The ECB's monetary policy strategy: Trying to go beyond inflation targeting

Abstract

Inflation targeting has been the ruling monetary policy paradigm since the beginning of the 1990s. In recent years, however, its pitfalls have become evident: it has been blind to the emergence of record international current account imbalances and inflated asset prices. However, a new monetary policy paradigm has yet to emerge. The ECB's monetary policy strategy was initially conceived as a bridge between the older paradigm of monetary targeting and its successor, inflation targeting. It could now provide a bridge between inflation targeting and a new paradigm which takes account of financial and asset market developments in monetary policy decisions. However, using the strategy this way would require the Council to be able to reconcile different signals from the two pillars of the strategy into a consistent interest rate (and communication) policy. For now, the Council seems to have difficulties doing this and hence tends to wait for the signals from the two pillars to coincide before taking action. To avoid policy inertia and mistakes, the ECB needs to resolve disagreements within the Council about the appropriate policy paradigm and reinforce research into a monetary policy strategy that goes beyond inflation targeting.

Paradigm changes

According to Imre Lakatos (1922-1974), a philosopher of mathematics and science, scientific knowledge does not grow by chance discoveries but is the result of competing "research programmes". A "degenerating" programme is a theory increasingly out of synch with facts while a "progressive" programme is a theory supported by new empirical evidence. Initially, researchers may still defend degenerating programmes (e.g., by adjusting old theory to better cope with new facts), but as this defence becomes ever more difficult, they shift sides and join the progressive programme.[1]

Now apply this to the recent evolution of monetary policy paradigms. Monetarist theories developed in the 1960s and early 1970s predicted the rise of inflation during the 1970s as a result of rampant money growth and then became the "progressive programme" (and preferred approach of central bankers) well into the 1980s. In the course of the 1980s, however, financial innovation undermined the predictive power of monetarist theory, turning it into a "degenerating programme". A competing theory—inflation targeting—seemed more successful as the output gap was found to be a superior predictor of near-term inflation.[2] Academic economists began to switch sides, and central bankers soon followed. By the mid-1990s, no hopeful young academic could advance his career by defending monetarist theory, and central bankers still professing allegiance to this theory tended to be ridiculed.

Over the years, inflation targeting proved a highly successful strategy especially for central banks in inflation-prone environments to anchor inflation expectations at levels consistent with price stability. More recently, however, new facts have begun to challenge the paradigm of inflation targeting. The theory's prediction of price stability

[1] See, for instance, Mark Blaugh, The methodology of economics, Cambridge University Press 1988 for a short introduction to Lakatos' theory.

[2] Generally speaking, inflation targeting describes an approach to monetary policy where the central bank adopts an inflation target and produces regular inflation forecasts typically with a two year horizon under the assumption of unchanged interest rates. The need for a rate change arises, when the forecasted inflation deviates from the inflation target. To arrive at the forecasts, the central bank in theory uses all available information. In practice, however, and reflecting the predominance of the so-called New-Keynesian economic model in recent economic thinking, inflation-targeting central banks have tended to rely primarily on Phillips curves to assess the outlook for inflation. As a result, estimates and projections of the output gap have played a prominent role in the interest rate decisions of inflation targeting central banks.

as a result of an interest rate policy aimed mainly at minimising an output gap predicted on a 1-2 year horizon has come under pressure from several sides. Two problems stand out: First, the role of the output gap in the practical implementation of inflation targeting has become problematic. For one thing, it has become apparent that output gap measurement and forecasting is highly uncertain. For another, it has been questioned whether the output gap is indeed a good predictor of inflation in the longer run. Second, inflation targeting has been blind to the emergence of huge international current account imbalances and unusually high asset valuation that pose series risks to price (and financial) stability in the future.

