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The European Central Bank and the Federal Reserve

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Abstract

In the four years of its existence, the European Central Bank (ECB) has made significant contributions to the macroeconomic stability of the Euro area. This paper takes a critical look at the ECB and compares its institutional structure, policy framework and operational procedures with those of the longer-established US central bank. We discuss the implications of various differences between the ECB and the Federal Reserve with a view toward identifying successful elements of the practices of both these institutions. The paper recommends that the ECB abandon the first pillar of its monetary policy strategy that affords a special role to monetary aggregates in the evaluation of financial market conditions. It also suggests that the Federal Reserve should follow the ECB's lead and provide an explicit definition of price stability.

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I. INTRODUCTION

In the four years since its inception, the European Central Bank (ECB) has played a central role in both European and global financial markets and has contributed greatly to macroeconomic stability in the Euro area. From the routine provision of liquidity to emergency fine-tuning operations in times of crisis, the ECB has succeeded in maintaining an orderly and efficient Euro-area money market. In addition, although inflation in the region accelerated somewhat during the first years of the ECB's existence, it has generally remained close to the target range, while economic activity in the area has consistently exhibited positive rates of growth.

To what does the ECB owe its success? To what degree does the ECB and the European System of Central Banks (ESCB) to which it belongs mirror the Federal Reserve System (Fed) in the US? This paper takes a critical look at the ECB and compares its institutional structure, policy framework and operational procedures with those of the longer-established US central bank. The implications of various differences found will be discussed with a view to identifying successful elements of the practices of both these institutions.

The next section recounts briefly the origins of both the ECB and the Fed while section III examines their institutional structures. This is followed by a discussion of the monetary policy frameworks of the central banks, including an analysis of the goals of policy. Section V takes a closer look at the role of monetary aggregates in the evaluation of financial market conditions while section VI compares how liquidity management operations are typically carried out by the two institutions. Policy performance is then briefly assessed followed by some thoughts for the future.

II. ORIGINS OF THE US AND EUROPEAN CENTRAL BANKS

The manner in which Europe's central bank came about is clearly very different from the historical circumstances that lead to the establishment of the Federal Reserve System under the Federal Reserve Act of 1913. The driving force behind the founding of the Fed was the need to restore order to the financial system, which had been plagued regularly by banking panics over the previous decades. It essentially started out as a bankers' bank, concerned with stabilizing the financial system, and evolved over time into the modern institution we know today charged with meeting general economic goals such as low inflation and economic growth.

The Fed's main tool of monetary policy – open market operations – was actually discovered by accident during the early 1920's[1]. The economic slump following World War 1 meant that some of the regional federal reserve banks – particularly those in agricultural areas – were in danger of not generating enough income in the normal course of business with member banks to cover their expenses. They turned to purchasing Government securities on the open market to bolster their earnings and, in the process, discovered how credit market conditions could be influenced by such operations. Soon, the buying and selling of Government securities was centralized at the New York Fed and by the early 1930's, the Federal Open Market Committee (FOMC) was established. In this manner, the key elements of current monetary policy making in the US came into being.

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[1] See the web site of the Minneapolis Fed for further details at http://minneapolisfed.org/pubs/region/88-08/reg888f.cfm .

In stark contrast, the establishment of the ECB was the culmination of many decades of work for which the express purpose was to create a pan-European monetary-policy making institution[2]. The explicit path to the establishment of the ECB was set out in the Delors report in the late 1980's, which specified a three-stage approach to monetary union and a single central bank for participating members[3]. The first of these steps involved the setting up of a work program to achieve monetary union and included the passing of the Maastricht Treaty, which came into force in 1993. This facilitated the establishment of the European Monetary Institute (EMI), which marked the start of the second stage. The task of the EMI was to make preparations for the establishment of a single currency, the introduction of which would signal the start of stage three in 1999. The ECB officially came into existence in June 1998, when the 11 original participating countries appointed the members of its Executive Board.

III. INSTITUTIONAL STRUCTURE

Economists often ignore one of the central precepts of other social science disciplines: Institutional structure is crucial for policy outcomes. The design of the ESCB – which includes the ECB and the national central banks (NCB's) of all fifteen members of the European Union – embodies the received wisdom of a century of monetary policy making. The lessons of history are numerous, and they have all been absorbed. For example, operational policy of the Eurosystem[4] is centrally controlled -- a lesson the Federal Reserve System did not learn until the 1930s. Care has been taken to insure that the ECB is independent from political influence, thereby avoiding problems that plagued the monetary policy of industrialized and emerging countries alike in the post-WWII period.

The main decision-making body of the ECB is its Governing Council, a group comprising the Governors of the twelve NCB's of the Eurosystem, the President and Vice-President of the ECB and the four other members of the Executive Board. Monetary policy for the Euro area is formulated by this Governing Council. The Executive Board is responsible for implementing the monetary policy decisions made by the Governing Council and its members are appointed by the Governments of the Euro-area countries[5].

The key elements of the Federal Reserve System include the Board of Governors, the twelve regional reserve banks and the FOMC. The FOMC is the body that makes monetary policy in the US. The seven Governors that make up the Board of Governors serve on the FOMC along with the President of the New York Fed and four other regional Fed presidents.

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[2] See http://www.ecb.int/

[3] Of course, the gradual convergence to monetary union among European Union countries started long before this, underpinned by the Treaty of Rome (1957) and manifested in increasing economic and monetary cooperation among countries over time. This process included the management of bilateral exchange rates among European countries under systems such as the Snake and the Exchange Rate Mechanism of the European Monetary System.

[4] The Eurosystem includes the ECB and the 12 NCB's of the countries that adopted the common currency.

[5] A third decision-making body called the General Council also exists. It is made up of the President and Vice-President of the ECB and the 15 Governors of EU member states. This group is responsible for decisions relating to the enlargement of the Euro area and contributes to the advisory functions of the ECB. For further details on the institutional structure of the ECB, see "The European Central Bank" at http://www.ecb.int/pub/pdf/ecbbren.pdf .

