An Overview of Monetary Policy in the US
by Karl Whelan*

ABSTRACT
With the introduction of monetary union, the US Federal Reserve system has become a common reference point against which to compare the procedures and policies of the fledgling ECB. This paper provides a brief overview of US monetary policy. The paper discusses the legal and institutional structures underpinning the Federal Reserve system, the process by which policy decisions are made, and the strategy that the Federal Reserve has used in implementing monetary policy in recent years.

1. Introduction
With the introduction of monetary union, the central banks of the euro area are now pursuing a common monetary policy. Because the European experience of setting a single monetary policy across an economy as large as that of the euro area has been very limited, the US Federal Reserve system has become a common reference point against which to compare the procedures and policies of the fledgling European Central Bank (ECB). This paper provides a brief overview of the structure and policy framework of the Federal Reserve.

The paper begins with a description of the legal and institutional structures underpinning the Federal Reserve system, the process by which policy decisions are made, and how these policy decisions are communicated to the public. It then moves on to discuss the strategy that the Federal Reserve has used in implementing monetary policy in recent years, focusing on a comparison of actual policy with that recommended by systematic interest-rate rules, and on the role of monetary aggregates. Finally, there is some comparison of the Federal Reserve’s approach to monetary policy with that of the ECB’s.

2. Institutional Details
2.1 Structure of the System
The Federal Reserve System — known popularly as the Fed — was founded in 1913 in response to a series of banking crises which had beset the US under its previous system in which there were numerous “national banks” with each entitled to issue banknotes. The modern structure of the system dates from 1935, with the setting up of a central management body in Washington D.C. known as the Board of Governors or Federal Reserve Board, and the Federal Open Market Committee (FOMC) which was charged with the formulation of monetary policy.

* The author is an economist in the Bank’s Economic Analysis, Research and Publications Department. The views expressed in this Paper are not necessarily those held by the Bank and are the personal responsibility of the author. He would like to thank Frank Browne, John Frain, Ruhique Mostiar and Tom O’Connell for helpful comments.
In addition to their roles in formulating monetary policy through the FOMC, the Board and the Fed’s twelve regional banks play a number of other roles in national economic policy. For example, the Board has responsibility for contributing to the smooth functioning of payment systems and financial stability in general, and also has a range of regulatory responsibilities for the banking system, including approval of bank mergers and the monitoring of compliance with congressional laws such as the Community Reinvestment Act. The reserve banks also play a role in monitoring and regulating the banks in their region and in the distribution of currency.

The membership of the FOMC consists of the seven Governors of the Federal Reserve Board (including the Chairman), the president of the Federal Reserve Bank of New York, and four other regional bank presidents chosen on a rotating basis from the other eleven regional district banks. The Committee has eight scheduled meetings per year but sometimes takes monetary policy decisions outside these meetings (typically meeting by telephone conference) if economic circumstances are judged to have changed a lot since the previous meeting.

2.2 Independence and Accountability

Although the Fed is an independent body with the sole power to set US monetary policy, its underlying legislative framework allows elected politicians to have an important influence on the long-term strategy of monetary policy and requires the Fed to be accountable to the other branches of the federal government.

The political influence on the long-term strategy of monetary policy has two elements, the first of which is the political nature of the process by which senior Fed officials are appointed. All Governors are chosen by the President and approved by the Senate, and are appointed to non-renewable fourteen-year terms. This process can allow a President to influence the composition of the Board in a manner that encourages the policies that the administration would like to see pursued. However, the long length of Governors’ terms and the fact that these terms cannot be renewed means that, once appointed, Board members are relatively free from political pressures.

