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No. 2007/03

**The European Central Bank**

Michael Binder and Volker Wieland

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A handwritten signature in black ink, appearing to read "Krahen".

Prof. Dr. Jan Pieter Krahen

A handwritten signature in black ink, appearing to read "Volker Wieland".

Prof. Volker Wieland, Ph.D.



CFS Working Paper No. 2007/03

**The European Central Bank\***

Michael Binder<sup>1</sup> and Volker Wieland<sup>2</sup>

This Version  
November 2006

**Abstract:**

The establishment of the ECB and with it the launch of the euro has arguably been a unique endeavor in economic history, representing an important experiment in central banking. This note aims to summarize some of the main lessons learned from this experiment and sketch some of the prospects for the ECB. It is written for /The New Palgrave Dictionary of Economics/, 2nd edition.

**JEL Classification:** E52, E58

**Keywords:** Central Banking, European Central Bank, Euro, Monetary Union

\* Forthcoming in The New Palgrave Dictionary of Economics, Second Edition, Steven N. Durlauf and Lawrence E. Blume, Eds., London: Macmillan

1 University of Frankfurt, Mertonstr. 17-22, 60325 Frankfurt and Center for Financial Studies, mbinder@wiwi.uni-frankfurt.de

2 University of Frankfurt, Mertonstr. 17-22, 60325 Frankfurt and Center for Financial Studies, wieland@wiwi.uni-frankfurt.de

## **Introduction**

The European Central Bank (ECB) was established on June 1, 1998 and since January 1, 1999 has been responsible for the conduct of a single monetary policy for its eleven member countries Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain (with Greece subsequently becoming a member country on January 1, 2001).

The launch of the ECB was the culmination of a process of monetary and economic integration that dates back at least to the efforts of Jean Monnet and others in the 1950s and gained decisive momentum with the report of a committee headed by Jacques Delors, that in April 1989 drew up a blueprint for the progressive realization of the European Economic and Monetary Union (EMU). The establishment of the ECB and with it the launch of the euro (the currency of the ECB member countries for which banknotes and coins first went into circulation on January 1, 2002) has arguably been a unique endeavor in economic history, representing an experiment of hitherto unknown magnitude in central banking. In what follows, we shall describe main aspects of the set-up, responsibilities, strategy and operations of the ECB in more detail, discuss what at present appear to be the lessons learned from this experiment for monetary economics and sketch some of the prospects for the ECB and the euro.

## **Lessons Learned and Future Prospects**

### **Lesson 1: How to Converge?**

While it has been widely debated whether the countries making up the EMU do form an optimal currency area in the spirit of Robert Mundell, there can be little doubt that the European Council's decision to pursue the Delors Committee blueprint of a feasible path towards monetary union for its member countries was foremost driven by political considerations, viewing monetary union as a building block towards tighter political and economic integration of the member countries of the European Union. However, given the broad consensus among economists and policy makers that ideally economic similarity rather than political boundaries should define the geographic area spanned by a common currency, the Delors report put considerable emphasis on realizing economic

convergence before establishment of a single European central bank. Key elements of the three stages to realization of the EMU as envisioned by the Delors report were:

- Stage 1 (July 1, 1990): Improvement of economic convergence; abolishment of restrictions on cross-country flows of capital; increased cooperation between national central banks.
- Stage 2 (January 1, 1994): Strengthening of economic convergence; establishment of the European Monetary Institute (EMI) as predecessor of the ECB to strengthen cooperation between national central banks and increase coordination of monetary policy.
- Stage 3 (January 1, 1999): Completion of the necessary economic convergence; irrevocable fixing of currency conversion rates; single monetary policy to be conducted by the European System of Central Banks (ESCB).

