SHOULD THE FEDERAL RESERVE OFFER ELECTRONIC FUNDS TRANSFER SERVICES?

HEARING

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON GOVERNMENT OPERATIONS HOUSE OF REPRESENTATIVES

NINETY-SEVENTH CONGRESS

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SHOULD THE FEDERAL RESERVE OFFER ELECTRONIC FUNDS TRANSFER SERVICES?

THURSDAY, OCTOBER 22, 1981,

HOUSE OF REPRESENTATIVES,
GOVERNMENT INFORMATION
AND INDIVIDUAL RIGHTS SUBCOMMITTEE
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:30 a.m., in room 2203, Rayburn House Office Building, Hon. Glenn English (chairman of the subcommittee) presiding.

Present: Representatives Glenn English and John Conyers, Jr.

Also present: Christopher J. Vizas II, counsel; Rebecca A. Miller, secretary; and John J. Parisi, minority professional staff, Committee on Government Operations.

Mr. ENGLISH. The hearing will come to order.

On October 5, the subcommittee held a hearing on the proper role of the Postal Service in electronic mail [E-COM]. Today we begin an inquiry into the related question—the proper role of the Federal Reserve in the delivery of electronic funds transfer [EFT] services. Both hearings are part of a broader investigation into the provision of computer and communications services by Federal agencies for private use.

As I said on October 5, in the United States we believe that where private enterprise can do the job, it should do the job. Except in very special circumstances, Government should not provide subsidized services to private business. Particularly in this time of limited resources, the resources of Government should be used for the business of Government. It is vital that Government agencies do not use scarce dollars and hardware to go into business for themselves.

There are clear parallels between the Postal Service proposals in E-COM and the Federal Reserve activities in EFT. Like the Postal Service, the Federal Reserve has moved into the business of electronic communications unilaterally. It has used its authority to operate in the paper payments system as the basis for electronic operations. Such a move may or may not be justified. That is one question we will address today.

At the same time, there are also ways in which the Federal Reserve's activities are not like those of the Postal Service. The Federal Reserve has no watchdog, such as the Postal Rate Commission, to oversee its service offerings. Indeed, the Federal Reserve Board is regulator and service provider rolled into one. Perhaps most im-

portant, the operations of the Federal Reserve in EFT are more massive and mature than any proposal by the Postal Service. The expanded capacity of the Federal Reserve Communications System-80, for example, dwarfs any plans by the Postal Service.

In order to understand both the scope and intent of the Federal Reserve operations in EFT, we will address three areas of concern this morning. First, we will explore the question of whether the Federal Reserve's offerings compete unfairly with private firms. Second, we will examine the social implications of a single, national EFT structure dominated by the Government—what effect would it have on privacy and other individual rights? Third, we will address the dilemma raised by a regulatory agency providing basic services needed by the business that it regulates.

As we address these three questions, I hope that we can all keep in mind the central question before us: What is the proper role of the Federal Reserve in EFT services?

Our first witness today is Mr. James Howard, former general counsel of the National Commission on Electronic Fund Transfers, and currently a private consultant.

I might state, not only for Mr. Howard but for all of our witnesses, we are under a serious time constraint. We expect there will be activity on the floor later this morning that will necessitate the presence at least of this member, and probably most of the other members of the committee, so if all the witnesses would please summarize their statements we will try to move along as quickly as we can.

We would appreciate it if the witnesses could keep their responses to questions as brief as possible. We may also request that we be allowed to submit written questions, and hopefully that you would respond to those in a timely manner.

Mr. Howard, welcome and please proceed.

STATEMENT OF JAMES O. HOWARD, JR., PRIVATE CONSULTANT, NEW YORK, N.Y.

Mr. HOWARD. Thank you, Mr. Chairman. It is a pleasure to be here and I appreciate your invitation.

Mr. ENGLISH. If you plan to summarize, without objection we would include all of your statement as part of the record.

Mr. HOWARD. I am planning to summarize.

Mr. ENGLISH. Without objection it is so ordered.

Mr. HOWARD. The question of whether the Federal Government should operate EFT systems in competition with the private sector is an important one, and one I think that should concern itself to this subcommittee because it involves a significant activity of the Federal Government which has not received, and by its nature will not receive, the normal congressional oversight that traditionally comes through the budget process.

This arises from the fact the Federal Reserve System finances its operation through the revenues that it obtains primarily from its monetary policy operations. Because those revenues are estimated to exceed $12 billion this year, the Federal Reserve has not had to ask for congressional appropriations, and has not had to justify its use of Government funds to compete with the private sector.

