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THE FEDERAL RESERVE SYSTEM DISCUSSED:
A comparative analysis

Prepared by M.M.G. Fase and W.F.V. Vanthoor
De Nederlandsche Bank

Société Universitaire Européenne de Recherches Financières
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M.M.G. Fase and W.F.V. Vanthoor
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THE FEDERAL RESERVE SYSTEM DISCUSSED:
A comparative analysis

M.M.G. Fase and W.F.V. Vanthoor*)

In the first half of 2000 the authors of this paper visited the twelve District Reserve Banks in the United States which was followed by a discussion at the Board in Washington. The aim of this visit was to get a deeper insight into the working of the American Federal Reserve System in order to see whether there is a sufficient basis for a comparison with the European System of Central Banks.The direct contacts with many senior and research staff members enabled them to deepen their factual empirical knowledge about the US banking system. The staff set aside a lot of time to discuss the relevant questions and made various members of the Economic Research Departments available for further conversation. Particularly enlightening were the stimulating views of some Reserve Bank presidents on the task and rules of monetary policy.

*) Professor Dr. M.M.G. Fase is Deputy Executive Director of the Directorate Monetary Affairs and Head of the Econometric Research and Special Studies Department of De Nederlandsche Bank as well as Professor in Monetary Economics and Financial Institutions of the University of Amsterdam. Since 1986 he is member of the Royal Dutch Acadamy of Sciences and member of the Board of the *Société Universitaire Européenne de Recherches Financières (SUERF)*. Dr. W.F.V. Vanthoor is Deputy Departmental Director of the Econometric Research and Special Studies Department of De Nederlandsche Bank where he is responsible for the Section Comparative Analysis and Historical Research. He is a member of the Academic Council of the European Association for Banking History. The views of the authors expressed in this paper are those of the authors and not of De Nederlandsche Bank.

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Introduction

Just over eighteen months have elapsed since the European System of Central Banks (ESCB) became fully operational. The euro is still young and it is too early now to judge the success of this ambitious European undertaking. As the ESCB has a federal structure comparable to that of the Federal Reserve System, it may be useful to take a look at the experience of the United States. This article focuses on the discussions held by the authors in January and April 2000 with high level representatives of the twelve district Federal Reserve Banks and the Board in Washington.

First the organization of the Federal Reserve System whose history goes back to 1913 is outlined in section 1 which deals with its statutory duties, management, structure and policy-making and supervisory duties. Section 2 reports discussions with representatives of the Reserve Banks and the Board based on a number of questions. Section 3 contains an assessment and a comparative study. It seems that the centre in Washington has great power and that regional economic developments (such as regional differences in inflation) are of minor importance in the Federal Reserve's policy meetings where recommendations by the individual Reserve Bank presidents are based entirely on 'nation-wide' considerations. Furthermore, the discount rate plays an important role in the relationship between the Fed and the regional publics. Apart from that, this section briefly looks at the meaning of the term 'credibility' and 'transparency' as they are used in monetary literature. Applied to the two systems, it seems that the Fed has greater transparency: the divergent votes cast by Board members are made known in order to prevent the public from seeing policy moves as 'remote, secretive and elitist'. The ESCB is reluctant to follow suit at this stage, having the legitimate excuse that all concerned need to become accustomed to a common monetary policy. One of the main conclusions in section 4 is that, although the ESCB has many comparable elements, it is especially the historical tradition of the Federal Reserve System that makes it different not only in its functional structure but also in its monetary philosophy and its way of conducting monetary policy where the ESCB, notably in terms of transparency and credibility, still has a long way to go. In this respect, history has given the United States the lead on Europe.

Section 1 The structure of the Federal Reserve System

1.1 Policy goals

The Federal Reserve System (FRS) was created when President Woodrow Wilson signed the Federal Reserve Act on 23 December 1913. For two short periods before than, 1791-1810 and 1816-1836, the country had a central bank whose duties included the issue of banknotes. However these central banks had a short existence, creating a very fragmented situation with concessions to the individual states for issuing banknotes. Following the Civil War, there was a single system between 1863[1] and 1913, known as the National Banking Period, when 'national banks' established by the federal government were authorized to issue banknotes. For various reasons, they were unable to develop into central banks as known in Europe and this led to serious monetary difficulties in times of deep financial crisis such as that of 1907. The Federal Reserve Act, which is in fact the banking act, aimed to bring an end to institutional monetary fragmentation and impracticability.[2]

It would take until August 1914 before the first operational steps had been taken to secure the functioning of the new System. The objective set out in the Act is 'to provide for the establishment of Federal Reserve Banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes.' The FRS has evolved gradually since then and may now be regarded as an independent central bank in the sense that its decisions are not subject to the approval of the President of the United States. The System is subject to control by the United States Congress since the constitution gives the authority 'to coin money and set its value' to Congress, an authority that Congress has in turn delegated to the FRS by the Act of 1913. As befits a democracy, the System has to operate within the framework of the general economic objectives of government policy.

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[1] Although the war ended in 1865, the first National Banking Act was signed in 1863.

[2] See M. Friedman and A. Schwartz, *A Monetary History of the United States 1867-1960* (Princeton 1963). A view on this part of monetary history can also be found in G.M. Verrijn Stuart (1956), A.H. Meltzer (1991), C.F. Karsen (1952), F.H. Repelius (1924), M. Toma (1997) and the historical study by A.H. Meltzer (2000). An overview of the American monetary system before 1913 is presented by N.G.Pierson (1912), part I (pages 570-578) as well as by F.W. Taussig (1934, pages 354-387) and J.L. Laughlin (1919). For a description of the current System: see *Board of Governors* (1999).

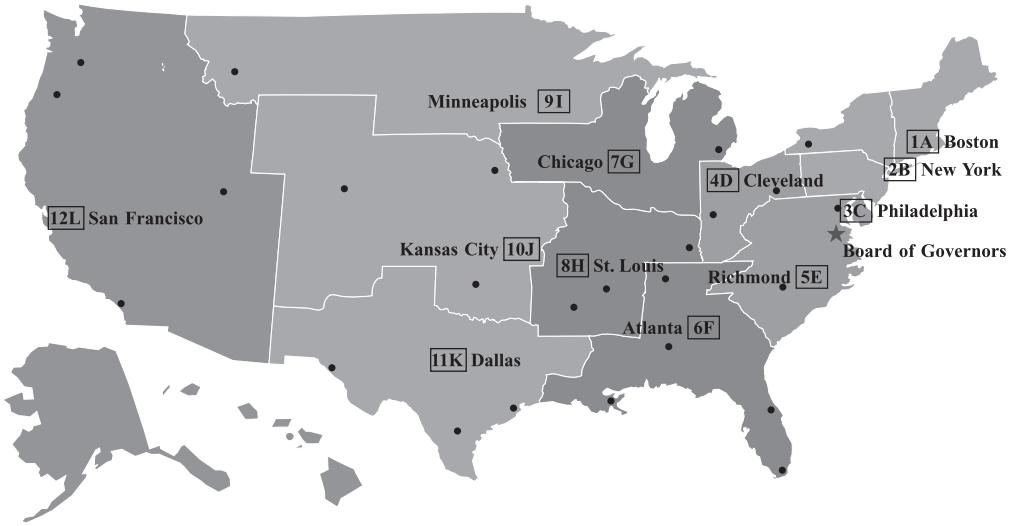
The Act of 1913 and subsequent legislation specify that the FRS and the Federal Open Market Committee (FOMC) must 'promote effectively the goal of maximum employment, stable prices, and moderate long-term interest rates'. These goals are set out in the Employment Act of 1946 and the Full Employment and Balanced Growth Act of 1978[3] although their wording offers considerable potential for interpretation and policy as was clear from our discussions.

1.2 The management of the Fed

The Federal Reserve System consists of the Board of Governors, based in Washington, and the twelve district Federal Reserve Banks each of which represents a district made up of several states and parts of states. There are twelve districts, numbered 1 to 12, covering the entire territory of the United States. Figure 1 shows the current geographical structure, which is almost the same as that of 1913. Table 1 sets out the economic significance of the districts in terms of their percentage of the gross domestic product of the United States at the end of 1997. It seems that there are only two Reserve Banks whose districts represent 11 and 20 per cent of the country's domestic product. Three Reserve Banks have a significance of one twelfth whereas the district of Minneapolis with 4.5 % is the smallest one.

[3] Also known, after its sponsors, as the "Humphrey-Hawkins Act".

Figure 1: The Fed's regional structure



Twelve Reserve Banks and their Branches*)

1 Boston	2 New York	3 Philadelphia	4 Cleveland	5 Richmond	6 Atlanta
	Buffalo		Cincinnati	Baltimore	Birmingham
			Pittsburgh	Charlotte	Jacksonville
					Miami
					Nashville
					New Orleans

7 Chicago	8 St. Louis	9 Minneapolis	10 Kansas City	11 Dallas	12 San Francisco
Detroit	Little Rock	Helena	Denver	El Paso	Los Angeles
	Louisville		Oklahoma City	Houston	Portland
	Memphis		Omaha	San Antonio	Salt Lake City
					Seattle

*) The 12 Fed-areas do not only have a number but also a letter: A for area 1, B for area 2, C for area 3, etc.

Table 1: Relative size of the Federal Reserve districts
(as a percentage of US GDP)

District name	No	Code	Share
Boston (Maine, New Hampshire, Massachusetts, Vermont, Rhode Island, Connecticut)	1	A	$5\frac{1}{4}$
New York (New York, Connecticut)	2	B	$8\frac{1}{2}$
Philadelphia (New Jersey, Pennsylvania, Delaware, District of Columbia)	3	C	$7\frac{1}{2}$
Cleveland (Ohio, Kentucky, West Virginia, Pennsylvania)	4	D	6
Richmond (South Carolina, North Carolina, Virginia, West Virginia, Maryland)	5	E	$8\frac{3}{4}$
Atlanta (Florida, Georgia, Alabama, Mississippi, Tennessee, Louisiana)	6	F	$11\frac{1}{4}$
Chicago (Iowa, Illinois, Indiana, Michigan, Wisconsin)	7	G	9
St. Louis (Arkansas, Mississippi, Tennessee, Kentucky, Indiana, Illinois, Missouri)	8	H	$5\frac{3}{4}$
Minneapolis (Montana, North Dakota, South Dakota, Minnesota, Wisconsin, Michigan)	9	I	$4\frac{1}{2}$
Kansas City (Wyoming, Colorado, New Mexico, Nebraska, Kansas, Oklahoma, Missouri)	10	J	5
Dallas (Texas, New Mexico, Louisiana)	11	K	$8\frac{1}{2}$
San Francisco (Washington, Oregon, California, Nevada, Idaho, Utah, Arizona, Alaska, Hawaii)	12	L	20

Source: authors' computations on gross domestic product data from U.S. Bureau of Economic Analysis, Regional Accounts Data.

The Board, as it has been known since the radical managerial reforms of 1933 in the direction of centralization in Washington, has seven members who are nominated by the President of the United States and confirmed by the Senate. The members hold office for fourteen years and may not be reappointed. If a Board member departs early, however, his replacement may be reappointed for a full term after serving the unexpired period. The chairman and vice-chairman of the Board are also nominated by the President and confirmed by the Senate. Candidates for these positions must be members of the Board or

be appointed as a member of the Board with a view to their position on the Board. The chairman's and vice-chairman's terms of office are limited to four years with the possibility of reappointment, as was recently the case with the chairman, Alan Greenspan. A staff of about 1700 people serve the Board. The Board does not have a Chief Operating Officer. The staff of the Board work in committees. There is no reporting to a single Board member, as is the case in the structure of the ECB.

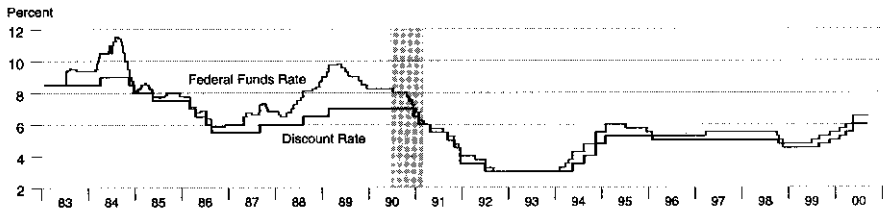
1.3 Federal Reserve Banks

The twelve district Federal Reserve Banks and their branches (25 in total) have a wide range of duties including processing payment transactions, supplying their districts with banknotes and coins, the supervision of "member banks" and providing services as banker to the US Treasury. Each Bank has to have its annual budget approved by the Board of Governors. Other expenditure such as the renovation of buildings and the salaries of the presidents and vice-presidents also has to be submitted for approval.

Each Reserve Bank has its own board of directors with nine members. These are divided into classes A, B, and C with three directors in each class. Class A directors represent the banks which are members of the System and shareholders of the local Reserve Bank, while the directors in classes B and C represent the public domain, as shown by the method of appointment which is as follows. The member banks in each district appoint the A directors by virtue of their shareholdings. The B directors are also appointed by the member banks but represent the district. The Board in Washington appoints the C directors, usually on the recommendation of the board of directors and the president of the District Reserve Bank. From the Class C directors the Board of Governors selects a chairman and deputy chairman. In turn, the nine directors appoint the president and vice-president of the District Reserve Bank, after approval by the Board of Governors. Each branch also has a board of directors, consisting of between five and seven members. The majority are appointed by the local Reserve Bank and the remainder by the Board of Governors. The counterpart for the Board and the board of directors at the district Banks is the Congress, under whose mandate the Board and the national policy of the FRS operate. The Reserve Banks make a regional contribution to this with their own economic data on the district and anecdotal information for background. The boards of directors, all of whom also hold prominent commercial or other positions in their day-to-day work, also have a role in this at a local level. The regional economic information collected by the Reserve Banks is incorporated into the *Beige Book* that each Bank issues

two weeks before the FOMC meetings in Washington. In addition, the board of directors of each Reserve Bank must make a recommendation to the Board of Governors on the discount rate every two weeks. A proposal for change can only be implemented after approval by the Board. The discount rate is used for discounting paper by banks to the extent that they wish to acquire liquid funds in this way. Nowadays, the symbolic function of the discount rate as a regional signal to the monetary policy centre in Washington is more important. Figure 2 shows a strong, although not a complete correlationship between the discount rate and the federal funds rate which is the FOMC's main monetary policy instrument.

Figure 2: Federal funds rate and discount rate



1.4 The banks

The American system refers to "depository institutions" which include commercial banks, savings banks, savings and loan associations and credit unions. Within the banks, a distinction is drawn between "national" banks chartered by the federal government and "state" banks set up under a licence issued by the states. National banks are automatically members of the FRS and are, therefore, referred to as "member banks". State banks may be members of the System but this is not mandatory; they are classified as "state member banks" or "state non-member banks". Irrespective of their "national" or "state" status, member banks are required to participate in the share capital of the District Federal Reserve Bank, up to a maximum of 3 % of their capital and reserves. An annual dividend of 6 % is paid on this. Voluntary membership is based on cost and benefit considerations. Table 2 shows information on the number of banks and member banks; it is clear that the numbers in both categories have fallen sharply in recent years, mainly as a result of concentration.

Table 2: Number and types of bank in the United States

Number	1993	1999
Commercial banks	11,233	8,798
of which:		
Members of the Federal Reserve System	4,332	3,472
of which:		
National banks	3,353	2,459
State banks	0,979	1,013

Source: Federal Reserve Bank of New York

1.5 The FOMC as a policy-making body

The System's most important policy-making body is the FOMC that is made up of the Board of Governors, the president of the Federal Reserve Bank of New York and the presidents of four other Federal Reserve Banks[4] who rotate with the other seven presidents according to a fixed schedule (Cleveland and Chicago rotate annually; the others every two years). The FOMC sets the "intended federal funds rate" and draws up instructions for the implementation of open-market policy. Open-market policy is the FRS's key instrument for managing money and credit growth by affecting conditions in the money market. In addition, the FOMC sets the acceptable limits for growth in monetary aggregates and issues guidelines for the FRS's transactions on the foreign exchange markets. The FOMC also gives a mandate to the Federal Reserve Bank of New York for the actual implementation of open-market policy and policy on the foreign exchange markets. All twelve Reserve Bank presidents participate in the FOMC meetings that are held every six weeks. Only the five presidents with voting rights and the seven Board members vote on proposed policy measures.

Until 1979, the FOMC had a target for money market interest rates and used open-market transactions to provide banks with reserves ("non-borrowed reserves") which were in accordance with the target. This policy strategy required a predicable relationship between the non-borrowed reserves and the supply of money that the public wanted to hold at a given interest rate.

[4] For the current year, these are the presidents of the Richmond, Cleveland, Atlanta and San Francisco Feds. Their alternates are the presidents of the Boston, Chicago, St. Louis and Kansas City Feds respectively. The alternate for the president of the New York Fed is the vice-president of that institution.