Pitfalls of inflation targeting: The role of the output gap

The output gap is regarded as a key predictor for future inflation in the New-Keynesian Model, the current workhorse for many economists and central bankers. Hence, it has played an eminent role in the implementation of inflation targeting by the main central banks. However, the output gap is an unobservable variable. It is calculated as the difference between actual and potential GDP, with the latter estimated from a production function or through time series techniques. Real time estimates of the output gap are subject to high uncertainty due to large error margins in real time potential GDP estimates and frequent and substantial revisions of national accounts data. Moreover, forecasting errors for output gaps are potentially compounded by simultaneous forecasting errors for actual and potential GDP in the opposite direction. Consider, for instance, the case where potential GDP is overestimated and overpredicted over the forecasting horizon with the opposite the case for actual GDP. As a result of this, the output gap will be overestimated by a large margin, and a monetary policy heeding the signals from the output gap will be far too expansionary to secure price stability over the medium-term.

How likely is it that such errors occur? Trichet and Gros (et al.) provide examples of real time estimates of the output gap in the euro area since 1999.[3] They show that all major international organisations tended to overestimate the euro area output gap in

[3] See Jean-Claude Trichet, "Monetary Policy and 'Credible Alertness'", Intervention at the Panel Discussion "Monetary Policy Strategies: A Central Bank Panel", at the Symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, 27 August 2005, and D. Gros (et al.), EMU at Risk, 7th Annual Report of the CEPS Macroeconomic Policy Group, June 2005.

the early years of EMU due to an over-estimation of potential growth. At the beginning of this decade, potential growth was seen to have accelerated on the back of faster technical progress. Hence, when actual growth reached 3.5% in 2000, GDP was seen to approach its potential from below, with the output gap gradually melting away. The unexpected downturn of 2001-2002 then was expected to give again rise to a considerable output gap.

In retrospect, estimates and expectations for potential growth of the euro area economy proved too optimistic. During the five-year period ending in 2004, euro area GDP growth averaged only 1.7%; during the corresponding ten-year period, growth averaged 2.0%. Hence, what initially and in real time appeared as a small positive output gap in the year 2000 turned into a significant negative output gap from a historical perspective. Reflecting the initial optimism about potential growth, monetary policy may have been too expansionary in 1999, and fiscal policy may have underestimated the size of structural deficits since the beginning of EMU. Against this background, it is not surprising that inflation has averaged 2.2% since the beginning of 2000--at least a ¼% above the ECB's target of less than but close to 2%--and an increasing number of countries is violating the deficit and debt limits of the Stability and Growth Pact.

A more theoretical objection against the output gap as the key predictor for inflation is related to the historical characteristics of the inflation process. For most countries—and certainly for those of the euro area—inflation has been a non-stationary time series over the last 30-40 years. It was high in the 1970s, eased in the 1980s and fluctuated around low levels in the 1990s before edging up again in the more recent past. Against this, the output gap is a stationary series with a zero mean by design. Standard econometric theory would argue that a stationary (i.e., I(0)) variable cannot explain a non-stationary (e.g., I(1)) variable. Hence, while the output gap may be useful explaining changes in inflation, it seems to be an inappropriate predictor for the level of inflation. Indeed, recent research shows that when euro area inflation is decomposed into a high frequency and a low frequency component, the output gap

explains well the former but not the latter time series components. For low frequency movements of inflation, money growth seems to be a better explanatory variable.[4]

Pitfalls of inflation targeting: External imbalances and asset prices

Problems associated with the focus on output gaps in the practice of inflation targeting could probably be remedied within the concept of inflation targeting by revising the inflation model employed for inflation forecasting. This would require the addition of other, possibly monetary variables to the inflation model and the extension of the forecasting horizon. Such a strategy would keep the main features of inflation targeting—a target and a forecast for consumer price inflation—and hence could perhaps be regarded as an enhanced version of the original strategy. Another, more fundamental problem, however, is the narrow focus on consumer price inflation as the target variable. As a consequence, inflation targeting has been blind to important developments affecting price and financial stability in the longer run, notably the emergence of very large external imbalances and high asset valuations (with a corresponding compression of risk premia) in recent years. In certain circumstances, narrow inflation targeting may lead to a monetary policy that condones the build-up of both a large current account deficit and asset price inflation.

