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ECB's monetary policy objectives and its priorities

Briefing Paper for the Monetary Dialogue of June 2006 by the Committee on Economic and Monetary Affairs of the European Parliament with the President of the European Central Bank

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Introduction

Article 105 of the European Constitutional Treaty (ETC) (26 of February 2001) states that price stability is the primary objective of the European System of Central Banks (ESCB) but in its second sentence states that "Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Community with a view to contributing to the achievement of the objectives of the Community as laid down in Article 2", which states that " the Union will have the following objectives: To promote economic and social progress and a high level of employment and achieve a balanced and sustainable development…"

Section 2A of the Federal Reserve Act in the US (23 December 1913, but amended in 1977) states that "The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate long term interest rates".

More than 22 years separate both Constitutional Treaty and Act (as amended) and their monetary policy objectives are apparently very similar, but there are two major differences: First, while the Fed's Act does enumerate three main objectives of monetary: maximum employment, stable prices and moderate long term interest rates (exactly in that order) the ETC singles out price stability at the beginning as the primary objective of the ESBC. This difference may show that the mainstream consensus about monetary policy objectives has evolved in that period of time, prioritizing price stability over growth and employment.

Second, the Fed's Act establishes a quantitative monetary strategy to achieve those goals, by mentioning a long run growth of money and credit compatible with the growth of potential output, while the ETC does not mention any strategy, that is, it is left to the ESCB itself. The ESCB approved strategy, by contrast, is an eclectic mixture of "inflation targeting" (although its Executive Board members have never mentioned this name and refuse to be assigned to that strategy, although it is today the most frequent in central banks) but giving an important role to money and credit growth in assessing the medium to long run inflation risks and trends.

The main arguments used for the ECB not using pure "inflation targeting" are, first, that the ECB inflation projections are not the only tool to make decisions, but only staff projections that are taking into account as an important input of economic analysis together with other monetary and economic forecasts, and second, that although their strategy is medium term oriented, fixes a time horizon for their assessment of price stability. Nevertheless, monetary strategies by central banks are converging to adapt to reality. For instance, the recent build up of asset bubbles in some countries has made some inflation targeting central banks to watch more carefully the evolution of monetary and credit aggregates, in the same way as does the ECB.

The fact is that programmatic economic goals of the US and the EU acts have changed very little, given that they have always aimed basically at high economic and employment growth in the long run with stable prices or vice-versa. It is only the sequence of those objectives what has changed. By contrast, in the last three decades monetary policy has changed substantially, not only about its effectiveness to achieve these economic goals and its choice of instruments to meet them but also about its prioritization of these objectives.

Macroeconomic policy in general, and monetary policy, in particular, have changed over time according to different new economic research paradigms resulting from new theories contrasted by empirical evidence and, as a consequence, according to new schools of economic thought that follow them. Economic researchers have been changing their views in order to try to explain (and to adapt to) new economic events which could not be explained by their previous one, all along history. As Keynes was used to say: "When I learn new facts, sir, I change my opinion. What do you do?"

Economic ideas and policies have changed throughout history at an increasingly faster speed. Classical macroeconomics dominant from the late 18th to the second third of the 19th century (Smith, Ricardo, Malthus, S.Mill) was followed by Neoclassical macroeconomics in the late 19th century (Marshall, Walras, Pareto, Bohm-Bawerk, J.B. Clark, Wicksell), then by the Keynesian macroeconomics after the Great Depression (Keynes, Harrod, Hicks, Hansen, Khan), then by the Neoclassical Synthesis in the 1950's (Samuelson, Solow, Tobin, Modigliani), then by Monetarism in the 1960's (Friedman, Schwartz), then by Rational Expectations in the late 1970's (Lucas, Sargent, Barro) after the period of stagflation in the mid 1970's, then by the integration of rational expectations into mainstream macroeconomics from the late 1970's to the mid 1980's (Hall, Fischer, Dornbusch, J.B. Taylor), then by New Classical macroeconomics and real business cycles in the mid 1980's (Prescott, Kydland), then by the New Keynesian macroeconomics in the mid to late 1980's (Akerlof, Krugman, Mankiw, Stiglitz and Bernanke) and, finally, by the New Growth theorists in the 1990's (Lucas, P. Romer, Aghion).

In spite of these different new ideas and theories, the great achievement about macroeconomics is how much policy consensus has been building up in the last 50 years and how modest are today the real differences among macroeconomists both on fiscal and monetary policy.

For instance, Classical and Neoclassical macroeconomists did not think that expansionary monetary policy was helpful to fight recessions although they were even more opposed to fiscal expansions. Keynesian macroeconomists had mixed feelings, they did not oppose it totally but they doubted about its effectiveness. Monetarists try to convince policy makers that it was very effective. Now the actual consensus by macroeconomists is that that it is quite effective except in some special circumstances. This is the case of "liquidity traps", a situation in which monetary policy is ineffective because the nominal interest rate is down to close to the zero bound (the nominal rate cannot fall below zero).

The same changes have happened about the idea of the effectiveness of monetary policy to reduce unemployment in the long run. Classical and Neoclassical macroeconomists thought that it was ineffective. Some Keynesian macroeconomists thought that it was effective (the Phillips curve) but at the cost of some inflation. Monetarist (Friedman) and some non monetarist macroeconomists (Phelps) rightly believed that unemployment could not be kept below its natural rate.

The present consensus shows that most macroeconomists accepts the natural rate hypothesis, thus, they think that that an effective monetary policy may limit the size of fluctuations of the actual employment rate around its natural rate, only in the short term, but it cannot be used to keep unemployment below its natural rate (Others, a minority, think that, at very low or negative inflation rates, the hypothesis does not work).

Similar changes have affected to the idea that monetary policy should be used in a discretionary way. Classical and Neoclassical macroeconomists rejected the idea of using monetary discretion to fight economic fluctuations. Keynesian macroeconomists did not opposed discretionary monetary policy but they doubt about its effectiveness. Monetarist and New Classical macroeconomists rejected it because they thought that it was doing more harm than good and, by contrast, proposed clear and simple rules that should not be changed in order to gain credibility and avoid time inconsistency problems.

Today, there is a wide consensus about using monetary policy as the main instrument for short and medium price and economic stability and about the importance of having an independent central bank, totally insulated from political pressures, in order to avoid a political business cycle. Another major step towards this wider consensus has been to combine the methodology of dynamic stochastic general equilibrium models than originated from the Real Business Cycles School with the New Keynesian hypothesis of "nominal rigidities", which gives more sense to the effects of money in the real economy through a more realistic transmission mechanism.

Prioritization of monetary policy objectives

Over the last two decades, a wide consensus among central bankers and many economists has emerged about the general acceptance of achieving price stability as the primary goal of monetary policy, given that it helps to achieve the other economic objectives as well. In the words of Ben Bernanke: "Achieving and maintaining price stability is the bedrock principle of a sound monetary policy", or William McDonough: "over the long run, price stability is the one sustainable contribution monetary policy can make to growth. This applies to all countries", or, finally, in the words of Jean Claude Trichet: "By credibly maintaining price stability, the ECB brings about a decisive contribution to long run output growth".

The main bases for this consensus are: First, an increasing belief in the benefits of price stability for long run stable growth and welfare. Second, an increasing belief in that monetary policy can effectively determine price developments over the medium and long rune, but cannot permanently and systematically influence economic activity. Third, an increasing belief that truly independent and credible central banks can pursue price stability in n effective manner, while reducing output volatility as well.

This positive relationship between price stability and growth and employment are explained as follows: price stability promotes efficiency and long term growth by providing a monetary and financial environment in which economic decisions can be made and markets can operate without concern about unpredictable fluctuations in the purchasing power of money. Recent evidence is showing that low and stable inflation is beneficial for growth and employment in the long-term but also it contributes to greater stability of output and employment in the short and medium term. In the last twenty years and in most industrial countries, inflation and output volatility have significantly decreased.

This empirical evidence challenges some previous economic views according to which greater stability of inflation can be achieved only by allowing greater fluctuations in output and employment. The reason for the challenge is that, when inflation is well-controlled, then the public's expectations of inflation will also be low and stable. In a virtuous cycle, stable inflation expectations help the central bank to keep inflation low even as it retains substantial freedom to respond to disturbances to the broader economy.

Price stability also helps to keep moderate long-term interest rates. Interest rates tend to move in tandem with expected inflation, as lenders require compensation for the loss in purchasing power of their principal over the period of the loan. When inflation is expected to be low, lenders will require less compensation, and thus, interest rates will tend to be low as well. In short, adopting price stability as the primary goal of monetary policy allows for a significant degree of flexibility so that, in practice, it does not preclude achieving other desirable goals. Moreover, a "gradualist" pursuit of price stability tends not to conflict with stabilization goals and demand and supply side disturbances can be managed by cushioning transitions to price stability.

But monetary policy cannot bear sole responsibility for maintaining price stability unless it is supported by sound budgetary policies and wage developments in line with productivity growth. Without the adequate support from other policy areas, monetary policy maybe force to take measures in the fight against inflation which entail a short- term loss of output and employment. But these short-term sacrifices may be justified in order to safeguard the foundations for balanced growth and employment in the long run. Moreover, sustainable growth and a healthy creation of employment require more than just an appropriate monetary policy. If there are structural rigidities which reduce the incentives to employment, an expansive monetary may not have any short term result if it is not accompanied by labour reforms designed to eliminate these structural rigidities. To achieve a stable economic framework implies a more efficient allocation of resources, lower interest rate premiums and larger investment.

These views by monetary policy makers are not fully shared by academics yet. Some of them, mainly New Keynesians, think that the ECB view that "only price stability matters" can be true in the long run, where monetary policy only affects prices (price stability) but not quantities (growth). But, in the short term, monetary policy affects both prices and quantities and, therefore, central bankers must accept the possibility of the existence of a trade-off between the degree of price stability and the level of economic growth. The existence of this trade-off can be larger the greater the "nominal rigidities" and imperfections in the different markets are ("efficiency wages" in the labour markets, "asymmetrical information" and "adverse selection" in banking and insurance, "staggering" of wages and prices to an increase of money and "menu costs" of output fluctuations and, finally, "herd behaviour" and "procyclicality" in financial markets.

There are also some fewer economists, following the Austrian School (Von Mises), which attack price stability because at its root lays the view that "money is neutral" which may provoke problems. According to money neutrality, changes in money only have an effect on the price level, while having no direct effect on the real economy and then, changes in the relative prices of goods and services are established without the aid of money because money appears to be only a "numeraire": an increase in the quantity of money leads to a proportionate fall in its purchasing power, i.e. a rise in the price level and vice-versa.

According to these economists, increases in money supply lead to a redistribution of wealth from the first recipients of the new money injected who can now acquire a greater amount of goods and services while prices of these goods are still unchanged to last recipients of this new money who buy the goods and services when their prices have gone up.

Finally, other economists think that price stability is not sufficient to ensure macroeconomic stability. Economic history is replete with examples of major economic and financial crises that were not preceded by inflationary pressure (the Great Depression, the Japanese recent decade of recession, the South East Asian crisis, the LTCM and Russian crises. In all of them, difficulties were not preceded by any inflationary excesses, but rather by sharp increases in credit, asset prices and fixed investment that eventually produced a crisis (as defended by Hayek in his debate with Keynes). By contrast, there are also numerous examples of periods of deflation, (based on rising productivity) with high economic growth.

Today, when a negative supply shock emerges (higher oil prices) which causes inflation to rise, central banks should not raise interest rates and try to ignore one-off changes, as long as those high oil prices do not increase inflationary expectations and lead to second round effects affecting core inflation. In the same line, when the present positive supply shock of China and India, opening to capital and trade globalization, makes prices of many goods to fall, central bankers instead of keeping to its inflation target, they have been until recently propping up inflation by pursuing looser monetary policies which they have produce consumption and asset bubbles when they should allow inflation to fall below target. These changes may bring back to light the central tenets of the pre-war Austrian Scholl theory.

This inconclusive dilemma may be one of the reasons why, most academic monetary policy models are still using an objective function based, in its turn, on a loss function which trades-off output volatility against inflation volatility. The central bank tries to minimize that loss by penalizing a weighted average of the deviations of the inflation rate from its target value (the inflation gap) and of the deviations of the real output from their "equilibrium", "natural" or "potential" value (the output gap) as in the Taylor Rule, or, alternatively, the deviations of the unemployment rate from its "natural" value (the unemployment gap). In principle, the output gap measure is more widely used than the unemployment gap because the estimates of the NAIRU (Non Accelerating Rate of Unemployment) are time-varying and tend to have large standard errors.

Even if output gaps are clearly preferred, the problem is how to move from output gaps to unemployment gaps, which needs another empirical step (productivity) which translates labour inputs into output. This empirical step adds another statistical uncertainty. Projecting or even estimating productivity tends to be quite difficult, so some economists have a mild preference for unemployment gaps, because unrecognized accelerations (or decelerations) of productivity growth can temporarily depress (or rise) the NAIRU.