The rise in inflation during the 1970s led the FOMC to move in October 1979 to a target for non-borrowed reserves which was based on certain targets for M1. The combination of interest rate liberalization and the advent of financial innovations upset this relationship and, for this reason, short-term interest rates – in particular, the federal funds rate – have again become the key policy instrument since 1982. In practice, this is done by influencing banks' reserves via open-market transactions, so that the federal funds rate is aligned, as closely as possible, with the intended target for this rate set by the FOMC.

Open-market transactions are carried out by the Trading Desk of the Federal Reserve Bank of New York and they consist of buying and selling government securities, although if the portfolio dries up (a real possibility now as a result of disappearing budget deficits) other securities such as corporate bonds may be used. Fine-tuning is done in the form of "repurchase agreements" by which reserves are temporarily expanded by the Fed buying paper with the obligation to sell it back. The other technique is "matched sale-purchase transactions" in which reserves are temporarily restricted as the Fed sells paper with the obligation to buy it back.

In addition to the open-market and discount rate policies, the FRS uses the instrument of reserve requirements. All depository institutions must maintain a cash reserve (which does not earn interest of 10 % of their transaction deposits above a certain minimum level). Although this instrument is no longer used for regulating money growth, the required reserves play an important role in monetary policy. 'They do so because reserve requirements induce a predictable demand for balances at the Reserve Banks on a two-week average basis. As you know, depositoryinstitutions trade reserve balances among themselves every day at the interest rate called the federal funds rate. The Federal Open Market Committee sets a target for the federal funds rate that the Open Market Desk attempts to attain. The predictability of the overall demand for reserves is important in helping the Desk determine the amount of reserves to supply through open-market operations in order to achieve a given federal funds rate target. Because required reserve balances must be maintained only on an average basis over a two-week period, depositories have some scope to adjust the daily balances they hold for this

[5] A bill is currently being considered to provide for interest payment on required reserves to the extent that they are in the form of deposits at the Federal Reserve Banks. See 'Testimony of Governor Laurence H. Meyer before the Committee on Banking and Financial Services', U.S. House of Representatives, May 3, 2000.

purpose and this process helps stabilize the federal funds rate,' says Board member Laurence H. Meyer, supporting a new bill on this subject[5].

1.6 Supervision

In addition to the Board of Governors and the Federal Reserve Banks, there are a number of bodies with financial supervision duties in the United States, such as the Comptroller of the Currency, the Federal Deposit Insurance Corporation and the Securities and Exchange Commission. The Board of Governors and the Office of the Comptroller of the Currency supervise national banks. The Reserve Banks supervise the state member banks, all bank holding companies and the domestic activities of foreign banks operating in the district. The Federal Deposit Insurance Corporation supervises the state non-member banks. The National Credit Union Administration and the Office of Thrift Supervision (for mortgage institutions) are the supervisory bodies for the other depository institutions. The activities of all of these bodies are co-ordinated by the Federal Financial Institutions Examination Council.

1.7 Coins and banknotes

Coins are minted in Philadelphia and Denver. Banknotes are printed in Washington D.C. and Fort Worth, Texas. The district of issue as shown in Table 1 is printed on every banknote. Coins and banknotes are stored at the Federal Reserve Banks and their branches for distribution to the depository institutions which deposit their surplus cash with the Fed of their own district for credit in a current account. The banknotes appear as one of the liabilities in the summary balance sheet of the FRS. The same procedure is followed by the ESCB.

Section 2 Discussions at the Federal Reserve Banks

The discussions took place in January and April 2000 using a standard framework that covered the following points:

(1) the influence of the Federal Reserve Banks' contribution to policy discussions and policy formation within the FOMC;
(2) the significance of regional inflation differences on the policy of the FRS;
(3) the ability of the Reserve Banks to raise their profile within the System, with particular emphasis on the role of their Economic Research Departments.

Various other subjects were also discussed, prompted in part by specific areas of expertise. Examples of these are the role of fiscal transfers in stabilizing business cycles in the United States, monetary transmission and the extent of centralization and decentralization in the System. The discussions are presented in chronological order. The tour was concluded with a visit to the Board in Washington.

2.1 Discussion at the Federal Reserve Bank of Boston[6]

Standard subjects

2.1.1 FOMC

Discussions at the FOMC are fairly informal and not determined to a great extent by the voting presidents. Mainly the chairman of the Federal Reserve, Mr Greenspan, sets the tone of the meeting. Each of the twelve Reserve Bank presidents can have their say, after which the chairman summarizes what he has heard and follows up with policy recommendations. Formally, financial stability, including price stability, plays no special role in the discussion but it is in the minds of all those present. Each participant in the meeting sees the strength of his reasoning as very important. The quality of the argument is enhanced by the personality of the Reserve Bank presidents, their knowledge of matters and the way they use their own research departments.

2.1.2 Specialization

The Economic Research Department has twelve economists who focus mainly on policy and anticipate new developments. They also pay

[6] Lunchtime discussion. Present: Ms Lynne E. Browne, Scotch Schuh and various members of staff from the Economic Research Department and the Supervision Department.

considerable attention to providing information to the public in the district in support of and, if possible, to strengthen the FRS's policy credibility. The lines of research followed are regional and address the economic situation in New England. The department also has an advisory role, for example to local authorities, but this is always done on request. It does not push itself forward, but works on the principle that 'they must do the work'. The researchers come from varied backgrounds. Although the famous universities of Harvard and MIT are nearby, it is not the case that they provide most candidates. Economists from those universities usually prefer a position in Washington, where there are over two hundred economists on the staff performing academic research and the preparatory work on national monetary policy for the Board of Governors. As a rule, the Reserve Bank of Boston attracts economists from all parts of the United States although, recently, two economists were recruited from Harvard.

2.1.3 Regional differences in inflation

Regional differences in inflation are of little concern partly because there is almost no statistical information available on this. The Boston Fed has only regional figures on asset price inflation. These figures are purchased from private consultants who offer such data. Attention is paid to the trend in local house prices, which are strongly affected by the state of the economy. The high degree of mobility of labour means that many people are attracted to the Boston district when there is good economic growth, as at present, and so the prices of houses and other real estate are rising sharply. Regional inflation figures have no role at all in national monetary policy and there is no view on them. Regional information that is discussed during FOMC meetings relates to trends in production and employment and adds background to the general economic and monetary scene for the United States as a whole.

Other matters

2.1.4 Fiscal transfers

Employment has a prominent place in the analysis of regional economic developments. The research department is very clear in its doubts as to the success of EMU in Europe in the longer term. The United States is very different to Europe, not only because of higher mobility of labour but also because of the significance of fiscal transfers. US fiscal policy is clearly determined regionally but this will be difficult to achieve within the European Union, at least while the fifteen individual EU member countries determine, each individually, fiscal and expenditure policy.

2.2 Discussion at the Federal Reserve Bank of Philadelphia[7]

Standard subjects

2.2.1 FOMC

In preparation for FOMC meetings, the Economic Research Department issues its own national forecast which includes variants on the Board of Governors' forecasts, supplemented by the district's own insights into interest rates, inflation and economic growth. When the FRS was set up, the Reserve Banks were given their own discount rate instruments but increasing financial integration created a national capital market so that joint action became more effective and this led to the creation of the FOMC in the 1930s. During its two-weekly meetings, the board of directors of the Bank makes proposals for changes to the discount rate; a change can only actually be implemented with the approval of the Board in Washington. The Board could not easily ignore a unanimous recommendation by the twelve Reserve Bank presidents. If the Board approves a proposal for change, the discount rate is maintained in any event until the next FOMC meeting. Arbitrage being absent, there is no logical relationship between the federal funds rate and the discount rate. However, the two rates often move in step; at 0.8, the correlation seems to be fairly strong. District economic information has a very small role in the FOMC's discussions, but increases in importance if it takes on a national dimension. The discount rate has lost importance as a monetary policy instrument and its significance lies mainly in its function of district involvement.

2.2.2 Specialization

The research department specializes in half-yearly interest rate and inflation forecasts. This came about for historical reasons. In 1946, the columnist J.A. Livingstone started the *Livingstone Survey* which contained forecasts by economists working in industry, the government, banks and universities. After his death, the Philadelphia Fed decided to take over publication of the *Survey* and, as a result, obtained a database covering fifty years. The department uses the database for further research, including into inflation forecasts for the coming ten years. These forecasts are used in the FOMC meeting.

Between the Reserve Banks a certain degree of rivalry cannot be denied, although not to excess. There is more competition with the universities. In

[7] Present: Rick Lang, Senior Vice President and Director of the Economic Research Division, Stephen Meyer, Vice President and Associate Director of that department and (during lunch) Mr Charles Mason of the Division of Consumer Prices and Price Indexes of the Bureau of Labor Statistics.

Philadelphia, the research department has three tasks: economic research, 'economic education' in the district and beyond and preparatory work for the president for FOMC meetings. The aim is for economists to be able to take each other's places. An economist working on monetary policy should be able to understand 'all the different views' and so there is an attempt to employ economists 'from all schools of thought'. The head of the department himself joined in 1980 from the then monetarist Reserve Bank of St. Louis. He has set up a rotation system, under which every researcher carries out long-term and policy research. When he arrived in Philadelphia, almost all the economists had left. His job was to ensure that that did not happen again and this led to his strategy that specialization should not be excessive and that the research orientation was maintained. Each economist has to publish at least one article a year and attends the preparatory briefings for FOMC meetings two or three times a year. There are no directives from above. Over the longer term, the proportion of policy work and basic research is about fifty-fifty. In addition to a number of district newsletters, the department publishes its *Business Review* six times a year and academic contributions in the form of *Working Papers* which are expected to appear in serious journals. The Reserve Bank also acts as an adviser to local communities. This is only done on request; 'We don't do the work for them'. The body asking for advice does the research but the staff of the Bank offer comments and act as a sounding board. In the past, the Bank acted for instance as adviser, using its specific expertise, to the city of Philadelphia that faced financial problems and had entered on research to find a solution.

2.2.3 Regional differences in inflation

In Philadelphia, too, regional inflation data have no significant role in the preparations for FOMC meetings. Revisions to the national Consumer Price Index (CPI) started in 1996 and are expected to be complete in 2000. They are carried out every ten years to keep the index accurate. The most fundamental and visible activity in each of these CPI revisions is the introduction of a new "market basket" or set of expenditure weights attached to the categories of goods and services comprising the CPI. In addition to these systematic revisions, there are regular methodological improvements in the spirit of the Boskin report, such as the quality of new cars after model changes in 1967, the move to flow-of-services measures of the cost of owner-occupied houses in the early 1980s and the implementation of regression-based methods for quality adjustments of apparel prices in 1991.[8]

[8] Comprehensive documentation on this is given in 'Overview of the 1998 revision of the Consumer Price Index', *Monthly Labor Review*, December 1996.

Other matters

2.2.4 Fiscal transfers

Fiscal transfers in the United States are important as automatic stabilizers but they are often not given that name or regarded as such since they occur as welfare payments, social security contributions, etc. Discretionary policy actions depend on the actual situation in a given state. The great advantage of the federal structure is that rich states automatically receive more in tax proceeds than they have to spend while, in contrast, poorer states pay out more than they receive in tax. On average, state budgets should be in balance for current items. Transfers between the two groups of states are made using "accounting standards" which, while they are not set by the federal government, are applied nationally.

2.3 Discussion at the Federal Reserve Bank of Richmond[9]

Standard subjects

2.3.1 FOMC

In Richmond, the Economic Research Department is systematically involved in the preparations for FOMC meetings. The strongly hierarchical structures of the German *Bundesbank* and Austrian *Nationalbank* are not regarded as a productive approach for properly coaching the president. The president maintains close contact with the department ahead of FOMC meetings in Washington in order to be prepared for any kind of issue. He is accompanied to FOMC meetings by the head of the research department, 'who understands the debates'. Part of the economists' job is to communicate well with the president :'communication is very important'. Even if the president is himself an economist (Mr Broaddus was formerly head of research at the Reserve Bank of Richmond), he can soon lose touch with the details because of his position at the Bank, a reason for him to be effectively updated. 'In arriving at his position, the president needs to hear the diversity of arguments only a research department can make.' Debriefings after FOMC meetings are restricted to a small group, because of the confidential nature of the information and to minimize the risk of leaks, which have happened in the past. As a rule, the chairman of the Fed visits the Reserve Banks once every two years to keep in touch.

[9] Present: Bob Hetzel, Senior Vice President of the Economic Research Department, Jeff Lacker, John Weinberg, John Walter, Pierre Sarte, Roy Webb, Ray Owens, all Senior Economists in the Economic Research Department; reception by president Al Broaddus. As early as 1924, in his thesis *Het Federal Reserve System in de Vereenigde Staten*, F.H. Repelius regarded the Richmond district as unnecessary since the eastern seaboard had too many Reserve Banks at the expense of the west.

The effectiveness of a Reserve Bank president's performance in the FOMC depends much on his personal contribution, the strength of his argument and his method of presentation. In the discussions, the president is guided by considerations of national importance. Regional price differences are not discussed; he regards them as monetarily irrelevant. If the Board in Washington champions a monetary policy that would clash with economic developments in the district, the president would generally go along with it. However, Mr Broaddus believes that it is very important to bring the policy across to the public as, in the end, the credibility of the FRS is involved. Educating the public is seen as being very significant and, in this context, great importance is attached to translating the message into "plain English".

The *Green Book* and the *Blue Book* play an important role in the preparations for FOMC meetings. The *Green Book* contains forecasts for the national economy. The *Blue Book* sets out various targets for the federal funds rate (including the current rate) that the FOMC can choose between. Each target is accompanied by the appropriate forecast for growth in monetary and credit aggregates. One of these targets is consistent with the forecasts in the *Green Book*. At the moment, the FOMC is paying more attention to the *Green Book* than the *Blue Book* which had been important when the FOMC concentrated on a target for monetary expansion, a method which, given the procedure followed by the German *Bundesbank*, 'will be the relevant one for the ECB'. There is also the *Beige Book* that systematically brings together the regional information provided by the district Reserve Banks for the FOMC meeting.

2.3.2 Specialization

The research department has about ten economists. Basic research is regarded as important not only with a view to recruiting new economists, but also for extending the sounding board for the policy discussions in the FOMC. The FRS was under severe criticism in this respect in the 1970s, which is why the Reserve Bank of Richmond does less of the rather superficial policy analysis and more, deeper theoretical research, partly with the aim of being on more equal terms with academic work at the universities. In addition, historical comparative analyses are made with a view to giving a degree of nuance to policy analysis. The orientation is monetarist. Quite separate from the specialized research, there is also functional specialization throughout the System. In Richmond this is information processing (FRAS). This type of specialization is a result of the wish to avoid duplication of effort within the System by making use of the comparative advantages of the Reserve Banks.

Other matters

2.3.3 Fiscal transfers

The state budgets are relatively unimportant. Redistribution of resources at the federal level does have a role as shown from a speech by Mr Broaddus, which states that '… the automatic inter-regional fiscal transfers that accompany and mitigate many asymmetrical economic and financial shocks in the US do not exist to any significant extent in the Euro area.'[10]

2.3.4 Ideas on the ESCB

Taking up on this speech, the president wonders whether the ESCB's institutional structure and public support will be enough to ensure the independence of the system in the longer term. The following notable passages are quoted:

Box 1 *Mr Broaddus' view on the ECB*

'The Eurosystem's structure – at least on paper – might reasonably raise concerns about its future prospects. In fairly sharp contrast to the Fed, the Eurosystem's central unit, the ECB and its Executive Board – again, on paper – appear relatively weak within the structure. The system's principal monetary policy-making body is the Governing Council. Unlike the FOMC, where voting Reserve Bank presidents are in a permanent minority, all 11 NCB governors are permanent voting members of the Governing Council and are therefore a permanent majority on the Council. Of particular importance, the NCB governors determine the ECB's operating budget and hence its access to staff and other resources. With these points in mind, some might argue that, in fairly sharp contrast to the Fed, the balance of power in the Eurosystem rests with the dispersed elements rather that the central element.'

Another weakness, according to Mr Broaddus, is that the ECB has no supervisory role:

'While the Reserve Banks participate importantly in each of these areas, the Board of Governors has final authority and exercises it actively. The Board has taken a keen interest recently in ensuring that Reserve Banks effectively coordinate their examinations of the emerging large "megabanks" that operate in two or more Federal Reserve Districts. This is an issue the Eurosystem may confront as EMU stimulates additional cross-border bank merger activity.'