I will make three points. First, there are a large number of competing payments systems, of which the EFT services provided by the Federal Reserve System are only one. Second, that the Federal Reserve has not demonstrated a need for its operational role in EFT. And third, this role distorts the marketplace for payments services, and will continue to do so in spite of the Federal Reserve's beginning to charge for its payments services.

The debate on Federal Reserve operation is a longstanding one. I have been involved with it since 1974 with the White House Office of Telecommunication Policy under the Nixon and Ford administrations, and through involvement with the interagency task force in the Carter administration. I am not now speaking, however, for any of those agencies, nor for my company or its clients.

Electronic funds transfers have been around for most of this century, operating between banks. But because they have only recently begun to be used by consumers in any significant degree, it might be useful to sketch out what these consumer systems are, who provides them, and how they fit with other parts of the Nation's payments systems. I will turn to the specific activities of the Federal Reserve System that are at issue today.

There are eight primary methods by which individuals can make payments in this country, several of which involve EFT.

Cash is the most common means of payment. It accounts for approximately a quarter of the Nation's money supply, and it is used in almost 90 percent of all transactions, most of which are for small dollar amounts.

Checks, including NOW accounts, are the second most frequent means of payment, accounting for approxmately 10 percent of all transactions, and by far the greatest dollar volume. The number of checks written yearly has been growing at a rate of approximately 7 percent, and will soon reach 40 billion.

Credit cards are a major, and recent, addition to the available payments mechanisms. Two-thirds of all adults are estimated to have at least one card, and over 500 million cards are in circulation. They are used annually for an estimated 4.5 billion transactions with an estimated average transaction of $30, for a total dollar volume estimated at over $140 billion. Put another way, they are used in approximately 2 percent of all payments transactions. They are primarily a paper-based system, but electronic clearance and settlement is an increasingly common feature.

Debit cards are also becoming important. Whereas the credit card accesses a line of credit, the debit card serves, like a check, to authorize payments from funds the debit cardholder has on deposit. Debit cards can be used to make purchases or to access automated teller machines. And, they can be combined with credit features to create a hybrid credit and debit card. Like the credit card, they can be paper based, electronic, or a combination.

Point of sale [POS] systems are probably what most people think of when they hear the term "EFT." In these systems, of which there are still comparatively few, consumers pay for their purchases at the place where the sale is made by presenting a plastic card that, like a credit card, contains account information in machine readable form. This information is used to initiate a debiting of the consumer's bank account and a crediting of the merchant's

account, normally without the creation of a paper payment instrument.

This debiting and crediting can be done instantaneously in an online system through telecommunications linking the merchant, his bank, and the consumer's bank. Or, it can be done at the end of the day in a batched form, much as happens with credit card systems. POS systems can also be used to authorize or guarantee paper checks, although in these cases the payment is accomplished through the normal check clearing and settlement process.

Automated teller machines [ATM's] are devices, commonly installed in the walls of financial institutions, that a customer can use in connection with a plastic card to receive cash, make deposits, transfer funds among his accounts, and make payments to selected institutions such as public utilities. There are now over 20,000 installed ATM's, and the figure is growing rapidly.

In addition, a large number of networks have developed, about 100 to date, that allow customers of one financial institution to use ATM's provided by other institutions. There are already regional networks in existence, and national networks are in advanced states of planning. These networks are provided by individual financial institutions, by groups of financial institutions, and by data processing and telecommunications service companies.

Telephone bill payment systems allow the customer to make payments instructions to his bank using a regular telephone. In some variations, special terminals are provided by the financial institution, and in others home computer systems are used. The payment is made by the financial institution using either a paper check or an automated clearing house.

This brings us to the eighth payment system, the automated clearinghouse [ACH], in which the Federal Reserve plays such an important and controversial role.

An ACH is a mechanism for electronically clearing and settling batched payments, and is in some ways an electronic analogue to the clearinghouses that clear paper checks. It works as follows:

A partcipating depository institution will receive instructions from a corporate customer to make salary payments to those of its employees who have asked to have their salaries directly deposited to their checking or savings accounts. The bank, or savings and loan association or credit union, will create a computer tape containing payments instructions such as each employee's bank account number, the bank at which he has his account—known as the receiving bank—and the dollar amount that is to be credited to his account.

This computer tape and the tapes from other participating financial institutions, are taken to a data processing facility, the automated clearinghouse, which sorts the information according to the receiving institution, and creates new tapes for each financial institution that is due to receive a payment. These new tapes are then sent to the receiving financial institutions, which use them to credit the accounts of their customers.

The system can also work in reverse. That is, by prior arrangement the bank that holds my mortgage could issue monthly instructions to debit my account the appropriate amount.