Another issue with this loss function is its quadratic form, motivated solely by mathematical convenience, because it gives rise to certainty equivalence, so, as a result, low unemployment should be penalized as much as high unemployment. Although to have a low unemployment rate yields undoubtedly social benefits of non economic nature, the reason why central bankers tend to worry about low unemployment is because tight labour markets tend to produce higher wages which can end producing rising inflation.

A final issue with the loss function is that every central bank has either statutory or tacit responsibility for maintaining financial stability, which, at certain critical times, this objective has priority over any other.

Thus, financial stability is too important to be left out of the loss function entirely. Most researches introduce this third objective by adding an interest rate volatility term which tends to be highly correlated with financial stability, but this term does not work during financial crises this is the reason why some prefer to give a due weight to this term only in the absence of financial crises.

In spite of these formal loss functions needed to analyze the inflation-output trade-offs, recent research demonstrates that capital account and trade account liberalization is helping to reduce inefficiencies associated with the fluctuations in the output gap, relative to inefficiencies associated with the fluctuations in inflation, reducing the inflation-output trade-off. Thus, globalization forces could induce monetary authorities to put a greater emphasis on reducing the inflation rate than on narrowing the output gaps. This new reality may bring a reinterpretation of the sacrifice ratio introduce in these objective functions but one thing is clear, market imperfections are going to be there for a long time…

In sum, there is, by now, a very wide and global evidence and consensus, at least among economists and central bankers, about the fact that, in the medium and long run, high inflation is negatively correlated with economic growth and vice-versa and that high inflation leads also to more variable inflation, which has also a relevant cost in terms of growth volatility. As a consequence, price stability must be the long term priority of any central bank. In the very short run, however, there is also relatively high consensus that sometimes there may be a positive correlation between inflation and growth or a trade-off between price stability and growth, but it is not easy for central banks to fine tune these short term trade-offs although they may produce positive effects on growth.

Number and Prioritization of Central Bank Objectives

Briefing Paper for the Monetary Dialogue of June 2006 by the Committee on Economic and Monetary Affairs of the European Parliament with the President of the European Central Bank

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Executive Summary

The Treaty has made the European Central Bank (ECB) very independent. Nowadays is it widely believed that a high level of central bank independence and an explicit mandate for the bank to restrain inflation are important institutional devices to assure price stability. It is thought that an independent central bank can give full priority to low levels of inflation. In countries with a more dependent central bank other considerations (notably, re-election perspectives of politicians and a low level of unemployment) may interfere with the objective of price stability. Recent empirical research on central bank independence has also shown that the negative relationship between central bank independence and inflation is quite robust. Before the ECB started its operations, the main elements of its monetary policy had been decided upon by the Governing Council in October 1998. The original strategy consisted of three elements. First, the Council provided a formal definition of price stability, i.e. yearly inflation for the euro area of less than two percent in the medium term. Second, money growth was assigned a prominent role in the assessment of the risks to price stability. This was known as the first pillar of the ECB's monetary policy. Third, a broadly based evaluation of the threat to price stability, using a wide array of economic and financial variables. This was the second pillar. In May 2003 the ECB announced the outcomes of its internal evaluation of this strategy. Even though the ECB stressed the continuity of its strategy and stated that the decisions taken were merely about clarification, these decisions have been widely interepreted as a change in the ECB's monetary policy strategy. The ECB will seek to maintain the inflation rate below, but close to, 2 per cent over the medium term. The Council confirmed the use of the two-pillar framework of the strategy as a tool to organise the information relevant for assessing the different risks to price stability. It also announced that the introductory statement of the President at the ECB Press Conference following a Governing Council rate-setting meeting now starts with an analysis identifying the short- to medium-term risks to price stability. This assessment has been called the economic analysis. It is followed by an assessment of the medium- to long-term risks to price stability, focusing on monetary indicators. This assessment has been called the monetary analysis. The Governing Council emphasised that the monetary analysis serves mainly as a means of cross-checking, from a medium to long-term perspective, the short to medium-term indications from the economic analysis. This decision has been widely interpreted as the downgrading of importance of the (previous) first pillar.

Introduction

The purpose of this Briefing Paper is to discuss the number and prioritization of central bank objectives.[1] Article 105.1 of the Treaty establishing the European Community (TEC) states price stability as the *primary* objective of the European System of Central Banks (ESCB) or the Eurosystem. At the same time this is not the sole objective mentioned as the second sentence of this article states: "Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Community with a view to contributing to the achievement of the objectives of the Community as laid down in Article 2." Supporters of a stabilization role of monetary policy interpret the second sentence of Article 105.1 in the sense of a duty to follow employment policies in times of price stability. However, opponents of such a role will deny this room to manoeuvre.

The Treaty has made the European Central Bank (ECB) very independent. Nowadays is it widely believed that a high level of central bank independence and an explicit mandate for the bank to restrain inflation are important institutional devices to assure price stability (Eijffinger and De Haan, 1996). It is thought that an independent central bank can give full priority to low levels of inflation. In countries with a more dependent central bank other considerations (notably, re-election perspectives of politicians and a low level of unemployment) may interfere with the objective of price stability. In that context the German central bank is often mentioned as an example. The Deutsche Bundesbank was relatively autonomous; at the same time, Germany had one of the best post-Second World War inflation records among the OECD countries. Indeed, the statutes of the ECB are largely modeled after the law governing the Bundesbank. Recent empirical research on central bank independence has also shown that the negative relationship between central bank independence and inflation is quite robust (see also: Berger et al., 2001).

The monetary policy strategy of the ECB has three main elements: (1) a quantitative definition of price stability, (2) a prominent role for money in the assessment of risks to price stability, and (3) a broadly based assessment of the outlook for price developments. In December 2002 the ECB Governing Council decided to evaluate this strategy in the light of the experience, taking into account the public debate and the outcomes of research undertaken by staff of the Eurosystem. The results of this evaluation were published in May 2003, which we will discuss later in this Briefing Paper.

Monetary policy strategy of the ECB

The primary objective of the ESCB is price stability. However, the Treaty does not provide a specific definition of this objective. In October 1998 the Governing Council of the ECB defined *price stability* as follows: a year-on-year increase of the Harmonized Index of Consumer Prices (HICP) for the euro area, which does not exceed 2 per cent in the medium term. Issing et al. (2001) point out that this quantification is in agreement with the stated preferences of European governments as expressed several times in the European Council's Broad Economic Guidelines.

[1] This Briefing Paper draws heavily on Chapter 2 of De Haan, Eijffinger and Waller (2005).

The HICP is a comprehensive measure for inflation, reflecting the focus of the general public on consumer goods.[1] The aim of an inflation rate "below 2 per cent" clearly delineates the maximum rate of inflation deemed to be consistent with price stability. The wording "year-on-year increases" implies that persistent price decreases – that is to say deflation in the measured price index – would not be considered to be consistent with price stability either. The Governing Council explicitly announced that price stability is to be maintained over the medium term, thereby acknowledging that price levels may be temporarily distorted by short-term factors.

The wording "for the euro area" highlights that area-wide developments, instead of specific national or regional factors, are the only determinants of decisions regarding the single monetary policy. A year-on-year increase of the HICP for the euro area as a whole represents price stability, even if increases in national price indices are above 2 per cent per year.

At the time the *monetary policy strategy* of the ECB was introduced, it rested on two "pillars". The *first pillar* is a prominent role for money. As inflation in the long run is considered to be a monetary phenomenon, the ECB Governing Council has announced a quantitative reference value for the annual growth rate of a broad monetary aggregate (M3). The focus on M3 is justified, according to the ECB (2001), by its favorable empirical properties like a stable money demand relationship. Furthermore, M3 has shown to exhibit leading indicator properties for future inflation (see also Issing et al., 2001). The reference value for M3 growth, which was set at 4.5%, should however not be considered as intermediate monetary target, "in order to avoid an automatic monetary policy reaction to fluctuations in M3 growth that may not be associated with inflationary pressures, but that may result, for example, from .... financial innovations" (Issing, 1999, p. 20). Although the first pillar is sometimes presented as only referring to M3 growth (see e.g. Begg et al., 2000), the ECB examines not only to what extent M3 growth deviates from the reference value, but analyzes underlying causes as well. Quite some attention is being paid, for instance, to the growth rates of the components of M3, notably the growth rate of credit supplied to the private sector.

The *second pillar* is a broadly based assessment both of the outlook regarding price developments and of the risks to price stability in the euro area as a whole. A wide range of economic and financial indicator variables is used for this purpose, which can be grouped in (a) gap measures (i.e. measures of the discrepancy between output, or its factors of production, and their equilibrium values); (b) measures of cost pressure; (c) international prices and exchange rates; and (d) other asset prices (see Issing et al., 2001). The indicators include:

- the HICP and other *price indicators* in the euro area, including producer prices as these are a leading indicator for HICP inflation. In addition, price developments in the world markets for raw materials are closely monitored, especially, of course, the price of crude oil. Oil prices have a clear impact on inflation in the euro area. The ECB also analyses the deflator of the euro area's Gross Domestic Product (GDP), as well as the deflators of its components. Finally, the ECB keeps an eye on real estate prices, where possible.

[1] The HICP has the following main characteristics: it encompasses only market transactions, is does not include interest rates, owner occupied housing is at present excluded, expenditure incurred for business purposes is excluded, it includes the consumption expenditure of foreigners in the reference country, but excludes the consumption of residents abroad (see Camba-Mendez et al., 2002 for further details).

- *indicators for the real sector*. The ECB monitors real GDP and its components, and also the production of the manufacturing and other sectors. The capacity utilization rate also belongs to this category of indicators.
- *confidence indicators*, including the economic sentiment indicator and various consumers and business sectors confidence indicators.
- *indicators for the labor market.* Employment and unemployment in the whole economy and by sector, as well as wages and unit labor costs (total and its components) and productivity belong to this category.
- *exchange rates.* The euro-dollar exchange rate, but also (real and nominal) effective exchange rates are closely monitored by the ECB. The initial decline of the euro vis-à-vis the dollar has had quite some impact on inflation in the euro area.
- *financial market indicators.* To this group of indicators belong various interest rates, as well as the term structure and stock market indices. The long-term yield and the term structure are often considered to contain information concerning (expectations of) future inflation and economic growth.
- *projections for inflation and economic activity.* The Governing Council also takes forecasts by others – like the Consensus forecasts – as well as the projections of the staff of the ECB into account in its decision-making process

The ECB's evaluation of its monetary policy strategy

On 8 May 2003 the Governing Council of the ECB made the results of the evaluation of its monetary policy strategy public. The Council considered that, so far, the strategy worked satisfactorily. As Issing (2003, pp. 4-5) put it:

> "Since 1999, medium and long-term inflation expectations – as measured by survey data or financial market indicators – have remained consistent with the ECB's definition of price stability. This is all the more remarkable given that the ECB started without a track record of its own and that it has experienced a number of sizeable adverse price shocks. As a result of these shocks, HICP inflation was above (and sometimes significantly above) 2% for quite some time. But, as the shocks gradually unwound, so inflation has returned towards levels compatible with price stability. Medium and long-term inflation expectations remained well anchored throughout this period."

Still, the Council took two decisions in view of the evaluation. First, the Governing Council confirmed its definition of price stability. At the same time, the Governing Council agreed that it will aim to maintain inflation rates close to 2 per cent over the medium term. According to the ECB press release, "This *clarification* underlines the ECB's commitment to provide a sufficient safety margin to guard against the risks of deflation. It 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."

As pointed out by Issing (2003), an important reason to aim at an inflation close to 2 per cent is the need for a safety margin against potential risks of deflation. In case of strong deflationary pressures, monetary policy may become less effective if central bank interest rate management is constrained by a liquidity trap or a "zero bound" problem.

According to analyses of the ECB, such constraints should not pose a significant threat if inflation remains sufficiently above zero. To aim at inflation rates close to 2 per cent offers a safeguard in this respect. At the same time, it takes into account both the potential presence of a measurement bias in the HICP and the implications of inflation differentials of a structural nature within the euro area.

Second, the Council decided that its policy decisions will continue to be based on "a comprehensive analysis of the risks to price stability". The Council noted that, over time, the analysis under both pillars of the monetary policy strategy has been deepened and extended. However, in order to "*clarify communication* on the cross-checking of information in coming to its unified overall judgement on the risks to price stability", the introductory statement of the President has henceforth followed a new structure. It starts with the *economic analysis* to "identify short to medium-term risks to price stability", followed by the *monetary analysis* **"**to assess medium to long-term trends in inflation in view of the close relationship between money and prices over extended horizons." As in the past, monetary analysis takes into account developments in a wide range of monetary indicators including M3, its components and counterparts, notably credit, and various measures of excess liquidity. According to the Governing Council, the monetary analysis serves mainly as a means of cross-checking, from a medium to long-term perspective, the short to medium-term indications from the economic analysis. To underscore the longer-term nature of the reference value for monetary growth, the Governing Council decided to discontinue the practice of an annual review of the reference value for M3 growth.