Consider first the relationship between a monetary policy guided by inflation targeting and the economy's external equilibrium. Assume a country that can borrow easily on international capital markets and has a high degree of economic flexibility. In this country, price stability is ensured when the supply of non-tradable goods is sufficient to satisfy demand. Any excess demand for tradable goods can be satisfied through imports from abroad at stable prices. In these circumstances, domestic demand growth can exceed GDP growth without raising inflation (and inducing a more restrictive monetary policy stance) as long as resources can be shifted from the traded to the non-traded goods sector to meet the demand for non-traded goods. A central bank concerned with maintaining internal price stability in an inflation targeting framework will aim at keeping growth in demand for non-tradable goods in line with the increase in their supply and be unperturbed by excess demand for

[4] See K. Assenmacher-Wesche and S. Gerlach, "Interpreting Euro Area Inflation at High and Low Frequency", paper presented at the Bundesbank-IIW workshop on "What central banks can learn from money and credit aggregates", Eltiville (Germany), October 27-28, 2005.

tradable goods. The speed limit for growth then is the rate at which resources can be reallocated from the traded to the non-traded goods sector. Especially in a fairly flexible economy benefiting from rising productivity growth in the non-tradable goods sector, monetary policy would then be much too easy to ensure both internal and external equilibrium. In the long run, however, an unsustainable external balance will in the end also disturb internal equilibrium.[5]

US economic developments over the last 10 years illustrate the above described case.[6] In 1994-2004, US real GDP grew by 3.2% on trend and inflation averaged 2.5%. Real exports and imports grew at trend rates of 4.0% and 8.0%, respectively, with real net exports declining from -1.0% of GDP in 1994 to -5.6% of GDP in 2004. Rising capital inflows prevented a depreciation of the US dollar while an increase in the ratio of value-added generated in the non-traded to the traded goods sector from 3.2 in 1994 to 4.4 in 2003 helped to contain non-traded goods inflation (chart 1).[7]

Developments in the US have differed significantly from those of another country, Germany, which has tended to run current account surpluses over the years (chart 2). The latter country experienced a one-off jump in the relationship between value added created in the non-traded and traded goods sector at the time of German unification, largely driven by a rise of value added in the construction sector. Unlike the US, Germany did not experience an accelerated increase in non-traded to traded goods sector value-added in recent years. This is consistent with findings of lower productivity growth in the non-traded goods sector, especially in retailing, in Europe compared to the US. Some economists have argued that this has been due to a lower

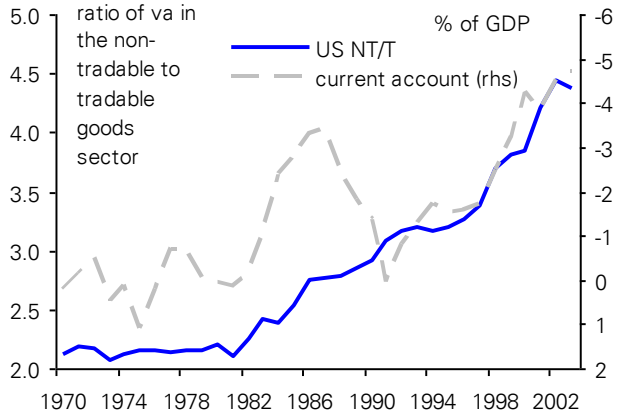
[5] From this does not follow that central banks should target external balance. The point here is that under the described circumstances a too easy monetary policy may raise the current account deficit instead of inflation. Thus, a central bank looking only at the near-term future of consumer price inflation and ignoring the development of the external balance could accumulate inflation pressures, which could be released when the external deficit becomes unsustainable and the currency collapses.