It was envisioned in the Delors plan (and enacted in the Maastricht Treaty establishing the European Union as signed in February 1992) that only those countries should become member countries of the EMU that were successful in accomplishing economic convergence. The convergence criteria (Maastricht criteria) were meant to specify a sufficient degree of economic similarity of member countries with respect to price stability, sustainability of fiscal policy, exchange rate stability and the level of long-term interest rates. In particular, with respect to price stability member countries' average rate of inflation in the year preceding completion of the EMU was to fall within a one and a half percent interval of average inflation in the three member countries displaying the highest degree of price stability. With respect to sustainability of fiscal policy, member countries were supposed not to carry an "excessive deficit" – that would occur if the actual or planned government deficit to GDP ratio would exceed three percent or if the ratio of government debt to GDP would exceed 60 percent. Concerning exchange rate stability member countries would in the two years preceding completion of the EMU have to keep the fluctuations of the value of their currency within the bands provided for by the European Exchange Rate Mechanism (ERM) and in particular not initiate any devaluation of their currency against that of any other member countries. Finally, with respect to the level of long-term interest rates, member countries' average long-term interest rates (on government bonds or comparable securities) in the year preceding

completion of the EMU were to fall within a two percent interval of average long-term interest rates in the three member countries displaying the highest degree of price stability.

Of course, economic similarities desirable for an optimal currency area in the spirit of Mundell do not end with these four criteria, but *inter alia* also include similarities in the monetary transmission mechanism, the coherence of the shocks and of the propagation mechanisms driving national business cycles as well as similarities in the prospects for trend output growth. These latter criteria were not part of the Maastricht criteria, though it was widely hoped that the economic convergence process prior or right subsequent to formation of the ECB would result in these latter criteria being approximately met as well.

Despite the relatively modest requirements for economic convergence in the Maastricht Treaty, the goal of EMU was put at significant jeopardy during the 1992 to 1993 crisis of the ERM when foreign exchange market participants widely viewed the ERM's margins of fluctuation of two and a quarter percent as not sustainable in light of at best limited coordination of monetary policy especially in Germany with that in several other countries in the European Union, specifically that in Italy and in the United Kingdom. It appears to have been due only to the commitment of some of the then political leaders of the European Union – perhaps most notably Helmut Kohl – who saw their vision of building a united Europe jeopardized that the goal of EMU was maintained despite the widening of the ERM's margins of fluctuation to 15 percent in August 1993. Due to this political commitment as well as the fact that markets increasingly gave weight to complying with the Maastricht criteria as a signal for sound monetary and fiscal policy, convergence as outlined by the Maastricht criteria was sufficiently advanced in May 1998 for the heads of state and government of the European Union to decide to proceed with Stage 3 of EMU as planned, if only for the eleven initial member countries.

While it is a valuable lesson to have observed in the context of the realization of the EMU that the prospect of a monetary union may itself help to induce partial economic convergence, it appears key to keep in mind that the process of formation of the ECB would likely not have been successful without the strong desire of the member countries' political leadership to see commonalities in cultural heritage also be reflected in

increasingly cohesive institutional entities, trusting that a common European currency would help the emergence of a single European identity.

Structural economic diversities between euro area member countries continue to persist up to today. Among these diversities perhaps most notable are persistent differences in trend output growth rates. The – at the time of the signing of the Maastricht widely voiced hope – that formation of the ECB would significantly spur convergence of trend output growth rates for euro area member countries through alignment of structural reforms of labor and product markets has so far proven to be wishful thinking. While some critics of the ECB have argued that this is due to the mandate of the ECB being too narrowly focused on price stability, it may have been exactly this focus that allowed the ECB to successfully establish itself as a credible safeguard of price stability, an issue to which we will return below.

## **Lesson 2: How to Design and Implement a Monetary Policy Strategy**

Starting point for any discussion of the ECB's monetary policy strategy has to be the mandate that the ECB was given by the Maastricht Treaty. Article 105 of that Treaty specifies: "The primary objective of the ESCB is to maintain price stability. Without prejudice to the objective of price stability the ECB 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." Article 2 specifies these objectives to be a high level of employment as well as sustainable and non-inflationary growth. (The Maastricht Treaty refers to the ESCB rather than the ECB as it envisioned that all member countries of the European Union would eventually adopt the euro and that even before this was to happen all national central banks of member countries not part of the euro area would be bound by the same objectives.)