Even though it was supposed to be a clarification of its objective of price stability, many observers have interpreted the statements of the ECB on price stability as a change in its inflation objective. For instance, Sibert (2003) argues that: "This presentational slight of hand should fool no one; this is a distinctly dovish *change in policy.* When it was originally announced that inflation was to be kept at less than two percent, the natural interpretation was not that the ECB was aiming to keep inflation just below two percent. Given the floor of zero, the obvious interpretation was that the ECB was aiming for about one percent and viewed the costs of deviating from this as rising sharply as inflation either rose to two percent or fell to zero percent."

Likewise, the decision on the two-pillar strategy has been widely interpreted as implying that the first pillar has become less important in the monetary strategy, even though ECB officials stressed the continuity of the strategy. Svensson (2003) summarizes the Governing Council decision as follows: "Keeping the two-pillar strategy but reducing the prominence of the first pillar by putting it second and discussing the monetary pillar (relabeled "monetary analysis") after the "broadly-based assessment" (relabeled "economic analysis"), seeing it mainly as a means of "cross-checking" the "economic analysis". This is a *change* in the right direction, but it is not enough."

Similarly, De Grauwe (2003) states: "the ECB is downgrading the importance of the money stock (M3) in its monetary policy strategy, and rightly so. It just did not make sense anymore to pretend that the money stock is the most important variable to watch. This variable is so much polluted by noise that it rarely gave the right warning signal of future inflation."

Conclusions

The Treaty has made the European Central Bank (ECB) very independent. Nowadays is it widely believed that a high level of central bank independence and an explicit mandate for the bank to restrain inflation are important institutional devices to assure price stability. It is thought that an independent central bank can give full priority to low levels of inflation. In countries with a more dependent central bank other considerations (notably, re-election perspectives of politicians and a low level of unemployment) may interfere with the objective of price stability. Recent empirical research on central bank independence has also shown that the negative relationship between central bank independence and inflation is quite robust.

Before the ECB started its operations, the main elements of its monetary policy had been decided upon by the Governing Council in October 1998. The original strategy consisted of three elements. First, the Council provided a formal definition of price stability, i.e. yearly inflation for the euro area of less than two percent in the medium term. Second, money growth was assigned a prominent role in the assessment of the risks to price stability. This was known as the first pillar of the ECB's monetary policy. Third, a broadly based evaluation of the threat to price stability, using a wide array of economic and financial variables. This was the second pillar.

In May 2003 the ECB announced the outcomes of its internal evaluation of this strategy. Even though the ECB stressed the continuity of its strategy and stated that the decisions taken were merely about clarification, these decisions have been widely interepreted as a change in the ECB's monetary policy strategy. The ECB will seek to maintain the inflation rate below, but close to, 2 per cent over the medium term. The Council confirmed the use of the two-pillar framework of the strategy as a tool to organise the information relevant for assessing the different risks to price stability. It also announced that the introductory statement of the President at the ECB Press Conference following a Governing Council rate-setting meeting now starts with an analysis identifying the short- to medium-term risks to price stability. This assessment has been called the economic analysis. It is followed by an assessment of the medium- to long-term risks to price stability, focusing on monetary indicators. This assessment has been called the monetary analysis. The Governing Council emphasised that the monetary analysis serves mainly as a means of cross-checking, from a medium to long-term perspective, the short to medium-term indications from the economic analysis. This decision has been widely interpreted as the downgrading of importance of the (previous) first pillar.

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Number and Prioritisation of Central Bank Objectives

Briefing Paper for the Monetary Dialogue of June 2006 by the Committee on Economic and Monetary Affairs of the European Parliament with the President of the European Central Bank

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Executive Summary

The paper outlines several theoretical approaches to monetary policy targets. After the Keynesian approach had been discredited, monetarist and neoclassical approaches prevailed during the seventies. The latter put a strong if not exclusive emphasis on nominal targets i.e. on inflation only. More recent approaches allow for a permanent impact on output growth as long as inflation is below a certain threshold. This result is corroborated by empirical analysis. Hence the conclusion is drawn that a dual target should be chosen: a nominal target as first priority and real one as second.

1. Introduction

There has been a long lasting debate on central bank targets. It always refers to the following questions: what can a central bank do? And what should it do? Today the prevailing view is that central banks should focus on price stability. There is still some debate on the strategy to achieve this target. Even among central bankers there is no homogeneous view whether inflation targeting or monetary targeting are more appropriate.

As far as the ECB is concerned an institutional setting has been chosen that reflects the majority view on a sensible monetary policy. There is a clear priority for the target of price stabilisation. The strategy debate, too, has been settled in a consensual way by applying a two pillar strategy that encompasses inflation targeting as well as monetary targeting. The former predominantly serves monetary policy in the short run while the later is used rather for the long term perspective. Thus it is fair to say that the ECB is following the present monetary policy mainstream.

In the following paper however some challenges to the mainstream view will be presented that raise doubts whether in the light of recent macroeconomic research a strict prioritisation of price stability is appropriate. The ECB´s view that by achieving price stability other stabilisation objectives are equally met will also be questioned. The arguments presented will draw on theoretical considerations as well as empirical results. In the second section after this introduction some theoretical considerations will be presented. They are based on models of more recent origin as well as well-established arguments. After the theoretical section some empirical results follow. In the final section some conclusions are drawn.

2. What Can a Central Bank Do and What Should a Central Bank Do? – Some Theoretical Approaches

2.1. Traditional Keynesianism

Central banks' target setting is based on the theoretical considerations concerning real versus nominal effects of monetary policy. The former effects are output changes the latter inflation changes. While the Keynesian approach, which dominated among academics until the sixties and among politicians until the seventies, sees mainly real effects, subsequent approaches like monetarism or neoclassical models put the emphasis much more or even exclusively on nominal effects. The Keynesian approach requires a growth or real stabilisation target for the central bank. In this setting interest rates predominantly affect investment and consumption, i.e. the real economy, hence central bank activities show a strong focus on growth and employment. Inflation is merely a goods and – labour market phenomenon resulting from excessive price and wage pressure. The central bank can influence inflation only indirectly by affecting output and thus market power of firms and bargaining power of employees. Hence there is only a very indirect conflict between output and inflation. The bottom line of this reasoning is that central banks should focus on the real economy and not on inflation.

2.2. Monetarism

The predominance of these views has been shaken during the seventies when monetary policy was expansionary, but growth was very slow and inflation very high (stagflation). Such a situation was not compatible with the traditional Keynesian view in two respects. Firstly, with an expansionary monetary policy, output growth should have been high. Secondly, if output growth is low, so should inflation. At this point the political breakthrough of monetarism could occur. According to the monetarist approach in the longer run monetary policy can only influence inflation. Any attempt to speed up output growth will be successful only in the short run. In the longer run only higher inflation will result. In such a setting expansionary monetary policy, low output growth and high inflation as a consequence of excessive monetary expansion are possible. As a consequence more and more central banks with the Bundesbank in the lead changed to a monetarist approach. This implied focussing on inflation alone and setting targets for monetary aggregates. It still meant that central banks had an eye on output developments since according to the monetarist theory there is a short term conflict between inflation targets and output targets to be taken into account. But the bottom line is in the long run monetary targets are decisive and should be of primary interest to the central bank.

2.3. Neoclassical Approaches

This prioritisation of inflation targets was even enhanced by further developments in macroeconomic theory. While monetarist scholars still accept some short term output effects of monetary policy. More recent neoclassical approaches among them real business cycle approaches would even deny that to a large extent. The reason is that, when rational expectations are introduced into the models, any systematic short term real effect of monetary policy vanishes. People expect the correct outcome of monetary policy except for random influences and change their behaviour immediately and not after some time of adjustment.

The result in a neoclassical setting is that monetary policy only influences inflation - even in the short run. Therefore it makes even more sense to confine monetary policy to inflation targets. Anything else would show adverse effects since it would distort an otherwise perfectly functioning market clearing process, since insecurity would be higher when a central bank always unsuccessfully tries to stabilise output fluctuations. There is another difference to the original monetarist approaches because there is a clear tendency for an inflation targeting strategy since e.g. in real business cycle models monetary aggregates do not have such a prominent role for economic developments. In any respect according to these approaches there is no conflict between nominal and real targets for monetary policy since only nominal targets make sense. Real targets would never be met because of a central banks fundamental lack of capacity to do so.

2.4. Neo–Keynesian Approaches

There was a Neo–Keynesian answer to this extreme monetary and neoclassical orientation. It consists in models that allow for price and wage rigidity in the short run. These assumptions are micro-economically justified by empirical as well as theoretical arguments on information and adjustment costs that prevent market participants to adjust their wages and prices immediately to a new market situation. As a consequence e.g. expansionary monetary policy does also not lead to an immediate increase of prices and hence to inflation. Therefore output will grow faster than without monetary stimulation. But this is only a short term impact. The trend of output growth is not influenced by monetary policy. Hence after some time output returns to its trend and the monetary stimulus fades away. At the same time the price level increases so that the long term impact of monetary policy consists in inflation only. Nevertheless, these approaches leave room for a short term output stabilisation. Therefore monetary policy in this setting could well have two targets a monetary target to keep inflation under control and a real target to stabilise output on its trend. The strategy implied by these models is mainly inflation targeting by interest rate policy as prescribed by a Taylor reaction function that considers inflation as well as the deviation of output from its trend. The weight of each argument is a matter of debate. Nevertheless, these considerations imply that a central bank should have an eye on output fluctuations, too.

2.5. New Keynesian Approaches

In recent years an important refinement of macroeconomic thinking has taken place. Inspired by the research of George Akerlof[1] some scholars have derived a long term real impact of monetary policy in an otherwise neoclassical setting. The basic assumption that underlying this result is information costs. Market participants do not have the time and the resources to check every slight movement of monetary authorities and its potential minor consequences for inflation. That means they do not assess the effect of any price change on their real income. As a consequence they do not adjust their price and wage demands in the presence of e.g. an expansionary monetary policy. Therefore a monetary stimulus will not lead to inflation but rather to output growth. Only if monetary policy gets “too” expansionary so that inflation exceeds a threshold the behaviour of market participants changes to the usual neoclassical outcome. From this point an expansionary monetary policy would cause only inflation and no real effect would occur.

[1] Akerlof, G. A. (2002): Behavioral macroeconomics and macroeconomic behavior, *American Economic Review 92(3),* 411-433.

The threshold is defined as the inflation rate from which the costs of neglecting inflation in terms of real income losses are higher than the costs of collecting information on inflation. In contrast to the approaches mentioned above in this setting, real and nominal impacts of monetary policy are not a matter of the short or long term. They are a matter of the extent of inflation. Monetary policy then can produce permanent growth effects as long as inflation stays below the threshold. In terms of monetary policy targets this has important implications. Monetary policy should as a first priority keep inflation below the threshold. However as long as this is the case, monetary policy can permanently stimulate output growth and can focus on this objective.

2.6. Credibility

The approaches mentioned above stress the importance of expectations of market participants for monetary policy. People will only react appropriately, if they believe that the central bank is determined to meet its targets. This raises the issue of credibility of monetary policy. Only if a central bank succeeds in establishing a credible record people will listen to warnings of the central bank. In a neoclassical approach this means they moderate their wage and price demands as soon as a central banker utters a warning on price stability. In an ideal world this would mean credible central banks could stabilise inflation without even raising interest rates. Therefore target setting is also important to establish credibility and thus reduces the costs of stabilisation. This issue is of general nature. Credibility matters – albeit in different ways – from Keynesian to neoclassical settings.

3. Some Empirical Results

Central banks have had a range of different targets and strategies. The most prominent examples were the Bundesbank with its explicit monetary policy targets and the Federal Reserve, which in contrast has a wide range of monetary as well as real targets. The ECB now has a target that is price stability with some highly debated leeway for real stabilisation. The question is, whether there is any evidence that one target works better than the other in terms of macroeconomic performance. Taking output growth and inflation as yardsticks Robert Barro[1] produced a very surprising analysis more than ten years ago. Based on data from 1960 to 1990 for around 100 countries he assessed the effects of inflation on economic performance. Hence he could distinguish between central banks that were not only rhetorically but also in practice very tight on inflation and those that were not. It turns out that keeping other things unchanged an increase in average inflation by 10 percentage points reduces real output growth per capita by 0.2 to 0.3 %. This would confirm the ECB's view that higher inflation reduces growth and the implication of monetarists and neoclassical approaches. The interesting twist in his analysis is however that the result is only significant when high inflation experiences are included. This implies that with lower inflation rates this negative relationship and hence the trade-off does not exist. Given that inflation is low in the Euro area there should be no negative growth effects. This result corroborates the information costs theory of an inflation threshold of an Akerlof type. As long as the threshold is not exceeded a central bank can well stimulate growth.