The President also appoints two Governors to act as Chairman and Vice-Chairman of the Board for renewable four-year terms. This re-appointment process places some limits on how much the Chairman can depart from the economic policy preferences of the President. That said, the current Chairman, Alan Greenspan, is very highly thought of by participants in international financial markets, and the approach of US administrations over the past decade has largely been to leave policy decisions to the Fed, with administration members usually refusing to comment on matters relating to monetary policy.
The second influence that the federal government has on the long-term course of monetary policy is its ability to set the Fed’s objectives through legislation. For example, the Full Employment and Balanced Growth Act of 1978 — usually known as the Humphrey-Hawkins Act — establishes a number of long-term goals for monetary policy (this issue will be discussed in greater detail below). Although such acts of Congress are not intended to allow politicians to control the month-to-month operation of monetary policy, the Humphrey-Hawkins Act does require the Fed to update Congress on its performance. The Act also requires the Fed to produce a twice-yearly report to Congress reviewing recent macroeconomic events and the policy stance and providing forecasts for major macroeconomic variables for the year ahead. After the release of this report, the Chairman is required to appear before two congressional committees to testify on the state of the economy, and to answer questions from congressmen and senators.

While these factors allow for a relatively important degree of centralized oversight, the Fed’s structure was also designed to allow for inputs from different regions and from the private sector. Its regional district banks exist as separate corporate entities with local member banks as stockholders. The directors of these district banks are then appointed to represent local business, banking and consumer interests. The regional bank presidents, who can vote on the FOMC, are appointed by these directors, although these appointments must be approved by the Board of Governors.

3. How Policy is Made: FOMC Meetings

3.1 Pre-Meeting Preparations

The process by which the FOMC makes monetary policy decisions begins a number of weeks prior to the actual meeting. During this period, Federal Reserve staff prepare materials to assist the committee in making its decision. In particular, the staff prepares three formal documents. Staff at the Board prepare the Bluebook, which discusses the various policy options open to the committee and analyses the likely reaction of financial markets to the policy decision, while staff at the regional district banks prepare the Beige Book, which provides qualitative descriptions of the state of the economy in the various regional districts based largely on discussions with local business contacts.

Perhaps the most important staff input into the policy process is the Greenbook, which is also prepared by Board staff. The Greenbook contains a description of macroeconomic and financial developments over the inter-meeting period, as well as a detailed discussion of the staff’s forecasts for all the major macroeconomic variables. The staff forecast focuses on the next eight to ten quarters and is constructed in an essentially
judgemental fashion. Specifically, the forecast is built from the ground up based on a large number of disaggregated forecasts for various expenditure categories, price indices, and so on.\footnote{See Sims (2002) for a discussion of forecasting practices at various central banks including the Fed.} While the analysts that construct these forecasts make extensive use of econometric modelling, the forecast is not restricted to match that of the Board’s large-scale structural econometric model, known as FRB-US. However, the Board staff uses FRB-US for a number of important purposes and, in the policy process, this model is used to describe a number of alternative scenarios to the base forecast.

In addition to the extensive set of materials prepared for all FOMC members, each of the Fed’s district banks has a staff of economists that brief their bank presidents on the state of the national and local economies, and these economists generally prepare independent forecasts to those produced by the Board staff. The research departments of the various district banks often tend to have expertise in different areas of macroeconomic modelling so, in addition to the Board’s forecast, committee members have often seen forecast simulations from vector autoregressions and more theoretically-based dynamic general equilibrium models.

### 3.2 The Meetings

In addition to the members of the committee, FOMC Meetings are attended by a significant number of other Federal Reserve staff. These include the alternating members of the committee (the non-voting regional bank presidents), advisors to each of the bank presidents (typically, the director of the research department at the regional bank), and a number of senior staff from the Board’s economics departments.

The committee’s meetings usually begin with brief statements by senior Board staff on the outlook for the domestic and international economies, and by a representative of the Open Market desk on operational issues for monetary policy over the inter-meeting period. Committee members usually question the staff on these statements, and then the Chairman leads a discussion of the state of the economy, with each of the Governors and regional bank presidents contributing their opinions. The regional bank presidents usually discuss recent developments in their region at this point.