[6] Strictly speaking, the US Federal Reserve has not adopted inflation targeting as a monetary policy strategy. It has a dual mandate, ensuring price stability and full employment, and it does not publish inflation targets. In practice, however, the Fed's approach has had considerable similarities with that of inflation targeting central banks. The Fed has led financial markets and the general public to believe that they aim for low and stable consumer price inflation and are prepared to take measures whenever the changes in the economic outlook jeopardise this goal. Moreover, in their comments and research papers, Fed officials and staff have left no doubt about their reliance on the New Keynesian Model for economic analysis and their preference of the Phillips curve and (related) output gap measures as tools to explain and forecast inflation. They have explicitly rejected asset price valuations or external balance as relevant factors for the conduct of monetary policy.

[7] For a discussion of inflation targeting and the external balance in the case of…..

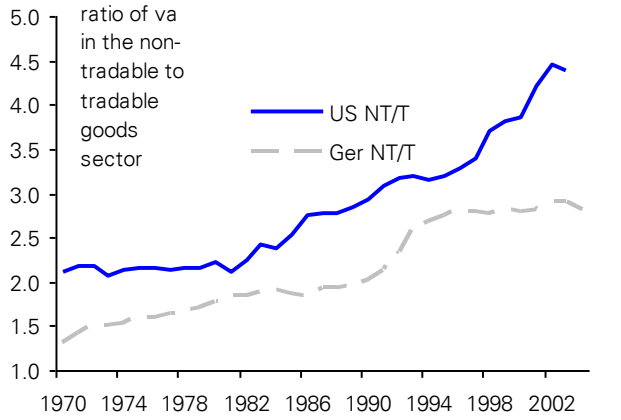
increase in the use of information and communication technology in European retailing, probably caused by denser regulations reducing the intensity of competition.[8]

1. US non-traded to traded goods sector value added and current account balance



Source: … OECD

2. US and German value added in non-traded versus traded goods sectors (current prices)



Sources: .. OECD

Clearly, in a small economy, a rising external deficit would soon run into financing constraints, forcing the exchange rate down. A lower exchange rate would in the medium-term induce a reallocation of resources from the non-traded to the traded goods sector. In the short-term, however, it would probably trigger a rise in the price

[8] See, for example, Olivier Blanchard, "The economic future of Europe", Journal of Economic Perspectives, February 2004.

level. To counter a sustained increase in inflation, the central bank would need to prevent an easing of monetary conditions by raising interest rates to offset the effects from exchange rate depreciation. In the event, internal and external equilibrium would be restored. Of course, even a large country like the US will at some point face an external financing constraint, when the appetite of foreign investors for US assets ends. Since investor attitudes often change abruptly and collectively, the external financing constraint may well kick-in abruptly and hard. In the event, the price for a long period of high growth liberally financed by foreign investors could be disruptive and painful adjustment.

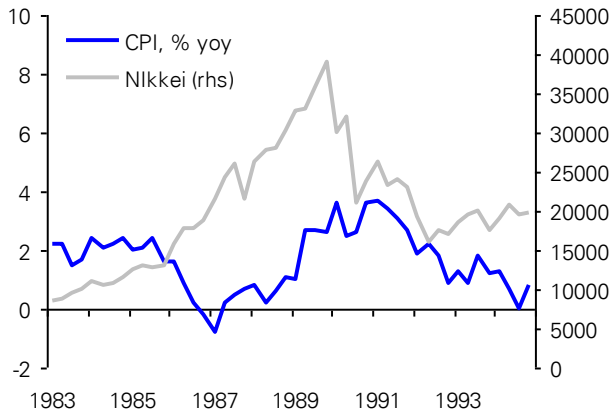
Consider next the relationship between inflation targeting, financial markets, and asset prices. As long as the outlook for consumer prices is consistent with the target, a central bank operating under an inflation targeting regime has no reason to adjust its policy stance, even if that stance is inconsistent with financial market or asset market equilibrium. It is, however, possible that an eventually destabilising credit and asset price cycle emerges that fails to appear on the central bank's early warning radar screen. This could happen if, for instance, a low central bank rate would induce accelerating demand for credit for the purchase of assets, such as real estate, equities or bonds. Defenders of inflation targeting would argue that rising asset prices would eventually stimulate consumption which then would raise expected consumer price inflation. However, this link may operate with a too long lag, be weak, or entirely absent when only a narrow group within the total population drives the credit and asset price cycle. Thus, credit and asset prices could rise to unsustainable levels without palpably raising consumer price inflation.[9]