[1] See Robert Barro (1995): Inflation and Economic Growth, NBER Working Paper Series No.5326.

4. Conclusion

Theoretical as well as empirical research, indicate that a central bank should primarily focus on inflation in order to ensure that inflation rates are kept at a low level. However, if this condition is fulfilled a central bank can stimulate growth. This speaks in favour of a dual target: a nominal target combined with a real one. There should be a priority in the sense that low inflation is a necessary condition for the central bank to stimulate growth. It seems advisable that the respective wording in the treaty is clarified in this sense.

Number and Prioritisation of Central Bank Objectives

Briefing Paper for the Monetary Dialogue of June 2006 by the Committee on Economic and Monetary Affairs of the European Parliament with the President of the European Central Bank

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Summary: inflation and output objectives may – and should – be harmoniously combined

The advantages of having a common monetary policy and a common fiscal orientation (Stability and Growth Pact) have not yet materialized in Euroland. On real growth and unemployment, Euroland has been strongly outperformed not only by the USA but also by Sweden and the UK, the two EU countries which have retained monetary and fiscal sovereignty. Moreover, as far as inflation is concerned, Sweden and the UK have also fared much better than Euroland, and the USA not worse.

Part of the disappointing result must be attributed to the Stability and Growth Pact, which has prevented any meaningful application of active fiscal policy for the stabilization of output in major eurozone countries. At the same time the Pact may have induced some extra inflation. Given the paralysis of the fiscal policies in Euroland, the monetary policy of the ECB was – and still is – the first (in fact also the last) line of defence against eventual stagnation. However, the ECB has not even been pretending to feel responsible for real growth. Instead, it has been repeating its 'price stability above all else' mantra. Formally, this is consistent with Art. 105 ECT, which states that price stability is the primary objective. Of course, in the ECT there is also a – properly unspecific – statement on the monetary policy contributing 'without prejudice to the objective of price stability' to the achievement of other Community objectives. But this appears to have been ignored because, apparently, the ECB believes that its best contribution to the achievement of broader economic objectives boils down to delivering price stability.

This note challenges the view that the concern over price stability rules out an active policy aiming at the achievement of growth and employment goals.

First, monetary policy matters for both inflation and output (production and incomes) in the medium run. Moreover, the response of output to monetary policy is much swifter and more definite than that of inflation. This fact alone creates a scope for a productively flexible monetary policy which can reach realistic output goals without compromising on inflation. Given the character of reactions to monetary policy instruments, one can hardly justify a policy insensitive to real-economy considerations.

Second, the fact that the ECB has been more inflation-averse than the Bank of England or Sweden's Riksbank – and yet has failed miserably not only on real growth, but also on inflation – proves that paying attention to the output objectives is in fact conducive to safeguarding low inflation. Unlike the ECB, both these central banks base their decisions on explicit inflation targeting. Thereby they are expected to be carefully weighing at least two objectives: inflation gap and output gap. The policy interest rates are to harmonize *both* objectives.

The policy should be continually closing – as far as possible – the gap between actual and potential production, and the gap between actual inflation and a medium-term positive inflation target. The outcomes of the policy emerging from inflation targeting (which is explicit in Sweden, the UK and many more industrialized countries, and implicit in the USA) demonstrate the inferiority of the policy focusing exclusively on price stability. Experience has shown that such a 'stability-oriented' policy not only provokes stagnation, but is also unable to deliver on price stability itself.

In the medium term monetary policy matters for inflation and output

In the long run there is, perhaps, little scope for a trade-off between inflation and real economic performance (growth and employment). Perhaps money – and also monetary policy – is irrelevant for the long-term real outcomes. But we all live in the short, or at best medium, run. And in the short-to-medium run the policy of the central bank is of some importance not only for inflation but also for real growth and employment, hence for the actual welfare of the people.

Output responds to monetary policy shocks faster and more strongly than inflation

There is relatively little disagreement about the effects of a reasonably credible monetary policy. It is a 'stylized fact', emerging from numerous empirical studies, that a policy-induced rise in the short-term real interest rates tends to be followed by a contraction in industrial production. Production starts to fall with roughly six months' delay upon an interest rate 'shock' administered by the monetary authority. The contraction continues for about 1-1.5 years thereafter. Only later the production does slowly return to its pre-shock path. The effects of an interest rate shock on inflation tend to be less definite (less accurately predictable) than its effects on production. Moreover, the first impacts of an interest rate shock on inflation tend to emerge only after much longer delay – after up to two years.[1]

Different responses of output and inflation, exemplified

Administering interest rates with a view to achieving an inflationary objective in a fairly remote future is a naturally risky decision. Even in the absence of any unpredictable events during the intervening period, the response of inflation is, as mentioned above, far from certain. This squares quite well with the past experience of the euro area. Despite very high interest rates administered by the ECB during the years 1999-2002, inflation has persisted at about 2% since 2001. Lower interest rates (since 2003) have not yet had much of a negative impact on current inflation, which is running at about the same 2% as before.

On the other hand, the fact that growth in the euro area came to a standstill in 2002-2003 is consistent with the earlier ECB policy. Some growth acceleration in 2004 and 2005 is again consistent with the relaxation of the ECP policy in 2003. This experience demonstrates swiftness and determinedness of the monetary policy – as far as the real economy is concerned.

[1] See, for example, Ch. Romer and D. Romer, 'A New Measure of Monetary Shocks: Derivation and Implications', American Economic Review, September 2004, pp. 1055-1084. This study is also downloadable from the website of the National Bureau of Economic Research (www.http://papers.nber.org/papers/w9866).

When it does make sense to tighten the monetary policy (and when it doesn't)

Administering a steep interest rate hike may be justified if, in the central bank's judgement, inflation in about two years (and beyond) is going to be alarmingly high, and accelerating. (There is virtually little that a central bank can do to affect inflation over a shorter horizon.) Suppose the central bank's forecast sees the *future* inflation rising to, let us say, 6%. Although that forecast need not be too accurate, it makes good sense to resort to 'drastic measures' – even if these measures are quite certain to provoke a swift and possibly strong recession. Nonetheless, in a situation where there is a risk of inflation getting out of control, one should accept the central bank's simple-minded determination to focus on preventing the emergence of a runaway inflation, even at the cost of (temporarily) lost production and incomes and (temporarily) higher unemployment.

On the other hand, it makes sense to demand from the central bank some moderation in its interest rate decisions if the inflation forecast predicts fairly low inflation and the ensuing gains on inflation are small and highly uncertain – while the quite certain loses on production are going to be rather painful. In other words, a rational and considerate central bank would be carefully weighing the expected gains on inflation against the expected losses on production and employment. Such a bank would not chase an illusive gain (let us say a fraction of a percentage point) irrespective of real losses, in particular if the future inflation is forecast to be low anyway. To the contrary, it is rational to expect the central bank to reduce its interest rate – and pretty fast too – if the expected inflation is not high while there is a recession, or stagnation, on the horizon. There is no justification for a pre-emptive CAUTION (or a *'Stability über alles'* attitude). Sticking to high interest rates no matter what, just on the principle that this should be good for price stability – and also for production eventually *('in the long run')* – imposes unnecessary medium-term losses. Besides, during growth slowdowns (and even more during stagnation/recession) caused by inconsiderate application of high interest rates it is investment in productive assets that suffers most. By impairing potential growth in the future, this has also negative consequences for longer-term growth.

ECP appears to be more inflation-averse than the Bank of England or Riksbank

Art. 105 of the ECT states that the *'primary objective shall be to maintain price stability'*. Of course, price stability means literally zero inflation. Even if the 'fathers of the ECB' had the objective of zero inflation in mind (who knows?), they soon re-defined 'their' price stability as *'a year-on-year increase in the Harmonized Index of Consumer Prices for the euro area of below 2%'*. But this definition did not rule out zero inflation, or even deflation. Formally, the ECB had pursued the objective of inflation lower than 2% (possibly zero inflation) until 2003. As already mentioned, inflation in the euro area has generally refused to be lower than 2%, even as growth has remained unimpressive (to say the least). Arguably, this has motivated the change of the ECB price stability definition. The current version of the ECB definition of price stability is still a bit ambiguous: *'inflation below but close to 2%'*

Even if one disregarded the *'below but close to'* qualification, and assumed instead that the ECB had a kind of implicit target of 2% inflation, one would wonder whether that target was not too ambitious for the euro area. The Swedish Riksbank has an explicit inflation target of 2% – but this is a mid-point target with a tolerance interval of plus/minus 1%.

Formally, the Riksbank is not obliged to engage in desperate actions even if inflation were expected to creep up to 3%. The Bank of England used to be even more liberal: until recently its explicit inflation target was 2.5% – but again with additional buffers of 1% on either side of the 2.5% mid-target.2 In effect, both the Riksbank and the Bank of England would appear to have been much less inflation-averse than the ECB.

Euroland performs much worse than Sweden and the UK on growth and inflation

Paradoxically perhaps, in the medium term Sweden and the UK have performed vastly better than the euro area on real growth *and* on inflation. Over the period 1998-2005, real GDP rose on average by 2.7% per year in the United Kingdom and by 2.8% in Sweden – against 1.9% in the eurozone. (More recently the growth rate differentials for Sweden and the UK vs. the eurozone have been widening further.) Average inflation over the same period was the highest in the eurozone: on average 2.04% per year. In the UK inflation was 1.3%, in Sweden 1.5%. How come those countries whose monetary authorities have, apparently, been indifferent to a *higher* inflation ended up having a *lower* inflation (and much higher growth)?

Unlike the ECB, the inflation-targeting central banks the take output gap seriously

Unlike the ECB, the central banks of the UK and Sweden (as well as many more industrialized countries including Switzerland, Norway, Canada and Australia) have adopted inflation targeting. This may partly explain why the UK and Sweden (and other inflation-targeting countries) have been growing much more vigorously than Euroland. The point is that in inflation targeting, attention is paid not only to the likely path of the future inflation, but also to the likely path of future *production*. More specifically, in setting the interest rates, the monetary authority targeting inflation should seek not only to move inflation possibly close to the target, within a reasonable time horizon, but simultaneously to reduce the 'output gap' – the distance between the *potential* and *actual* real GDP growth paths. Figuratively speaking, a monetary authority engaging in inflation targeting could be portrayed as an institution endowed with a 2 At the beginning of 2004 the UK Chancellor of the Exchequer ordered a change in the Bank's mid-point target, from 2.5% to 2%, leaving the 2% tolerance band. Moreover, for the inflation-targeting central banks any inflation above the target (or above the upper tolerance limit) is explicitly as bad as any inflation below the target (or below the lower tolerance limit).

Thus for the inflation-targeting central banks, too low inflation (and deflation in particular) is to be avoided as much as too high inflation. The ECB has not yet committed itself to avoiding too low an inflation. 'loss function' whose value it tries to minimize.[1] The loss function combines at least two criteria: inflation (or rather the inflation gap, or the distance between the inflation target and the inflation rate that is achievable) and the output gap. Optimum decisions allow for *both* criteria. That is, they seek the best trade-off between the two goals.

[1] Of course, one does not know what motivates the actual decisions of IT (inflation-targeting) central banks. One does know what they say they take into account. And what they say they do can be described in terms of minimization of a loss function. The famous Taylor Rule was the first simplified 'prototypic' description of the response function attributed to the FED (the US central bank). The Taylor Rule can be derived from a 'loss function' taking into account inflation and output gaps. More recent research on the actual behaviour of the FED (which formally does not state any specific inflation target) indicates that the FED's response function takes into account both inflation and production growth (past, current, as well as expected). Interestingly, the weights assigned to production are bigger than the weights assigned to inflation. Moreover, the FED reaction function seems to allow also for a third item: the unemployment rate. (See Ch. Romer and D. Romer, op.cit.)

Arguably, the success – as far as real growth in concerned – of countries which have adopted formal inflation targeting may have something to do with that framework's unprejudiced attitude towards the objective of achieving a possibly high level of utilization of existing (and forthcoming) production capacities. Unlike the ECB, which subordinates its action to its primary objective of 'price stability', an inflation-targeting central bank subordinates its policy to an objective which combines *both* inflation and production targets.

Taking the output gap seriously helps to hit own inflationary targets

While the application of inflation targeting, possibly combined with a good dose of fiscal activism (see next paragraph), may explain the superior real performance of the UK, Sweden or other countries, there is still the question why these countries enjoy, at the same time, inflation that is consistently *lower* than in Euroland. To some extent this may be explained by the fact that the output gap (whose forecast is taken into account while formulating the inflation forecast and the policy interest rate) is actually also a measure of the *future* inflationary pressures. By minimizing the future output gap, an IT monetary policy actually reduces the risks of inflation missing its own forecast (and the target). Thus, one does not have to demand that the IT monetary authority is sentimental about the social discomforts of recession, low growth or high unemployment. The IT monetary authority does not have to have a 'soft heart' at all. It will take into account the growth considerations just because this appears to be an *efficient* way of achieving its *own* inflationary objectives.