While the Maastricht Treaty does not specify a precise quantitative definition of price stability, the ECB, particularly on the basis of the argument that such quantification would strengthen its commitment to its primary objective as well as strengthen its accountability, in October 1998 defined price stability as a year-on-year increase in the Harmonized Index of Consumer Prices (HICP) for the euro area of below two percent over the medium run. While this definition of price stability does exclude deflation as

being consistent with price stability and leaves the ECB with no degrees of freedom to potentially remove more volatile and/or temporary components of overall consumer prices in order to declare price stability, the definition does leave the ECB some flexibility in that a time horizon as to what would constitute the medium run was not established.

In its pursuit of price stability, the ECB decided to base its monetary policy framework on two pillars: “monetary analysis” and “economic analysis”. In declaring monetary aggregates as providing information valuable to the objective of price stability that should be separated from other economic and financial variables, the ECB has so far maintained that monetary aggregates do not just offer incremental information relative to such other variables for purposes of projecting inflation, but that at longer horizons (stretching beyond those typically adopted by central banks for the computation of their inflation projections but still essential for medium-run price stability) monetary aggregates provide information qualitatively different from the one that other economic variables can provide. The ECB in this context has so far also maintained that money demand (as measured by M3) for the euro area has been stable at least over longer horizons with some short-run instabilities being due to an exceptionally prolonged (but still temporary) period of high asset price volatility. Finally, the ECB has so far maintained that conventional macroeconomic analysis is not sufficiently advanced to combine the analysis of real economic phenomena with monetary trends within a single pillar framework. Driven by these considerations, the ECB therefore initially decided to announce annual reference values for the growth rate of M3 as a benchmark for keeping monetary growth in line with the objective of price stability.

The “economic analysis” pillar of the ECB’s monetary policy framework aims at identifying and quantifying short- to medium-term non-monetary risks to price stability. Variables entering this analysis include (i) gap measures of the discrepancy between actual output as well as its factors of production on the one hand and their medium- to long-run equilibrium values on the other hand; (ii) labor cost measures; (iii) exchange rates for the euro and international prices; and (iv) asset prices other than exchange rates, particularly yield curve measures. Reflecting the sizeable degree of persistence of



consumer price inflation in the euro area, considerable weight in the economic analysis is also given to recent consumer price dynamics itself.

The ECB's two-pillar strategy has been heavily criticized and remains controversial. Critics argue that monetary aggregates such as M3 – specifically due to the lack of sufficient stability of money demand – are lacking the degree of reliability needed to separate information in such monetary aggregates from other economic and financial variables. These critics *inter alia* also argue that if transparency and accountability of the ECB's decisions were to be improved, this would be helped most by the publication of inflation forecasts by the ECB as well as the publication of the minutes of the meetings of the ECB's Governing Council (more on this Governing Council below). The two-pillar strategy was re-affirmed in a broad internal assessment by the ECB in 2003, but two clarifications were provided. First, the Governing Council noted that it is aiming to maintain inflation rates below, but close to, two percent over the medium run. A number of arguments in favor of tolerating a low rate of inflation – and not aiming at zero inflation – were acknowledged, among these most importantly the need for a safety margin against potential risks of deflation and the “zero bound” on nominal interest rates. While this “zero bound” renders central bank interest rate management less effective at low rates of inflation, ECB studies argued that inflation rates below, but close to, two percent would provide a sufficient safeguard against these risks. Second, the Governing Council emphasized that the “monetary analysis” pillar was meant to serve mainly as a means of cross-checking, from a medium- to long-term perspective, the short- to medium-term indications provided by the “economic analysis” pillar. To underscore the longer-term nature of the reference value for monetary growth, the practice of an annual review of the latter was discontinued.