Finally, the president offered some recommendations 'with the conviction born of nearly 30 years of service at a regional Federal Reserve Bank':

'First, the Governing Council and its NCB governor majority *must act to strengthen the real authority of the ECB* and its president. It is difficult to see how the Eurosystem can

[10] J.A. Broaddus, Jr., 'EMU and the Role of the National Central Banks in the Eurosystem', remarks before the Cornelson Lecture in Economics, Davidson College, Davidson, North Carolina, on April 14, 1999.

build credibility for EMU and its monetary policies unless the euro-area public has a clear sense of affirmative leadership at the center. Moreover, if the Governing Council is to meet the challenge of producing a viable monetary policy for all of the euro-area, it will have to function effectively, which means achieving consensus within a group virtually certain to reflect a wide range of conflicting viewpoints. If FOMC experience is any guide at all, achieving consensus will be challenging. This is all the more likely in that the NCB members of the Council represent sovereign nations. Two steps that would facilitate consensus building at any particular point in time would be (1) establishing a highly competent and adequately manned professional ECB research staff and (2) using this staff to develop, in conjunction with existing NCB staffs, a state-of-the-art analytical framework for Eurosystem policy deliberations. Above all, the Governing Council should allow the designated Eurosystem leader, the ECB president, to be the leader in fact, both internally in Governing Council deliberations and externally as the System's dominant spokesman in relations with other European organizations, member governments, and the euro-area public.

'Second, in addition to strengthening the ECB and its president, I respectfully suggest that the NCBs and their representatives on the Governing Council need *to function more like Federal Reserve Banks and their presidents* than they might naturally be inclined to. I say this not out of excessive pride in the role of the Reserve Banks and the presidents, but simply because the NCBs and their leaders now confront circumstances quite similar in many important respects to those the Reserve Banks confront. In no sense does this imply that the NCBs should become fundamentally weaker elements of the Eurosystem. On the contrary, NCBs must continue to monitor and analyze economic conditions in their respective member nations, and they must present this information accurately and objectively in Governing Council meetings. Beyond this, however – and this may be the most challenging part – the NCB governors will need to develop a euro-area-wide perspective that transcends narrow national interests and focuses on the determination of policies in the best interest of the euro-area economy as a whole. Further, the NCB governors should present this perspective and "sell" it to their respective national governments and publics. In short, the NCB governors, like the Reserve Bank presidents, must not only represent their respective regions – in their case, countries – in the Eurosystem, they must also represent the Eurosystem and its policies in their countries.

'Finally, I believe *a greater degree of transparency* would strengthen the Eurosystem and its public support. Federal Reserve transparency has increased in recent years and has served us well. We now announce FOMC policy changes immediately after they are made. We release relatively complete minutes of FOMC meetings, including individual member votes, about six weeks after a meeting. The Chairman testifies before Congress more frequently and on a wider array of topics than in years past. And with the rapid growth of new financial news media, the public comments of Fed governors, Reserve Bank presidents and other senior Fed officials are much more widely disseminated than before. Even so, an argument can be made that still greater Fed transparency, such as earlier release of the minutes, is desirable. As is well known, the Maastricht Treaty imposes only limited reporting requirements on the Eurosystem. This appears to reflect in part a laudable desire to insulate the NCB representatives

from political pressure from their respective governments. The cost, however, could be a broad perception among member states' publics that the ECB and its monetary policy process are remote, secretive, and elitist. Ultimately, such sentiment may be the greatest single threat to the success of EMU. The ECB president currently holds a press conference immediately following the first Governing Council meeting each month, which helps clarify and explain Eurosystem policy decisions – a highly useful practice in my judgement. There are no plans, however, to publish minutes of Governing Council meetings nor to make public the votes of individual members. In my option, the latter two steps would help convey to the public a reassuring sense of the reasoning and debate in the Governing Council.'

The minutes of the FOMC meetings aim at a high degree of openness in this respect as shown from a recent report in which president Broaddus is named explicitly as a "dissenter" in the voting on the guideline on intervention in the foreign exchange market (Foreign Currency Directive) which, in his opinion, would endanger the effectiveness of monetary policy: 'He continued to believe that the Federal Reserve's participation in foreign exchange market intervention compromises its ability to conduct monetary policy effectively. Because sterilized intervention cannot have sustained effects in the absence of conforming monetary policy actions, Federal Reserve participation in foreign exchange operations in his view risks one of two undesirable outcomes. First, the independence of monetary policy is jeopardized if the System adjusts its policy actions to support short-term foreign exchange objectives set by the Treasury. Alternatively, the credibility of monetary policy is damaged if the System does not follow interventions with compatible policy actions, the interventions consequently fail to achieve their objectives, and the System is associated in the mind of the public with the failed operations.'[11]

2.4 Discussion at the Federal Reserve Bank of Cleveland[12]

Standard subjects

2.4.1 FOMC

According to the president, Mr Jordan, he worked previously at the Federal Reserve Bank of St. Louis, developing its monetarist model the Reserve Bank presidents often use regional information to raise matters of national

[11] Minutes of the Federal Open Market Committee, February 1-2, 2000, 3/2400, p. 7, Washington D.C.

[12] Present: Jerry L. Jordan, President, Mark S. Sniderman, Senior Vice President and Director of the Economic Research Department and five Senior Economists from that department.

importance for discussion in the FOMC. They 'do not know' which participants are entitled to vote at the FOMC meeting. It is absolutely impossible for an outsider to see who the voting members are because of their active contribution to the discussions. For matters not involving monetary policy, the presidents have a consultative body (the "conference of presidents") where subjects such as the purchase of computers, software, renovation of buildings, etc. are discussed. If large amounts are involved, they have to be approved by the Board in Washington. Unlike the ECB, the FRS does not have an explicit inflation target but in compliance with its statutory objectives, it also pays attention to growth and employment. This is what Mr Jordan calls the 'broader' approach which he thinks is better than concentrating on price inflation as a quantitative monetary goal so that, in his opinion, discussion and judgement of monetary policy remain the principal business, avoiding a one-sided fixation on figures. Like the Feds of St. Louis and Richmond, the Reserve Bank of Cleveland is, at least as far as the president is concerned, a follower of the monetarist school. This implies that inflation is a monetary phenomenon. Reference is even made to the ideas of the Austrian economist, von Mises. The monetarist view in Cleveland is, as noted, determined entirely by the president.

2.4.2 Specialization

The Reserve Bank has some kind of specialization. Its ruling philosophy is decisive when looking for research staff consisting of about fifteen economists. There were times when the district presidents were poorly trained in economics but this is different now, partly because the Board in Washington needs a heavyweight team. The Cleveland Fed publishes a monthly newsletter (*Economic Commentary*) and an academic journal (*Economic Review*). In addition, there is an annual report with a policy statement by the president.

2.4.3 Regional differences in inflation

The Bank is not particularly interested in regional price differences since they may not be of a monetary nature but a temporary reflection of differences in scarcity. In the FOMC, asset price inflation is seen as a particular threat to monetary stability. Mr Jordan wonders what the definition of price stability is. According to him (and Mr Greenspan) price stability implies that economic decisions are not distorted by inflationary expectations. Elaborating on this – fully in line with Austrian tradition – he brings up trends in labour productivity. An increase in this raises future incomes, something which rational economic beings anticipate in their spending decisions; in other words, growth in spending created in this way has to be financed monetarily.

This means that it is dangerous for a monetary authority to rely only on price stabilization. The FOMC's broader approach is relatively new. Chairman Greenspan is regarded as a little too Keynesian ('he is guided very much by the marginal propensity to consume').

Other matters

2.4.4 Fiscal transfers

There are fiscal transfers in the form of all kinds of social payment, but they are not regarded as very significant. The situation in the United States seems to be entirely different from that in Europe. In the latter, the populations of some countries are actually falling whereas the population in the United States is increasing, so that there is adequate supply in the labour market. The differences in national pension systems between the European countries are regarded as a major problem for the future which sooner or later will make its mark on the approach to budget deficits in the EMU context. The German economist J. von Hagen[13] puts the net gains from a federal system into perspective with reference to the situation in the United States, where he says the 'interstate insurance' from the federal budget is heavily exaggerated. The Cleveland research department does not share this view, however. Von Hagen is only telling half the story by relying on data from a period when the United States was already a unitary state. Each time one of the states really gets into financial problems, a mechanism starts operating that, in any event, has its roots in the federal structure of the country. The reason why fiscal transfers as such are put into perspective is probably that their significance is set against the high mobility of labour which, of course, eases the necessity for resource transfers. Mobility of labour is encouraged by the existence of a flexible rental market for homes in the United States.

2.4.5 Supervision

Banks are supervised by the Reserve Banks and other bodies. The location of the head office determines which Bank carries out the supervision. There are doubts about the effectiveness of this system. Increasingly, the location of the head office is chosen 'to satisfy local politicians', while the management is really somewhere else. As a result, relevant activities avoid examination as formally nothing happens at the head office where supervision is exercised.

[13] See J. von Hagen (1992)

2.5 Discussion at the Federal Reserve Bank of Chicago[14]

Standard subjects

2.5.1 FOMC

The Economic Research Department meets in the week preceding an FOMC meeting and the economists give the president their views of economic activity in the Chicago district, with agriculture, industry and the financial sector being the main areas of interest. They use four models for forecasting inflation in the national economy: a model based on production potential, a diffusion model, a time-series model and a model which uses national interest rates. Regional data on employment and inflation are obtained from Washington and it is possible, if desired, to disaggregate the figures to county level. During the pre-briefing, economists and their research assistants try to answer the question of 'how to strategize for the meeting'. The real briefing then takes place attended only by the senior economists (with 'class 1 clearance'). The discussions are based on the documentation from Washington: the *Green Book* containing national forecasts and the *Blue Book* setting out policy options, one of which the FOMC chairman selects as the central policy recommendation. Based on this, the department draws up the "regional statement" for the president in which he sets out his own policy recommendation. He may modify his recommendation during the FOMC meeting, according to the comments of the other Reserve Bank presidents. With respect to the voting procedure, the voting presidents – Chicago rotates with Cleveland and has voting rights every other year – do not take a special position. The rotation system was introduced to prevent coalitions being formed among economically similar states. A third party should have no idea of which of the twelve presidents have voting rights. Each president has an equal say on the policy and on Mr Greenspan's recommendations. Of course, the presidents know which of them is entitled to vote. There is an internal list which sets this out but it is not evident from the discussions in the FOMC. After the meeting, a debriefing is held at the research department attended by the president and, for confidentiality, only the senior economists. One aim of this is to set the relevant policy matters for the following FOMC meeting.

Open-market transactions are carried out by the Federal Reserve Bank of New York which tries to keep the federal fund rate at the intended level. From

[14] Present: William C. Hunter, Senior Vice President and Director of Research; Daniel G. Sullivan, Senior Economist and Vice President; Michael A. Kouparitsas, Senior Economist Macroeconomic Policy; Thomas H. Klier, Senior Economist and Douglas D. Evanoff, Senior Financial Economist and Vice President.

the point of view of national monetary policy, the discount rate has little significance beyond its obvious signal function. The rate is of course important to banks which borrow money (micro-effect). If a bank were to make a permanent call on the rediscount facility, there would be a case for prudential supervision. The Reserve Bank of the district where the bank is established would be wondering whether that bank is following a sound internal policy. The relationship between the discount rate and the federal funds rate is fairly strong, although there is no general causality. A change in the discount rate without the federal funds rate changing at the same time almost never happened although, in contrast, the opposite is often the case.

2.5.2 Specialization.

The Economic Research Department consists of five groups:

1 The macroeconomic section where empirical macro-models are developed with professors at the University of Chicago (e.g. Nobel Prize-winners Lucas and Gordon (NAIRU and the Phillips Curve)) and from North Western University (Hall, consumption function) being consulted as advisors.
2 The microeconomic section which is mainly engaged in regional research into taxation, migration and the economic development of the Midwest.
3 The banking and financial regulation group looking at the regulation of exchanges and financial institutions (partly because Chicago is the second financial centre of the United States after the Reserve Bank of New York), analysis of the structure of the banking industry and competition between banks. The Chicago Fed is highly specialized in this field and organizes an annual conference.
4 The international section: this performs economic and monetary analyses of areas outside the United States (including the ECB, its policy and significance in payment transactions).
5 The statistical section representing about half of the Economic Research Department.The research activities are determined to a great extent by the president's interests. The previous president had limited ideas in this respect. He did not want to enter into discussions outside, and so, for example, Milton Friedman – still one of the most famous of the Chicago economists – never visited the Chicago Bank. This is now completely different. There is no strict segregation between policy-based and other research. Some economists spend 90 % of their time on policy work and 10 % on empirical research, while for others the ratio can be exactly the reverse. There are also economists who only do research. Each year, every economist is expected to submit at least one *Working Paper,* an article for the *Economic Perspectives* and a contribution the *Chicago Fed Letter*

which appears once a month. These publications that comment on academic and policy research activities make the FRS's national monetary policy accessible externally. This has a clear objective of raising the profile.

Raising the profile is clearly an aim. In the recent past, economists from abroad (Bank of England, *Banca d'Italia*, and also economists from Japan and Korea, for example) have carried out research at the Chicago Bank as "visiting scholars" for terms ranging from a week to six months. As is the case for all Reserve Banks, articles that appear in *Economic Perspectives* must be submitted for approval by the Board of Governors in Washington to avoid statements in conflict with national monetary policy. The Bank also has a "Speakers Bureau" that makes available economists, armed with hand-outs and video material, to all types of regional institutions (municipalities, trade associations, educational institutions and also work-related and religious organizations) to speak on current economic events and the banking industry. The presentations are free and the Fed pays for accommodation if necessary.

The competitive element between the Reserve Banks is very clear, like that between universities. In Chicago the research department tries to be the best by attracting leading economists, although they are not excessive in this. Specialists from the Reserve Banks see each other regularly at FOMC meetings where their work is discussed. They analyze monetary shocks, research employment problems and in addition there is also supervision. Much depends on the attitude of the Reserve Bank president, although the board of directors is also clearly involved in the strategy marked out by the research department. The relationship with the economic staff in Washington is described as 'competitive in a co-operative way'. There are regular seminars and the economists hold evening tutorials at one of the many universities in Chicago. This creates an active exchange of thoughts 'which keeps the staff refreshed'. The staff consists of twenty-eight post-graduate economists who have a wide range of subjects. Chicago comes second in district research (after New York).

2.5.3 Regional differences in inflation

The district's inflation figures are 'just a piece of information' for the FOMC. They are not a concern for monetary policy and disappear as a result of labour and capital mobility. The Federal Reserve has several goals and focuses on price stability and growth since sufficient employment is being created. There is no regional price index although one could in theory be made. Nevertheless, differences in inflation can attract the attention of the FOMC if

several presidents speak in similar terms on price developments in their districts. In this context a comparison is made with Cleveland which had been a very prosperous area in the past (the home of the Rockefeller Oil Company and a number of very large steel companies) and which in economic terms has been gradually overshadowed by the Reserve Bank of Chicago. A certain rivalry between the two cities cannot be denied. The department clearly has more interest in regional differences in inflation than its colleagues at the Reserve Banks of Boston, Philadelphia and Cleveland.

Other matters

2.5.4 Evaluation of the research

Self-evaluation is a significant activity. All the economists' activities are described yearly in a report. In the previous year, the department had organized 15 conferences and wrote no fewer than 350 speeches. After approval by the board of directors, the report is sent to the Board of Governors in Washington where it is examined thoroughly by the staff. The FRS has a classification system on a scale from A to D with A at the top. The Chicago research department is classified as A. The evaluation reports differ from district to district in terms of content and size. The Governors in Washington can reduce a classification if they think, for example, that certain articles have not come up to current academic standards in terms of content or if certain activities that the Board regards as relevant are not adequately explained. This activity by Washington does not go unchallenged.

2.5.5 Fiscal transfers

Fiscal transfers do not have a large cyclical effect. In some situations, they occur as a result of particular political initiatives (by members of Congress), but this is not a form of cyclical policy and they definitely do not form part of a 'grand political design'. Discretionary budget decisions work through the economy with a delay. Federal government support for a given state has to be requested repeatedly. The government then holds consultations and negotiations with the state concerned, so that resources are provided only after a length of time. The federal government grants discretionary help only in the case of serious shocks. The research department gives no clear support to the argument that budgetary policy works countercyclically in the federal structure.

2.5.6 Mobility of labour

The very high mobility of labour in the United States has a historical background. For 200 years, Americans have been moving to new areas. It was the way the country was built up. Today, immigrants still come to the United

States from all parts of the world. The degree of mobility is determined not only by the availability of employment, but also by regional pay differences. Apart from that, mobility is encouraged by the American mentality to 'take care of yourself'. This mobility means that regional differences in inflation are mainly temporary except in the case of non-tradables, such as agricultural land and real estate, where they are longer lasting. This is not a monetary phenomenon, however, but a result of differences in scarcity and relates, therefore, to relative prices, and they cannot be a matter for monetary policy.