The example of Japan in the 1980s and 1990s illustrates the development and the damage of a credit and asset price cycle left to its own. When the central bank's lending rate is fixed at a too low level, credit growth may accelerate without

[9] The Fed's behaviour along these lines has created the notion of the "Greenspan put" in financial markets. With rising asset prices only slowly raising consumption, investment, and eventually inflationary pressures, the central bank is seen to remain agnostic when asset prices boom. However, with a plunge in asset prices possibly pushing down consumer and investor confidence sharply, the central bank cuts rates aggressively. The asymmetric reaction of the central bank to likely asymmetric consequences of asset price changes for inflation prospects (the "Greenspan put") runs the risk of creating moral hazard in financial markets, which shows up in the form of artificially compressed risk premia.

constraint and feed into asset price growth. Consumer price inflation may well remain unaffected by this. The degree of leverage of investors may be strongly reinforced by the use of derivatives in financial markets. The process carries on until leverage and asset valuation have become so over-extended that even a small exogenous shock or endogenous forces cause an implosion. Declining asset prices then enforce de-leveraging through a rise in savings and defaults of leveraged borrowers, possibly until a "negative asset price bubble" (Robert Shiller) has emerged. A monetary policy approach restricted to "cleaning-up" after an asset price downturn may help to stabilise the economy when just one asset class is affected (as in the 2000-02 stock market downturn), but it is likely to be ineffective when the asset price down-turn is broad-based (as was the case in Japan in the early 1990s).

3. Equity boom-bust and moderate inflation in Japan



Source: .. Haver, Global Insight

In certain circumstances, a too easy monetary policy may induce both a trend increase in the current account deficit and in asset price inflation without an accompanying alarming increase in consumer price inflation. Consider the case when in an economy with a soft external financing constraint monetary policy turns expansionary and stimulates demand growth. Higher demand will elicit a volume response where supply elasticities are high, and a price response where supply elasticities are low. Now assume that the supply curve for traded goods is horizontal owing to highly elastic supply from abroad. Assume further that the supply elasticity of non-traded goods is pretty high owing to the ability to reallocate resources from the traded to the non-traded goods sector. In this case, an expansionary monetary policy will boost the

foreign supply of tradable goods (and thus imports into the home country) without causing price pressures there, and it will cause only modest price pressures for non-traded goods. However, supply elasticities for non-renewable resources and investment-grade assets are probably pretty low. Hence, price increases for these items are likely to be substantial. A monetary policy focussing on the weighted average of price changes for traded and non-traded goods (i.e., "core" inflation) may see few signs of inflation and hence regard its stance as appropriate. In reality, however, inflationary pressures are crystallising in a rising current account deficit and soaring asset prices. These pressures could come into the open if the external financing constraint eventually kicked in and the currency tumbled, or they could be extinguished before breaking out if asset prices collapsed. In both cases, the economy may fall into recession, either as the result of a monetary tightening to combat inflation or as a consequence of asset price deflation.

Defenders of inflation targeting have argued that the above discussed pitfalls of this strategy could be easily solved within the existing framework by extending the forecasting horizon for inflation. Notably, repercussions from asset price changes on the outlook for price stability could be captured by forecasting inflation on a 3-4 year horizon instead of the more customary 1-2 year horizon. This would give asset price movements sufficient time to exert their influence on the real economy, the output gap, and hence consumer price inflation. The weaknesses of this defence are obvious: First, margins of forecast errors tend to grow exponentially with the forecast horizon. With error margins for 1-2 year forecasts already substantial, forecasts on a 3-4 year horizon come with error margins so large that they are almost useless as a basis for policy decisions. Second, it is completely unclear how long the forecasting horizon ought to be to capture the effects of an asset price cycle on price stability. Are 3-4 years enough, or should be 5 or even 10 years? Third, if the response of consumer price inflation to changes in asset prices is asymmetric (with only slowly rising upward pressure on inflation when asset prices rise but fast and sharp downward pressure when asset prices fall), monetary policy will react asymmetrically to asset prices. This may give rise to the notion that monetary policy is writing a put at no cost to investors with the consequence of creating moral hazard and distortions of risk premia in financial markets.