Fiscal policy in Euroland impedes growth but adds to inflation

There is a second reason why countries with the IT monetary policy perform better (on growth, stability and employment) than does the eurozone. Unlike the eurozone countries, inflation targeting countries have retained the freedom to *actively*[1] use the fiscal policy to support aggregate demand whenever the actual production shows signs of straying too much from the potential level. The UK is the case in point: since 2003 the UK general government deficits have been running at over 3% of the GDP. Arguably, this has reduced the output gap and prevented stagnation (which would have likely occurred otherwise). Of course, the USA remains the best example of the aggressive use to be made of deficit spending.

It may be fair to add that the fact that inflation in the euro area tends to be higher – despite much weaker real growth – may have been *directly* unrelated to the monetary policy of the ECB. The major euro area countries have been desperately trying to squeeze their fiscal deficits below the magical 3% threshold – also by raising the indirect tax rates (VAT and excises). This tends to bid up euro area inflation and to depress domestic demand at the same time. The irony of the situation is that the tax-driven inflation, which is a by-product of the ECB's stubborn insistence on 'fiscal prudence' in the euro area member countries, is then interpreted by the ECB as a sign of 'mounting demand pressures'. These 'pressures' are then invoked as the reason for raising the interest rate (or for refusal to lower them).

[1] A high deficit need not reflect an active use of fiscal policy for stabilization purposes. The high fiscal deficits in Germany do not reflect a conscious intention to support faltering domestic demand. Rather, these deficits emerge because of the passivity of the fiscal policy, which is determined not to pre-empt an approaching recession with higher deficit spending. When such a non pre-empted recession finally sets in, falling tax revenue and rising social spending (e.g. unemployment benefits) generate deficits – much to the displeasure of the fiscal authority.

Concluding remarks: inflation and output objectives may – and should – be harmoniously combined

Although the primary business of the ECB is to keep inflation reasonably low, it could – and should – allow for the real economy performance: output and employment. As has been argued above, there is a scope for a harmonious combination of both concerns. In fact, paying attention to the real economy performance would, in all probability, make the job of inflation stabilization more effective.

An efficient pursuit of both objectives (inflation and output) requires a definite framework for the elaboration of decisions on the policy interest rates. Forecasting the paths of both output and inflation is essential to that framework. Having a specific inflation target (as under inflation-targeting regimes) would seem to be advisable.

In any case the ECB should be explicit on its inflation goal: its current objective of *'inflation below but close to 2%'* is not only ambiguous, but very likely also too ambitious given the euro area realities. (Impotence of the fiscal policy, which is practically paralysed by the Stability and Growth Pact; high heterogeneity across the member countries; non-satisfaction of the basic requirements of the Optimum Currency Area theory). It may make good sense to fix the inflation target at 2.5% (and permit an additional 1% plus/minus tolerance band) at least for some time.

Finally, it is worth remembering that the central banks are also responsible for the maintenance of financial stability. Occasionally, the inflation objective may collide with the need to preserve financial stability. In such, admittedly rare situations, the central banks are expected to give preference to financial stability – even if their policy actions (such as strong reductions in interest rates, or 'pumping money' into the banking system) may imply a heightened risk of rising inflation. The inflation objective, however 'sacred' under normal circumstances, is then overridden by other considerations. This 'instinctive reflex' is quite understandable: a general collapse of the financial system and the ensuing real losses (recession) are capable of generating social costs that may by far exceed the costs of even high inflation. Such extreme occasions reveal a certain inferiority of the inflation objective: there are, even to central bankers, more important things in life than just low inflation.

Nomination of Central Bankers

Briefing Paper for the Monetary Dialogue of June 2006 by the Committee on Economic and Monetary Affairs of the European Parliament with the President of the European Central Bank

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Summary

The *de facto* arrangement whereby six places of the EB go to the six largest countries in Euroland and the remaining two rotate among the smaller nations may conflict with the request that they be "appointed from among persons of recognized standing and professional competence in monetary or banking matters". Additionally, the Treaties determine that no member of the ESCB may take instructions from any outside institution or from national Governments or Parliaments. Given this clash between custom and prescription, whenever a new member of the Council has to be chosen, the discussion flares up between those who would see at least one of their nationals on the Board and those who incline for a purely professional choice regardless of nationality.

The demand for central bank independence is now well established in economic theory and in political practice. Further, the conviction that inflation does not contribute to keener growth or larger employment has resulted in the remit to central banks generally and the ECB in particular to maintain price stability. These elements of central bank organisation seem to clash with the need for democratic accountability of Bank officials and with the need of Bank directors to exert an authority over matters monetary, often seen as part of political sovereignty.

Hence the selection of members of the EB of the ECB should balance technical expertise and independence with democratic accountability and political weight. A reform of the method of EB members selection should be considered carefully.

Every nation in Euroland wants to have a national member on the Executive Board (EB) of the European Central Bank (ECB) though this is not possible for there are only eight seats in that Board. Although the Governing Council (GC) comprises the EB plus the Governors of the national central banks, this Council's role is only to lay down guidelines for the EB, which does not satisfy national aspirations. So a *de facto* arrangement has emerged, whereby six places of the EB go to the six largest countries in Euroland and the remaining two rotate among the smaller nations. But this national apportioning may not always tally with the request that they be "appointed from among persons of recognized standing and professional competence in monetary or banking matters". Hence, whenever a new member of the Council has to be chosen, the discussion flares up between those who would see at least one of their nationals on the Board and those who incline for a purely professional choice regardless of nationality. Further, the Governments of some of the smaller Member States (MS) are sometimes tempted to join with the defenders of professionalism, since they think they would thus stand a greater chance of seeing one of their own on the Board.

The argument is further muddied by disagreements on how to understand the requirement the European Monetary Authority be independent. True, the Treaties have determined that neither the European System of Central Banks (ESCB) nor the ECB itself "nor any member of their decision making bodies shall seek or take instructions from the Community institutions … or from any Government of a Member State". However many point out that the ECB cannot sit in an ivory tower and must be seen to be in touch with public opinion in the various parts of Europe, for two reasons, one acceptable, one spurious. The reason worthy of consideration is that the ECB ultimately relies for its authority on the Governments and Parliaments of the different European nations, especially on the larger ones without which there would be no euro. The mistaken reason is the belief the ECB should with its monetary policy directly contribute to fostering sustainable development and full employment in the whole of Europe – a pretext for Governments with populist inclinations to ask for more inflation.

So, how should the members of the EB be chosen? Should the criterion be purely professional no regard given to nationality? Should it be one of political clout, where the six larger nations occupy one seat each, by right or by tradition and two are left for the smaller members? Or should the criterion be political but egalitarian, so that all MS have an equal chance of acceding to the Board?

Central Bank independence

One of the more fateful innovations of the European Treaties is the idea of making the ECB independent of political dictation or influence. There are a number of theoretical reasons for this principle, which had been abandoned with the demise of the gold standard and only reappeared with the creation of the Bundesbank.

One argument is that an independent central bank governed by proper rules can more easily maintain the strength of the currency in the exchange markets, especially if backed by an undertaking to limit public debt, as with the "Growth and Stability Pact". Another is the conviction, slowly arrived at by many in the economic profession, that discretionary monetary management cannot bring about long term growth or reduce unemployment permanently. These theoretical arguments against monetary activism, however convincing, were not easy to apply in practice even by enlightened politicians, since they could always be open to being outbid by populist proposals to inflate the country out of stagnation and unemployment: to keep the country away from monetary activism all sides had to agree to tie the hands of Governments of all kinds and shapes in matters monetary.

These three ideas can be expressed more precisely by saying: (a) that a well behaved Central Bank with a sound monetary policy can help avoid sudden catastrophic capital flights and steep devaluations, if backed by a sensible fiscal policy; (b) that money illusion is short lived and that monetary activism does not contribute to real economic growth; and (c) that politicians, always in search of votes, are subject to time inconsistency, unless they all agree to a self-denying rule to keep politics out of monetary policy. Hence, the wisdom of keeping the ECB as free from political pressure as possible and making the obligation to "maintain price stability" trump a vaguer remit of supporting "the general economic policies of the Union".

These considerations have led in many democracies during the second part of the 20th century to totally or partially removing decisions about monetary policy from the hands of elected politicians. Given that in the long run money does not systematically contribute to real growth and employment, except in so far as a solid currency contributes to the reduction of transaction costs; and given that tampering with money for short term gains is a negative sum game: then, entrusting monetary policy to unelected officials told to aim for monetary stability is a desirable limitation of democratic sovereignty.

The return to monetary rules

Central bank independence for maintaining price stability, then, is based on two ideas: that growth is endogenous and due to real causes; and that money is a veil, a fluttering veil perhaps (Yeager, 1997), but one that finally does not blind people to economic reality and real incentives. These truths have taken a long time to be generally accepted.

Seignorage, a, was from the earliest of times understood to be an important source of Government income. This realisation led cities, monarchies, empires to nationalise the issue of metallic money and whenever possible to overvalue their currency over and above the cost of minting it. As Mundell (2000) has noted, "when money is overvalued [it is] a fiscal resource of the first magnitude". There is however a limit to how much seignorage can be extracted from the users of money. Within the confines of the state, Gresham's Law obtains: bad money will circulate at a discount related to the excess of money supply and inflation will reign. But in as far as coins circulate as merchants' money outside the territory of the state, their face value cannot much exceed metallic value, at most by the competitive cost of minting them (called *brassage"*) and the value of the assurance of fineness and weight afforded by the public stamp. Thus, during the centuries when metallic money was the main monetary instrument, a three tier system evolved in the main merchant countries: almost full valued coins circulated in international trade; local small change was exploited by debasement and re-stamping with varied success; and a unit of account that did not circulate was used for measuring the price of goods and services independently of the vagaries of coin value. (Sargent and Velde, 2002)

The spread of the gold standard during the second part of the 19th century disciplined central banks to a degree reflected in the secular stability of prices and in the steady rate real growth (for the US, Friedman and Schwartz, 1963, Chart 62). There were indeed repeated financial crises, as will happen in any system where commercial banks create money, but these were addressed internally by central bankers playing their role of lenders of last resort and internationally by reserve swaps among central banks.

The move to a gold exchange standard after the WWI made the international payment system more unstable: by allowing issuers of money other than the US to keep dollars instead of gold as a reserve, it added a central bank multiplier to the internal commercial banks multipliers of each nation. When a real downturn came in 1929 and the Federal Resrve Bank badly failed its duties as a lender of last resort (Friedman and Schwartz, 1963, ch. 7), the gold standard was in fact abandoned and a long period of (badly) managed money began. Thereupon Keynes became the single most important intellectual influence on monetary policy for thirty years. He blamed the persistent unemployment suffered by the UK during the '20ie on the gold standard rather on high unemployment benefits (and would not listen to Jacques Rueff's contrary arguments). , He also expressed deep scepticism in the *General Theory* (1936) about the effectiveness of the interest rate policy traditionally applied by the Bank of England to steer money supply and influence savings and investment. This led to a long period of minimal rates and suppressed inflation in the UK after 1945 and in other interventionist nations (with the signal exception of the Federal Republic). He also helped design a rickety half-way house between the gold standard and flexible exchanges for the world as a whole, and edifice that fell to the ground with the 1970ies energy crises.

Indeed, an important contrary influence was the evident success of the Constitutional arrangement of the Federal Republic of Germany, whereby the Bundesbank was able to pursue the aim of monetary stability free from political interference: German growth even survived revaluations of the Deutschemark! On the theoretical plane, the criticism of the monetarists (Friedman, 1970) started to dent the belief in Keynesianism and the doctrine that central bankers must submit to Government instructions. When the world suffered from a bout of 'stagflation' and later a policy of cheap money, high government debt and expansive public works clearly failed in Japan, the confidence in discretional central banking started to wobble. The last blow was the intellectual challenge of the rational expectations school, as put forward by Lucas (1976): to sum it up in Kydland and Prescott's words (1977): "A discretionary policy for which policymakers select the best action, given the current situation, will not typically result in the social objective function being maximized".

An indication as to how the conception of monetary policy has changed under the influence of rational expectations is the greater transparency of the decision making of issuing banks. Many now publish the minutes of their executive meetings a month or even a fortnight after these have taken place. Also, many a Governor or Chairman gives pointers as to how he views future inflation and how probable a change of the Bank interest rate is in the future. Gone is the belief that monetary policy should surprise markets, when they were seen as passive respondents of the central bankers' decisions. The aim now is to give markets as much information as possible, so that expectations are properly formed and the need for outside intervention minimised.