On its surface, therefore, the ESCB resembles the Federal Reserve System. There are twelve regional banks with a central board. But there are important differences. In the Federal Reserve System there is a sense in which the Board of Governors is in control. At the ECB, casual observation suggests that the reverse is true. While the Board of Governors supervises the regional Federal Reserve Banks, approving their budgets and overall management decisions, in the ESCB, it is the NCB governors who supervise the ECB.

The Governing Council of the ECB resembles the FOMC on the surface as well. Both formulate monetary policy and draw their membership from both the regional banks and the central body. But again, appearances can be deceiving. While decisions in both bodies appear to be taken by consensus, as a technical matter, only five of the Federal Reserve Bank Presidents vote at any one time in the FOMC. This means that the Governors always comprise a substantial majority and can outvote the Presidents. The claim is that the Governing Council does not take formal votes, but even so, the NCB Governors outnumber the Executive Board members by two to one.

An important difference between the Federal Reserve System and the Eurosystem policymaking procedures arises from the fact that all of the information provided to the FOMC comes from the staff of the Board of Governors. There is virtually no relevant information that either comes from or is produced in consultation with the staffs of the regional Federal Reserve Banks that finds its way into the hands of all of the participants at an FOMC meeting. The only information that is universally distributed was generated by at the Board of Governors in Washington D.C. In contrast, the information that makes its way to the Governing Council is prepared and compiled in cooperation with the NCB's, facilitated by an elaborate committee structure. This means that the economic forecasts, for example, are constructed with explicit input from the staffs of all of the central banks in the Eurosystem.

Beyond the frequency of the policy meetings, with the Governing Council meeting three times as often as the FOMC, the meetings differ substantially in attendance. As we understand it, the Governing Council meets alone (with the exception someone charged with recording minutes). By contrast, FOMC meetings include between 20 and 30 staff members, as well as the 19 principals.[6] Each Reserve Bank President has one staff member present, and a number of members of the Federal Reserve Board staff are in attendance as well.

Furthermore, at FOMC meetings the staff participates actively. But again, it is primarily the staff of the Federal Reserve Board that does the talking, with the exception of the System Open Market Account Manager, who is an employee of the Federal Reserve Bank of New York. This, along with the fact that the Governors speak among themselves about policy, serves to further increase the influence of the Board members over the policy outcomes.

There is one more important difference between the Federal Reserve System and the ESCB, and that is the fact that the ECB is a bank while the Board of Governors is not. As a consequence, the ECB itself is capable of operating in financial markets – and they have done so. Surely, the ESCB structure is set up to insure that the bulk of operations take place at the NCBs. In many ways, this is the remaining role of these satellites of the ESCB system. But how long can a

[6] For a description of the mechanics of FOMC meetings see Meyer (1998).

system be maintained that has (currently) 13 separate operating locations, each with nearly the same capability?

The logic of having NCBs maintain regular financial operations is that these central banks have special knowledge of the mechanisms and participants in their local national markets. But since one of the major goals of monetary union is to accelerate the development of a pan-European financial system, it is just a matter of time before things are centralized. There will be an inexorable pull toward the center, draining resources and power from the periphery.

A number of observers have noted the potential problems created by the fact that one country has one vote on the Governing Council.[7] This creates an inexorable pull toward the median country, and the objective of stabilizing euro-area prices would be compromised. Both von Hagen and Brückner (2001) and Alesina, Blanchard, Galí, Giavazzi and Uhlig (2001), suggest that if this were the outcome, the Executive Board would not be doing its job. As members of the Governing Council, Governors of the NCB's of the euro area are responsible for making policy recommendations on the basis of the economy of the Euro-area as a whole and not on the basis of the economic situations in their own countries. The ability to do this is facilitated by the lack of formal voting at Governing Council meetings, which precludes the possibility that a vote by a particular Governor that was not consistent with the idiosyncratic needs of his own country at that time would become public. The preponderance of the evidence clearly suggests that that the Governing Council is following its mandate, and not behaving in a nationalistic way.

IV. MONETARY POLICY FRAMEWORK

Turning to the policy strategy, there now exist numerous detailed descriptions of the monetary policy strategy of the ECB and the problems it has created[8]. As mandated in Article 105(1) of the Maastricht Treaty, "the primary objective of the ESCB shall be to maintain price stability" and 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," including "a high level of employment…, substantial and non-inflationary growth, a high degree of competitiveness and convergence of economic performance." This is what Federal Reserve Board Governor Laurence Meyer has called a *hierarchical objective* -- price stability first, other things second. This contrasts with what he refers to at the Fed's dual mandate, where inflation and growth are on equal footing.

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[7] Allowing for each EMU country to have a vote on the ECB Governing Council will eventually create an additional problem as the number of countries participating in monetary union grows. With twelve countries in EMU there are 18 voting members of the governing council. Without any change in the voting rules, and if countries joining the European Union become members of the Eurosystem, this number could potentially become much larger, thereby hampering the ability of the Council to arrive at consensus decisions. This problem was acknowledged by the Governing Council who agreed in December, 2002 to limit the number of ECB Governors exercising a voting right to 15 through the use of a rotation system in the event that enlargement caused the number of Governors to exceed this limit. For further details, see http://www.ecb.int/press/02/pr021220en.pdf

[8] For a description of the strategy, see European Central Bank (2001). The difficulties are discussed in von Hagen and Bruckner (2002), among others.

Implementation of the ESCB's monetary policy required that the Governing Council define what is meant by the term *price stability*, and that it formulate a policy strategy. An 18 October 1998 press release entitled "A stability-oriented monetary policy strategy for the ESCB" provide important operational details for how this objective would be addressed. That press release (which is available on the ECB's web site at www.ecb.int) stated that the policy strategy would have the following three components:

1. The operational definition of price stability would be inflation in the Harmonised Index of Consumer Prices (HICP) of less than two percent per year, in the medium term[9].

