, referred to as the “two pillars”. This framework made a distinction between, on the one hand the monetary analysis, and on the other hand the analysis of other indicators to arrive at a comprehensive assessment of the outlook for price developments. Within the monetary pillar, which gives a prominent role to money, a reference value for the growth of a broad monetary aggregate was announced. The two-pillar framework has become a distinguishing feature of the strategy, in conjunction with the medium-term orientation of the ECB’s monetary policy conduct. The public’s understanding of this approach has significantly improved over time.

The clarification of 8 May 2003

Nevertheless, on 8 May the Governing Council decided to clarify some aspects of the two-pillar approach that had posed certain challenges for communication in the past. It confirmed that its monetary policy decisions would continue to be based on a comprehensive analysis of the risks to price stability, organised, as in the past, on the basis of two complementary perspectives on the functioning of the economy: the “two pillars” of the ECB’s monetary policy strategy. These two perspectives would henceforth be referred to as “economic analysis” and “monetary analysis”. The Governing Council stated that, over time, analysis under both pillars of the monetary policy strategy had been deepened and extended in line with increasing availability of euro area data and ongoing improvements in technical tools, and would continue to be developed in the future.

The Governing Council also clarified the way in which it integrates the indications stemming from these two complementary types of analysis as it seeks to come to a unified overall judgement on the risks to price stability. In particular, it indicated that monetary analysis mainly serves as a means of cross-checking, from a medium to long-term perspective, the short to medium-term indications coming from economic analysis.

To properly reflect the two-pillar approach and the cross-checking role of monetary analysis in public communication, the Governing Council announced that the President's Introductory Statement to the ECB's monthly press conference would henceforth follow a new structure. It will start with a broadly based economic analysis to identify short to medium-term risks to price stability. In the second section, the statement will proceed to monetary analysis to assess medium to long-term trends in inflation in view of the close relationship between money and prices over extended horizons. The end of the statement will then provide a cross-check of the information from these two complementary perspectives and include an overall conclusion on the risks to price stability.

To underscore the longer-term nature of the reference value for monetary growth as a benchmark for the assessment of monetary developments, the Governing Council also decided to no longer conduct a review of the reference value on an annual basis. The rationale for these decisions is considered below.

The two-pillar approach

In 1998 the ECB's monetary policy strategy was designed to ensure that in the assessment of risks to price stability no relevant information would be lost and that appropriate attention would be paid to different perspectives. The two-pillar approach is a way of conveying to the public the notion of a diversified analysis and of

ensuring robust decision-making based on different analytical perspectives.

An important argument in favour of adopting the two-pillar approach relates to the difference in the time perspectives for analysing price developments. The inflation process can be broadly decomposed into two components, one associated with the interplay between demand and supply factors at a high frequency, and the other connected to more drawn-out and persistent trends (see Box 2). The latter component is empirically closely associated with the medium-term trend growth of money.

The short to medium-term economic analysis – with its focus on real activity and financial conditions – is well equipped to study shorter-run deviations of inflation from its long-term trend. However, it often fails to track the mechanisms by which monetary factors act over extended horizons and thus to pin down such trends. There is, therefore, a need for monetary policy to explicitly take information from monetary developments, which might otherwise risk being overlooked or underestimated, into due account in policy considerations. In this sense, the two-pillar approach constitutes a commitment device on the part of the ECB to make sure that, while responding to economic developments as and when they arise, the fundamental factor driving prices over extended horizons – the rate of money growth – remains consistently under observation.

The rest of this section discusses the way in which the two complementary perspectives on the process of price determination – offered by economic and monetary analysis – are integrated into the final judgement of the risks to price stability.

Economic analysis

The economic analysis focuses mainly on the assessment of current economic and financial developments and the implied short

to medium-term risks to price stability from the perspective of the interplay between supply and demand in goods, services and factor markets at those horizons. In this respect due attention is paid to the need to identify the nature of shocks hitting the economy, their effects on cost and pricing behaviour and the short to medium-term prospects for their propagation in the economy.

The economic and financial variables that are the subject of this analysis include, for example: developments in overall output; aggregate demand and its components; fiscal policy; the formation and cost of capital; labour market conditions; a broad range of price and cost indicators; developments in the exchange rate, the global economy and the balance of payments for the euro area; financial markets; and the balance sheet positions of euro area sectors. All these factors help to assess the dynamics of real activity and the likely development of prices over shorter horizons.