It will be interesting to observe whether eventually the monetary pillar will come to be viewed as having only been of importance in the early years of operation of the ECB when the ECB had to establish the credibility of being as committed to price stability as the Deutsche Bundesbank and was confronted with sizeable problems regarding the measurement of harmonized euro area wide real economic aggregates, or whether ECB-style cross-checking by means of monetary analysis will become a common practice of central banks around the globe.

The operational framework used by the ECB to implement its monetary policy strategy is less controversial than the strategy and includes three main instruments: open market operations, standing facilities and reserve requirements. Among the open market operations of primary importance are the “main refinancing options” that provide the bulk of refinancing to the financial sector and through signaling the ECB’s monetary policy stance are supposed to steer market interest rates. The “main refinancing options” are executed by the national central banks of the euro area member countries on a weekly basis through a tender procedure spanning three working days. “Standing facilities” aim at providing and absorbing overnight liquidity, and “minimum reserve requirements” (the ECB imposes minimum reserves on all credit institutions in the proportion of two percent of the reserve base) aim at stabilizing market interest rates.

Evaluating the overall success of the ECB in terms of it being able to adhere to its price stability objective, inflation rates in the euro area since 1999 for annual data have on average been slightly above two percent (in the range of up to 30 basis points above two percent). Also taking into account that surveys of average long-term inflation expectations in the euro area have consistently measured such expectations as below, but close to, two percent, the ECB’s track record has quite firmly established it as being credible in regards to safeguarding price stability.

### **Lesson 3: One Central Bank for Many Countries: How to Organize Decision Making**

The most important decision making body of the ECB is its Governing Council, which is made up of the Executive Board of the ECB (which in turn is made up of its president, vice-president and four other members) as well as the governors of all the national central banks of euro area member countries. It is the responsibility of the Governing Council to formulate monetary policy for the euro area, including decisions about intermediate objectives and key interest rates. The Executive Board is in charge of implementing the monetary policy decisions taken by the Governing Council, in doing so cooperating with the national central banks through open market activities. Each member of the Governing Council has one vote. Given that at present two thirds of the votes in the Governing

Council therefore belong to national central banks, the latter do have a strong influence on the ECB's monetary policy decisions.

This organizational structure implies an asymmetry between the economic size of euro area member countries and their influence on decisions arrived at by the Governing Council. Indeed, more than half of the euro area member countries at present have an economic weight (as measured by the ratio of their national GDP to euro area GDP) that is smaller than their voting weight within the Governing Council. This is quite different from the structure of, say, the U.S. Federal Reserve that is significantly more centralized. While decentralization of the implementation of the ECB's monetary policy arguably is useful particularly as long as there are important differences among national financial markets and institutions in the euro area, the decentralized institutional set-up of the ECB does bear risks particularly during episodes of real divergence. It will be interesting to see whether the "one person, one vote" principle for the Governing Council will be maintained after enlargement of the euro area to incorporate (particularly Eastern European) accession countries. Even if the "one person, one vote" principle was to be maintained, there appears to be considerable scope for future revision of the organizational system of the ECB such as requiring approval of nominations of new central bank presidents by the Executive Board of the ECB.

#### **Lesson 4: Common Currency and Monetary Policy: Gains and Losses**

In general, the principal advantages of a common currency are widely held to include the reduction of transaction and information costs implied by the use of a common medium of exchange as well as the stimulus the common currency provides for the convergence of organizational principles used in business, in turn leading to a stimulation of trade of goods and services and of cross-country flow of capital. The principal disadvantages of a common currency for multiple countries are widely held to include the loss of shock-absorber properties of flexible exchange rates and of independent national monetary policies. Furthermore, if a single monetary policy is accompanied by a diverse set of national fiscal policies, inappropriate fiscal policy in one country will – through its effect on interest rates – directly spread to other countries in the monetary union. Thus macroeconomic stability could be affected for the worse.