After these initial statements, the Chairman usually outlines his preferred policy decision and each of the Governors and regional bank presidents comment on this proposal. Finally, a (usually unanimous) vote of the committee is taken on the proposed policy directive and a public statement concerning the decision.
is agreed upon. The Chairman’s role in leading the policy discussion and in setting the terms of the debate usually has a crucial influence on the decision that is taken. As a result, while theoretically the Chairman has only one vote, in practice he bears a very important responsibility for the strategy of monetary policy, and this responsibility is re-enforced by legal requirements that he be responsible for publicly articulating and defending the Fed’s policy stance to Congress.

3.3 After The Meetings: Public Communications

After the FOMC makes a decision, the public communication of events at the meeting proceeds in various stages. Immediately following the meeting, a statement is issued outlining the policy decision. In recent years, this has taken the form of the announcement of an explicit target for the federal funds rate, the interest rate on short-term loans of bank reserves. The Fed controls this rate by buying and selling securities to either add or subtract liquidity in the inter-bank reserves market. The statement also provides an indication of whether the committee views the economic circumstances as pointing towards either tightening or loosening of policy in the immediate future. Recently, the statement has also included the details of the vote on policy, describing who voted for and against the policy decision, and the preferred decision of those who voted against. This information was previously released with a delay.

About a month after the meeting, a more detailed set of minutes are released, which provide more information on the committee’s views on the state of the economy. Finally, about five years after the meeting, a full transcript of what took place is made available. Thus, ultimately, everything said at the meetings is for the public record. The transcripts, currently available through the end of 1996, provide an important insight into how monetary policy decisions are taken. For example, the transcripts provided the basis for the description above of how FOMC meetings usually proceed.

4. The Policy Framework of the Federal Reserve

The underlying objectives of the Federal Reserve are not set out in a single constitution or piece of legislation. Rather, the goals of monetary policy are understood to coincide with the objectives of national economic policy, as set out in the Employment Act of 1946 and the Humphrey-Hawkins Act of 1978 (described above). These objectives include economic growth in line with the economy’s potential to expand; a high level of employment; stable prices; and moderate long-term interest rates. Here, we discuss how the Fed has implemented monetary policy in pursuit of these goals.
4.1 The Role of Inflation and Output

While central banking practice around the world has seen a movement in recent years towards price stability as the sole goal of monetary policy, the Federal Reserve has a mandate to pursue both price stability and economic growth in line with the economy’s potential. An important line of research has recently explored how US monetary policy has responded to the two elements of this dual mandate.

In a well-known paper, John Taylor (1993) showed that monetary policy under the chairmanship of Alan Greenspan (whose term began in late 1987) was well described by a simple rule under which the federal funds rate was a simple function of inflation and output. Specifically, the so-called Taylor rule relates the federal funds rate to deviations of output from a trend level, and of inflation from a target of two per cent. Algebraically, the Taylor rule can be written as:

\[
i(t) = \alpha + \beta (\pi(t) - 0.02) + \gamma (y(t) - y^*(t)) \]

where \(i(t)\) is the federal funds rate, \(\pi(t)\) is the four-quarter per cent change in an aggregate price measure, \(y(t)\) is the log of real GDP, and \(y^*(t)\) is a measure of the trend level of \(y(t)\).

Figure 1

**The Taylor Rule**

2 The use of logs implies that the term entering the interest rate rule can be interpreted as the percentage deviation of output from its trend level.
Figure 1 illustrates the fit of an econometrically-estimated version of the Taylor rule, estimated over the sample 1987:Q4 to 2002:Q2. The regression underlying this chart followed the original work of Taylor in using the GDP deflator as the price index, and in measuring trend GDP as the fit from a regression of the log of GDP on linear and quadratic time trends. The figure shows that this simple rule explains most of the variation over the past fifteen years in the federal funds rate: The R-squared for the regression is 0.65. This evidence confirms that the Taylor rule appears to provide a reasonable first-order approximation to actual Federal Reserve policy over this period. And not surprisingly, given its prominence in recent academic discussions, it is believed that the staff's Bluebook prepared for the FOMC contains discussions of the policy choices consistent with the Taylor rule as well as other systematic policy rules.