The ECB's economic analysis has been significantly extended and enriched over the past few years, largely as a result of the progress made in the production of euro area real and financial data and in the statistical and analytical processing of such information. Furthermore, several models have been developed to better assess and understand past and ongoing developments, to make more reliable short-term forecasts and to underpin the regular macroeconomic projection exercises for the euro area economy. In this context, with the improved availability of financial accounts statistics for the euro area, increasing attention has also been paid to indicators of households' and corporations' financial and net wealth positions, as relevant driving factors in shaping consumption and investment choices. By monitoring incoming data and using all the available analytical tools, a comprehensive assessment of the economic situation and the outlook for the euro area is conducted and updated continuously.

The Eurosystem's staff macroeconomic projection exercises have played and will continue to play an important role in the economic analysis, as input into the considerations of the Governing Council.⁹ The projections help to structure and synthesise a large proportion of economic data and ensure consistency across different sources of economic evidence. In this respect, they are a principal element in sharpening the assessment of economic prospects and the short to medium-term fluctuations of inflation around its trend. Despite this, they are not an all encompassing tool for the conduct of monetary policy, as they do not contain all relevant information. In particular, information from monetary aggregates is not easily integrated into the framework used to produce the projections.

The ECB has confirmed that its monetary policy should not react exclusively to a forecast at a fixed horizon. Instead, monetary policy needs to be tailored to the nature of the shocks hitting the economy, and their size, source and potential for propagation. On this basis, the key ECB interest rates must evolve in such a way that the path of future inflation remains in line with the ECB's objective of price stability over the medium term (see Box I). A further consideration relates to the fact that the degree to which forecasts prove reliable tends to fall significantly as the distance to the forecasting horizon increases. On some occasions, notably in the face of uncertainty about the sustainability of asset price movements, it may be advisable for a central bank to set interest rates with a view to a time frame extending well beyond conventional forecast horizons.

Furthermore, forecast exercises are based on models which, by definition, cannot provide a full description of economic events. The indications yielded by such procedures generally depend on a number of conditions that can only be imperfectly controlled. An essential element of the policy process is

⁹ See the box entitled "The role of macroeconomic forecasts and projections under the second pillar" in the November 2000 issue of the ECB's Monthly Bulletin, pp. 43-44.

therefore to evaluate and compare the robustness of the information stemming from various sources. To fully assess the economic situation and the outlook for price stability, the Governing Council must be able to call on a variety of techniques and policy simulations based on various models, and must use its own judgement, with particular regard to the likelihood that certain hypothetical scenarios will eventually materialise. In this respect, an exclusive focus on an inflation forecast would neither do justice to the intrinsic complexity of the decision-making process, nor would it provide a transparent means of communicating this complexity. An articulated analysis of the economic forces at work in the economy is thus preferable to the use of a single summary indicator.

Monetary analysis

In 1998 the ECB decided to single out money from within the set of the selected key indicators that it would monitor and study closely. This decision was made in recognition of the fact that monetary growth and inflation are closely related in the medium to long run. This undisputed relationship was acknowledged to provide monetary policy with a firm and reliable nominal anchor beyond the horizons conventionally adopted to construct inflation forecasts. Therefore, assigning money a prominent role in the strategy was also a tool to underpin its medium-term orientation.

More than four years later, the economic foundations on which the prominent status of money was based remain solid. As already mentioned, the fact that longer-term trend movements in broad money serve to identify inflation trends in the euro area continues to be a robust result of the quantitative evaluation exercises conducted both within and outside the ECB (see Box 2). Furthermore, the Governing Council's experience in actually conducting policy has lent support to the notion that taking policy decisions and evaluating their consequences

on the basis not only of the short-term indications stemming from the analysis of economic and financial conditions, but also of money and liquidity considerations, allows a central bank to see beyond the transient impact of the various shocks and not be tempted to take a more activist course.

The analysis of money has been extended over time beyond the assessment of M3 growth in relation to the reference value. The framework for monetary analysis builds on the ECB's expertise in the institutional features of the financial and monetary sector. In its regular monitoring of the monetary conditions in the euro area, the ECB draws on a range of small-scale money demand and monetary indicator models which have been developed and published by ECB staff and academics. The monetary analysis uses a comprehensive assessment of the liquidity situation based on information from the components and counterparts of M3, in particular loans to the private sector, and from various money gap measures and concepts of excess liquidity. A detailed analysis of the structure of M3 growth is helpful for extracting a signal from monetary developments that is relevant for identifying the longer-run trend in inflation. In this context, the most liquid components of M3 – most notably M1 – receive particular attention as they more closely reflect the transaction motives for holding money, and are thus the most tightly related to aggregate spending. At the same time, gaining a thorough understanding of the interdependencies between M3 and its counterparts in the consolidated balance sheet of the MFI sector is instrumental in judging whether observed changes in money growth can be traced to portfolio shifts which, in turn, may or may not bear implications for price trends. The analysis of the balance sheet positions of the non-financial sector, which also contain information on the holding of assets outside the MFI sector, has been particularly important in identifying such portfolio shifts that have affected monetary developments since mid-2001.