True, there are remnants of Keynesian thought in present day monetary policy. Central bankers still use the 'output gap' to determine when they believe money should be made tighter to control future inflation. Also, a revival seems to be taking place of the belief in the ability of central banks to influence the business cycle and the real economy: but, as the neo-Keynesians Clarida, Galí and Gertler say in their influential (1999) survey, *only in the short run*. On the assumption of "temporary nominal price rigidities", they find evidence that "monetary policy significantly influences the short term course of the real economy". Since for them "the instrument of monetary policy is the short term interest rate", they consider "how the interest rate should adjust to the current state of the economy" to be the main monetary policy design problem. The essential question, they admit, is how market participants form their expectations and *how one helps the formation of more accurate expectations through commitment to a rule*. Indeed the authors accept that "output-inflation

trade off is reduced by commitment" – an assertion that begs the question of the value of their "science of monetary policy", since that science will be less needed the more the Bank aligns its policies to fostering rational behaviour in the financial markets. These instrumental or supporting central bank policies should have two strands: (1) supplying liquidity when a huge outside shock causes a retraction in the supply of commercial bank money; (2) transmitting the non-indulgent stance of the Bank as regards inflation. One cannot but agree with the three authors when they say: "a central bank chair should be appointed with greater distaste for inflation than society as a whole".

Whether one accepts those neo-Keynesian views or not, the following conclusions stand: that making monetary policy a part of the political cycle is counterproductive for the very politicians who yield to that temptation; and that central banks must continue to be independent and predictable.

Structure and size of monetary decision bodies

The question of how to structure decision making in monetary policy is related to a number of questions: (a) how to maintain central bank independence; (b) how optimise the political authority of the bank; (c) how to organise its democratic accountability; (d) how to facilitate decision making in practice; and (e) how to guarantee the quality and professionalism of the decision makers and the application by them of theoretically sound rules.

a. The nomination process is an essential element in central bank independence. There are many different solutions to this questions and I shall mention only a few.

    - In Australia, the Reserve Bank Board consists of the Governor and the Deputy Governor *ex officio* and appointed by the Government; sis external members appointed by the Treasurer (or Finance and Economics Minister); and the Secretary to the Department of the Treasury. This seems not to make the Board very autonomous but the minister does not take decisions and the Government is only "informed from time to time of the Bank's monetary and banking policy" (in practice, every month).
    - In New Zealand, the Government appoints the Governor and the Minister appoints the 5 to 7 non-executive directors, but it is the Governor who takes all the responsibility for monetary policy, under very clearly specified inflation objectives that reflect on his salary.
    - The connection between the Monetary Policy Committee (MPC) of the Bank of England and the staff of the Bank is closer than in many other issuing institutions. Of the eight members of the Committee, four are employees of the Bank: the Governor, the Deputy Governor, the official in charge of monetary policy analysis, and the executive responsible within the Bank for monetary policy operations. The Chancellor of the Exchequer appoints four members having "knowledge or experience which is likely to be relevant to the Committee's functions". Curiously, these persons need not be UK nationals. The arrangement in the UK is double-tiered, as there is a Court of Directors most of whose members are drawn from business and need not give up their other occupations. The appointments to the MPC are vetted by the Treasury Committee of the House of Commons under the condition that the members of the MPC "should be selected to meet the twin requirements of demonstrable professional competence and personal independence from Government".

- An interesting arrangement is that of Finland. There is a Parliamentary Supervisory Council to which the Board of the Bank of Finland reports regularly. The Board is comprised of the Governor and up to five more members. The President of the Republic appoints a member on the basis of a Government proposal. The Parliamentary Committee makes its own proposal to the Government. Appointments for the other posts on the Board are publicly advertised and decided on the basis of capacity and experience.

b. The political kudos of the various central banks is generally maximised by Government appointment and professional capacity. Only the practice of the ECB adds a dimension that is more weakly present in central banks of federal stats. The Federal Reserve Chairman is nominated by the President of the USA and approved by the Senate after searching hearings. The FR Bank of New York is present on the Board *ex officio* and the other Reserve Banks rotate, so that attention is paid to local susceptibilities. In practice, appointments to the EB of the ECB take into account the distribution of nationalities of the Board by reserving six places to the six largest economies in Euroland. This looks discriminatory to the smaller MS of the EU but in fact gives some assurance that ECB decisions will be politically acceptable to the heavyweights of the EU.

c. Democratic accountability usually takes the form of regular consultation with the Economics Minister and information to Parliament or Congress. In the case of the ECB, the connection with national opinion of the different MS is established by a complicated system of: supervision by the GC of the ECB, where the Governors of the Central Banks of Euroland all sit; reporting to the Ecofin Committee of the European Council; periodic reviews by the European Parliament. Though all this seems quite remote, it is sufficient to maintain a connection with public opinion in the MS while not impairing the independence of the ECB. One must not forget that the whole point of independence is to remove monetary policy from the political arena.

d. The size of directing boards or committees is material to their proper functioning. A useful survey of the size of governing boards across 84 central banks is the paper written by Berger, Nitsch and Lybeck (2006). Decision making becomes more difficult with board size. But the authors note that size is not random. It is positively connected with various country characteristics, such as country size and population heterogeneity – two traits especially notable in the EU. Also democratic institutions, greater autonomy, longer history and larger staff tend to have larger governing boards. This seems to explain the sixe of the GC of the ECB and the need for a small EB.

e. Finally, the combination of a clear mandate for central banking conduct and the professionalism of the executive directors seems to be a strong guarantee that the issuers of money will not try to exceed their power, both in the sense of their legal remit and in the sense of what economic theory ways central banks can usefully do.

A modest proposal

In vies of the need to balance independence and professionalism on the one hand, and democratic accountability and political kudos on the other, the idea of Francesco Giavazzi to ask MS to propose three names of recognised reputation and experience in financial and monetary matters is worthy of consideration.

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Appointing Central Bankers

Briefing Paper for the Monetary Dialogue of June 2006 by the Committee on Economic and Monetary Affairs of the European Parliament with the President of the European Central Bank

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Executive Summary

- The ECB appears to be designed to maximise the deviation between the Governing Council's potential and actual performance and to promote the possibility of the Governing Council making extreme or risky decisions. The nomination process for Executive Board members should be designed to offset these problems.
- Allocating Executive Board positions to particular countries is counter to the spirit – and probably the letter – of the Maastricht Treaty.
- In the United Kingdom, an opaque nomination process for Monetary Policy Committee (MPC) members has led to widespread resentment and has possibly damaged the reputation of the Chancellor and the MPC.
- Executive Board vacancies should be advertised and candidates should be scrutinised before being nominated by the European Council. The European Parliament should play a larger role in the appointment process.

Article 11.2 of the Statute of the European System of Central Banks and the European Central Bank provides a partial outline of the procedure for appointing members of the ECB's Executive Board. The European Council recommends a candidate; the recommendation is sent to the European Parliament and the Governing Council of the ECB for consultation; the European Council, at the level of heads of state or government, makes a final decision. The only formal requirements for a candidate are that they be of "recognized standing and professional experience in monetary or banking matters" and that they be a national of an EU member state.[1] What is missing from the protocol's guidelines is a specification of how the European Council is to arrive at its initial recommendation.

Following the announced retirement of Mr. Otmar Issing from the Executive Board, Germany proposed a single candidate – Mr. Jurgen Stark – to replace him. On 14 February 2006 – without commentary or justification – the Ecofin Council of the economics and finance ministers of the member states dutifully nominated Mr. Stark to succeed Mr. Issing. On 2 March 2006 the Governing Council of the ECB rendered its terse opinion that Mr. Stark is of suitable standing and that it had no objection to the appointment. On 25 April 2006 the Committee on Economic and Monetary Affairs of the European Parliament, having previously solicited the views of Mr. Stark and having held a hearing, gave its approval of the candidate. On 17 May 2006 Mr. Stark's appointment was approved by a plenary session of the European Parliament and on 26 May 2006 the heads of state or governments of the EU member countries having the euro as their currency formally appointed Mr. Stark.

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[1]The Protocol only requires that Executive Board members be citizens of EU member states, not that they be nationals of eurozone countries. However, the decision to appoint Mr. Stark was taken by the heads of state or government of the eurozone countries.

The open and transparent proceedings of the European Parliament contrast with the secrecy surrounding the rest of the appointment process. Mr. Stark has a respectable central banking background, but – unlike his predecessor – he is not widely viewed as a distinguished economist. While it is impossible to verify how Mr. Stark was selected, there is a widespread belief that the four largest eurozone members each "own" a seat on the Executive Board and that the seat just filled "belongs" to Germany. Thus, Germany was entitled to select the candidate. In addition, there is a sense that Mr. Stark might have been picked for his *lack* of a track record as an economist; that the German government believed that a candidate with more pronounced views and with a history of expressing independent thought might have encountered opposition.

In this note I explain why the ECB's structural flaws make it essential that the nomination process lead to independent, forceful, intellectually adept and hardworking Executive Board members. I contrast the appointment process in the euro area with that in the United Kingdom and I briefly discuss alternatives.

Why is the Appointment Process Important for Good Outcomes?

Groupthink at the ECB

Economists tend to have a rosy view of monetary policy making by committee. In his briefing note De la Dehesa (2006), for example, says that there is wide evidence and consensus that committees make better decisions than individuals because extreme positions tend to balance out in groups. Decades of research in the other social sciences provides a different point of view: belonging to a group changes people in profound and unforeseen ways, committees polarize their members and groups of competent people can make horrendous decisions.[1]

Interesting early evidence of the impact of group membership is provided by the experiments of Solomon Asch, who showed groups of students two cards: one with a single vertical line and one with three vertical lines of differing heights. The students were told that Asch was studying visual perception and then were asked sequentially which of the three lines on the second card was the same height as the line on the first card. Unbeknownst to the next-to-last student in each group to answer, the other students were Asch's confederates. In some experiments the confederates were told to give the obviously correct answer, and in these experiments the students who had not been briefed gave the correct response as well. In the other experiments the confederates were told to all give the same wrong answer. In these experiments, the unbriefed students went along with the same incorrect answer one third of the time. Asch commented that, "The tendency to conform in our society is so strong that reasonably intelligent and well-meaning young people are willing to call white black."[2]

A potentially worrying way in which group membership affects people is that it polarizes their expressed views. After deliberation with their group, group members tend to be more extreme than prior to deliberation. This phenomenon is known as *group polarization* and it has been documented by more than 300 studies.[3] Social psychologists offer two main explanations for this outcome: one has to do with individuals' desire to be accepted by the group; the second, called the *persuasive argument theory*, has to do with informational influence.[4] Group polarization leads to group members becoming less risk averse in situations where they are already willing to take relatively large risks[5] and it causes them to be more

[1]See Sibert (forthcoming) for a survey.
[2]Asch's experiments are described in Napier and Gershenfeld (1999).
[3]See Buchanan and Huczynski (1997) for a discussion of this.
[4]See, for example, Friedkin (1999).
[5]The original article documenting this is Stoner (1961).

willing to commit to losing courses of action.[1] A particular form of group polarization, know as *groupthink*, emerges when group members' striving for consensus leads them to stop giving due consideration to alternatives. Groupthink has been blamed for apparently competent committees making terrible choices: the Bay of Pigs, the Watergate cover-up and the decision to launch the space shuttle *Challenger* are examples.

The way to avoid harmful group polarization and groupthink is to get committee members to act as individuals. A monetary policy committee can do this by having short terms in office, appointing members from outside of central banks, appointing people with a history of independent thought and the intellectual capacity to effectively oppose other group members, by permitting evaluation of individual members and by allowing external scrutiny of the group's decision-making process. As Executive Board members have long terms in office (eight years) and the ECB allows no scrutiny of the decision making process or of any individual's contribution to it, it is especially important to the eurozone that the appointment process lead to intellectually heavyweight and independent-minded members.

Are Two Heads Better than One at the ECB or Are Too Many Cooks Spoiling the Broth?

In addition to committee decision making sometimes producing disastrous outcomes, more than 125 years of research in the other social sciences documents that committee outcomes are not as good as one might expect, given the talents of the individual members. Unless their individual contributions are observable and can be evaluated, group members tend to shirk and the extent of the shirking is increasing in the size of the committee. In addition, there is substantial empirical evidence that committees do not share information well[2] and that larger committees are subject to coordination problems.[3]

Monetary policy committees ought to be designed to minimise the process losses associated with shirking, the failure to properly share information and coordination problems. The Bank of England is an example of how this can be done. The MPC is relatively small, it has a clearly defined goal and individuals' votes are published. The ECB contrasts with its ludicrously large (and growing) Governing Council and its opacity. Given that the ECB appears deliberately designed to make decision making by the Governing Council subject to serious process losses, it is especially important that the appointment process lead to competent and hard working Executive Board members.