A wide variety of payments mechanisms can use the ACH. There are no technical reasons why credit card companies could not use ACH's to clear and settle charge conditions. Point of sale systems that batch their items can clear through the ACH. The same is true of telephone bill payment systems. But the difference between the ACH and these other payments systems is that 37 of the currently existing 38 ACH's are operated by the Federal Reserve System.

The way this came about is interesting. It provides an instructive lesson in inaccurate technical forecasting, institutional inertia, and the continuing attractiveness of an apparently free lunch.

This system started in 1968 when there were fears that the check system was going to grind to a halt. There was an effort to figure out ways of clearing transactions using magnetic tapes instead of paper transactions. The first automated clearing house started in 1972. The Federal Reserve provided the data processing backbone for the ACH's, provided courier service to transport magnetic tapes, and in some cases paper advices to the banks. At the same time the Federal Reserve was providing direct deposit of Government payrolls, social security accounts using the same system.

From the beginning, the Federal Reserve provision of private sector payments has resulted in substantial policy questions. The Federal Reserve asked in 1973 for public comment on the appropriate roles for Government and the private sector in owning and operating EFT systems. It received a great many comments. It has not yet responded as to its findings on what that role is.

In the meantime, since ACH's were founded, you had the existence of the National Commission on Electronic Fund Transfers looking at the issue. And you had the existence of the Privacy Commission looking at the issue. You have had the existence of the Inter-Agency Task Force in the Carter administration, chaired by Treasury and Commerce, taking a look at the issue. And this issue is still with us. It has not yet been addressed by the appropriate bodies, which are Congress.

In the meantime, the Federal Reserve has proceeded to entrench and enhance its role at the center of EFT. Its most important step is its planned procurement of a sophisticated general purpose data communications network, a packet-switched system called FRCS-80 [Federal Reserve Communications System of the 1980's].

This network will replace several current Federal Reserve networks. Its characteristics are such that it greatly increases the likelihood that the Federal Reserve will expand its role in providing commercial transactions for the private sector, will have a significant involvement with POS transactions, and will forestall the development of competing and perhaps more efficient private sector alternatives.

This will come about because the proposed telecommunications system provides both an impetus and a means for the ACH, with the Federal Reserve at its hub, to provide the link among financial institutions for a variety of payments services.

As part of its ACH services, the Federal Reserve provides physical delivery of computer tapes to the banks using ACH's. This physical delivery is being replaced by a telecommunications system, FRCS-80, that will allow computer-to-computer communi-

cations between the Federal Reserve and ACH members. By the end of this decade, the Federal Reserve expects that all ACH inputs and outputs will be delivered electronically.

Through the FRCS-80 telecommunications system, each bank originating items to or receiving them from an ACH will have some online connection to the Federal Reserve. And one Board member of the Federal Reserve recently said the Federal Reserve was considering placing its own terminals in banks.

It is important to note that this new communicating system is not being designed primarily to handle Federal Reserve non-ACH information flows, nor to handle Government payments, which still constitute the bulk of all ACH transactions. It is being designed to allow the Federal Reserve to maintain itself as the core provider of electronic payments services.

You can see this most clearly if you look at the projections the Federal Reserve is using in designing the system, and the specifications that it has given out to companies which are going to provide aspects of that service. The Federal Reserve is designing the system on the assumption that commercial ACH payments, not Government payments but commercial payments, are going to be at peak volume five times the volume for all uses other than the Government ACH payments. And over the next 4 years, this 5-to-1 ratio will increase fourfold.

Furthermore, the Federal Reserve expects commercial ACH to be 2.5 times the Government peak hour volumes by 1985. And the payments services that the Federal Reserve expects to flow through its system are themselves illuminating. First, check truncation should provide 38 percent of ACH volume by 1990. The Federal Reserve has also required that FRCS-80 be designed to handle individually initiated items, including interbank settlement of batched POS transactions, and telephone bill payments.

The FRCS-80 is admirably designed to move the Federal Reserve into servicing individually initiated transactions; that is, to move from a wholesale to a retail orientation. FRCS-80 is not designed to improve the Federal Reserve's ability to provide preauthorized Government payments such as social security.

There are a number of circumstances in which we might formally provide for Government operation of services, situations in which there are monopolies or externalities in which there is a felt need for a nationwide system that would otherwise not be available. EFT services do not have any of the quality that traditionally led to a major Government role. If a Government role were necessary for these reasons, I would argue that that role could be provided through the Federal Government's acts as a regulator rather than taking the extreme step of operating the system itself.

Let me touch on two more points. First, in response to concerns that a number of people, including the EFT Commission, had expressed about pricing and the Federal Reserve was giving away its EFT services, Congress required last year in the Depository Institutions Deregulation and Monetary Control Act, that the Federal Reserve set out and implement a schedule of fees and a set of pricing principles.