It would be a mistake, however, to over-estimate the extent to which US monetary policy can be summarized by a simple rule. To illustrate this point, consider the following three examples of periods when policy deviated from the Taylor rule.

The Credit Crunch: Figure 1 shows that following the recession of the early 1990s, the federal funds rate was kept about one per cent below the level predicted by a Taylor rule until about the middle of 1994. An examination of transcripts from FOMC meetings during this period reveals that committee members were concerned about a “credit crunch” due to US banks adopting tighter credit standards. As a result, the FOMC felt that financial conditions were tighter than the low federal funds rate would have suggested, and so deliberately deviated from the usual prescriptions of a Taylor-style rule. The committee appears to have offset this policy by then adopting a tighter-than-normal monetary policy for a period beginning in late 1994.

The Asian Crisis: Another policy move that ran directly counter to the prescriptions of the Taylor rule was the decision to cut the federal funds rate by 75 basis points in late 1998. At this time the US economy was expanding at a rapid pace and the Taylor rule was calling for interest rate increases. However, the Fed’s interest rate cuts followed a default by Russia on its debt and a set of large devaluations of Asian currencies which together led to a very high level of uncertainty and instability in global financial markets. The Fed’s interest rate cuts were widely seen as helping to restore calm to international financial markets, and this example illustrates how some of the Fed’s other goals, such as the maintenance of financial stability, can at times cause it to behave in a different manner than would be suggested by a simple interest rate rule based on the behaviour of US inflation and output.
The Late 1990s: Another example of how US policy does not appear to have followed the simple Taylor rule relates to the apparent instability over time in the coefficients on the estimated rule. Ball and Tchaidze (2002) have demonstrated that there was a break in the estimated Taylor rule in 1996. Figure 2 provides an illustration of this break: It shows that a Taylor rule estimated using data up to 1996:Q4 provides a poor description of actual Fed policy in the late 1990s. The pre-1996 Taylor rule would have called for much higher interest rates during both the expansion of the late 1990s and the subsequent slowdown.

Figure 2
A Pre-1996 Estimated Taylor Rule

Technically, the main reason for the difference between the estimated policy rules shown in Figures 1 and 2 is that the pre-1996 rule places a much higher weight on the output gap than the rule estimated over the full sample. It is widely believed that the reason for this change in the weight assigned to the output gap is that, from the late 1990s on, the FOMC disagreed with the implications of this series for the difference between actual and potential output. In particular, Chairman Greenspan and other Fed officials spoke on many occasions about a resurgence in US productivity growth and its implications for a faster pace of growth in potential output. This pattern, however, was not fully reflected in the simple measure of trend output incorporated into the Taylor rule. Thus, the FOMC appears to have viewed the US economy as being less “over-heated” than the traditional measure of the output gap suggested it was.
These examples illustrate some of the reasons why actual interest rate policy has sometimes deviated from the recommendations of the Taylor rule, often for periods of a couple of years. One aspect of these deviations that has been noted by a number of researchers is that the federal funds rate appears to have been somewhat "smoother" than predicted by the Taylor rule. As a result, some have suggested that the Fed also places some value on keeping the interest rate stable, and empirical Taylor rules estimated by researchers have often incorporated a lagged federal funds rate term to capture this element. However, the examples just discussed illustrate that a statistically significant role for the lagged funds rate in an econometric regression may not reflect a desire to smooth interest rates. Rather, this may simply reflect the fact that other considerations not well captured in the Taylor rule tend to affect monetary policy, and that these considerations may lead to relatively persistent deviations from this rule.

4.2 The Role of Money

A noteworthy aspect of the recent conduct of US monetary policy is the very limited role played by the monetary aggregates. This reflects, in part, the views of Fed officials that setting monetary policy via targets for monetary aggregates has not proved effective in the past.