The Appointment Process in the United Kingdom

> "The procedures for identifying a new Pope or a new Dalai Lama, are less opaque than those which precede the appointment of a Chairman of the Federal Reserve, a Governor of the Bank of England or a President of the ECB." Howard Davies (2005)

While a model of democratic accountability in most of its operations, the appointment process at the Bank of England is possibly even more inscrutable than it is in the eurozone. In practice, the Chancellor simply appoints whomever he feels is most qualified for the job; how he arrives at a decision is unknown. Many of the candidates report surprise at being chosen: Sushil Wadhwani said that the approach came "totally out of the blue"[4], while David

[1] See White (1993).
[2] See Stasser and Titus (1985).
[3] See Strobe and Diehl (1991)
[4] Monetary Policy Committee of the Bank of England, UK House of Lords (2001).

Blanchflower said that his appointment was a shock.[1] Appointments appear rushed: Sushil Wadhwani's appointment was announced five days after the phone call offering him the position; Chris Allsop's appointment was announced two days after an initial call and Stephen Nickell said that he was rung on a Tuesday and invited to participate in a meeting on Wednesday. He said accepted the job on Thursday and his appointment was announced on Friday.[2] Sir Andrew Large was told only hours before his first MPC meeting that he had been chosen.[3] Subsequent to appointment, a select committee of the House of Commons holds hearings and publishes a report. It can – and has – voiced disapproval of a choice but it has no power to veto it.

Recent appointments have included Sir John Gieve, a senior official at the Home Office with no obvious expertise at monetary policy, Richard Lambert, an editor of the *Financial Times*, and David Blanchflower, a labour economist who intends to remain resident in New Hampshire – appearing at the Bank of England for only a third of each month. The recent selections have led to regular articles in the British press bemoaning the choices and the process. Last November, the House of Lords rebuked the Chancellor, saying, "None of the recent external appointments is an acknowledged expert in monetary economics."

The consequences of secrecy and questionable choices have been a loss of respect for the MPC and a suspicion of cronyism. As a column in the *Guardian* put it, "Inevitably, there were whisperings that ... nudge, nudge, wink, wink – Ed Balls, Brown's right-hand man at the time, had been hired ... by, you guessed it, Lambert. There's no evidence to suggest that this was the case, but that's what happens when the method of appointment is opaque."[4] This autumn, a Treasury Select Committee of the House of Commons is to launch an inquiry into the way the Chancellor makes his appointments.

How could the process be improved?

There is not a large amount of research on central bank governance, but recent sweeping changes in central bank legislation have provoked some interest in the topic. Lybeck and Morris (2004) suggest that a double-veto process encourages the appointment of qualified people: one body nominates a candidate while another body appoints the candidate. The two bodies must be of comparable influence and power so that they balance one another. Thus, in the United States, the Governors of the Federal Reserve Board are appointed by the President with the advice and consent of the Senate. It might be preferable in the eurozone if the European Council were required, not just to consult, but to seek the consent of the European Parliament. Within what is specified by the protocol, the European Parliament could follow the lead of the UK House of Commons and shame the Council for a less-than-excellent choice by publicly and strongly voicing its disapproval of the nomination.

[1] Watts (2006)
[2] Monetary Policy Committee of the Bank of England, UK House of Lords (2001).
[3] Brummer (2005).
[4] Elliott (2006).

The protocol does not specify how the European Council is to arrive at a nomination. It is clear, however, that allocating seats on the Executive Board to the four large countries is counter to the spirit and possibly the letter of the Maastricht Treaty. Article 7 of the protocol says that no member of the ESCB's decision-making bodies shall take instruction from any member state government and that no member state should seek to influence any member of the ESCB's decision-making bodies. If a government insists on a right to appoint one of the Executive Board members, this invites suspicion that the government seeks to influence that member. In addition, it drastically limits the pool of available applicants if the candidate must be of a particular nationality.

Monetary policy making at the ECB is primarily a technical activity: choosing an interest rate such that, given the current and expected future path of the fundamentals, inflation will remain close to, but below, two percent. Thus, the appropriate people to carry out such an activity are professional economists. In addition, to avoid the groupthink referred to earlier, it is essential that some of these professional economists be academic, or other research, economists who are not connected to central banks, particularly the central banks of large eurozone countries. As academic economists and politicians typically inhabit different spheres, there needs to be a way for the politicians to learn about which economists might be qualified for the job. Restricting attention solely to candidates whom they or their advisors might know personally invites suspicions of cronyism. Consequently, it seems desirable that vacancies on the Executive Board should be publicly announced and that there should be an advertisement for candidates.

As both good governance and good outcomes requires candidates who are not just able but also possess integrity and a willingness to live up to responsibility the pool of candidates should be interviewed and carefully assessed prior to nomination by the European Council. It might therefore be desirable for the European Council to appoint a committee of both Council members and academic economists to evaluate the candidates. While it is reasonable that the ECB be consulted about the appropriateness of a candidate nominated by the European Council, it is also important that the Executive Board of the ECB not be overly involved in selecting the candidate. There is a danger that the Board will favour like-minded candidates or candidates who are unlikely to oppose its favoured policies and this promotes groupthink.[1]

[1]The current UK government has argued against such an open appointment process on the grounds of market secrecy. However, it is difficult to see why a transparent process is worse for markets than a process which leads to insider information and rumours.

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Central Bank objectives

Briefing Paper for the Monetary Dialogue of June 2006 by the Committee on Economic and Monetary Affairs of the European Parliament with the President of the European Central Bank

Charles Wyplosz

Executive Summary

The Eurosystem has been given a hierarchical mandate: first ensure price stability, then support growth and employment. Other central banks have a single objective, price stability, or several objectives, like the Federal Reserve whose mandate explicitly stipulates price stability and high employment.

Yet, in nearly all developed countries, central banks act in very similar ways. Over the last decade, they have delivered low and stable inflation while responding to both inflation and output fluctuations. Evidence is provided by the fact that their actions are well explained by the Taylor rule. This rule asserts that central banks set their interest rate in reaction to the discrepancy of inflation from its target rate and to deviations of output from its trend level.

The apparent adherence to a Taylor rule does not mean that central banks pursue several objectives. They clearly focus first and foremost on inflation, but they clearly recognize that, since they affect inflation with a long lag, at least one and possibly two years down the road, the path to price stability can be adjusted according to output and employment circumstances. This is what the ECB means when it declares itself committed to price stability in the medium term. In the shorter run, it can adjust its policy stance to deal with growth and employment. The evidence is that this is indeed how it operates. This is also how most central banks operate, irrespective of their formal mandates. It is current best practice, perfectly in line with existing knowledge of monetary policy.

Is the Eurosystem right to claim that "price stability is the best contribution that it can make to sustainable growth"? Yes and no. Yes because in the long run inflation is solely driven by monetary policy, and sustained, high inflation hurts growth. No because monetary policy also affects growth and employment in the relatively short run, with no long run effect. This is why no central bank can take responsibility for long run growth and employment; yet a central bank can, and should, recognize that its actions have an effect on the shorter run. This is what the Eurosystem refuses to do.

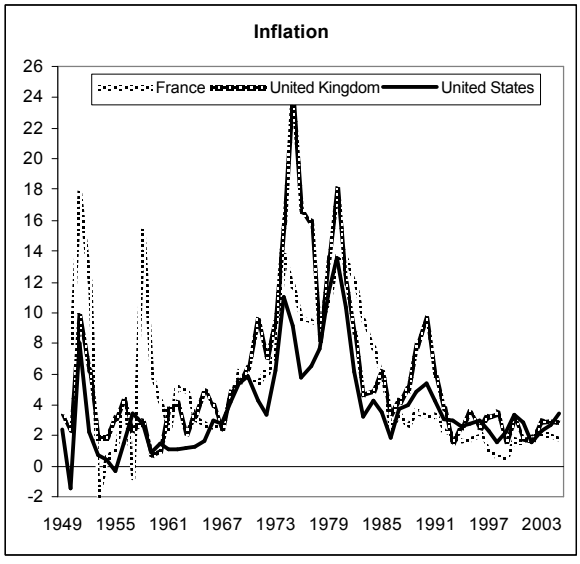
The experience of the last decade is one where inflation has been low. Should inflation rise, central banks are likely to move away from a Taylor rule approach and revert to a hierarchical approach, i.e. to focus solely on inflation. On the other hand, the current approach has worked well and is the main reason why inflation has been low and stable for a decade.

Modern central banking

Nowadays, central banks in all developed countries do the same things, almost in the same way, irrespective of their formal mandates. They aim at a low inflation rate, while being sensitive to growth and employment. This is in line with currently accepted theories.

A central bank cannot pursue more than one objective at a time, because it has one instrument, the interest rate nowadays. In fact, hitting just one objective can be tricky at times. If it pursues several objectives, it must make compromises, accepting misses on one to get closer to another one. Why then choose inflation? The answer is effectiveness. It is generally accepted – in fact it is a very old finding – that in the long run inflation is entirely the result of money growth. Other potential objectives, like growth and employment, are also influenced by monetary policy, but temporarily while they fundamentally depend on a host of other factors, usually called structural factors. It follows that central banks are much better at dealing with inflation than anyone else and not especially good at affecting *durably* growth and employment. It also follows that it is very unlikely that the stubbornly high unemployment rate of some countries is related to monetary policy.

In addition, achieving low inflation requires being parsimonious with money creation. Yet, creating money is hugely tempting. It is a seemingly easy source of instant revenues. Its drawback, inflation, is slow to come. This temptation has led to what is referred to as the *inflation bias,* the tendency of governments to finance spending without raising taxes. This has been done immoderately in Germany in the 1920s, in Latin America until quite recently, all over the world, including Serbia at the end of the Milosevic era and now in Zimbabwe. More responsible governments have also fallen prey to the inflation bias, as for example the US, the UK or France in the 1970s, as illustrated in the figure below. This political failure of self-restraint is the reason why central banks have been granted independence. Delegating monetary policy to independent experts has indeed delivered low inflation in every country where it has been tried.



Independence, however, can only be granted if the experts are accountable. Accountability can only be exercised if the performance can be assessed. Independence with accountability

means no *ex ante* control and strict *ex post* control. A central bank that pursues, and misses, several objectives can always explain *ex post* that it has been compromising on this or that objective to achieve a better result on another objective. Once inflation is identified as the major objective, no such escape is possible. A single, or a priority objective is indispensable for proper accounting.

This does not mean, however, that central banks should ignore other objectives. Monetary policy does not have a *durable* effect on growth and employment, but it does have a temporary effect. This is why, no matter what they say, central banks also care about growth and employment. A simple example can explain how. Euro zone inflation is currently above the ECB's own 2% objective, and it is expected to remain so possibly until 2008. This is why it must raise the interest rate. But how far and how quickly? A central bank uniquely preoccupied with inflation would quickly raise the interest rate to a "normal" level, at least to 4%. This is not what the Eurosystem is doing. It is raising the interest rate in very small instalments, and very slowly, once a quarter so far. The reason is no secret: the Eurosystem is concerned with the solidity of the current recovery. It is also explicitly concerned with financial market stability. This is exactly the approach taken by the Fed over the last two years, as well as by the Bank of England or the National Bank of Switzerland. There is near unanimity among central bankers, as well as among monetary economists, that central banks can pursue price stability while being sensitive to growth and unemployment. This is the strategy pursued over the last decade and, as the figure above shows, it has delivered similarly low inflation rates. Meanwhile, with the same monetary policy strategy, growth has been strong and unemployment low in countries with limited structural problems; growth has been low and unemployment high where structural problems are acute.

The Eurosystem and other central banks

The Eurosystem's mandate, as specified in Art. 105, clearly establishes a hierarchy of objectives, which is well in line with the principles presented above. Art. 2, to which Art. 105 refers, is less precise. It mentions the need "to promote economic and social progress and a high level of employment and to achieve balanced and sustainable development". This implies that, taking price stability as its overriding objective, the Eurosystem is requested to support employment and non-inflationary growth.

The Fed has been given two objectives: low inflation and high employment. The second objective is discussed in Section below. The Bank, however, states that "low inflation is not an end in itself. Price stability is a precondition for achieving a wider economic goal of sustainable growth and employment." The Swedish Riksbank has one objective (price stability), as is the case for the Bank of Japan. Most other non-Eurozone central banks have objectives set in very similar terms as those of the Eurosystem. The Bank of England has two "core purposes", in the following order: monetary stability, i.e. low inflation, and financial stability.

The differences among formal objectives are not just small, they fail to affect central bank behaviour. The widespread adoption of best practice means that all central banks now reason and act in similar ways. They all interpret their mandates as requiring that they deliver price stability and, whenever possible, that they take into account growth and employment.