2. Money would be assigned a prominent role in the evaluation of financial market conditions, and that this role would be signaled by the announcement of a quantitative reference value for the growth rate of a broad monetary aggregate – they have chosen euro-area M3.

3. A broadly based assessment of the outlook for future price developments and the risks to price stability in the euro area would play a major role.

Let us take a look at each of these in turn. First, defining price stability in a clear quantitative manner is extremely difficult. Every inflation measure that we have available to us has its problems. They are all distorted by problems with weighting, with quality changes, with the introduction of new goods, with changes in expenditure patterns, and the like. A key problem with the original design of the HICP was that it did not include owner-occupied housing, an omission that is particularly significant given the high rate of home-ownership in Europe. This problem is being addressed, however, and Eurostat and member states are looking at the possibility of including home ownership in the index on the basis of total expenditure on newly built or converted dwellings. A final decision on the issue will be based on the analysis of a pilot series constructed in this manner.

In looking at central bank strategies for achieving price stability objectives, the time horizon is often a subject of heated debate. Here, again, the ESCB has been criticized for its vague use of the terminology "medium term." Our view is that this is not a serious issue. As Mervyn King (1999) argues, in the end, central banks with inflation objectives will be held accountable in such a way as to make the time horizon irrelevant. As King notes, if a central bank has a 2% target, then after 10 years the question will be whether inflation averaged less than 2% over the entire period. The overriding issue is that longer time horizons give somewhat more flexibility in responding to short run real factors. Here, we believe the ESCB has done the right thing.

By comparison, the objectives of Federal Reserve System monetary policy are extremely unclear. The language contained in the Full Employment and Balanced Growth Act of 1978 currently guides monetary policy in the United States. It states there that the Board of

[9] The ESCB was criticized from various quarters for not stating that the operational definition was inflation in the HICP of between zero and two percent. The suggestion was that somehow the current formulation left open the possibility of deflation. I view this criticism as inaccurate and generally unfair, as the term *inflation*, clearly implies a range of zero to two.

Governors and the FOMC are required to "maintain growth of money 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." This has been interpreted to mean that monetary policy should foster maximum sustainable growth and price stability.

Importantly, though, there are no numbers attached to what is meant by any of this. Federal Reserve Board Chairman Alan Greenspan has said that he believes "We will be at price stability when households and businesses need not factor expectations of changes in the average price level into their decisions."[10] But this statement seems very imprecise. What level of what price index constitutes price stability? Different people will have different interpretations.

The lack of clarity in the objectives of the FOMC creates an enormous problem for decision-making. How can a committee agree on policy actions if they do not agree on their objectives even privately among themselves? Surely it would be a step in the right direction to follow the course suggested by Governor Meyer (2001) if the FOMC would adopt an explicit definition of price stability and make it publicly known.

Even with clearly defined objectives and a well-specified framework for implementation, however, monetary policymakers cannot hope to continually meet their inflation and growth goals without the support of prudent and consistent policy-making by other branches of Government. Recent developments in Argentina, for example, illustrate how poor fiscal policy can make it impossible for central bankers to do their jobs. The question arises, therefore, as to how monetary authorities should handle this interdependence among various areas of macroeconomic policy.

In our view, central banks can best meet their goals by focusing on using the instruments at their disposal and under their control to pursue their policy objectives. The responsibility for fiscal policy and structural reform lies with the elected members of parliaments, congresses and senates and it is not appropriate for central banks to comment officially on these policies or to try to influence them formally.

Traditionally the Fed, as an institution, has not commented on US fiscal policy although Chairman Greenspan has aired his views about fiscal stimulus in recent times. In Europe, the scope for fiscal policy to undermine the ECB's inflation objective is severely curtailed by the provisions of the Stability and Growth Pact. The ECB has expressed its views on the Pact formally, most recently in the form of a press statement on the Pact from the Governing Council. Moreover, President Duisenberg has repeatedly called for the implementation of a structural reform agenda covering reforms in labor, product and financial markets. We believe that, while fiscal and structural policies clearly have an impact on the goals of monetary policy, it is not the role of the central bank to bring pressure to bear on how these policies are formulated. Rather, central bankers should focus on their role as technicians, reacting to the macroeconomic environment in which they operate in a transparent and well-defined manner.

[10] See Greenspan (1994).

We now move on to the second two components of the ECB strategy, often referred to as the "two pillars." These are the prominent role for money and the use of a range of indicators for future price developments. The first of these has come under substantial attack. As Alesina, Blanchard, Galí, Giavazzi and Uhlig (2001) write, the ultimate goal of the ESCB is to keep inflation low. In actual fact, they have been doing something that closely resembles inflation-forecast targeting. It is difficult to see in this context why M3 is special. A more detailed look at this issue is deferred to the next section of the paper.

Turning briefly to the second pillar, who can argue with the strategy of using broadly based assessment future price developments? Addressing uncertainties by bring all possible information to bear -- including that in broad monetary aggregates -- is the obvious thing to do. Importantly, though, it leads to inflation-forecast targeting, and it would be helpful if the ESCB were clear that this is what they are doing.

V. THE ROLE OF MONETARY AGGREGATES

It is evident that the most controversial element of the ECB's monetary policy strategy is undoubtedly the first pillar - the prominent role assigned to money in the evaluation of financial market conditions. The inclusion of the first pillar has been defended on the basis that money plays a central role in all well-established theories of inflation and that this special role provides continuity with previous practices of member central banks (Issing et al. 2001). It is more likely, however, that the logic behind the inclusion of the first pillar was based on socio-political considerations rather than economic ones. It provided a way for the Governing Council to hedge its bets until it had a chance to see what was going to work.