Competing paradigms and the ECB Council

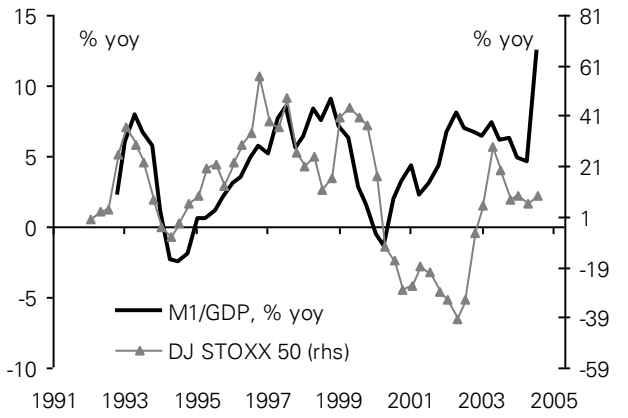
Many observers have interpreted the ECB's two-pillar monetary strategy—where the "economic pillar" resembles an inflation-targeting and the "monetary pillar" a monetary targeting approach—as a bridge between the monetary targeting strategy of the old Bundesbank (the "degenerating research programme") and the more up-to-date inflation targeting approach (the "progressive research programme"). Hence, many financial market participants and commentators have expected the monetary pillar in the ECB's strategy to fade away in line with the shrinking influence of old Bundesbank disciples on the conduct of European monetary policy.

Contrary to these expectations, however, the rising recognition of the pitfalls of monetary targeting in recent years has given the monetary analysis a new life-line. Research conducted mainly at the ECB and the BIS has related the analysis of monetary developments to that of asset and financial market developments.[10] Credit developments appear to supplement value estimates especially in the housing market to detect emerging asset price bubbles while liquidity measures may help to put equity market developments into a better perspective (see chart 4). Moreover, broad money growth may give useful signals for longer run inflation developments (chart 5). Thus, the monetary pillar of the ECB was in effect re-invented as a tool to overcome some obvious short-comings of the simple inflation targeting approach, namely its narrow focus on the real economy and its blindness towards external, asset market and financial market equilibrium. Hence, the ECB's monetary analysis could be characterised as the beginning of a "progressive research programme" (in Lakatos' terms) that is challenging the "degenerating programme" of inflation targeting.[11]

[10] For a survey see O. Issing, "The monetary pillar of the ECB", Speech at the conference "The ECB and Its Watchers VII", Frankfurt, 3 June 2005; and for recent research see the papers presented at the Bundesban-IIW workshop on "What central banks can learn from money and credit aggregates" (http://www.bundesbank.de/vfz/vfz_konferenzen_archiv.php).

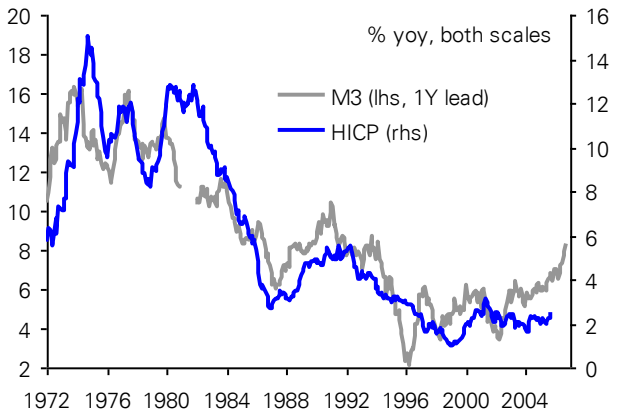
[11] To borrow from the field of automotive engineering, the likely successful future engine for monetary policy could be the hybrid motor, where the petrol engine ("economic analysis") is combined with the electric motor ("monetary analysis") to improve efficiency and effectiveness. Unfortunately, however, research into such a hybrid monetary policy approach appears way behind that into the hybrid car motor.