2.6 Discussion at the Federal Reserve Bank of Atlanta[15]

Standard subjects

2.6.1 FOMC

The Reserve Bank presidents prepare for FOMC meetings completely independently of each other. They do not telephone or consult each other in advance and each makes his own preparations with his own staff. Differences of opinion may occur in two ways: (a) at the local Reserve Bank itself, between the board of directors and the president. It is possible for example that the president does not agree with the policy ideas put forward by the directors on the basis of their own regional information. If the board of directors continues to disagree with the president, the Board of Governors in Washington is informed; (b) a Reserve Bank president can disagree with Mr Greenspan, in which case, resolution is always sought, certainly if the president concerned has a vote. If the five voting presidents do not agree with Mr Greenspan, a discussion is held behind closed doors for as long as necessary ("moral suasion") until a majority for a policy decision is found.

The president takes note of regional information provided by the board of directors but is expected to think nationally and to formulate his policy recommendations from that viewpoint. The federal funds rate is much more important than the discount rate. There can only be a change in the discount rate if one of the twelve presidents makes a proposal on which the others must have an opinion, too. In this connection, the *Beige Book* containing regional and anecdotal information, plays an important role. Telephone calls are used to create a degree of standardization in the information. It is very difficult to assess the extent to which the regional information presented during FOMC meetings changes Mr Greenspan's opinion.

[15] Present: Jack Guynn, President, Robert Eisenbeis, Senior Vice President and Director of the Economic Research Department and various members of his staff.

The president of the Reserve Bank of Atlanta, Mr Guynn, does not see a clear shift in the quality of the Reserve Bank presidents. During his long presidency there has always been a 'hard core of people with well-considered opinions'. He recalls that one of Mr Greenspan's predecessors (William Miller) could not operate on 'collegial terms'. He came from the business world, moved to politics and acted at the Federal Reserve as if he was running a commercial business, with little feeling for strategy and policy-based operation. The president notes that many of his colleagues remember the 1970s (high inflation) and mid-1980s (high unemployment) only too well. This has been a clear economic lesson to them, even to those who were not economists. Mr Guynn admits that he wears two hats in his work. As president of the Atlanta Fed, he alone is responsible for the work at his own bank while, as a member of the FOMC, the national interest has to prevail. The two functions do not conflict, however. He relies strongly on the expertise of his staff, but is well aware that, in the end, he alone decides on what he raises in the FOMC meeting.

2.6.2 Specialization

The president has a significant voice in the nature of the research ('the golden rule applies'). The research department carries out economic modelling (VAR models) and also maintains contact with economists of other Reserve Banks who do empirical research. Other research topics are working conditions and economic developments in Latin America, although the Reserve Bank of Dallas has the most expertise in this area. With a view to the growing economic and financial links between the United States and Latin America, the Reserve Bank of Atlanta recently set up the Latin American Research Group (LARG). The interaction between the Reserve Banks and the FRS gives a diversity of ideas which maintains the independence from politics, and the research departments of the Reserve Banks have a clear role in this sense. With respect to functional specialization, it has also been given a mandate by Washington for research into funds transfers, which are regarded as being in decline in view of advances in funds transfer technology.

2.6.3 Regional differences in inflation

In an integrated economy, regional price differences are merely a reflection of relative scarcity and are, therefore, irrelevant to monetary policy which, of course, focuses on the general price level. Distortions as noted in the Boskin report are taken into consideration, especially in periods of low inflation (e.g. 1.5 %) when the relative significance of the distortions is large. A feature of the FRS is that the Congressional mandate goes much further than controlling inflation so that the System is less politically vulnerable and monetary leeway

is greater. Besides price stability, there are many other policy objectives: economic growth, employment and low interest rates, each of which has a different priority at any given time; in other words the "revealed preferences" change over time. The phenomenon of asset price inflation is interesting in itself, but it is not an element of counter-inflationary policy. District price information is used 'to develop insight in forecasting the national inflation rate'. The economic importance of the Atlanta district appears from its share of 11 % of the national GNP. Tourism is a very important sector.

Other matters

2.6.4 Fiscal transfers

Although in the European Union fiscal federalism does not exist, a common view in Atlanta is that the market there will force the necessary adjustment mechanisms after a long and painful process of adaptation. The high mobility of labour in the United States has, indeed, a counteractive effect but, in the end, such a mechanism will also arise in Europe under pressure from the free market.

2.6.5 Issue of targets

Some economists would be happy with a quantitative target. There are, however, members of the Board of Governors who oppose this since announcing a target could be seen as being in conflict with the Congressional mandate that forbids such a statement. The current 'vaguely defined objectives' often lead to 'fuzzy language' so that commenting on district policy is difficult. In this connection, every Reserve Bank president has to be very involved in his district to keep as closely in touch as possible with what is going on there.

2.6.6 Supervision

Over the long run, supervision is moving in the direction of centralization. Currently the location of a financial institution's head office determines which Reserve Bank carries out the supervision, but this is not working well. San Francisco has, for example, only two or three head offices, Minneapolis and Dallas have none and there are only two in the Atlanta district.

2.7 Discussion at the Federal Reserve Bank in San Francisco[16]

Standard subjects

2.7.1 FOMC

The Economic Research Department informs the board of directors on the situation in the real economy every two weeks A monthly briefing is held for the four local branches. The staff have no direct influence over the nine directors who make a proposal on the discount rate, based on their assessment of real economic developments in the district. There is a strong correlation between the discount rate and the federal funds rate, more so than say ten years ago. Discount rate changes have primarily a symbolic meaning, 'It is just a way to express the Fed's view on future monetary policy'. The discounting volume is modest since banks regard calling on this facility as a sign of weakness. The two-weekly period is set by law. The frequency could easily be less, but there is a reluctance to call for a change in the law on this point for fear that the government could at the same time reconsider the existence of the less-important Reserve Banks. In terms of the district's share of the gross domestic product the Reserve Banks of Cleveland and Philadelphia are often identified in this context. The three largest Federal Reserve Banks are those of San Francisco, Atlanta and Chicago.

2.7.2 Specialization

The research department has eighteen post-graduate economists. The San Francisco Fed does not have a real speciality: 'We just study monetary policy'. A strong point is organizing conferences where economists of the department take part. Given San Francisco's geographical location, a relatively large amount of the research focuses on economic and monetary events in the Pacific Rim. For that reason external researchers from Japan and Australia, for example, are employed fairly regularly for the specific expertise they are expected to offer. The economists spend about half of their time on basic research and the rest on policy and briefing activities. The *FRBSF Economic Letter* is published about forty times a year, and there are also *Pacific Basin Notes* and an *Economic Review,* whose publication has now been reduced from twice to once a year because of pressure of work. The department carries out about fifty external activities a year. Speeches by the president are the main channel of information as far as external communications are concerned.

[16] Present: John P. Judd, Vice President and Associate Director of Research; Bharat Trehan, Research Officer and Economist and Gary C. Zimmerman, Economist of the Economic Research/Public Information Department.

2.7.3 Regional differences in inflation

District inflation data are available but the Board in Washington is not interested in it at all as national monetary policy cannot have a role in combating regional differences in inflation which, in addition, are not seen as relevant from a monetary point of view. They show up primarily as symptoms of a distortion in demand and supply in the real economy. The FRS has no quantitative monetary target. Two acts, the Employment Act of 1946 and the Full Employment and Balanced Growth Act of 1978 specify the goals of national economic policy as 'economic growth in line with the economy's potential to expand; a high level of employment; stable prices (that is, stability in the purchasing power of the dollar); and moderate long-term interest rates'. The lack of a monetary target has to do with the reputation of Mr Greenspan, who seems to exude so much confidence that it is possible not to pursue an explicit inflation target. According to some economists in San Francisco, the Boskin report is of secondary importance as it was intended mainly to restrain inflation-linked government expenditure, in other words its significance was mainly in the area of budgetary policy.

The policy of the Federal Reserve rests on credibility emanating from the person of Mr Greenspan as well as and from the FRS's policy actions over the past twenty years. It was admitted with a smile that the 'gradual approach' to interest rate rises in recent months could impair the authority of the Fed's policy, at least if the often repeated danger of inflation fails to materialize.

Other matters

2.7.4 Fiscal transfers

With respect to Europe, the view is confirmed that in due course a centralized monetary policy would require a common budgetary policy. However, there is no specific view on this issue. A possible explanation for this could be that Europe is a long way from the California district and Japan is closer by in economic terms.

2.7.5 Open-market policy

The Treasury Securities portfolio is threatening to become a problem in the future, now that the federal government's budget deficit has been converted into a surplus. Thought is currently being given to how this potential gap can be filled. A possible solution might be corporate bonds which could be used for open-market purposes.

2.7.6 Relative size of San Francisco
Geographically, the San Francisco district is the largest of the twelve, covering some 35 % of the surface area of the United States. Its regional importance is estimated at about 20 % of the country's gross national product. The district has the third largest share of the depository institutions holding required reserves at the Fed (13.2 % of the total), with 238 member banks (including 160 national banks) and 454 state non-member banks with, in addition, 124 branches of foreign banks.

2.8 Discussion at the Federal Reserve Bank of Minneapolis[17]

Standard subjects
2.8.1 FOMC
With respect to the relationship with the Board in Washington, Mr Stern comments that apart from the FOMC meetings, the twelve Reserve Bank presidents (who are also the chief executive officers) meet each other in various committees where they discuss all kinds of subject except monetary policy. Having a voting right on the FOMC is important. The voting members are known. Mr Greenspan is allowed to discuss matters with FOMC members outside the meetings and, although not the rule, this does sometimes happen. Coalitions can be formed, but in general there is a tendency to reach consensus. Members who hold differing opinions ("dissenters") must have well-supported arguments to be taken seriously. Each voting president in the FOMC has an alternate in the person of another Reserve Bank president. Dissenting opinions have not been common under Mr Greenspan as the economy has only improved since 1978 when he took office. Things were more difficult under Paul Volcker who was faced with economic recessions, increasing oil prices, etc.

The law states that every two weeks the twelve boards of directors have to submit a proposal on changing the discount rate to the Board of Governors for adoption. If the board of one Reserve Bank makes a proposal that is accepted by Washington, the other Reserve Banks are notified. Since the communication takes a little time, the new rate does not take effect everywhere at the same time. It could be that a majority of the twelve Reserve Banks propose a rate change that the Board does not agree with, in which case the discount rate will remain unchanged. There is only one rate for the whole

[17] Present: Arthur J. Rolnick, Senior Vice President and Director of Research; Richard M. Todd, Vice President of the Risk Management Department and W.E. Weber. Garry Stern, the president, joined the lunch.

of the United States. In the course of the years, the correlation between the discount rate and the federal funds rate has increased. The use banks make of the "discount window" is limited because of the effect on reputation. However, one cannot exclude that the discount facility will gain in importance in the future. An acknowledged problem is that a continuing federal budget surplus could mean the portfolio of government securities drying up. What will happen if the Fed wants to sell government paper on the market which it does not itself have? Although this problem is currently being studied, the Mr Stern does not give it too much weight as there is enough other paper that the Fed does have available (major housing agencies, national mortgage corporations and municipal debt).

2.8.2 Regional differences in inflation

Regional differences in inflation play no role in the discussions within FOMC meetings. Although the national inflation rate reflects the average of the twelve district's figures, regional developments play no role unless certain elements in the price movements have a national significance. In other words, inflation is regarded as a national phenomenon. The reason for this is that the associated discussions relate to inflation in the United States, with regional price differences reflecting relative differences in scarcity. These are of a non-monetary nature and disappear in due course as demand for and supply of goods or labour will change. Regional differences in inflation, such as differences in house prices or oil prices, sometimes play a role as signals of unusual developments in the real economy and, for this reason, district price indices are sometimes computed. However, monetary policy has no regional function. During FOMC meetings, no-one thinks in terms of weighted averages. Signs of national significance are identified and the question is whether they are also being seen in other districts. If so, the phenomenon is included in the national discussion. The presidents often do not know their regional inflation data, partly because the figures do not exist. Under Mr Greenspan, the inflation target has been set in vague terms and so the FRS has some leeway. What about the sharp rise in labour productivity? The president of the Minneapolis Bank admits that to the extent that this translates into downward pressure on prices, an inflation target might be dangerous since meeting it invites an expansionist monetary policy. For that reason he is grateful that achieving price stability is only one of he goals of the Federal Reserve's monetary policy.

2.8.3 Specialization

The aim of specialization is good research and, in due course, this brings rewards, as shown by the fact that this policy is followed at other Reserve

Banks (Chicago, Atlanta, Cleveland and, since the early days, Richmond). On policy issues, the relevant literature is consulted and then academic tradition is followed. Mr Stern has established this tradition since he became president of the Reserve Bank in 1982 and he is supported in it by a sound research department. He sees only two ways to raise its profile in the FRS: (a) through the president's contribution in FOMC meetings and (b) in-house economic research. The Bank is relatively small and distinguishes itself through its academic publications which are aimed mainly at establishing an academic foundation for the effects of monetary policy and "selling" the results to the public. The research department has twelve economists whose task is 'to bring the current policy implications and relevant policy questions within the framework of the academic literature'. There is also a very active "visitors programme" in the sense that leading economists are invited for a period (sometimes a week) to share their scholarship. Naturally, the entire approach depends strongly on the attitude of the president. The current president has a strongly academic disposition and encourages this approach. Mr Greenspan has a similar approach, which is why the FRS has moved in this direction during his period in office. People are not recruited through the market. Researchers present themselves via the quality of the research and or the visitors programme which also has 'recruiting purposes'. At the same time the department attempts to attract the right people through external contacts. It is not so much the type of research but its quality that benefits the System as a whole and, therefore, its policy. There is certainly competition in this area with other Reserve Banks, but this is also a benefit as the competition can only enhance the quality of the research. The staff of the Board of Governors follow this with a certain critical eye, partly out of professional jealousy. Since the mid-1970s, the research by the Reserve Banks has gradually been creating a strong system that demands respect and broadens the acceptance of policy. In Minneapolis, considerable attention is given to bringing research and policy over to the public, as shown by the numerous activities such as the essay competition for senior school students on the subject of a painting by Hieronymus Bosch featuring money.

Other matters

2.8.4 Fiscal transfers

The EU issues of a supranational monetary policy and decentralized budgetary policies are not regarded as a problem. Everything depends on what is agreed among the parties. If the ESCB does not yield in a situation in which a member country goes beyond the norms for budgetary policy, the market will do its work. The country concerned will be punished automatically in the form of higher interest rates which will in themselves restore the necessary

budgetary discipline. The cyclical effect of fiscal transfers in the United States are barely recognized and are regarded as small.

2.8.5 Banknotes

Coding banknotes is in fact pointless. It has its origins in the past when, in 1863, the national banks were given the right to issue banknotes from which the Federal Reserve decided it should differentiate itself after 1913. Banknotes can be exchanged at all Reserve Banks and any of them may reissue the notes, irrespective of where they were first issued. A new coin is the "Golden Dollar" which replaces the "Susan B. Anthony" dollar. It will circulate alongside the existing one-dollar bill as the public is not ready to accept its replacement by a coin!

2.9 Discussion at the Federal Reserve Bank of Kansas City[18]

Standard subjects

2.9.1 FOMC

Through their board of directors the Reserve Bank and their branches parallel the political system of regional representation. These boards are a source of regional economic information. Insofar as this information gives similar signals, it gains weight for the policy preparations which are nationally focused. In the FOMC it is chairman Greenspan who sets the agenda. The president of each Reserve Bank speaks during the meeting. The last two minutes, when Mr Greenspan calls for the voting on certain policy proposals, are important. Naturally, he pays more attention to the remarks of the voting presidents because he needs their votes. Sometimes one or two presidents vote against, but they have to put forward a well-reasoned argument in their comments. It has never yet been the case that all five voting presidents have voted against nor has the chairman ever been out-voted. Much depends on the person of Mr Greenspan. But what will happen when there is a new chairman? This idea brings some economists to a target for inflation. Accepting a target would create the ability 'to more institutionalize the monetary policy'; in other words, if the new chairman were 'a fool', an inflation target would impose limitations on his policy actions. A discretionary policy seems to be appropriate with a good chairman but for a weaker one there need to be "rules". Nevertheless, the disadvantages of such a target are also recognized. It would rapidly take on the

[18] Present: Craig S. Hakkio, Senior Vice President and Director of Research, George A. Kahn, Vice President and Economist and, during the lunch, Sharon Koziaks, Assistant Vice President and Economist, Andrew J. Filardo, Assistant Vice President and Economist and Todd E. Clark, Assistant Vice President and Economist.

significance of a forecast and the question would then be whose forecast would be accepted. One could imagine that the voting presidents would cast their votes in the Board of Governors on the basis of their own inflation forecasts, but this method would also not be very practical if the forecasts diverge.