How can this assertion be tested? We would like to check whether all central banks react in the same way to the same situation. Do they set the same interest rate facing the same deviations of inflation and output from their desirable levels? Such a systematic reaction is

captured by the Taylor rule.[23] This rule states that, in practice, central banks respond to deviations of both inflation and output from their target levels, with weights that reflect their relative preferences. Formally, the rule asserts that central banks set the interest rate i to respond to deviation of expected inflation π from its target level π^* with a weight α, and to deviations of expected output y from its trend level y^* with a weight β:

$$i = \alpha(\pi - \pi^*) + \beta(y - y^*)$$

The weights α and β capture central bank preferences. A very large α means that the central bank cares only about inflation while a very large β would correspond to a central bank that is essentially trying to stabilize output and therefore employment.

The next step is to determine whether Taylor rules adequately describe the behaviour of central banks and, if so, to estimate whether the weights ascribed to inflation and output are indeed similar from one country to another. There is a sizeable literature devoted to this question. It tends to indicate that Taylor rules do provide a fairly accurate description of central bank interest rate decisions – or of the interest rate implication of decisions affecting the monetary aggregates or the exchange rate. Furthermore, the literature reports small and rather insignificant differences across countries regarding the weights that capture policy preferences. This is an indication that, irrespective of the wording of their mandates, central banks behave very similarly and pay attention to both inflation and growth. A commonly accepted rule of thumb is that $\alpha = 1.5$ and $\beta = 0.5$.[24]

As an illustration, the following figure presents Taylor rules for 9 OECD countries, including the Eurozone. For each country, a graph shows the actual money market interest rate and the rate that would have prevailed if the corresponding central bank had strictly followed a Taylor rule, the same rule for all countries. The latter is computed with the formulation above modified to allow for interest rate smoothing. Indeed, one feature of modern central banks is that they change the interest slowly, typically by 25 basis points at a time. They do not believe that such a small change, in and by itself, will achieve anything; rather they intend to change the interest rate by a meaningful amount but do so in several small instalments spread over a rather long period, bringing it gradually to the level that they consider appropriate. Otherwise, the simulations use the standard values $\alpha = 1.5$ and $\beta = 0.5$ and set 2% as the inflation target inflation; target output is potential output as estimated by the OECD (see the appendix for more details).

A first observation is that central bank behaviour has increasingly conformed to the Taylor rule formulation. While in the 1970s and 1980s we can observe wide deviations from the rule, in recent years, the deviations are small. This observation confirms that central banks have come to operate in increasingly similar ways.

A second observation concerns the latest decade. Actual interest rates differ remarkably little from the rates implied by the Taylor rule. Where they do deviate, monetary policy is slightly more expansionary than predicted by the Taylor rule. This confirms the frequently-heard

[23] Named after John Taylor, a Stanford University economics professor who served as Under Secretary of Treasury from 2001 to 2005.

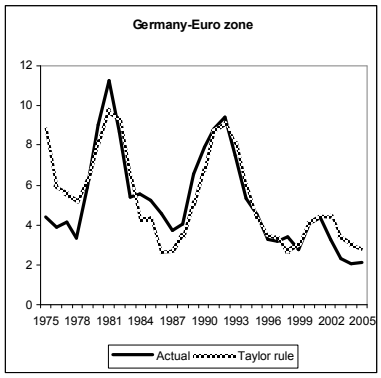
[24] This implies that the central bank raises the nominal interest rate one for one with inflation, which keeps the real interest rate constant, and in addition, by 0.5 to raise the real interest rate. Put differently, inflation and output elicit similar 0.5 responses in the real interest rate. See the Appendix for details.

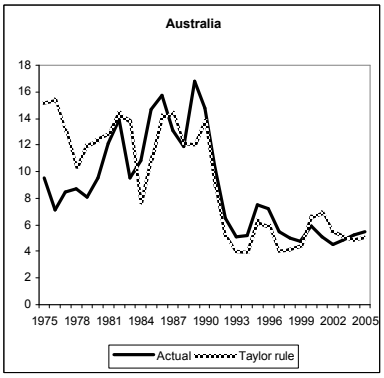
observation that monetary policy has been very accommodative. The exception is Japan: the Taylor rule predicts negative inflation rates, which is impossible. Accordingly, the zero interest rate policy of the Bank of Japan appears to have been constrained by the zero bound, one explanation for the poor economic performance of this country, which included deflation.

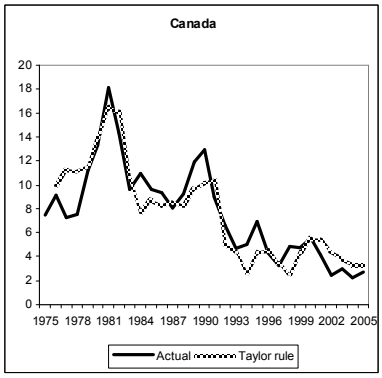
What about the Eurosystem? The corresponding graph treats the Eurosystem as a continuation of the Bundesbank: from 1975 to 1998, the interest rate, inflation rate and output gap are those of Germany; afterwards, they are those of the whole Euro zone. This graph shows that the Bundesbank, despite all of its tough rhetoric, was an early practitioner of the Taylor rule and that the Eurosystem followed suite, slightly on the more accommodative stance side. Much the same can be said of the other perennial low-inflation country, Switzerland.

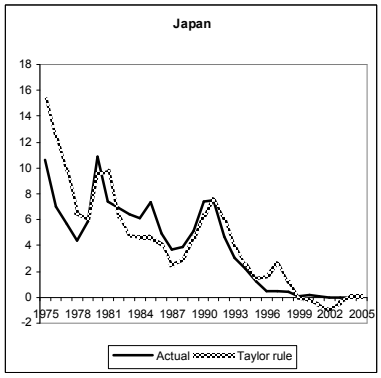
Note that central banks typically deny that they simply follow a Taylor rule; indeed, no one claim that they do, and few claim that they should. The Taylor rule is primarily meant to describe what central banks would do if they were on automatic pilot, set to implement a reasonable rule, and to check how far away from this simple approach they are in practice. It is used here to answer the following question: how different are monetary policies from what they would have been had central banks reacted in exactly the same way? The answer is: not much. All central banks look alike.

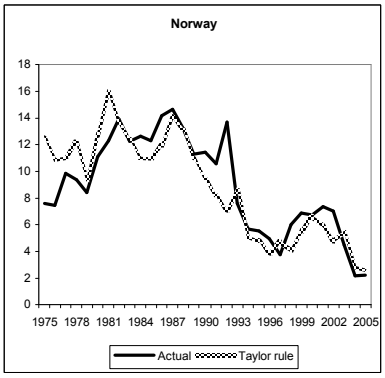
Taylor rule simulations

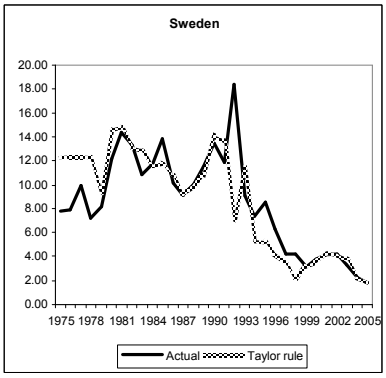


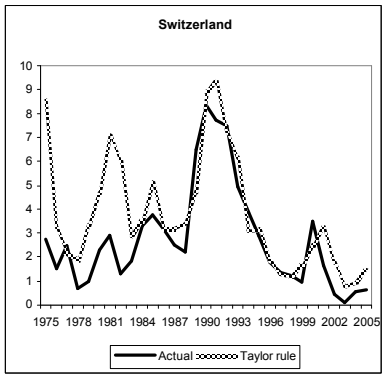


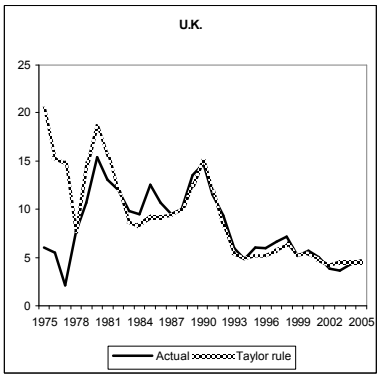


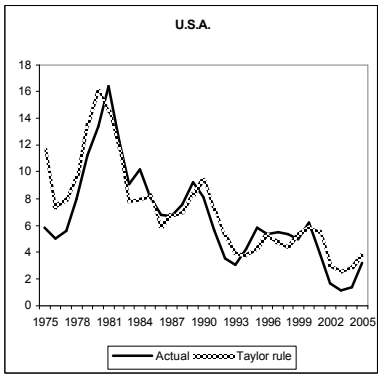












Two qualifications

As already noted, the Taylor rule seems to be a good description of what central banks do on average. This does not mean that they will do so in every circumstance. This section deals with two important, if controversial exceptions.

Asset prices

Many central banks, for example the Bank of England, are explicitly mandated to promote financial stability. The reason for this mandate is partly historical. Many central banks were created at a time when paper money did not even exist and, therefore, monetary policy could not exist either. Central banks, back then, were often owned by banks and their role was to provide support in case of turmoil. This led central banks to be in charge of financial market regulation and supervision. The trend, nowadays, is to delegate financial market regulation and supervision to distinct specialized institutions, yet central banks retain the implicit lender of last resort function because they, alone, can create liquidity.

Lending in last resort rarely practiced, only in extreme crisis situations. Crises, however, can be prevented if liquidity is abundant. In that sense central banks cannot ignore financial market stability. This creates a tension between the need to strictly control liquidity in order to ensure price stability and the occasional need to provide liquidity when financial markets are under stress. The tension is reduced by putting price stability at the top of the central bank mission, yet there may be cases where the financial market stability objective must come to the fore.

The issue is controversial, and is likely to remain controversial. For instance, in the late 1990s, it was widely perceived that stock prices were excessively high because of widespread "irrational exuberance". In such cases, should central banks expand liquidity to prick the suspected bubble? At that time, most central banks answered this question negatively. The subsequent collapse of the high-tech bubble, followed by a marked slowdown in economic activity worldwide, has led several central banks to adopt a more nuanced position. Currently, the debate concerns housing prices, which are perceived as too high in several countries, including the US, the UK, France and Spain.

Shocks and hierarchy

Why do central banks, whose mission usually sets price stability as a priority, end up responding to both inflation and output fluctuations, as evidenced by the Taylor rule? Note that the evidence is largely based on the last decade, when most developed countries granted independence to their central banks and formulated their missions. It may well be that the relatively benign environment of the last decade explains why central banks, whose mandate gives primacy to price stability, have been behaving like central banks given a wider task.

For example, the formulation of the Eurosystem's task identifies price stability as a primary objective but allows for a secondary objective "without prejudice" to the first one. With inflation low since the launch of the euro, the "without prejudice" clause applies and it may not be surprising to find that the Eurosystem's behaviour is well described by a Taylor rule. Does this mean that the Eurosystem has been able to pursue its two objectives at the same time only because, so far, it has been blessed with benign circumstances? There is some element of truth in that view. A resurgence of inflation pressure – for instance because of rapid wage increases – would probably lead the Eurosystem to enforce a more hierarchical approach, focusing squarely on inflation and accepting wider fluctuations in growth and employment.

However, the situation is more subtle. The fact that the Eurosystem, and most other central banks as well, are first and foremost committed to price stability, certainly shapes expectations and therefore keeps inflationary behaviour in check. The implication is that the mere existence of a hierarchy may well remove the need to act hierarchically. In that sense, the Eurosystem is right to claim that "price stability is its best contribution to sustainable growth".

At the same time, there is a discrepancy between the Eurosystem's insistence that it cares only about price stability and its willingness to continuously miss the 2% inflation target. Had the Eurosystem considered this target as overriding, it could have achieved it. It has chosen not to, and rightfully so. Its tough talk is not matched by its pragmatic actions. Price stability is one of its contributions to growth and employment, its willingness to adjust inflation fighting to cyclical conditions is another contribution. The denial that it acts in this way is detrimental to accountability.

Appendix

Formulation of the Taylor rule

The target interest rate from the Taylor rule is:

$$i^* = r^* + \pi + \alpha'(\pi - \pi^*) + \beta(y - y^*)$$

where r^* is the natural neutral interest rate, i.e. the real interest rate level at which monetary policy is neutral, neither expansionary nor contractionary. This expression can be re-written as:

$$i^* = r^* - \alpha'\pi^* + (1 + \alpha')\pi + \beta(y - y^*)$$

In practice central banks smooth the interest rate, they move it slowly towards the target i*, keeping it close to the previous year's interest rate i_{-1}:

$$i = \gamma i_{-1} + (1 - \gamma) i^*$$

where γ is the degree of smoothing.

In the end, they set the interest rate as:

$$i = \gamma i_{-1} + \gamma\left[r^* - \alpha'\pi^* + (1 + \alpha')\pi + \beta(y - y^*)\right]$$

The simulations presented in the text use $\alpha' = 0.5$, $\beta = 0.5$, $\gamma = 0.5$, $\pi^* = 2$ and $r^* = 2$. Note that this implies that the weight α in the text is $\alpha = 1 + \alpha' = 1.5$.