4. Money and equity prices in Euroland



Source: ..., Haver, Financial Times

5. Money and inflation in Euroland



Source: ..., Haver, ECB

However, the ECB's Governing Council itself still seems to have difficulties in recognising the two pillar strategy as a "progressive research programme". Thus, inconsistencies in the "consensus view" of the Council as given by the ECB President in his monthly press conferences through most of 2005 suggest that the Council was torn between the old and potentially new paradigm. For more than a year, the Council identified rising "upside risks to price stability" from money and credit developments, and at the same time (with only a couple of interruptions) found the level of interest rates "appropriate". The ECB President attempted to resolve the obvious inconsistency in this message by characterising the mood of the Council as "vigilant" in different degrees of strength. But if there had been persistent one-sided risks, the Council ought to have addressed them; if rates had indeed been appropriate, risks ought to have been symmetrical; and that all Council members should have been

"vigilant" in the appropriate way should be self-evident. The described "consensus view" seemed too muddled to be true, and the ECB President's reports on the Council meeting probably simply papered over (open or hidden) divisions in the Council. The outside observer could hardly avoid getting the impression that the Council was paralysed and monetary policy hence too passive in the face of shifting risks. Only after the economic and near-term inflation outlook also supported a rate increase could consensus be reached in the Council for a move in December 2005. With so limited confidence shown by the Council in its own monetary analysis, it is not surprising that few outside observers regard this as a promising tool to widen the scope beyond the narrower concept of inflation targeting and thus to reduce policy errors.

How could these divisions be resolved? A new monetary policy paradigm would be capable of reconciling the different signals coming from the economic and monetary pillars of the ECB's strategy into a consistent interest rate and communication policy. Although such a reconciliation is built-into the strategy in principle (see below), it seems that the Council has not reached a stage where this is possible in practice. Under these circumstances, different signals from the two pillars lead to paralysis, and action is only possible when the signals happen to point in the same direction. Clearly, if the critique of inflation targeting is right, such an approach would be suboptimal. The economic (inflation targeting) analysis could give the wrong signal that rates are "appropriate" when in reality they are not. A correct monetary policy would depend on a lucky coincidence of signals from the two pillars.

Where do we go from here?

A two-pronged strategy appears to be sensible in these circumstances. For the intermediate future, good judgement would seem to be required to relate the signals coming from the ECB's economic and monetary analyses to each other. In principle, the two pillar strategy, with a cross-check of the separate signals from each pillar at the end, provides a useful framework for the exercise of good judgement. In practice, however, good judgement can only be exercised if interpretation of the signals is not complicated by quarrels over the appropriate monetary policy paradigm. Clearly, Council members with strong priors against the monetary analysis (on the grounds

that money has no information value) cannot engage in a productive discussion with others who want to reconcile signals from both pillars. In the worst case, the proponents of traditional inflation targeting could render the monetary analysis obsolete for interest rate policy, exposing ECB monetary policy not only to errors arising from the discussed pitfalls of inflation targeting but also damaging the central bank's credibility (which could be seen as paying only lip service to the monetary analysis).

To facilitate the exercise of good judgement and to advance the two pillar strategy to a stage where signals from the two pillars can be better related to each other, the European System of Central Banks ought to strengthen research on a monetary policy strategy that goes beyond inflation targeting. A "progressive research programme" in this field could involve research into the relationship between monetary variables, which the central bank can influence, and consumer and asset prices, which have a tangible impact on price and (related) financial stability. Such a research programme should be broadly based, involving academic, central bank, and financial markets researchers.