As stated earlier, the discount rate is of little value from a monetary point of view. Its real significance is linked with the relationship between the FRS and the public. That relationship is two-fold and has everything to do with the district structure of the System. Since a proposal for changing the discount rate is made by the district board of directors, the Board in Washington has more or less permanent contact with what is happening in the district economies. At the same time the System creates a broad base of support via these directors whose task it is to make clear and explain the Fed's policy in all corners of the country. In Kansas City the board of directors meets once a month for a briefing on developments in the national economy given by the economists of the research department. The boards of directors of the branches also meet once a month and an economist from the research department attends the meeting. The Bank has three branches. One director from each branch attends the briefing at the Reserve Bank, so that the group there consists of twelve people. The directors are 'high-level people' and have a wide network of contacts which they use when making their two-weekly recommendations on the discount rate. The discount rate procedure involves them in the monetary policy process. They know that their *Beige Book* is read in Washington by Mr Greenspan and this contributes to their feeling of being very closely involved in their own district and also, therefore, in explaining the interest of the FRS and the significance of its policy. This creates involvement from the bottom up and this is nurtured continuously: 'It is a way to get support throughout the country'. Through the directors the districts feel involved in monetary policy decisions and actions in Washington and New York.

2.9.2 Regional differences in inflation

Regional inflation figures play no role at all in the research department's policy preparations. The explanation for this is that monetary policy does not focus on combating regional inflation. With one monetary policy there is only one inflation rate and that is the national figure. Under Mr Volcker and Mr Greenspan, price stability only exists if spending decisions are not influenced from the monetary side[19]. Regional imbalances can best be combated by budgetary policy.

[19] In other words, when money is neutral in the sense argued in the Netherlands by J.G. Koopmans and applied in practice by Holtrop and the Nederlandsche Bank.

2.9.3 Specialization

Research benefits from innovation. As a rule, innovation comes from the universities and can enter the FRS via the Reserve Banks. There can be no innovation through the centre which, by nature, is more conservative. Universities are spread throughout the country and so it is logical that the Reserve Banks benefit from this. For this reason, their research departments are simply more academically oriented than the economic staff in Washington who, by the nature of their duties are more policy focused. Research by the Board in Washington is regarded as conservative; that by the Reserve Banks as innovative and challenging. In general, the economists at the Board have to assist policy; the innovative and challenging come from outside the centre since there is less direct policy responsibility. This is the particular duty of the Reserve Banks, as they have greater freedom than the policy-setting centre. It also gives these Banks a special responsibility to safeguard the quality of the research. Part of this research is some degree of specialization.

The Kansas City Reserve Bank Fed is specialized in rural and agricultural research recently set up in the Center for the Study of Rural America which concentrates on economic and political questions which are unique to rural America and attract national attention. The research department now consists of three sections: the Rural Center, the Monetary Analysis section and the Macro-economic Analysis section. Some people from the research department stress that the Reserve Bank's specialization is determined by the market. At a given moment, something happens in a district which gains the attention of the press, public, universities or other institutions and the research department reacts to this. Others hold a different opinion. In their view specialization has much more to do with regional factors. The Reserve Bank of San Francisco will always look towards Asia, because of its geographical location, agriculture will always be significant for the Kansas City Fed because of the nature of the district, while the New York Reserve Bank will always be interested in financial research because of its position as a financial centre.

Empirical macroeconomic research is a speciality of the Kansas City Fed. The economists look at the term structure of interest rates, the regional effects of macro-shocks, empirical studies of bank mergers, the agricultural economy (two economists) and macro-research. The research department has about eighteen post-graduate economists who come from far and wide, including from outside the United States. Economists from Canada, the United Kingdom and South America have been engaged on research in the recent past. Foreign participation is also related to the fact that in the United States

about half of students come from outside the country. The results are published in the *Economic Review* and in the monthly *Newsletters*. They also serve for the president's briefing for FOMC meetings. Economists spend about half their time on their own research, the topic of which should be related in some way with the Reserve Bank's areas of interest. As elsewhere, the economists also make presentations to universities.

Other matters

2.9.4 Fiscal transfers

States do not use their tax income and expenditure as cyclical instruments. They have balanced budget rules, imposed by their own legislation. The federal government's budget does have that role but the impression is that its significance as an countercyclical policy instrument has declined sharply with the dominance of monetary policy and the present dislike of active budgetary policy.

2.9.5 Supervision

The Kansas City Fed supervises over a hundred state member banks, more than a thousand bank holding companies, a number of trust companies and some eleven data-processing centres. There are teams of analysts in Kansas City, Denver and Oklahoma for this. Each state member bank is subject to a "safety and soundness" examination once every twelve to eighteen months and, as necessary, "trust examinations" and "information technology examinations" At trust companies examinations take place about once every eighteen months. The rule for bank holding companies is that when they are new, the Reserve Bank carries out an examination within eighteen months of their incorporation. At all other large, complex or problem companies this happens at intervals of one to two years.

2.9.6 Monetary transmission

The federal funds rate works through into interest rates effecting expenditure and investment decisions and possibly also through 'wealth'. In addition there is the "credit channel". Under the Humphrey-Hawkins Act[20], the FRS should look to monetary aggregates as an indicator but under the current thinking

[20] This requires the Fed to announce its targets for money growth and credit expansion in February each year and to evaluate and, if necessary, revise them around the middle of the year.

they play no significant role in monetary policy. However, there is no consensus on this.[21]

2.10 Discussion at the Federal Reserve Bank of St. Louis[22]

Standard subjects

2.10.1 FOMC

The president of the Bank, Mr Poole was, until his appointment in 1998, a very prominent monetary theoretician and professor in the United States. He has his own views on the role of the FOMC's interest rate policy which he regards as a consequence of the era of rational expectations. In his view, the FOMC's interest rate policy should reflect the expectations in the market. This means that monetary policy should be anticipatory and not create surprises. The symbol of this is policy rules which could relate to interest rates, but also to the supply of money. The strength of these rules is that they bring about transparency and certainty (in the sense of a policy without surprises) and this promotes orderly markets. This approach does not mean that it would be simple to formulate rules.

[21] Interestingly, in this context, one of the members of the Board of Governors, Laurence H. Meyer, voted in the FOMC meeting on 1-2 February 2000 against the Board's proposal to keep the growth targets for M2 and M3 unchanged for the current year at 1 – 5 % and 2 – 6 % respectively (increase over the year). The Minutes note the following: 'In dissenting, Mr Meyer noted that although the money growth ranges do not play an important role in the conduct of monetary policy today, Congress has mandated that the FOMC set and report ranges for money and credit growth. In recent years, the money ranges have been set to be consistent with price stability and normal velocity behavior. The rate of money growth consistent with price stability depends on the average growth of real GDP. Therefore, when there is a significant increase in the projected average growth rate in real GDP, money growth ranges should be adjusted upward so that they remain consistent with price stability. While considerable uncertainty remains about the average rate of growth in real GDP, there is a strong consensus that it is significantly higher today than when the target ranges were set at their current values. The failure to adjust monetary aggregate ranges makes them less useful signals of the Federal Reserve intentions. As long as the Federal Reserve is required to set and report ranges for money and debt growth, it should update them as appropriate.'

[22] Present: William Poole, President and Chief Executive Officer, W. Legrand River, First Vice President, Robert Rasche, Director of Research, Cletus C. Coughlin, Vice President and Associate Director and Henry H. Bourgaux, Senior Vice President.

Box 2 *President Poole's view on the role of monetary policy*

An important task of monetary policy is to supply the economy with enough liquidity during crises to dispel unease. Mr Poole describes the issue of 'how to respond in a crisis situation' as a very important aspect of monetary policy. Separately from this, he believes that monetary policy should ensure that the market is never faced with surprise situations. The maximum policy transparency should put the private sector in a position to anticipate the FRS's policy measures. If the market anticipates policy actions, the Fed's policy will have no effect on prices as its influence will already have been discounted by the market in its spending decisions which is as it should be, at least when price stability is the aim. While such a policy is not counter-cyclical, it does mean that the public knows what the Fed stands for and that is the best way to ensure price stability. 'When the markets and the Fed are in synch, both will have a common reaction to incoming data, and the markets will correctly anticipate Fed policy actions. An environment in which markets correctly anticipate Fed actions implies a situation in which Fed policy is widely understood, regular and predictable. The fact that this does not always succeed 'shows that we have not reached perfection yet'[23]. Against this background Mr Poole regards philosophizing on the transmission mechanism as less important. When the market is able to anticipate the Board's policy, the way in which monetary policy works through the economy makes no sense since the intended effect – maintaining price stability – is enforced by the market. Monetary policy must ensure that the market is never subjected to surprises. Anticipation creates a mechanism that maintains price stability through rational expectations. He thinks there is little chance of pursuing policy through the banks' cash reserves as about 70 % of the dollars in circulation are held outside the United States.

The discount rate is not very relevant from a monetary point of view. Its significance is in the fact (already noted in Kansas City) that through their mandatory two-weekly consideration of the rate, the district directors are involved in policy, can make their views known and thus involve their own region in the central events in Washington (and New York). It is very important that there is a nation-wide sentiment that policy is not determined by and set only in those two centres. This is the reason why the discount rate will not be abandoned quickly. One of the explanations for the modest amount of discounting may be that the need for very short-term credit ("seasonal lending") has fallen throughout the country. The fact that banks see a call on discounting as a sign of weakness is not specifically mentioned here.

[23] 'Synching, Not Sinking, the Markets', contribution by William Poole to the meeting of the 'Philadelphia Council for Business Economics', held at the Federal Reserve Bank of Philadelphia on 6 August 1999.

2.10.2 Specialization
For too long the Reserve Bank of St. Louis has lived off its pioneering macro-monetary work between 1960 and 1970. Currently, the objective in this field is to regain a leading position in the FRS. Operational specialization is guided by comparative advantage – such as the availability of information technology expertise in St. Louis – and the wish of the System to benefit from economies of scale. The Reserve Bank of St. Louis has the role of collector for the federal tax authorities because of the information technology and know-how advantages it has built up and this also applies with respect to the processing of cheques. This functional specialization creates problems of manageability since the responsibilities are not always clear and this is increasingly seen as a problem by the boards of directors of the various Feds.

2.10.3 Regional price differences
Regional differences in inflation are partly an expression of the nature of the goods (non-tradables such as houses) or different fiscal regimes. Monetary policy cannot affect these. Furthermore, no systematic information is available. Sometimes, prices perform a signal function for the desirability of federal assistance programmes. This is, for example, the case in agriculture where low prices are a result of poor demand because of the Asian crisis, For a long time there has been little innovation in the measurement of price changes by the Bureau of Labour Statistics (BLS). In that field innovation has come from the academic world but the BLS has not taken it up. There is currently more awareness of the inaccuracy of the measurements, particularly because of the budgetary implications of indexing as shown by the Boskin report. Congress nevertheless remains cautious because of the possible adverse political consequences among the electorate (an example is the "poverty index", which would perhaps be revised downwards after further statistical research). Mr Poole believes that the official statisticians have been seriously deficient in this area. He does not, however, see a task for the Fed in this.

Other matters
2.10.4 Fiscal transfers
The scope for countercyclical budgetary policies by the states is modest because of the requirement for a more-or-less balanced current account. There are some transfers at the federal level. St. Louis is a very agriculturally-oriented district that has suffered considerably from a sharp fall in demand for agricultural and cattle products caused by the Asian crisis. The lack of demand was offset by support from the federal government. There is 'some support on state level via tax preferences' in such a situation, but it is not very

significant. In a speech Mr Poole has recently made to the agricultural sector in his district he points out that productivity improvements in that sector have the effect of depressing prices which puts pressure on income. This has become a structural problem that cannot be solved by cyclical policy. He believes that sound knowledge of the regional economy is vital for making clear to the private sector where the limits of policy lie.

2.10.5 New Economy

The new economy is closely linked to the increase in labour productivity which has grown continuously in the non-farm business sector in the United States during the last three years from 2.0 % in 1997 to 2.8 % in 1998 and 3.0 % in 1999. This means that the level of the "Golden Age" (the period from 1950 to 1973) when labour productivity in the United States increased on average by 3 % per year, has been reached. There is no doubt that the increase in the 1990s was due in large part to technical advances (and price reductions) in information and communication technology (ICT). Comparison with Europe shows that similar developments have taken place there too. Mr Poole looks not only at labour productivity but also at the productivity of labour and capital together (total-factor productivity). For this, he points to empirical research which shows that the cost of ICT investments in the United States has fallen by no less than 28 % since 1995. In other words the driving force behind the rise in labour productivity is the substitution of capital for labour, encouraged by price reductions, bringing about a rise of capital intensity as shown in an increase in the capital/labour ratio. The increase in total-factor productivity has been modest since 1995 and has contributed a maximum of 0.75 % – 1 % to real GDP growth. This has significant implications for the future. Sharp, unexpected price reductions for ICT products can increase the *level* of labour productivity over the long-term and perhaps permanently, but need not mean a rise in the *growth* of labour productivity which would require the price reduction and consequent increase in the capital/labour ratio to be permanent. Mr Poole wonders whether at some point the price cuts in the computer world will not stop or in any event be smaller: 'It seems probable to me that eventually – although I have no idea when – the technical advances that have been creating the sharp declines in the price of computing power will slow, perhaps as a consequence of fundamental laws of physics that control how many transistors can be packed onto microchips. When the price decline of computing power slows, the application of additional computing power per unit of labour will slow, and so also will the rate of growth of labour productivity.' The conclusion he draws from this is that we cannot be distracted into a monetary policy 'that depends on any particular rate of productivity growth.' It is certainly possible, that the current growth in

productivity will be maintained or even increase but 'by the same token, it is obviously dangerous to simply assume that our good times will roll on for the foreseeable future'. A little unhappily, he concludes this topic with the comment that it is not satisfying for a former academic 'that we are going to have to watch carefully' but that 'such watching is about the best advice we can take. But that seems to be our situation, like it or not.'[24]

2.10.6 Bank supervision

There have been remarkable changes in commercial banking. In the past, banks only had a local presence. Then, through alliances and mergers, they took on state-wide significance, later to grow into institutions with a nation-wide character. It can, therefore, be the case that a state such as California, geographically belonging to one of the largest districts in the FRS, nevertheless has almost no bank holding companies so that the supervision by the Reserve Bank of San Francisco means little there. The St Louis district never had any large banks. This has to do with the position of the regional economy. The district has never been a dynamic economic centre, its population has been more or less stationary and there is no "booming sector". Florida, Georgia and California are the strong economic centres. Arizona and Texas are described as 'retirement centres'; certainly now that air-conditioning has brought the less-pleasant aspects of the climate under control.

2.11 Discussion at the Federal Reserve Bank of Dallas[25]

Standard subjects

2.11.1 FOMC

The views expressed in Kansas City on the significance of the discount rate, are confirmed. It resides mainly in the fact that the district boards of directors are given the opportunity through the discount facility to present their views on economic developments in the own district. The directors are 'eminent businessmen' involved in Fed policy through their mandatory two-weekly proposals on rate changes to the president and through him to the Board of

[24] Discussed in 'Perspectives on Productivity', contribution by William Poole for the conference 'The New Economy in a New Century: Impacts of Technology on What and How We Teach', held at the Southern Illinois University, Edwardsville on 7 April 2000.

[25] Present: Evan F. Koenig, Senior Economist and Vice President, Mark Wynne, Research Officer, Mine K. Yücel, Research Officer, Stephen P.A. Brown, Director of Energy Economics and Microeconomic Policy Analysis and William C. Gruben, Director of the Center for Latin American Economics and Vice President.

Governors in Washington. The Reserve Bank of Dallas sometimes takes a special and dissenting position, partly because the district is made up mainly of the state of Texas with its own economic structure and problems (oil prices and banking crises). The Board in Washington has a powerful position. The budgets of the Reserve Banks have to be submitted to the Board for approval. This is a completely different situation to the ECB where the eleven NCBs are the shareholders. There is no similar structure with respect to the Board, where Congress fulfils the position of shareholder in corporate governance terms. It is also the case that the chairman of the Board always has an advantage in economic and monetary information as he has a staff of about two hundred economic researchers, while the individual Reserve Banks have to manage with between ten and twenty economists. Mr Greenspan sets the agenda. It is not clear what will happen after him, but this is a matter of concern in view of his age. Publications by the Reserve Banks have to be submitted in advance to the Board in Washington, and this is regarded as a sign of centralization. The Dallas Fed attaches major importance to the *Beige Book*, partly because of the district's great economic weight, and everything is done to keep up the quality of this source of information. 'We pride ourselves on having a good *Beige Book.'* The quality of the *Beige Books* varies from district to district but is of high quality particularly when there is an academic research department. A wide range of subjects is discussed at the president's briefing for FOMC meetings, including matters such as the new economy and free enterprise. According to Mark Wynne who, because of his Irish nationality, was able to work at the EMI/ECB for about sixteen months, the power of the Board does not have much to do with the limited voting rights of the Reserve Bank presidents. Even if all twelve presidents could vote, it would not mean that power would be more decentralized. Mr Wynne doubts whether the power structure is much different from the ECB structure. According to him a member such as Otmar Issing has a large amount of power since the Director Generals of the research department and the monetary policy department report to him directly, a situation which currently does not occur with the Board. Mr Wynne said this was also clear in ECB meetings.