Box 2

Money and prices in the long run

The medium to long-term link between money and inflation in the euro area has been the subject of a number of recent studies, using a range of different technical approaches. Broadly speaking, these studies can be classified into three groups.¹

The first group of studies tackled the issue of the relationship between money growth and inflation from the perspective of assessing whether the inflation process in the euro area can (at least partly) be traced to factors related to money growth. On the basis of statistical methodologies suited to breaking down a time series into the relative contributions of components acting at different time horizons, it has been found that long-term variations in inflation are closely associated with long-term movements in money. Furthermore, it has been found that euro area inflation can be described by means of a Phillips curve relationship – i.e. a relationship explaining inflation in terms of indices of economic slack – augmented by a term capturing low-frequency movements in money. This relationship has been interpreted as being indicative in that, whereas fluctuations of inflation in the euro area are driven by factors associated with the state of activity in relation to its long-term potential, the long-term average of inflation is highly correlated with money growth. More consistent evidence in favour of a causal link between money and inflation in the euro area at longer-term horizons has been found by constructing a core inflation measure on the basis of the common persistent – or “long-memory” – component of inflation and excess nominal money growth.

All these results (which confirm the principle that, in the long run, money only affects prices and not output growth) have received support from a second strand of literature, aimed at uncovering money’s indicator properties with respect to future price movements. From this perspective, there appears to be compelling evidence that the growth of broad monetary aggregates helps to predict inflation, notably at horizons exceeding two years. At the same time, various monetary indicators can indirectly offer information about risks to price stability through their impact on economic variables other than prices, which in due course can influence price formation. For example, narrow monetary aggregates have leading-indicator properties for demand conditions and thus cyclical developments. Moreover, growth rates of money and credit in excess of those sufficient to sustain economic growth at a non-inflationary pace may, under certain conditions, signal the emergence of financial imbalances or speculative asset price bubbles. Such information may indicate, at an early stage, the build-up of destabilising forces with adverse implications for activity and, in the medium term, prices.

A third strand of literature has undertaken empirical investigations on the basis of money demand models. Money demand models are a tool for quantifying how the demand for real money holdings is affected by its fundamental determinants – such as, in particular, real GDP, and measures of the opportunity cost of holding money. At the same time, these models can be used to isolate the quantitative impact of transient shocks to the preference for liquidity and temporary instabilities in the mechanisms by which agents adjust their money holdings to the equilibrium conditions mapped out by the fundamental determinants. The long-term stability in the relationship between real money balances and their long-run fundamental determinants in the euro area has been interpreted as a confirmation that a stable relationship exists between nominal money balances and prices in the medium to long term. It has also been seen as a precondition for the announcement of a reference rate for M3 growth.

¹ References to these studies can be found in the note entitled “Overview of the background studies for the Reflections on the ECB’s monetary policy strategy”, the background studies cited therein and further relevant papers, all of which are available on the ECB’s website (<http://www.ecb.int/pub/strategy/strategy.htm>).

The ECB's reference value for M3 growth is a benchmark for analysing the information content of monetary developments. In this respect, the reference value has also constituted an instrument for the construction of quantity-based indices of longer-term monetary imbalances, such as measures of the money gap, which have proved useful for the conduct of a comprehensive medium term-oriented monetary analysis. The ECB has always emphasised the fact that, owing to the medium to long-term nature of the monetary perspective, there would be no direct link between short-term monetary developments and monetary policy decisions. Monetary policy would not therefore react mechanically to deviations of M3 growth from the reference value. Rather, the reference value performs an important role as a medium to long-term quantitative benchmark for assessing monetary developments. It constantly reminds the central bank of the fundamental principle that, while responding to economic developments, it must never lose sight of the fact that over sufficiently extended horizons the rate of money growth must be consistent with the price stability objective.