The role of the monetary aggregates in US monetary policy has changed significantly over time. Up until the late 1960s, Fed policy was set much like it is today, with short-run targets for the federal funds rate. However, this period saw the monetarist school of thought associated with Milton Friedman becoming more influential. Friedman documented the long-run relationship between the price level and the supply of money, and during the 1970s the Fed began to focus more on explicitly managing the money supply. In 1978 the Humphrey-Hawkins Act imposed the requirement that, as part of its semi-annual report, the Fed should announce explicit targets for the money supply and explain any deviations from these targets. Then, starting in 1979 under the chairmanship of Paul Volcker, the Fed implemented policy by explicitly managing the level of reserves to meet these money growth targets. This approach resulted in a substantial increase in the volatility of the federal funds rate, as this rate moved around to fit the specific rate of reserves growth that the Fed was targeting.

Although monetary policy over this period was highly successful in reducing inflation, Fed officials became unhappy with a number of practical difficulties associated with the implementation of monetary targeting. Specifically, the historical link between the money supply and the price level relies on the assumption of a

---

3 See, for instance, Woodford (1999) for a discussion of this issue.
4 See Rudebusch (2002) for a further discussion of this position.
relatively stable monetary velocity. However, deregulation and technological innovations in financial markets led to substantial changes in monetary velocity during the 1980s. Thus, over the course of the 1980s the Fed gradually placed less emphasis on the monetary aggregates as indicators of inflationary pressures, and returned to implementing policy by managing the federal funds rate.5

In recent years, the Fed has become more explicit about the limited role that the monetary aggregates play in its approach to policy. For example, consider the following quote from the official document *Purposes and Functions of the Federal Reserve System*:

The usefulness of the monetary aggregates for indicating the state of the economy and for stabilizing the level of prices has been called into question by frequent departures of their velocities from historical patterns.

In 2000, the Fed asked to be relieved of its responsibility to report annual monetary targets to Congress and the request was approved.

4.3 Policy Debates

While most observers have been satisfied with the performance of US monetary policy in recent years, there remain a number of active debates concerning how policy should be conducted.

One of these debates concerns whether the Fed should adopt an explicit inflation target, as has been done in a number of other countries. Although Taylor-rule style econometric analysis has pointed to an implicit target of about 2 per cent, there has been a substantial debate as to whether an explicit target would be preferable. Advocates argue that while Alan Greenspan is widely thought to have a credible commitment to low inflation, there is nothing committing the Fed as an institution to low inflation after his departure as chairman. Indeed, Clarida, Gali, and Gertler (1999) and others have argued that the high inflation of the 1970s was the result of the failure of the Fed to be sufficiently aggressive in fighting inflation at that time: Econometric estimates of Taylor rules for this period report low coefficients on inflation. An explicit inflation target may prevent such a regime from happening again, and this proposal is known to have some backing within Federal Reserve circles. For example, former Governor Laurence Meyer and current Governor Ben Bernanke are known to favour an explicit target, on the grounds that this would improve the transparency of monetary policy and help to “anchor” expectations of low inflation.

5 Meyer (2001) provides a clear and useful discussion of the role of the monetary aggregates in Federal Reserve policy.
In contrast, others have argued against an explicit inflation target on the grounds that it would limit the flexibility that the FOMC requires to meet its various goals. More generally, some argue that an explicit inflation target could be construed as a repudiation of the Fed’s legal “dual mandate” to foster growth as well as low inflation. However, the dual mandate itself has also been the subject of active debate. While theoretical work has shown that Taylor-style rules that react to both output and inflation tend to produce good economic outcomes, there are also some relevant arguments for policy rules that do not explicitly incorporate stabilization of output.\(^6\)

One argument against the dual mandate is essentially theoretical in nature. Economic theorists have shown how, under some conditions, a policy-maker that credibly commits to a policy of low inflation with no regard to output can, paradoxically, face an improved trade-off between inflation and output, with cost shocks requiring smaller adjustments to output to maintain stable inflation.\(^7\) A more practical argument against explicit attempts to stabilize output is associated with Athanasios Orphanides, an economist at the Federal Reserve Board. Orphanides (2002) argues that the gap between actual and potential output is very difficult to observe, and that past policy errors have sometimes been the result of reacting to mis-measured output gaps. For example, Orphanides argues that the 1970s FOMC actually followed a policy similar to the Taylor rule characterizing the Greenspan era, with their failure to contain inflation resulting from their consistent overestimation of the size of the output gap. He recommends that, in light of these measurement uncertainties, central banks should not attempt to stabilize output around some measure of potential.