2.11.2 Specialization

The Dallas Reserve Bank specializes in two areas: (a) Latin America, partly because Texas borders Mexico and (b) "Free enterprise education". The latter is the personal preference of the president, Bob McTeer, who has also created a distinctive profile for his Fed throughout the United States. He even incorporates this speciality in speeches, etc. The interest in Latin America is prompted in part by geography. The Center for Latin American Economics,

which is associated with the Reserve Bank of Dallas, is the visible embodiment of this specialization. Considerable attention is paid to Mexico, the significance of crises for the American economy and the effect of immigration on the labour market and wage setting. The energy economy is also a particular interest, with two specialists in this area. The district covers about 1/12 of the country, largely coincides geographically with the state of Texas and is one of the medium-sized districts.

2.11.3 Regional differences in inflation

Inflation differences do not care from a monetary point of view. An eye is kept open for constituent elements, such as house prices which are rocketing in areas such as San Francisco, but this is not a monetary phenomenon. Regional statistics are not collected. Only anecdotal evidence is available regionally and it is sometimes put forward in the president's preparations for the FOMC meeting. Monetary policy is, however, nation-wide. Regional differences in inflation usually have no monetary cause and, therefore, offer no pointers for monetary policy.

Other matters

2.11.4 Fiscal transfers and the EU

Under their own constitutions, the states are obliged to run balanced budgets over the long-term. The states do not play a role in fiscal policy although, in periods of high inflation, some cities have taken their own steps in the form of price controls with 'disastrous consequences'. The countercyclical significance of federal budgetary policy seems to be wholly inappropriate to the current policy philosophy of the government.

In his recent article[26] Mr Wynn links the future success of EMU to the need to implement structural reforms. 'The ageing of the population over the coming decades in conjunction with generous pension provisions will put a severe strain on the public finances of the euro-area economies. One solution might be to admit large numbers of immigrants, but Europe does not have a tradition of encouraging large-scale immigration. The only alternative is drastic reform of the public pension programs in all countries, something no government has yet been willing to tackle. More generally, structural reforms of labour and product markets are crucial if the EU is to address the high unemployment rates and sluggish growth that have plagued it for the past decade. Small moves have been made in this direction, but a lot more needs to be done.'

[26] See: M.A. Wynne (2000).

2.11.5 Monetary transmission
Thinking on the transmission of the FOMC's monetary policy seems to be not well developed. Some economists refer to the Wicksellian idea that changes in the federal funds rate aim at bringing market and natural interest rates together. The monetary aggregates are not reliable because of the changes in velocity and a large amount of "base money" being held outside the United States. It is recognized that Reserve Bank presidents such as Jerry Jordan and William Poole have a 'very sophisticated view' of monetary transmission. Their insights differ slightly from those of Mr Greenspan, who also looks to commodity inflation and thus does not adhere to an explicitly monetarist view. There is some concern that Mr Greenspan has put a clear stamp on policy, so that there is no explicit policy framework. In addition, the fact that there have been no serious shocks during his chairmanship could mean it has not yet been put to the test. Inflation targeting is seen as a solution to the dilemma for when chairman Greenspan disappears from the policy stage. As noted before, the mandate for the Board and the System goes beyond just price stability, namely also covering full employment and growth. The policy leeway this creates is valued.

2.11.6 Relations with Latin America
The Texas district has close trading links with nearby Mexico, which receives about 50 % of its exports. Naturally, this relationship is strongly influenced by the exchange rates between the two countries. The effects of this are clear in Dallas. A large number of banks failed as a result of the oil crises but also because of excessive property development, so that huge buildings originally built in the city for banks are now the homes of non-financial companies. The Latin America specialist regards the IMF's approach at the time of the South American currency crises as correct and on the basis of own analysis predicts that the next crisis will be in China.

2.12 Discussion at the Federal Reserve Bank of New York[27]

Manager of the System Open Market Account

2.12.1 Open-market policy
Mr Fisher is the Manager of the System Open Market Account at the Federal Reserve Bank of New York. Once every six weeks, the Board in Washington sets the intended federal funds rate and it is the task of the System Open

[27] Discussions with: Peter Fisher, Manager of the System Open Market Account, Mrs Rae D. Rosen, Senior Economist, Michele S. Godfrey, Senior Vice President and (during lunch) Howard Howe, Assistant Vice President and International Economist.

Market Account to use open-market transactions in order to bring the actual rate as closely in line as possible with the FOMC's intended rate. How this is done in practice is his responsibility. The three sections in his department (Open Market Account, Forecasting and Policy-options) work closely with each other. They work out what the federal funds rate should be for the next two weeks, so that the intentions of the Board are met on average over the six-week period. This has to take account of week-end and month-end circumstances, large transactions by certain banks and treasury operations. The aim is that the intended target is achieved on average and a route is marked out with this in mind. Once that route has been set, there is a daily telephone conference with members of the senior staff of the Board and the president of another Reserve Bank who at that time is a voting member of the FOMC to discuss what types of open-market transactions the New York Fed should carry out. These transactions are implemented through the Domestic Trading Desk, which dealers are in contact with. The daily purchase and sale transactions permit a degree of volatility in the federal funds rate, provided Mr Fisher ensures that on average the rate remains in line with the Board's aim. Mr Fisher exercises some restraint towards the market with respect to what the period of the average is. The 'every-day actions' have to be consistent with the route mapped out for the two-weekly calculation period. In the past, the highest and lowest subscription rates were published but this was discontinued as it sometimes disclosed too great a 'range'. The FOMC aims for reasonable volatility with the New York Fed setting the quantity of bank reserves and leaving it to the banks how they share the available amount among themselves. There is, of course, a lot of 'noise' in the daily rate but this is not a great concern. Mr Fisher sees himself as the 'servant' of the System whose money he manages. When asked, he tells the Governors what he has done 'and they vote on my function'. He has regular contact with one of the voting presidents and admits that he is one of the few officials in the System with so much discretionary authority. He explains his policy to the Governors and presidents during each FOMC meeting. Often this is at the beginning of the meeting, sometimes also at the end if special situations are being discussed so that he has a lot to explain or when Mr Greenspan asks questions on the implementation of open-market policy during the previous six weeks. Mr Fisher points out that in many respects the Act governing the Fed is out of date and needs revision. This means that he regularly has to negotiate his authority during FOMC meetings with respect to the technical modalities that characterize open-market policy (for example, the type of paper traded) and where in practice there have to be changes which the legislation does not or could not provide for. During the FOMC meetings, the Manager presents the current US yield curves to the Governors and presidents, comparing them

with interest rates in countries such as the United Kingdom and Germany. He makes his own selection of the information he presents. Sometimes this is very extensive but sometimes he limits his explanation to the FOMC to a few minutes. Mr Fisher is a great proponent of the maximum openness on what his department does and to this end, he has opened a special website (the information is confidential) for the Reserve Bank presidents and their staffs, which lists everything that happened in the money market on a given day.

With regard to the monetary transmission mechanism, Mr Fisher pointed to the different meanings of the term "monetary instrument" in English. For macroeconomics, the federal funds rate is an instrument in the sense of influencing expenditure decisions. From the micro-perspective, however, acting upon the free bank reserves is the instrument and the interest rate is the result: 'We manipulate the quantity to reach the price target we have in mind.' Speaking about the "discount window", he confirms that banks increasingly avoid calling on this facility for fear that the market would see it as a sign of weakness. Nevertheless, over the past five years the Federal Reserve has tried to change this attitude. The System wants it to be regarded more as a normal credit facility, although it is not the intention that banks make calls on it continuously but instead with a certain regularity and for short periods. The Fed's changing attitude is prompted in part by the banks' improved financial position.

2.12.2 Specialization

The New York Fed has a very strong research department (about 80 economists) whose macroeconomic structure model competes with that of the Board's staff in Washington. Its forecasts are not published, partly because Washington does not permit this. Some other Reserve Banks also have models but these are less policy oriented. Research into regional economic development is believed to be relevant for various reasons. Firstly because of the national and international significance of New York as a financial centre. Another reason is the public support the FRS needs to sell monetary policy. The New York Fed works with local business and universities focusing attention mainly on less-advantaged groups in the district. As a consequence of this there are educational programmes on the benefits of saving, taking out loans, etc. and brochures for all groups in the population. In this way, the Reserve Bank is working on its image and tries to maintain and possibly increase public interest in the System's tasks and function. At the moment, New York is seeing a fairly large influx of people from India and Pakistan who are prepared to enter the labour market for a very low wage, and this is at the expense of the African-American population who have lived in New

York for many years and whose educational levels are relatively low. The president has a great interest in the lot of the lower income groups, the creation of employment in the district and, of course, in the financial markets and this is reflected in the research effort.

2.12.3 Regional differences in inflation
Regional price differences play no role at the national level. They have no monetary significance as they are determined by other factors. In New York, for example, housing costs (house prices, rents etc.) make up about 40 % of the regional price index. In practice though, the twelve regional price indices for the Fed districts do not differ significantly from the national price index but this close relationship is questionable and needs investigation. Probably price differences between the districts are wider because of natural and geographical factors.

Other matters
2.12.4 America's lead
The United States' current lead in the new economy is explained as originating particularly from the industrial restructuring around the 1980s when the American economy was showing symptoms of rigidity. The institutional situation in the United States allowed this process of change. It is too much to claim that his country is always ahead of Europe or Japan although the United States has learnt its lesson in the recent past and this possibly explains the current dynamism.

2.12.5 Possible successor to Mr Greenspan
The president of the New York Fed is believed to gave a good chance of succeeding Mr Greenspan. He is a banker from Chicago with an international background and as vice-chairman he is a prominent member of the FOMC with permanent voting rights. He is a Democrat and so the result of the presidential election next November will not be without significance for his future.

2.13 Discussion at the Federal Reserve Board in Washington[28]

Standard subjects
2.13.1 FOMC
The Fed's monetary policy aims, among other things, at stable prices, That means a national price level which does not influence spending decisions in the private sector. The chairman of the Board interprets this as 'trying to maximize economic efficiency in the long run'. In the short-term, the aim is

to prevent inflation rising from where it currently is. Attention is also paid to interest rates partly with an eye on balance sheet developments in the financial sector arising from the endeavour for financial stability. Monetary aggregates are given little attention in macroeconomic models because of instability in the demand for money. The Federal Reserve focuses its policy on short-term interest rates. Monetary targeting is 'very loose' which entails much discussion within the System. It is true that in recent years the Fed has wanted to see discounting regarded as a more routine credit facility, in other words moving away from the idea that calling on it is regarded by the market as a sign of weakness at the credit institution involved. In practice, the amount of discount credit is negligible (about 1 % of the banks' consolidated balance sheet).. Nevertheless, the discount rate has a significant signalling role and a practical function. For technical reasons, discount policy is also a supplement to open-market policy, since that market is only open during the morning. It is an instrument to influence the borrowed reserves. There is a high correlation between the discount rate and the federal funds rate although the spread does show some variation; there is also a link with the debit interest rates charged by banks. The role of the federal funds rate has changed considerably over the course of time. Currently, it involves the "intended rate", while previously there had been more emphasis on the actual interest rates and before that on the supply of money. Today the FOMC aims to achieve the intended price through the money supply. This is a major difference with ECB policy which focuses much more on price setting.

The *Beige Book* provides anecdotal information which gives colour to what is happening economically in the country. The districts Reserve Banks maintain close ties with their regions and this helps the FRS to safeguard its independent position. The Monetary Affairs Division collects data for the *Beige Book* from the Reserve Banks. They maintain contacts with the banks in their districts with which the System ultimately does business. Contacts with the New York Fed are less formal as daily information is exchanged with that institution.

[28] Present: from the Research and Statistics Division: Michael J. Prell, Director, David E. Lebow, Senior Economist, Wolf Ramm, Senior Economist; from the Monetary Affairs Division: Thomas F. Braddy, Chief, Brian F. Madigan, Associate Director, Jim Clouse; from the International Financial Division: Mico Loretan, Senior Economist, Murat F. Iyigun, Economist, Jane E. Ihrig, Economist. During lunch we spoke to members of the International Financial Staff: Karen Johnson, Director, Dave Henderson, Associate Director, Joseph E. Gagnon, Chief World Payments and Economic Activity, Lauren Rosen, Economist.

Every Monday there are three briefings for the Governors in Washington. The first covers non-financial developments (economic data on growth, investment, employment, etc.). The second briefing covers domestic financial developments and specific areas of interest (including events on the financial markets). In the third briefing, information is provided on the foreign exchange markets and international developments. This means that there is a more or less permanent flow of information from the staff to the Governors. A quantitative target for inflation would probably not enjoy wide support in Congress as the law specifies growth and employment as policy goals of equal importance to price stability. As a result of the loose wording of the FRS's Congressional mandate, in practice there is 'goal independence' as the System has to give an interpretation to the mandate which goes further than only a technical translation into policy.

2.13.2 Regional differences in inflation

The Board in Washington looks at national inflation. The staff keep an eye on price developments in the districts and at industry level. Inflation figures are known for a number of cities although they are not always reliable. Monetary policy relies on nationally aggregated figures since it is assumed that the districts are adequately integrated in the national economy ('that we take for granted'). The Board itself does not collect statistical data and *ipso facto*, no price index figures. It does apply some pressure on the Bureau of Labour Statistics to deal with upward distortions in the CPI, in line with the recommendations of the Boskin report. The key consideration of this report was on the budgetary side, in particular the indexation of benefits and suchlike. In the absence of district date on inflation, the national CPI is the centre of attention for monetary policy. Sometimes there is anecdotal attention for certain prices, such as those of hotel rooms, rents or house price changes, to colour the national monetary scene in the same way as the regional information in the *Beige Book* can nuance the general economic picture.

2.13.3 Specialization

International research is done almost entirely in Washington (about 120 economists) with some more-operational research being done at the Federal Reserve Bank of New York. The Research and Statistics (about 60 employees) and Monetary Affairs (about 30 people) divisions are much smaller than International Finance division. The Board prefers strong research departments at the districts Reserve Banks, for supporting their presidents at FOMC meetings. The significance of functional specialization is underlined. The Richmond Fed is known for its central computer operations because of

its knowledge of payment transactions, Atlanta for its expertise in derivatives, Dallas and Atlanta for their experience of Latin America, San Francisco for its relationship with the Pacific Rim, Minneapolis for its knowledge of the real business cycle theory and Chicago for its specialization in the field of banking structures. Some surprise is expressed at the two-week frequency of ECB Council meetings and the number of staff at some national central banks in Europe compared with the situation in the FRS. In this respect, it is notable that, at some 200 people, the number of economic staff in Washington differs from that in Frankfurt.

Other matters

2.13.4 Fiscal transfers

Almost every state has rules to ensure a balanced budget and so there is almost no deficit spending. The states are regarded as sectors of the economy just like the private sector. They have their own constitutions which commit them to balanced budgets. It would be possible to change the law but, of course, this could not go against national policy. Since the early 1990s, there has also been almost no discretionary budgetary policy at a federal level, partly as a result of the deliberate policy of limiting government expenditure. Special programmes exist, but these are of a structural nature and often prompted by political initiatives. Countercyclical budgetary policy is no longer employed. The EU's problems in this area are not seen as very different from the budgetary policy in the United States. If a country in the EMU gets out of line, it will find itself in difficulties in terms of higher yields being demanded on its bonds and some downgrading in its credit rating.

2.13.5 Independent research

Supervision of the Reserve Banks' publication activities is now rather more flexible than in the past and rarely causes problems. In the end, poor quality penalizes itself and so strict supervision on this point is not necessary. Co-ordination with the policy line seems sometimes desirable, although this should not cause policy-reinforcing research.

Section 3 Assessment and comparative study

The discussions with representatives of the twelve Federal Reserve Banks and the Board were very stimulating and refreshing in building up insights into the working of the FRS compared with the still young ESCB. Factual empirical knowledge in this area was deepened by direct contact with the many senior policy and research staff. Particularly enlightening were the stimulating views of the president of the St. Louis Fed on the task and role of monetary policy and the deeper motives expressed elsewhere which underlie the discount credit which is less-relevant in volume terms.