How has the euro area so far fared on these counts? Trade within the euro area increased from approximately 26.5 percent of (euro area) GDP in 1998 to approximately 31 percent of GDP in 2005; one and a half percent of this increase was due to trade in services. It is at present difficult to disentangle, however, to what extent this increase in trade was indeed driven by the creation of a single currency and to what extent it may instead have been driven by the process of economic globalization. We do know, in fact, that trade with trading partners outside the euro area over this same time period rose by a slightly larger margin than intra euro area trade, from approximately 24 percent of GDP in 1998 to approximately 30 percent of GDP in 2005.)

Regarding financial markets, for which the volume of transactions is likely yet more sensitive to even small costs and risks associated with the use of multiple currencies, by a variety of measures deeper, broader and more liquid markets have emerged for the euro area member countries since establishment of the ECB. On the money market, issues of their interpretation aside, cross-country standard deviations for average overnight lending rates did fall from 130 basis points in January 1998 to three basis points one year later and since then have decreased to approximately one basis point. Cross-country standard deviations for rates at longer maturities (one and twelve months) for unsecured money market instruments have fallen to less than one basis point also, with the spreads still somewhat larger in the collateralized repo market (due to continued differences in legal structures across euro area countries). In the interest rate derivatives market, the euro interest rate swap market at a daily volume of 250 billion euro is now one and a half times as large as the corresponding U.S. dollar market. In the government bond market as well spreads have fallen to low levels, suggesting – in the likely absence of major changes in default risks – a significant fall of liquidity risk. Regarding euro-denominated debt securities overall, their holdings since 1999 have increased by well over ten percent to approximately one third of the global market (through holdings tend to be concentrated in countries neighboring the euro area).

In the equity and retail banking markets integration has been progressing more slowly. For example, despite a decrease in the number of credit institutions in the euro area member countries by almost 50 percent in the last ten years less than one third of the mergers and acquisitions driving this consolidation process have been cross-border. Also,

the cross-country standard deviation of interest rates on consumer credit in the last three years has still been close to one percent.

While – just as for trade – it is at the present stage difficult to disentangle the contribution of the euro to the process of financial integration in euro area member countries from the global trend towards financial integration, the euro surely has greatly facilitated the task of bringing the European financial system closer to U.S. standards regarding market depth and liquidity. Further improvements in this direction – including the creation of a single payment system for the euro area member countries – are likely to intensify the debate as to the potential role of the euro as a complement and/or competitor to the U.S. dollar as international reserve currency.

Finally, turning to macroeconomic stability and the potential cost of losing flexible exchange rates and independent national monetary policies as shock absorbers, some such costs clearly have been observed since 1999. While the cross-country standard deviation of consumer price changes has fallen from approximately six percent in the late 1990s to one percent with the launch of the euro and has been rather stable at this level since, there have been persistent deviations from euro area average inflation rates for some countries, implying sizeable (and potentially destabilizing) differences in real interest rates. For example, real interest rates have been significantly lower in a booming Irish economy than in a German economy experiencing weak growth. When it comes to assessing the implications of the establishment of the ECB for macroeconomic stability, these costs have to be subtracted from benefits owed to factors such as the elimination of intra euro area exchange rate crises and the fact that inflation rates for some euro area member countries have been falling sizably since 1999. A stronger degree of real convergence through aligned policies aimed at removing structural deficiencies in European product and labor markets would have helped rendering the benefits yet larger, though.

## **Conclusion**

While this entry has tried to convey that on various counts (such as the monetary policy strategy and the organizational set-up) there is no consensus yet as to whether the ECB adheres to best international practice in central banking, it would appear rather

questionable to label establishment of the ECB and with its introduction of the euro as anything but an enormous success. The ECB has successfully mastered the technical challenges of establishing a new common currency across a set of countries comprising one of the largest economic regions in the world, has in a short period of time established a strong track record of being successful in preserving price stability and has on many counts, particularly in the area of financial markets, helped lead the way to stronger integration of European markets. While it is undisputable that this integration of markets along with structural reforms needs to proceed much further, the key decisions that could facilitate such integration and structural reforms fall outside the core domain of responsibility of the ECB and, for that matter, likely should do so for any central bank primarily entrusted with maintaining price stability.

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