But we are now four years on, and the same arguments no longer apply. Instead, we can think of the ECB as just another central bank that controls interest rates in an effort to meet an inflation objective. Money is surely helpful in doing this, but then so are many other things. At this point, the first pillar merely stands in the way of effective communication.

Beyond these conceptual issues, it is worth noting that the first pillar of the policy strategy has already caused some technical problems. The ECB defines M3 to include only currency, deposits and marketable financial instruments held by euro area residents (European Central Bank 2001: 32-33). Needless to say, it is difficult to discern the ultimate owner of deposit accounts or liquid financial instruments, and so estimating the size of euro-area M3 is not a trivial task. This difficulty created substantial problems in the spring of 2001. In his news conference on 10 May 2001, ECB President Duisenberg stated that "there have been indications that the monetary growth figures are distorted upwards by non-euro area residents' purchases of negotiable paper included in M3. This has now been confirmed by clear evidence, and the magnitudes involved are significant."

How much emphasis has the Governing Council placed on the behavior of monetary aggregates over the past four years? Does the behavior of money really attract more attention at the ECB than it does at the Fed or does the first pillar merely reflect a difference in the presentation rather than the substance of policy strategy?

One major area of difference between the two central banks in the last couple of years has been in the announcement of targets for the growth of money. In the Federal Reserve Board's 20 July 2000 *Monetary Policy Report to Congress* there is a footnote that reads:[11]

> "At its June meeting, the FOMC did not establish ranges for growth of money and debt in 2000 and 2001. The legal requirement to establish and to announce such ranges had expired, and owing to uncertainties about the behavior of the velocities of debt and money, these ranges for many years have not provided useful benchmarks for the conduct of monetary policy. Nevertheless, the FOMC believes that the behavior of money and credit will continue to have value for gauging economic and financial conditions, and this report discusses recent developments in money and credit in some detail."

The ECB, on the other hand, periodically publishes what they call a reference rate for money growth. On the face of it, therefore, it would seem that the ECB affords money a more prominent role, consistent with the first pillar. The fact that most references by ECB officials to this "reference" rate, that was interestingly not called a "target", involved explaining why deviations from the reference rate were not important undermines this conclusion.

To evaluate this issue further, we turn to what is probably the most natural place to look - to what policy makers say they actually take into account when making decisions. For the period of interest, information available from the Fed includes a press statement following each FOMC meeting and minutes of these meetings. The ECB also issues press statements announcing policy changes and usually provides transcripts from a press conference with the ECB president explaining the factors behind the decisions of the Governing Council[12].

The most striking thing we noticed on examining the minutes from the meetings of the FOMC and the longer press statements following Governing Council meetings was the similarities between the references made to the developments in the monetary aggregates by the two groups. Each usually included a paragraph on money when discussing the factors leading to their policy decision. There seemed to be little apparent difference in substance between the emphases placed on money as an information variable by the Fed and by the ECB, although cosmetic differences did appear in the form of references to the first pillar in the ECB statements. Over the past four years, neither institution ever referred to monetary aggregate developments in the short press statement they release announcing their policy decisions, although it should be noted that, unlike the Fed, the ECB has not tending to include any rationale for their decisions in these brief statements.

Where a greater focus on monetary aggregates did emerge was in the transcripts of the question times that generally followed the press statements by President Duisenberg of the ECB. (Unfortunately, no direct comparison can be made to the Fed here.). In almost every press conference, at least one question was directed at the ECB president regarding monetary aggregate developments, requiring additional emphasis being placed on these developments over

[11] This is footnote 2 in Section 1 of the report. It is available on the Federal Reserve Board's web site at http://www.federalreserve.gov/boarddocs/hh/2000/July/ReportSection1.htm.

[12] Full transcripts of the FOMC meetings are made available to the public at a five-year lag while minutes of the Governing Council meetings will be made available only after a twenty-year lag. The information used in the current analysis has been taken from the web sites of the Fed and the ECB.

and above other information variables. What is important here is the fact that this additional emphasis has been driven by the financial community and not by the ECB and may often reflect confusion arising from the stated special role of monetary developments, which may not always be consistent with policy decisions. While the exact degree to which monetary developments are actually considered cannot be know with certainty until the minutes of the meetings are available, it certainly appears that the explicit special role afforded to money over and above other information variables has merely served to confuse rather than to clarify. This leads us to agree with those who say that the first pillar stands in the way of effective communication and should be jettisoned.

VI. OPERATIONAL PROCEDURES

The ECB and the Fed use similar tools to implement monetary policy, although some differences do exist between the methods used to manage the money market and influence short-term interest rates. In this section, we briefly outline the main procedures used by each of the central banks and then assess the relative merits of the two approaches.

Most of the liquidity supplied to the market by the Fed comes from overnight repurchase agreements (repos) carried out between the Open Market Desk at the New York Fed and a small number of designated dealers. These repurchase agreements are essentially collateralized loans and involve the Fed providing reserves to a dealer in exchange for Government securities and agreeing to reverse the transaction at a future date.

The level of reserves to supply is decided each morning based on forecasts for reserve demand with a view to keeping the federal funds rate as close to its target as possible. The Fed enters the market only once a day – with the exact time of the intervention randomized slightly by the throwing of a ten-sided die. Interventions take place at 9.30 plus the number of minutes obtained from the die throw. This method ensures that market participants know that they cannot get any information out of the exact timing of the operation. In addition to these short-run temporary operations, the Fed responds to forecasts of sustained increases in reserve demand by purchasing Government securities outright in the secondary market[13].