3.1 Main conclusions

3.1.1 On the deliberations in the FOMC

– The chairman, Mr Greenspan, puts a dominant mark on the FOMC's meetings and the policy set out in them. All twelve Fed presidents participate actively in the meetings, irrespective of whether they have voting rights. The personality of a local president, his knowledge of affairs and the way in which he uses his own research department further the quality of his argument and persuasiveness. Coalitions can be formed, but in general there is a tendency to reach consensus. Members who hold differing opinions ("dissenters") must have well-supported arguments to be taken seriously. It has never yet been the case that the five voting presidents have voted against nor has the chairman ever been out-voted. The chairman does listen more to the voting presidents as his policy decisions depend on them.

– The Board in Washington has a powerful and central position. The budgets of the Reserve Banks have to be submitted to the Board for approval. In addition, the chairman always has an advantage in economic and monetary information as he has a staff of about two hundred economic researchers, while the individual Reserve Banks, other than the New York Fed, have to manage with between ten and twenty researchers.

– The Reserve Bank presidents base their policy recommendations to the FOMC primarily on national economic considerations. District developments are given attention when they appear to have nation-wide significance. The Board uses the regional information collected by the

Reserve Banks in their *Beige Books* as background to his information on the general economic scene of the nation.

– The presidents make intensive use of their research departments when preparing for FOMC meetings. 'In arriving at his position, the president needs to hear the diversity of arguments only a research department can make,' said Mr Broaddus, president of the Richmond Fed. Intensive and direct contact with the research staff is regarded as a more effective means of coaching the president than, for example, the discussions within the *Zentralbankrat* of the *Deutsche Bundesbank* whose strongly hierarchical structure results in the president being surrounded by "outsiders" who are too remote from the field. Debriefings after FOMC meetings are restricted to a small group, because of the confidential nature of the information and to minimize the risk of leaks, which have happened in the past. One of the aims of the debriefing is to establish the relevant policy matters for the following FOMC meeting.

– Discount rate changes can only be implemented on the proposal of one or more Reserve Bank presidents who always make their proposals at the request of their boards of directors. Differences of opinion with the chairman are solved behind closed doors by "moral suasion". Although the discount rate is of little importance from the monetary viewpoint (the federal funds rate is relevant), its significance is primarily in the relationship between the Fed and the public in the districts. That relationship is two-fold and has everything to do with the district structure of the System and the American tradition of maintaining equilibrium between the central and local government. Since a proposal for changing the discount rate is made by the local board of directors who come from the district, the FRS has more-or-less permanent contact with what is happening in the district economies. At the same time the System creates a broad base of support by the directors who make clear and explain its policy in all corners of the country. This symbolic role of the discount rate is in any event remarkable and in some way instructive for Europe.

3.1.2 On regional differences in inflation

– Regional differences in inflation are given no significance in national monetary policy. The FRS has never felt the need to collect district statistical data, not only because of a historical feeling for the Union (the states are adequately integrated in the national economy) but also because price differences between districts are not permanent. They are not monetary phenomena but merely symptoms of temporary imbalances in

supply and demand which will disappear through the operation of the market. Monetary policy, therefore, is restricted on logical grounds to changes in the general price level in the United States.

– Considerable attention is given to measuring inflation and the underlying price index figures. A number of staff members, including some presidents, believe that the official statisticians have not been in the forefront in this. For a long time, there has been little innovation in the measurement of price changes by the Bureau of Labour Statistics. Currently, there is more awareness of the inaccuracy of the measurements, particularly because of the budgetary implications of indexing as shown by the Boskin report. Congress nevertheless remains cautious because of the possible adverse political consequences among the electorate. Any correction of the overestimated inflation rate would, for instance, lead to an unfavourable adaption of income in the lowest income groups. Members of the Congress will undoubtedly be afraid of doing so because of their possible re-election.

3.1.3 On specialization:

– Economic research at the Reserve Bank is sometimes determined by history. Economists should have a broad range of views. For that reason, the Reserve Banks attract them from every school of thought and from many places. Academic research has a general presence, certainly in the monetarist-focused Reserve Banks in Cleveland, Richmond and St. Louis, with the economists having to write articles for the Banks' journals and making academic contributions in the form of *Working Papers*.

– With the exception of the Fed of New York, the research departments are small, rarely having more than twenty economists. Altogether they number about the same as the equivalent staff in Washington.

– Reserve Banks believe their research departments can be more innovative than the staff of the Board because of their greater distance from the policy centre which, by its nature, must be more conservative. Functional specialization is based on comparative advantage. In many cases this develops spontaneously; in some cases, it is influenced by the personal interests of the sitting president.

– The staff of the Board specialize in the international monetary research, an area which the district Reserve Banks, other than the New York Fed, give little prominence to. The Board has some influence on the regional research

through assessing the quality of the output and approving items proposed for publication by the Reserve Banks.

3.1.4 On other matters

– The states have limited scope for countercyclical budgetary policies because of the requirement for a more-or-less balanced current account. Regional transfers are not part of the federal budgetary policy, although there are special programmes. From a national viewpoint, these are small scale although they are important to the district concerned. Discretionary budgetary policy is not regarded as significant as it does not fit at all into the government's current policy philosophy based on a great confidence in the operation of the markets for goods and labour. In the light of this viewpoint, there is no 'policy mix'.

– Generally speaking, there is little concern that decentralized budgetary policies could cause problems in the Economic and Monetary Union. Everything depends on what is agreed among the members. If the ESCB does not yield in a situation in which a member country goes beyond the norms for budgetary policy, the market will do its work. The country concerned will be punished automatically in the form of higher interest rates and downgrading of its credit rating.

– Some Reserve Banks (and not only the monetarist ones in Richmond, Cleveland and St. Louis) would be happy with a quantitative inflation target. There are, however, members of the Board of Governors who oppose this, since announcing a target could be seen as being in conflict with the Congressional mandate that forbids such a statement. The current 'vaguely defined objectives' often lead to 'fuzzy language' so that commenting on district policy is difficult.

– Confidence in Mr Greenspan, engendered by his personality and expertise, makes the 'credibility' of the Fed's policy unassailable. The acceptance of an inflation target would create the ability 'to institutionalize monetary policy'; in other words, if the new chairman were 'a fool', an inflation target would impose limitations on his policy actions.

– Over the long run, supervision is moving in the direction of centralization. Currently the location of a financial institution's head office determines which local Fed carries out the supervision, but this is not working well. San Francisco has only two or three, Minneapolis and Dallas have none and there are only two in Atlanta.

3.2 A comparative analysis with the ECB

The conclusions in section 3.1 were drawn almost entirely from our discussions with regional Feds and the Board about the workings of the Federal Reserve System. The European System of Central Banks is often compared to the US system, without much thought to whether there is sufficient basis for comparison. However, this is a central question in order to form a balanced judgement on the monetary policy measures and the functioning of the European System of Central Banks. As far as these policy measures are concerned, an insight into the differences between the Member States in the euro area and the United States – in terms of the structure of monetary institutions within the historically evolved central bank culture and the political context – provides an important touchstone. The same applies to the assessment of the actual functioning of the systems. The most noteworthy points arising from a comparison of the functioning of the American system with that of the ESCB are given below.

(1) Undeniably, the historical origins of the FRS and ESCB are completely different. The American system was created in 1913 under national legislation by the Congress which corrected a monetary policy vacuum. It gave the United States a central monetary authority which has since built up a mine of experience. The ESCB was created by a treaty among sovereign states, each of which already had monetary authorities with greater or lesser degrees of independence in the shape of a national central bank with its own history and policy traditions.

(2) A feature of the ESCB at the moment is the mixture of national identities and community spirit, something which the FRS has never experienced. As a result, the system in Europe has national statistics, collected in each member country under national legislation. The presence of national inflation rates could conflict with the harmonized price index of the ECB. In the US system, statistics of the districts are of little relevance. Regional economic developments, including, therefore, inflation differences, have a completely subordinate role in the monetary policy and the Reserve Bank presidents base their policy recommendations to the centre entirely on 'nation-wide' considerations. The ECB currently lacks a tradition and the majority of the member countries will have to get used to interpreting national economic developments in "euro-wide" terms to the same extent.

(3) The centre in Washington has a powerful position as shown by the fact that the budgets of the Reserve Banks have to be submitted for approval by the Board. Nevertheless, a stable equilibrium now seems to have been

reached in the balance of work and power between the centre and the districts. Within the ESCB, the national central banks are shareholders (element of national identity). Although the subsidiarity principle adopted in the Treaty of Maastricht sets a formal boundary between their positions and the ESCB, its practical effect is still developing.

(4) Compared with the six-weekly FOMC meetings, the frequency of meetings of the ECB Council seems to be exceptionally high. Again, a fact that cannot be ignored here is that the FOMC already has a long history while as yet the ESCB can hardly boast any tradition.

(5) The dominating influence of Mr Greenspan, during FOMC meetings is indisputable. His personal charisma, monetary expertise and reputation as guardian of price stability are currently seen as the main guarantees of the credibility of the System. The president of the ECB, Mr Duisenberg, was appointed for the same reasons but his reputation as guardian of a stable euro still has only a brief tradition. The ECB's monetary policy actions are, therefore, perhaps under extra stress compared with the policy of the FOMC. Furthermore, the centre in Frankfurt appears less powerful if only because all 11 central bank governors are voting members while in the FOMF only five presidents have that right.

(6) Unlike the ESCB, the FOMC does not concentrate only on price stability (which, furthermore, is not specified in the United States). This would not be in line with the Fed's mandate from Congress which also requires attention to growth and employment. Inflation targeting is currently a subject of discussion and some see this as an instrument to curb the power of a future chairman of the Board.

(7) In the ESCB, the national central banks are searching for opportunities to raise their profile through specialization. In the FRS, virtually every Reserve Bank has economic research specialization, but in many cases this was determined by history. The general opinion is that there should be a broad range of views among the economists, a reason why they come from every school of thought and from many places. With the exception of New York Fed, the economic research departments are small, rarely having more than twenty economists. Altogether they number about the same as the equivalent staff in Washington. This appears to be a distinct difference with the ESCB although one should not forget that the national central banks – some of which have relatively small staffs – used to be closely involved in the preparation of monetary

policymaking. A number of Reserve Banks also have a degree of functional specialization for the System based on comparative advantage. In many cases this developed spontaneously; in some cases, it is influenced by the personal interests of the sitting president. In this respect there are close similarities with the ESCB (see box 3).

Box 3 *Specialization*

The interviews with the twelve District Federal Reserve Banks in the United States revealed that, while sharing a common task, the research departments are specialised to some degree. Broadly speaking, the Feds of Cleveland and St. Louis appear to focus on monetary research of an empirical monetarist nature and on an active role for money supply. The emphasis at the Feds of Minneapolis and Richmond is on research in line with the paradigm of the real business cycle, which assigns a predominantly passive role to money. The empirical foundations are reached by what was formerly known in the Netherlands as global empiricism: practised by Schouten (1986) for example. A shared feature in the relevant research by all four Feds is the assumption of rational expectations. The Chicago Fed specialises mainly in regional analysis and financial stability, while regional analysis also characterises research at the Fed in Kansas City. Internationally oriented research is conducted at the Feds in New York, particularly in relation to its forex management tasks, San Francisco (Pacific Rim) and Dallas (Latin America). Payments and financial markets form the special area of attention at the Fed in Atlanta, while Philadelphia concentrates on researching expectations using survey data.

Within the research by the ESCB, a degree of specialisation also seems to be emerging at the NCBs, along with attention for their specific area. It can now be concluded that the NCBs of Italy, Finland, the Netherlands and to a lesser extent Spain seem to be creating the most distinct profile for themselves in certain fields of research. The relevant fields are model building in numerous forms including macroeconomic models, forecasting and analysing monetary transmission. It should be noted that the diversity is wide, and that there are many areas where the research overlaps, partly because of the NCBs' traditional task of charting economic and monetary development in their home country. Strikingly, no clear research specialism or efforts to stress distinctive features are so far perceivable in precisely the two largest euro area countries, Germany and France.

(8) The discount rate has a significant role in the relationship between the FRS and the public in the districts. Moreover a close relationship seems to exist between the discount rate as proposed by the districts and the intended federal funds rate of the FOMC. For that reason the discount rate plays an interesting role. Despite its mainly symbolic character it is a signal of how people throughout the country feel about monetary policy. The question is whether within in the ESCB the discount rate of the member countries might not have played a similar role of increasing the direct involvement of the national central banks in the ESCB's monetary policy.

(9) In the United States both the philosophy and the practical effects of interest rate policy differ from those in EMU although at first sight policy seems the same in both areas. The Federal Reserve attempts to achieve the intended interest rate by changing money market supplies via the open market. Setting the interest rate directly affecting the money supply accordingly, which is the ESCB's approach, is not done. Right in a way, one could say that the FOMC tries to conduct its policy in such a way that the market will not be surprised. In this point a principal different seems to exist with the ECB's interest rate policy, although it would be incorrect to conclude from this that the ECB tries to surprise the market.

(10) In the US fiscal system the state budgets have practically no cyclical significance. Furthermore, the federal government does not allow countercyclical policy at a regional level, although "automatic stabilizers" play a significant role in the distribution of income between the states. This redistributive element is barely evident in EMU because of the negligible size of fiscal transfers between the member countries. In addition, when account is taken of the relatively small degree of labour mobility and wage flexibility (partly because of the greater strength of trade unions) in Europe, it seems not unlikely that the asymmetric effects of monetary policy shocks will be greater in EMU countries than in the states and districts of the United States.

(11) The FRS is characterised by a high degree of transparency. This partly results from the systematic publication of the minutes of the FOMC, without concealing the divergent votes cast by the FOMC members. This openness prevents the public from regarding the Fed's policy moves as "remote, secretive and elitist". Although this subject is rather sensitive in the ESCB at present, more transparency appears unavoidable in the long term, especially as, when judged by the standards of a modern parliamentary democracy, the accountability requirement now seems to be unavoidably restricted. The publications of the regional Feds, which often need the Board's approval, likewise aim to further the Fed's visibility and transparency, and so inspire confidence in policy among the public in the region, while also supporting the credibility of national policy. In this area too, the ESCB is just starting out and the practice in the United States is instructive. The choice of the 'Bundesbank model' for the ECB is, however, an indisputable signal that EMU participants are determined to pursue a credible and clear monetary policy without direct political influence.

Box 4 *Transparency by means of publications*

All of the individual Reserve banks publish a regular report as an information channel for policy, targeted at readers with an interest in economics.

Main periodicals per district*

No.	District	Name of report	Frequency	Volume in 2000
1	Boston	New England Economic Review	Bimonthly	32
2	New York	Economic Policy Review	Quarterly	6
3	Philadelphia	Business Review	Bimonthly	27
4	Cleveland	Economic Review	Quarterly	21
5	Richmond	Economic Quarterly Review	Quarterly	86
6	Atlanta	Economic Review	Quarterly	85
7	Chicago	Economic Perspectives	Quarterly	24
8	St. Louis	Review	Bimonthly	82
9	Minneapolis	Quarterly Review	Quarterly	23
10	Kansas City	Economic Review	Quarterly	85
11	Dallas	Economic and Financial Review	Bimonthly	19 a)
12	San Francisco	Economic Review	Quarterly	26 b)
Board Washington DC		Federal Reserve Bulletin	Monthly	86

* Along with numerous smaller publications, such as newsletters, communiqués, etc. sometimes referred to in the main text.
a) Quarterly as from 1992.
b) Three times a year as from 1992.

Most of the NCBs in the euro area issue similar publications, although they were relatively late starting. For example in the Netherlands, the Nederlandsche Bank began to publish its Quarterly Bulletin in 1969, which is now entirely aimed at furthering policy transparency. The Bundesbank too, (known as the Bank Deutscher Länder until 1957) has its Monthly Report, which has been issued since 1949. Some NCBs are not yet ready for such regular legislation.

3.3 Credibility and transparency: a theoretical approach

The terms ‘credibility’ and ‘transparency’ of monetary policy are central to the practice of monetary policy in the United States and the euro area and play a major part in contemporary monetary theory. This section briefly looks at the meaning of the terms ‘credibility’ and ‘transparency’ as they are used in monetary literature, since they are also becoming highly significant in policy-making circles. As shall be shown, both terms are ambiguous and are often either vaguely defined or not at all. The following gives a short explanation of the use of both terms in theory, against the

background of the practical discussion of the modern policy vision in the foregoing section.

Credibility and transparency

As Blinder (1996,1998) stresses, there is no clear-cut definition of the term 'credibility' in the literature. The definition preferred by Blinder, and also applied by Faust and Svensson (2000a) for example, states that credibility means that the policy acts by the monetary authority must be in line with stated objectives. In cases where a monetary authority proclaims zero inflation, credibility is defined in terms of the extent of inflation or deflation, since this is precisely the degree to which the actual change of the general price level deviates from the stated objective. It follows directly from this that the risk of a loss of policy credibility is inextricably linked to the wording of the policy objectives. From this perspective, a statement in the form of a set range – as used by the ECB for its inflation target and by the Bundesbank, even prior to 1999, in respect of money growth – seems to be efficient and to reflect policy wisdom.