As already noted, the Governing Council decided to no longer review the reference value for M3 on an annual basis. In the past, at the end of each year, the Governing Council had reviewed the assumptions about the medium-term trends in potential output growth and the income velocity of M3 underlying the derivation of the reference value for M3. However, these medium-term trend assumptions are not expected to change frequently. Therefore, the decision to discontinue the regular annual review is more in line with the medium-term nature of the assumptions underlying the computation of the reference value. It may also help to dispel occasional misperceptions that the former practice implied a reference value that was specifically applicable – like a monetary target – to the year ahead. The Governing Council will, however, continuously monitor the validity of the conditions and assumptions

underlying the reference value and communicate any changes to the underlying assumptions, as soon as they become necessary.

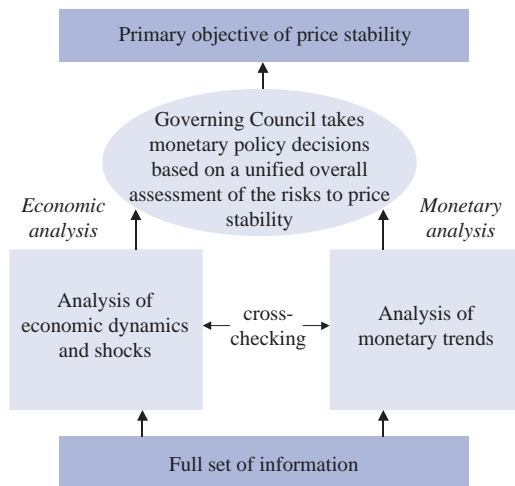
A condition for setting a reference value for M3 growth is the long-run stability of money demand. While M3 has grown significantly faster since mid-2001 than can be estimated using available money demand models,¹⁰ there is to date no compelling evidence to suggest that these developments may have altered the long-run relationship between money and its long-term determinants.

Recent developments in the demand for M3 have been associated with a heightened preference for liquidity induced by an exceptionally prolonged period of asset price volatility. This appears to have led to portfolio shifts from less liquid (and more risky) assets to instruments included in the definition of M3, which are perceived as a more secure store of value. However, these are likely to be temporary phenomena, as there is little evidence of structural changes in the euro area economy to suggest that the relative attractiveness of holding instruments included in M3 as opposed to other financial instruments has been fundamentally altered in recent years. Historically, when money demand instability occurred over longer periods of time, this was primarily due to financial innovation or tax changes affecting the opportunity cost of holding money assets. However, there have been no significant changes in any of these factors recently to justify expectations of continued instability in euro area money demand.

Nevertheless, looking ahead, two issues will require careful monitoring. One concerns the duration of the current period of volatility in the financial markets. A second source of uncertainty concerns possible future structural changes in financial markets and in the composition of wealth due to the increased sophistication of private investors.

¹⁰ See the box entitled "Estimating the size of portfolio shifts from equity to money" in the May 2003 issue of the ECB's *Monthly Bulletin*, p.11.

Chart 2
The stability-oriented monetary policy strategy of the ECB



Both issues make it necessary to closely monitor the stability properties of money demand and ensure the appropriate definition of the broad monetary aggregate. This, in turn, means using the appropriate statistical tools to identify and model such developments, as well as utilising the Eurosystem's detailed knowledge of the institutional features of the euro area's financial and monetary sector.

4 Conclusions

With its announcement of 8 May 2003, the Governing Council has confirmed and clarified the ECB's monetary policy strategy. In this respect, the Governing Council's indication of a medium-term focus for monetary policy on inflation rates below, but close to, 2% reflects full continuity with the past conduct of monetary policy. At the same time, changes to the presentation of the two-pillar framework seek to explain the conduct of

The cross-checking

In order to assess the indications about the appropriate stance of monetary policy, the two-pillar approach provides a cross-check of the information that stems from the shorter-term economic analysis with that from the monetary analysis, which mainly provides information about the medium to long-term determinants of inflation. As noted above, the cross-check ensures that monetary policy maintains a firm medium-term orientation beyond the conventional projection horizon, helping to discourage excessive policy activism and overly ambitious attempts to fine-tune economic developments.

The two-pillar structure does not partition the information set, or allocate indicators rigidly to one pillar or another. As in the past, all complementarities between information variables under the two pillars will be exploited, as this is the best way to ensure that all the relevant information for assessing price prospects is used in a consistent and efficient manner, facilitating both the decision-making process and its communication (see Chart 2).

monetary policy more clearly to the general public, thus helping to eliminate any remaining uncertainty in the public's understanding of this aspect of the framework.

With its decision to confirm and clarify the main elements of its stability-oriented monetary policy strategy, the ECB has also ensured that price stability is maintained in a credible and lasting manner in the euro area.