The other, less important, monetary policy tools available to the Fed are reserve requirements and the discount rate. Reserve requirements are not used to try to influence inflation and growth but serve to stabilize the demand for reserves, making it easier for the Fed to control the federal funds rate. The discount rate determines the cost of funds available for banks to borrow through the discount window[14]. In the past, banks seldom borrowed from the discount facility in the normal course of events, however, despite funds being available at an interest rate that was below the prevailing market rate. The reason for this is that banks were obliged to exhaust all other sources of funds before going to the discount window and so discount borrowing was seen as a signal that the bank was in trouble.

[13] While the Fed primarily engages in operations to add reserves to the market, it can withdraw liquidity through matched-sale-purchase agreements (reverse repos) or by selling securities.

[14] The term discount rate is usually used in relation to lending under the adjustment credit program – one of three types of credit (the others being seasonal credit and extended credit) currently available through the discount window.

In October 2002, the Board of Governors approved a plan to revise the discount window programs[15]. The main change involves the provision of loans to healthy banks at a rate set at 100 basis points above the federal funds target. Under the new plan, there will no longer be a stipulation that banks have to exhaust all other source of funding before borrowing from this facility and so no stigma associated with using the facility. These changes provide the US financial system with a source of funds available at the discretion of the borrowers similar to standing facilities provided by central banks in other countries.

Like the Fed, the main way the ECB provides liquidity to the market is through open market operations. They refer to these as "refinancing operations" and conduct them according to a pre-arranged schedule on a weekly basis. The loans provided through these weekly auctions have a two-week maturity, although loans with a maturity of three months are available through longer-term operations that are conducted on a monthly basis. The ECB may also carry out fine-tuning and structural operations from time to time. Table 1 sets out the main operational tools of the ECB and the Fed.

The refinancing operations of the ECB are really repurchase agreements, where the ECB, through the National Central Banks, gives banks reserves in exchange for securities, and then reverses the transaction two weeks later. These operations provide banks with virtually all of their reserves, and account for between 15 and 20 percent of the ECB's balance sheet. Day-to-day monetary policy sets the minimum bid rate on these refinancing operations. In other words, the ECB will not accept any bids that are below the rate set by the Governing Council.

The ECB also provides overnight loans to banks – at a rate known as the marginal lending rate – that is normally significantly above the target-refinancing rate. The spread between this lending rate and the target refinancing rate is determined by the Governing Council, and is currently set at 100 basis points. As in the case of discount borrowing, use of the marginal lending facility is initiated by the commercial banks when they feel that they face a reserve deficiency that they cannot satisfy in the marketplace. Banks don't borrow regularly, although on occasion the amounts can be large.

The ECB's requires banks to hold minimum reserve levels based on the level of liabilities that they hold and remunerate these required reserves at the average of the refinancing rate over the relevant period. Banks with excess reserves at the end of the day can deposit them overnight at an interest rate that is substantially below the target refinancing rate. Again, the spread is determined by the Governing Council and is currently 100 basis points. While usually small, these deposits have been substantial on particular days as they include all excess reserves that are in the banks of the Eurosystem.

[15] The changes are effective from 9 January 2003. For details on the proposal, see the press release on the Board of Governors web site at http://www.federalreserve.gov/boarddocs/press/bcreg/2002/200210312/default.htm

Table 1: Operational Policies of the ECB and the Fed

	ECB	FED
Open Market Operations		
Main	- Reverse transactions at weekly auctions with maturities of two weeks	- Repurchase agreements on a daily basis usually of very short-term maturity but maturity can range from 1 to 90 days
Other	- Reverse transactions with 3-month maturities conducted on a monthly basis - Non-standard fine-tuning operations using various instruments	- Outright purchases or sales of Government securities, usually once a week
Standing Facilities		
Loan	Marginal Lending Facility - Overnight facility at an interest rate (marginal lending rate) 100 basis points above the target refinancing rate	Discount Window - Various lending schemes, the key one being the provision of overnight adjustment credit at an interest rate (discount rate) 25-50 basis points below the target for the fed funds rate.
Deposit	Deposit Facility - Overnight facility at an interest rate 100 basis points below the target refinancing rate	None
Reserve Requirements		
Reserve Ratio	- 2% of checking accounts and some other short-term deposits averaged over a month	- From 0-10% on a graduated scale based on two-week average balances on accounts with unlimited checking privileges
Remuneration	- At the average of the refinancing rate over the period	- None

While the ECB's refinancing operations are broadly similar to the Fed's daily open market operations, there are differences. The most important is that the operations are done at all of the NCB's in the Eurosystem simultaneously. This makes the operations much more complex. It involves both coordination among a dozen central banks and the handling of transactions with literally hundreds of banks. To give some idea of the amount of potential counterparties, at end-2000, some 2500 of the over 7500 credit institutions in the Euro area met the criteria to be a counterparty to these operations and between 400 and 600 institutions actually participated in the tenders for the main refinancing operations (ECB, 2001: 63). Recall, in the U.S. everything is done at the Federal Reserve Bank of New York, with the Open Market desk only transacting with a short list about 20 securities dealers. In addition, due to the differences in financial structure in different countries, the ECB has to contend with a much wider range of potential collateral in its refinancing operations, with the list of acceptable collateral differing by country. Under normal circumstances, the Fed just deals with U.S. Government securities.[16] The other factor that makes the ECB set up inherently more cumbersome and more risky than that in the US is the sheer volume of funds that is refinanced on a regular basis.

Figures 1 and 2 show the behavior of key US and European interest rates. Figure 1 shows the federal funds target rate since 1996 along with the average rate on interbank transactions during the day. You can see that, by and large, the Fed is able to keep the market interest rate close to the target, although, every so often, the market rate spikes. As information systems have improved both within banks and at the Fed, however, there have been fewer surprises in the daily reserve market in more recent times and so the deviations of the daily federal funds rate from the target have become very small.[17]

Figure 2 illustrates the key interest rates in the Euro Area. The target refinancing rate is the solid line going through the center of the corridor created by the standing facility rates. The overnight cash rate is the European analog to the federal funds rate – the rate banks charge each other for overnight loans. In contrast to the behaviour of the effective rate in figure 1, the overnight cash rate is always inside the band and so always within 100 basis points of the target refinancing rate. From figure 1, you can see that, over the six and one-half-year period plotted there, the funds rate was more than 100 basis points away from the target 19 times – about 3 times per year. The European system is clearly more successful in giving policymakers control of the short-term interest rate. The spikes in the US data will disappear, however, upon implementation of the new discount facility, which resembles closely the ECB system.