5. **Comparisons with the ECB**

The relatively positive performance of the US economy over the past fifteen years has often led to praise for the Fed’s approach to monetary policy. However, this does not necessarily imply that the Fed provides an appropriate model upon which monetary policy in Europe should be based. As we have discussed above, a number of economists and policy-makers believe that the long-run performance of US monetary policy could be improved by the adoption of a legal framework similar to that of the ECB. In addition, the institutional structures of the Federal Reserve are quite different from that of the ECB, and thus may call for a different policy framework.

Perhaps the most obvious difference between the Fed and the ECB’s approaches to monetary policy relates to their legal

---

6. Woodford (2001) contains a brief and useful discussion of a number of theoretical issues related to Taylor rules.
mandates. The Fed has a somewhat loosely-defined mandate which places price stability and output growth roughly on an equal footing. In contrast, the Maastricht treaty strictly sets the ECB’s mandate as being the maintenance of price stability, with other goals such as output growth only being pursued to the extent that they do not prejudice this primary goal. In addition, while the Fed appears to have an implicit inflation target of about 2 per cent, the ECB interprets its price-stability mandate as explicitly implying an inflation rate of under 2 per cent. That the US economy has performed well under the Fed’s guidance is not, however, in itself an argument against the ECB’s policy framework. In fact, there is an active debate in US policy circles over whether the Fed should also have an explicit inflation target and whether price stability should be the sole or principal responsibility of monetary policy.

In addition, the difference in legal structures perhaps suggests that the arguments for an explicit mandate and quantitative inflation target are stronger for the ECB than for the Fed. As discussed above, power in the Federal Reserve System is quite centralized, and the Fed is highly accountable to a single governmental authority. In contrast, the more diffuse dispersion of power among the separate countries of the ECB enforces the usefulness of an explicit mandate in ensuring that monetary policy meets its objectives.

A more technical difference between the two central banks is the emphasis placed on monetary aggregates. The Federal Reserve has explicitly rejected targeting of the monetary aggregates as a means of implementing monetary policy, and has de-emphasized money in its presentation of policy decisions. This is often contrasted with the ECB’s policy strategy, which has a quantitative reference value for money growth as one of its two ‘pillars’. However, there is perhaps less difference between the Fed and ECB’s philosophies in relation to money than initially meets the eye. For example, page 47 of the official document The Monetary Policy of the ECB makes clear that the ECB does not view the first pillar as implying strict monetary targeting. It states:

The reference value is not a monetary target. The ECB does not attempt to keep M3 growth at the reference value at any particular point in time by manipulating interest rates. However, deviations from M3 are closely analyzed in the context of other economic data in order to extract the information they contain regarding the risks to price stability.

The document then cites variations in velocity as the principal reason not to respond “in a mechanical way to deviations of M3 growth from the reference value.” Thus, the difference between the Fed and ECB’s attitudes towards the role of the monetary
aggregates is more subtle than is sometimes suggested. Moreover, recent debates over the role of the first pillar in the ECB’s strategy has provoked some important research examining the information that monetary aggregates contain for forecasts of inflation in both the US and the euro area. Such research may further encourage convergence of opinion on the appropriate role for money in the formulation of monetary policy.

References


For example, see Rudebusch and Svensson’s (2002) study for the US and Altinari’s (2001) study for the euro area. Such research may further encourage convergence of opinion on the appropriate role for money in monetary policy.