Box 5 *Credibility as an abstract concept*

The term 'credibility' has featured prominently on the agenda of monetary macro literature since the articles by Kydland and Prescott (1977) and Barro and Gordon (1983). These studies shed light on the problem of dynamic inconsistency. Conduct is termed dynamically inconsistent when future conduct, which forms part of an optimal plan of conduct announced ex ante, is no longer optimal at the moment that it should be carried out (ex post), without new relevant information having become available (for the precise mathematical formulation see also for example Blanchard and Fisher (1989), p. 592). The assumption in Kydland and Prescott as well as in Barro and Gordon is that the private sector reacts optimally to a (stated) policy implemented by the (monetary) authorities. This conduct by the private sector greatly influences the effectiveness of the policy pursued by the authorities. As these authors see it, the credibility of the authorities especially has much bearing on the effectiveness of their policy in the future. If a monetary (or fiscal) authority has built up a certain amount of credibility with the private sector, that authority's policy can be more effective it might otherwise have been, since the public believes in it on account of the policy credibility acquired in the course of time. At the same time, from the theoretical perspective taken in the models of the above authors, there is a stimulus to dynamic inconsistency, i.e. to deviate from the ex ante best policy path. In other words, the policy-making authority has an incentive to depart from the previously stated optimal plan because of the short-term benefits. However, this will lessen its credibility in the future and will therefore not be worthwhile in the long term. The aforementioned models analyse the area of tension between the instantaneous advantages of diverging from the stated optimal plan (flexibility) as opposed to the resulting loss of credibility over time.

Like the term 'credibility', the term 'transparency' is not clearly defined in the literature. Even more so than in the case of credibility, authors often assume the term 'transparency' to be understood intuitively and so do not sharply define it. Faust and Svensson (2000a) form an exception. These authors define transparency as the degree to which the public can deduce the monetary authority's objective and intention from observable quantities such as the announced rate of interest or money supply. A transparency problem can hence only exist to the extent that the monetary authority fails to provide information to the private sector on its objectives and policy intentions. Subsequently, if that information is not communicated effectively to the public – or if it cannot be communicated, for example due to the lack of credible communication strategies – an obscure situation is generated, with insufficient policy transparency. Inadequate transparency causes public uncertainty as to the objectives of the monetary authority. Just as a lack of credibility, this can detract from the effectiveness of monetary policy. The public cannot satisfactorily observe whether the authority is adhering to its objective and, conversely, the authority has scope to deviate from its objective at its own discretion, without the public being aware. This is misleading in the long term. Pursuing a policy of high transparency, as for example in New Zealand, England and Sweden and, to a lesser extent, by the Feds, requires that the authorities communicate with society about their policy in a credible manner. The regular publication of informative reports, such as inflation reports for example and policy decisions by the monetary policy committee, facilitates the degree to which the public can infer the authorities' intentions. Periodic publications such as monthly or quarterly reports, in which the background of policy decisions and the underlying deliberations are explained, further policy transparency. The build-up of expertise in the publication of such reports can be seen as a (valuable) signal by the monetary authority that it intends to pursue a transparency-oriented policy in the future too. Moreover, this advances the credibility of current transparency policy, as it lessens the attraction of dynamically inconsistent acts.

It should be clear from the above that the terms 'transparency' and 'credibility' are closely linked. Both underpin the effectiveness of monetary policy. Faust and Svensson (2000b) demonstrate that for some monetary authorities, the optimal choice is for a greater degree of transparency, while for others, restraint is more appropriate. This choice is closely connected to the degree of discretion that the authorities have in determining monetary policy. The key question is the extent to which the authorities have committed themselves to existing policy rules or, on the other hand, have reserved the right to act as they see fit at a given moment and prefer

a discretionary policy. The relevant analyses show that a monetary authority which has committed itself to a fixed policy rule – such as the Taylor rule – benefits from additional policy transparency. This allows it to retain some policy leeway, as the public can not properly assess the extent to which the monetary authority deviates from the chosen policy rule. In theory, where the monetary authority already has a high degree of policy discretion, situations of either high or low transparency are possible and can both be effective. However, generating uncertainty is never effective for policy, and the practice of the FOMC under Greenspan would appear to support this argument, as does that of the ESCB.

An illustration for the ECB and the Fed

The above, somewhat abstract, line of reasoning can be made concrete by referring to the recent debate between Buiter and Issing on the transparency of the ECB in comparison to that of the Federal Reserve and other monetary authorities, and the ensuing discussion by Eijffinger and De Haan and others.

According to Buiter (1998), the ECB lacks political legitimacy, and this emerges in its lack of transparency which seriously jeopardises its accountability. He holds that transparency in respect of monetary policy acts and the outcome of that policy is inadequate. The essential concern is to provide the public with clarity and openness as to how the central bank goes about realising its mandate. However, this is not what the ECB does, Buiter argues. For the ECB, the primary interpretation of accountability is to provide an insight into its performance in preserving financial stability to date. In Buiter's view, the ECB has adopted the traditional Bundesbank approach of openness, transparency and accountability. The author describes this attitude as paternal and no longer appropriate in a modern democratic society: 'Mr. Duisenberg's accountability model, which suggests that as long as Daddy brings home the bacon, Mummy and the children ought not to ask where he got it, is not viable as a modern model for the relationship between the citizen and the state'. A modern approach, Buiter finds, not only requires amendments to the EU Treaty[29], but also the publication of the minutes of the

[29] According to Buiter, the following amendments should be made: abolition of the rule that each country has one seat in the Governing Council, and restriction of the number of its members to nine, and in the Executive Board to four. Abolition of Article 109 which authorises the Council of Ministers to set general guidelines for the exchange-rate policy, explicit delegation of responsibility for financial stability in the euro area to the ECB (inclusion of the term 'lender of last resort' in the Treaty) and establishment of a body that makes binding recommendations for the procedures to be followed by the ECB.

ECB General Council meetings and the votes cast by members, as well as the reinforcement of the role of the European Parliament, so that it may effectively monitor ECB policy.

In response, ECB Executive Board member Otmar Issing (1999) distinguishes between transparency on the one hand and accountability on the other. In his opinion, accountability is primarily related to the ECB's realisation of the Treaty mandate and hence the quantitative objective of price stability. On this point the ECB can do little other than base itself on 'its observable role in fulfilling its mandate'. Transparency refers to statements, in other words, the efforts to communicate the background of policy acts as clearly as possible to the wider public. Complete transparency is impossible in practice, Issing holds; providing the maximum amount of information is not the point. Transparency means clarifying the sense of monetary policy to both policymakers and the general public. This involves constantly searching for a balance between information that the public has a 'right to know', and facts that help fulfil its 'need to understand'. To put it differently, transparency goes beyond openness, also requiring that explanations are made with a degree of clarity in order to advance public understanding of monetary policy. Issing's conclusion is that adequate justice is done to transparency and accountability at the ECB. Political legitimacy is also sufficiently safeguarded, he finds, since the EU Treaty was ratified by the parliaments of all EU Member States, and further endorsed in some countries via a referendum.

According to De Haan and Eijffinger (2000) – in their review of the debate between Buiter and Issing – their discussion largely reflects the typical difference in approach, arising from the divergent Anglo-Saxon and continental European visions of the terms 'transparency' and 'accountability'. It is a matter of long-term strategy versus short-term tactics, they conclude. In the long term, the central bank's strategy should be completely predictable and transparent for the financial markets; intermediate monetary objectives and the manner in which the central bank intends to achieve them must be as clear as possible. However, this does not mean that the tactics applied by the central bank in the short term must also be fully predictable and transparent. The fact is that a central bank needs a certain ambiguity when it intervenes on the currency market or pursues an open market policy because of the attendant interaction with the financial markets:. 'Ambiguity might be necessary for a central bank to be effective'. Seen in this light, the Bank of England and the Federal Reserve System in the Anglo-Saxon world show a preference for greater transparency with the risk of exposing some of their tactics; while on the European mainland, banks such as the Bundesbank prior

to 1999 and the ECB from then on, are less accountable and transparent and so risk obscuring their strategy. The two authors attempt to give this debate more structure by attributing three criteria to the term 'accountability': who decides on the objective of monetary policy, how transparent is current policy and who bears ultimate responsibility for that policy. In respect of the first point they find that, in a democracy, the right to determine the objective of monetary policy should be reserved for the elected politicians. They argue that transparency is a crucial component of accountability, and so disagree with Issing's explicit distinction between these two facets. Whatever arrangements are made for accountability, it will not mean much without transparency. As De Haan and Eijffinger see it, the transparency of monetary policy is furthered if the central bank's decision-making body is obliged to publish the minutes of its meetings. In contrast, revealing the votes of members of the decision-making body seems to be of little value, the authors hold. There are sometimes well-founded political reasons not to disclose too much, and that applies at any rate to aspects of monetary policy where 'ambiguity is really essential'. As far as the ultimate responsibility for monetary policy is concerned, they fully endorse Buiter's view that the European Parliament should evolve into a parliament 'with a bite' that should function as an effective watchdog over the ECB.

Analogous to the indicator for the degree of central bank independence, as tested by Cukierman (1992) among others, De Haan, Amtenbrink and Eijffinger (1999) – in an earlier study for the central banks of Canada, Japan, England and also the ECB – devised an indicator for accountability. The Bank of England apparently comes out best, whereas the ECB has the lowest score. However, when judged by its practical actions, which in some cases go significantly further than required by the EU Treaty, the ECB books a better result, ranking more or less equal to the Federal Reserve System. Finally, Eijffinger and Hoeberichts (2000) examined the effects of accountability on macro-economic development in a model, distinguishing between accountability via transparency and accountability via ultimate responsibility. It was found that while the central bank's area of independence is indeed curtailed by transparency, its effective independence is actually enhanced. This results in lower inflation expectations, but also to a weaker stabilisation of production shocks. In other words, more transparency shifts the balance between credibility and flexibility towards the credibility side. Attaining accountability by means of transparency is consequently appealing to countries that are struggling with a credibility problem. Achieving accountability by passing on ultimate responsibility for monetary policy to general government obviously undermines the central bank's effective independence. This leads to

higher inflation expectations, but also to a greater stabilisation of supply shocks. This method therefore seems appropriate for countries who do not so much have a credibility problem as a serious flexibility problem.

Strikingly, in the debate on the desirability of transparency and credibility at central banks in general and the ECB and the Fed in particular, their publications are completely ignored as a contribution to public accountability (Box 4), and there is no mention of desiring the same qualities for fiscal and trade policy. While it is noticeable that this point is passed over in silence, there are good reasons to place less stress on the requirement for transparency and credibility in this respect, because the relevant political authorities are directly responsible to the national parliaments and did not acquire their competence through delegation. This is perfectly illustrated by the practice in the US in respect of the Board, whose chairman must regularly appear before Congress, a situation that has to some extent taken shape in the euro area as well.

3.4 Distribution of gross domestic product in the United States and the euro area

The Federal Reserve districts originally resulted from a deliberate political decision that they should not correspond to the states of the American federation. This means that there is no natural, democratically elected, unique counterpart for each district. Some districts cover several states, as figure 1 clearly shows. Consequently, the geographical structure of the American system of central banks differs essentially from that in Europe. As demonstrated by Vanthoor (1996, 1999), the emergence of the European System resulted from a lengthy historical process which originated in sovereign national states. Each NCB hence has its own democratically chosen political counterpart and the democratic integration of the ECB in the EU to date has been far less self-evident than that of the FRS in the United States.

The different origins of both systems is also reflected in the distribution of gross domestic product (GDP) throughout the participating districts in the US or the national states within the euro area. In the United States each district was originally allocated around 1/12 or $8^1/_2$ per cent of GDP, a share that has radically changed since 1913 due to the divergent dynamism of the separate districts. For example, with a share of 20 per cent and over 11 per cent of GDP respectively, the San Francisco and Atlanta districts significantly outstrip the others, while the Boston, Cleveland, St. Louis, Minneapolis and Kansas City districts appear to have rather small shares of GDP, with 5 to 6 per cent each. Table 3 presents the distribution for the euro area Member States.

Table 3: GDP at current market prices in the euro area 1999

Euro-countries	Nominal GDP	Percentages of nominal GDP in the euro area
Belgium	232.1	3.8
Germany	1972.5	31.9
Greece	117.4	1.9
Spain	524.2	8.5
France	1332.2	21.6
Ireland	86.3	1.4
Italy	1090.7	17.7
Luxembourg	15.7	0.3
Netherlands	373.9	6.1
Austria	198.6	3.2
Portugal	105.0	1.7
Finland	119.1	1.9
Total	6167.7	100.0

*) As from 1 January 2001, Greece will become member of EMU

Source: *European Economy, 1999 Broad economic policy guidelines*, European Commission Directorate-General for Economic and Financial Affairs, No 68, 1999.

The pattern in the euro area is completely different from that in the United States, even though, by coincidence, both areas comprise 12 countries or regions respectively (for convenience's sake we include Greece, the twelfth member of EMU as of 1 January 2001). As expected, Germany accounts for a third of the total GDP in the euro area, followed at some distance by France with almost 22 per cent and Italy with 17.5 per cent. With close to 6 per cent, the Netherlands is not that much less important than Spain in terms of GDP, and carries more weight than Belgium or Austria for example. Of more significance than this distribution, however, is the dominant position of Germany, and the fact that Germany and France together contribute more than half of euro area GDP. It is therefore no surprise that the ECB is closely modelled on the Bundesbank, with slight alterations along French lines.

Table 4: Distribution of Feds en NCBs in terms of GDP volume in their area in 1999

Percentage of GDP	US	Euro area
0 – 5	1	7
5 – 10	10	2
10 – 15		
15 – 20	1	1
20 – 30		1
> 30		1
Number of members	12	12
Total GDP (billions of euro)	10,014.8	6,167.7

This distribution is of great significance to the ECB's monetary target, i.e. the maintenance of price stability. Not only is the volume distribution in the euro area totally different to that in the United States (see Table 4), but this also implies that inflationary pressure in countries such as Germany, France or Italy makes itself much more strongly felt in the harmonised index of consumer prices than corresponding pressure in the smaller states. Only by evolving towards the situation in the United States – where the regional differences in inflation are not deemed to be of monetary significance owing to the presumed mobility of labour, goods and services throughout the whole area – can this statistical peculiarity lose its bearing on policy. The ECB's emphasis on the need for the structural reform of the labour market and the policy on fair trade should be seen in this light.

Section 4 Conclusions

The above analysis shows that, by reason of its historical origins, the Federal Reserve System has different characteristics to the ESCB. Regional statistics in the United States are scarce and of little relevance; regional differences in inflation play a completely subordinate role in policy; and the presidents of the regional Feds base their general policy advice exclusively on nation-wide motives. Chairman Alan Greenspan holds a dominant position within the FOMC. His personal charisma, monetary expertise, and reputation as the guardian of price stability guarantee the system's credibility. Some find that inflation targeting could be a way of restricting the powers of the future chairman. Another characteristic is that almost every regional Fed bank has its own specialisation, often for historical reasons. With the exception of New York, the economic research divisions are small, rarely comprising more than twenty economists. Due to locally available comparative advantages, a number of Feds also have certain functional specialisations that serve the system as a whole. The ESCB is still busy developing these areas, although it is highly questionable whether – given the historical relations in Europe – emulating the situation in the American system of central banks is the best and most desirable course of action.

In contrast to the United States, the euro area has a very uneven geographic distribution of GDP, and, by consequence, of effective economic power. An uncertain factor is the extent to which this inequality will eventually be reflected in the ESCB's common monetary policy. In political terms, the fact that the system is modelled on the German example one may already be sufficient expression of the economic balance of powers. A remarkable, and instructive point for the ESCB is undoubtedly the part that the discount rate plays in the American system, as a link between the Fed and the public in the regions. Could the discount rate of the Member States in the euro area have fulfilled a similar role? Namely by increasing the direct involvement of the NCBs in the policy in Frankfurt, and by mitigating the political division of power, even if only symbolically? Moreover, this could enhance the credibility and transparency of ESCB policy. However, as the comparative analysis shows, this would not suffice. The Fed has greater transparency: the divergent votes cast by Board members are made known in order to prevent the public from seeing policy moves as 'remote, secretive and elitist'. The ESCB is reluctant to follow suit at this stage, having the legitimate excuse that all concerned need to become accustomed to a common monetary policy. On

the other hand, the NCBs are becoming increasingly aware that clarification of the common monetary policy targets in their own country is vital in order to secure adequate political support, and to maintain the credibility of their policy among the financial markets. In this respect, history has given the United States the lead on Europe.

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