VII. POLICY PERFORMANCE

Results are the real test of policy. Numerous people have examined the brief history of ECB policy in various ways. A decade ago John Taylor (1993) suggested the history of the U.S. Federal Funds Rate could be adequately explained by a simple rule in which the policy rate

[16] They accept securities issued both by the U.S. Treasury and those issued by government-sponsored agencies like the Federal National Mortgage Corporation.

[17] The easiest way to see this is to look at the daily standard deviation of the federal funds rate available on the Federal Reserve Bank of New York's web site. While there used to be days when the standard deviation was near one percentage point, it is now almost never above 0.3 percentage points.

depended on a long-run equilibrium interest rate, the deviation of inflation from a target level and the output gap. It has become very fashionable for academic researchers to compare actual interest rate paths to those implied by various versions of what are commonly called "Taylor rules," and analysis of the ECB is no different[18].

Such exercises conclude that interest rates were initially too low, and later were too high. The question is whether it is possible to actually evaluate policy using such an exercise. If the rule had been followed at the beginning of the period, then inflation and growth would have been different later. This is obvious, and what it means is that you cannot look at the actual policy relative to a Taylor-style rule without embedding the rule in a fully articulated dynamic structural model of the euro area.

Originally, Taylor viewed this as a way of summarizing policy history, not a prescription for future action. In recent years, researchers and policymakers have taken this rule and examined its properties for policymaking. Such exercises must be done with great care, however. In particular, evaluation of the rule can only be done if it is embedded into a dynamic model of the economy as changes in the interest-rate instrument that deviate from historical experience will drive inflation and output away from their historical paths as well.

Rather than build such a model (or borrow one), we will simply look at the performance of the ESCB since its inception. Figures 3 and 4 plot GDP growth and inflation in the Euro area. Growth data begin in 1992 and inflation data in 1996 – this is what is available from Eurostat and the ECB. It is surely difficult to tell from these data what the consequence of recent policy will be, but we can nevertheless make a preliminary evaluation. The results give the impression that policy has been more successful in fostering steady growth, initially at least, than in keeping inflation in check, as HICP inflation rose unabated over the first few years of the ECB. This provides some support for the von Hagen and Brückner conclusion that policy was too lose early on. Since mid-2001, however, the index has shown a downward trend, resulting in an average inflation rate since the establishment of the ECB of 2.02 percent, close to the upper band of the target range.

In terms of achieving price stability over a medium term horizon, therefore, it appears that the ECB has essentially done its job. While it is interesting to compare how the ECB's policy actions have mirrored or differed from what the Fed or an EU wide Bundesbank would have done, surely the achievement of its mandated objectives is what counts.

This is not to say that its policymaking was optimal and might not have been too loose or too tight at various points in its history. It is true that the Federal Reserve has enjoyed greater success in the more recent past in re-igniting growth and keeping inflation low, while the ECB has seemed somewhat slow in loosening policy. The idea that this reluctance to reduce interest rates was motivated by a strict adherence to the first pillar of the monetary policy strategy in the face of growth rates in M3 monetary aggregate consistently several percentage points above the reference value, doesn't bear out, however The observation by Begg et al. (2002b) that actual ECB decisions have been negatively correlated with nominal money growth is telling. It is

[18] See, for example, Von Hagen and Brückner (2002).

likely that the ECB's strategy reflected a more gradualist approach given the greater uncertainty that the ECB faced regarding the environment in which it operated and the transmission mechanism through which its policy actions reach the real economy.

VIII. THOUGHTS FOR THE FUTURE

The report so far on the ECB is of a new institution that has faced numerous challenges head on and come out only mildly bruised. It is difficult to see how things could have come out any better than they have. But this is not the end of the story. The future challenges of the ESCB are nearly as daunting as those of the past, with the biggest problems likely to continue to arise from conflicts among national interests in policy setting.

A key and unique challenge facing the ECB over the next few years is the inevitable increase in the number of nations whose monetary policy it coordinates. With the accession of ten countries into the EU planned for May 2004 adding to the number of potential mew members, it is likely that national considerations will remain central to many of the challenges facing the institution.

One of the areas where national considerations are currently apparent at a practical level is in the cumbersome system through which the ECB provides liquidity to the money market. While differences in national financial structures may have warranted such a decentralized system in the early days, it surely makes sense to centralize these operations in the future. In addition, a structural adjustment to reduce the enormous volume of liquidity routinely provided to credit institutions through short-term operations along with a cutback in the potential number of counterparties to these operations would aid the system to function more efficiently. Another issue that we feel should be addressed is the role of monetary aggregates in the formulation of monetary policy. There seems little to be gained by assigning a special place to money in the assessment of financial conditions and much confusion to be wrought by the unpredictable behavior of these impossible to measure statistics. The path taken by the Fed recently to discontinue the publication of target ranges for the growth of money and debt is, we believe, the correct one.

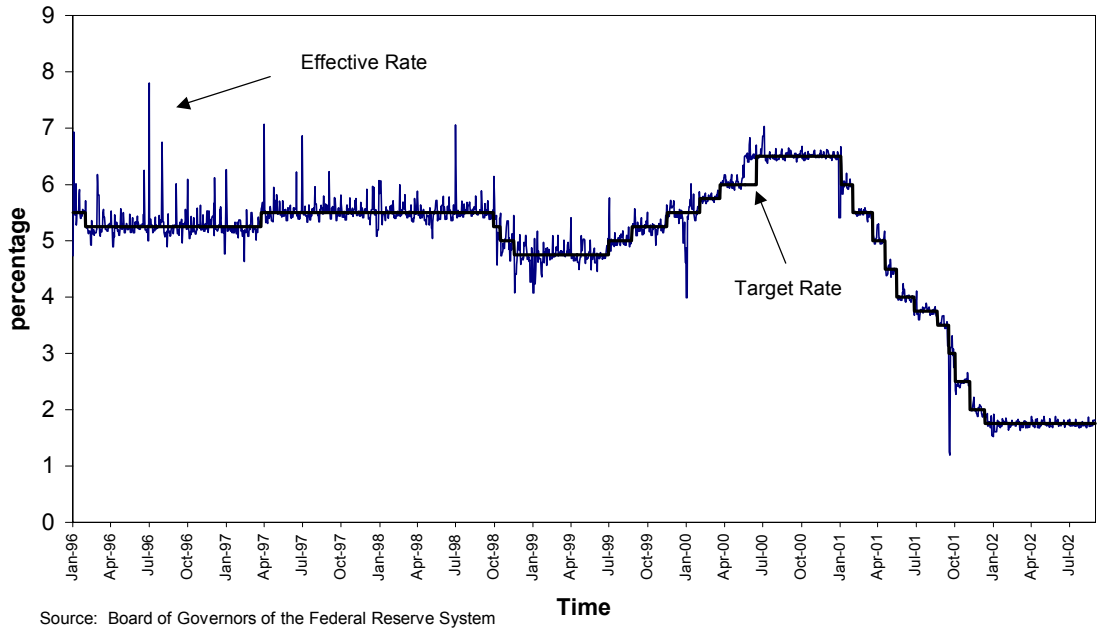
The ECB has announced that it will be undertaking a comprehensive review of its policy making strategy in the first half of 2003, which may well signal the end of the first pillar. This would mitigate the need for endless explanations and qualifications of monetary growth data and undoubtedly improve the transparency of its policy making. There is also speculation that this re-evaluation may lead to a softening of the ECB’s target for price stability. Critics have argued that the ECB have focused excessively on inflation, to the neglect of secondary goals relating to output and employment. In our view, such a fundamental change to its monetary policy strategy so early on would not be wise. Undergoing a re-evaluation of its policy framework at this stage is a courageous move and using the opportunity to improve communication and transparency is surely a good idea. Changing the specified objective of monetary policy a mere four years on is not. The continued targeting of HICP of 2 percent or lower is, in our view, wholly consistent with goals of sustained economic growth and healthy employment levels. The most we would endorse would be the very modest change to a target range of 1 to 3 percent inflation over the medium term. But even that would have to be explained within the context of a combination of

the likely upward bias present in the HICP and he relatively higher inflation in the 10 accession countries.[19]

While the ECB would do well to follow the Fed's lead on the treatment of monetary aggregates, there are also lessons for the Fed to take from the ECB. This is already happening in the form of the changes to the Fed's discount window policy. The other place where the Fed could take a leaf from the ECB's book relates to the clarity with which the goals of monetary policy are defined. The Fed needs to spell out precisely what is meant by "maximum employment" and "stable prices" and give some sense of the priorities they will impose when these two goals come into conflict. Undoubtedly, the need to elucidate goals has been much more important for the ECB, as a new institution with a need to effectively communicate with twelve distinct national entities, than it has been for the long-established Fed with its veteran leader. These circumstances, however, will inevitably change sometime in the not-so-distant future.

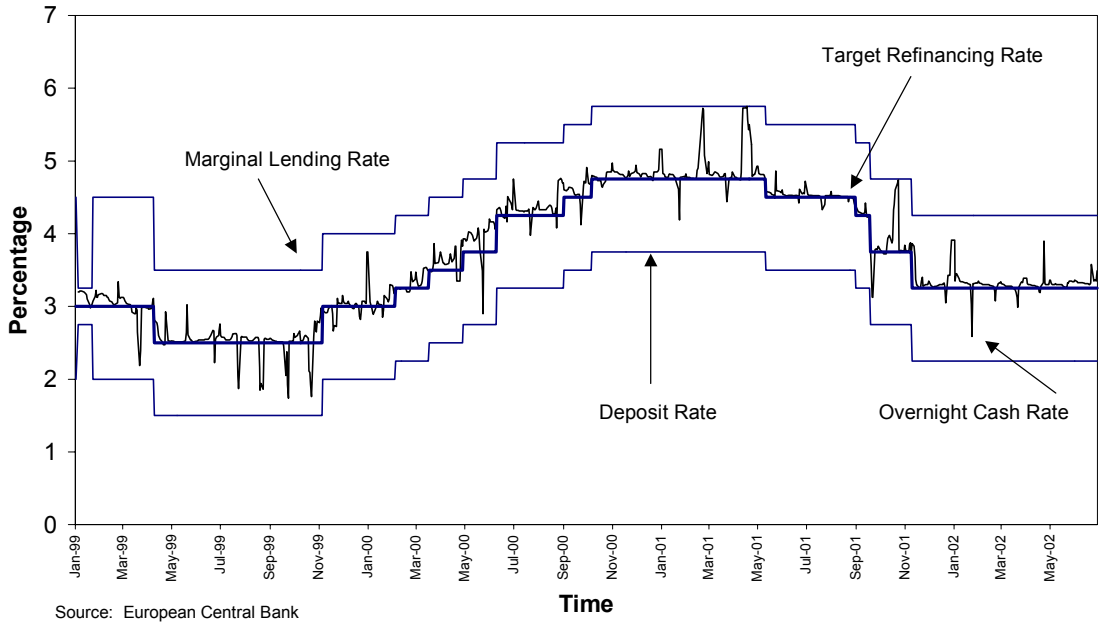
[19] Recent experiments with the U.S. CPI suggest that bias in that index may still be as high as one percentage point. The HICP surely has a bigger upward bias. Because of their relatively high growth rates, the accession countries will be at the upper end of the inflation range in the euro area. This means that if the inflation target is set at too low a level, the more advanced countries could experience steady deflation, something that is to be avoided.

Figure 1: U.S. Federal Funds Rate Target and Effective Rate: January 1996 - August 2002



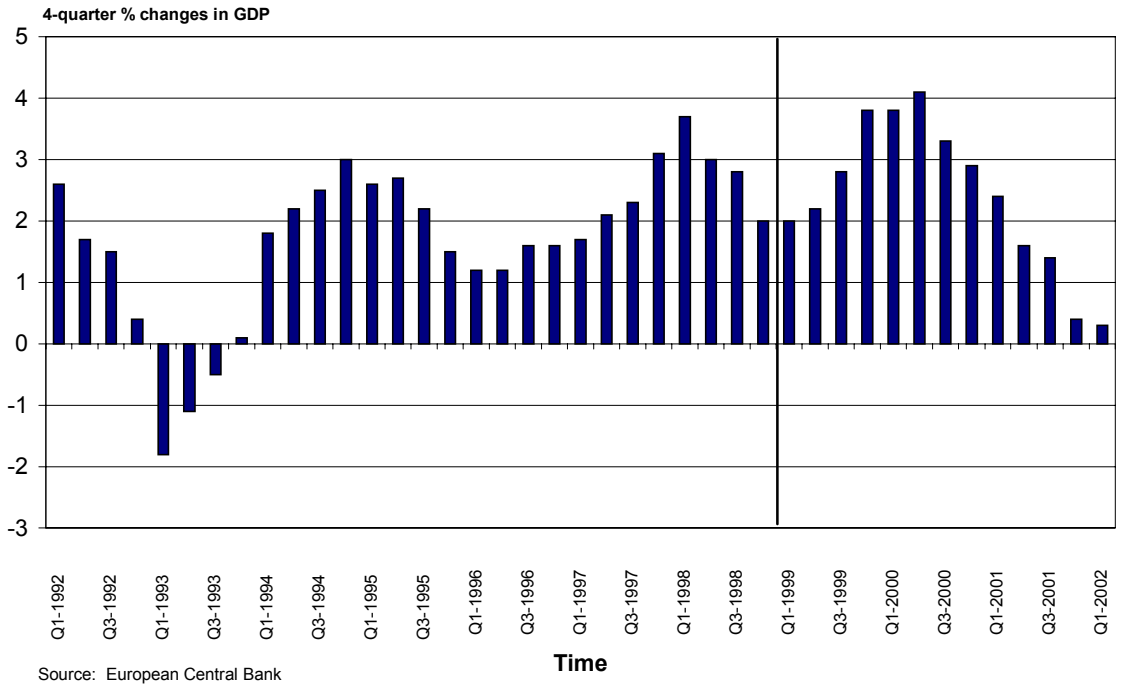
Source: Board of Governors of the Federal Reserve System

Figure 2: ECB Money Market Interest Rates: January 1999 to June 2002



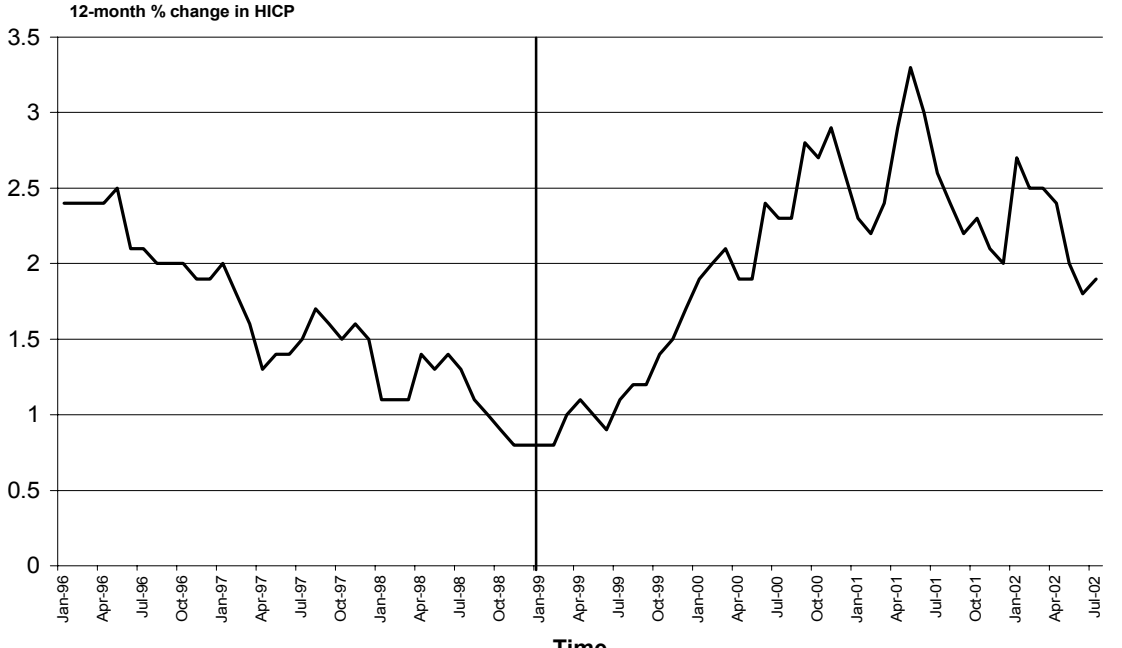
Source: European Central Bank

Figure 3: Real GDP Growth in the Euro Area



Source: European Central Bank

Figure 4: Inflation in the Euro Area



Source: European Central Bank

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