The proposals that the Federal Reserve issued were attacked widely for a number of reasons. A lot of the attacks were on techni-

cal ground, but there are two primary concerns that you face if you are a private sector company thinking about going into competition with the Federal Reserve.

First, their pricing assumptions are inherently arbitrary. This is shown by the fact in a 3-week period, both the Home Loan Bank Board and the Federal Reserve in response to some statutory instruction, came up with significantly different figures to use in putting into their calculations a figure to take account for the kind of taxes and the return on capital the private firm would face.

The second key feature is that the Federal Reserve is pricing these systems so as to recover its cost only when the system is running at far higher volumes than it is at present. A private sector firm, thinking of going into competition with the Federal Reserve System, knows the Fed will be pricing below its cost and below that competing firm's cost for however many years it takes to achieve a mature system.

Private competitors can't operate that way. They don't have pockets that deep. The development of FRCS–80 raises significant new barriers to the development of competing systems. The Federal Reserve Bank of St. Louis noted in its comments a year ago on the Fed's proposed pricing schedules that:

> The capability of the Federal Reserve to underwrite a system as extensive as the proposed FRCS–80 communications network may de facto eliminate future competitors in the ACH, net settlement and funds transfer product areas.
>
> It is also clear the Federal Reserve is not acting to provide services that the private sector will not provide. The Federal Reserve is consciously going into competition with the private sector.

Lyle E. Gramley, a member of the Board of Governors of the Federal Reserve System, delivered what must have been a chilling message in a speech on September 8, 1980, before the 1980 Southern Regional Operations and Automation Workshop, entitled "Pricing and Access to Federal Reserve Services":

> I am confident that the new arrangements mandated by the Monetary Control Act of 1980 will be of substantial long-run benefit to the payments mechanism and to our nation's economy. Many of you in the private sector, I am sure, are anxious for the opportunity to compete with the Fed. We welcome your rivalry. We intend to give you a tough, but fair, battle. May the best and most efficient win.

There is a final aspect to the Federal Reserve's provision of services for use by financial institutions that should be scrutinized. That is the problem, mentioned by both the National Commission on EFT and the Privacy Commission, of conflicts of interest between the Federal Reserve as seller of services to financial institutions, and its role as regulator of those same institutions. The National Bank of Detroit spoke to this problem in a letter to the Federal Reserve Board on March 6, 1974. The bank said:

> We do not think it sound for a major regulating agency to be a major part of the operation * * * of the electronic funds transfer system. Regulation, audit and control should be separate from operations so that policy may be set independent of day-to-day problems.

As we compose this answer to the Federal Reserve Board's request for comments, we cannot help but be aware that we are responding to our lender of last resort. Of necessity, this inhibits the truly arms-length relationship we should have with an organization performing a service for us.

Let me conclude with three observations. First, EFT is developing rapidly within the private sector of those areas in which the Federal Reserve plays no operational role. Second, if there were no market-driver demand for EFT services, the services are not so important that Government should step in and subsidize their operations.

Third, and finally, it is time to resolve this debate. The Federal Reserve is on the verge of a major step that further entrenches it in the payments systems, the most recent in a series of steps it has taken without benefit of ongoing congressional examination and approval.

Thank you, Mr. Chairman.

[Mr. Howard's prepared statement follows:]

TESTIMONY

OF

JAMES O. HOWARD, JR.

Mr. Chairman, Members of the Committee, my name is Jim Howard, and I appreciate your invitation to testify before you this morning concerning the Federal Reserve's provision of electronic funds transfer services.

The question of whether the Federal Government should operate EFT systems in competition with the private sector is an important matter, and one that should particularly concern itself to your Subcommittee. It is particularly relevent to your Subcommittee because it involves a significant and, I would argue, ill-advised activity of the Federal Government that has not received the congressional oversight that traditionally comes through the budgetary process. Because the Federal Reserve system finances its operations through the revenues it receives primarily from its monetary policy operations (its gross earnings are estimated this year to exceed $12 billion), it has not had to ask for congressional appropriations for this activity, nor to justify its use of government funds to compete with the private sector.

I will attempt to make three points. First, that there are a large number of competing payments systems, of which the EFT services provided by the Federal Reserve are only one. Second, that the Federal Reserve has not demonstrated a need for its operational role in EFT. And third, that this role distorts the marketplace for payments services and will continue to do so in spite of the Federal Reserve's beginning to charge for its payments services.

Let me briefly state my background and biases to help you judge the validity of what I say. I began looking at the question of the proper role of the Federal Government in providing electronic funds transfer (EFT) services when serving in the White House Office of Telecommunications Policy in the Nixon and Ford administrations. That office had a strong interest in minimizing government control over the merging technologies of computers and telecommunications -- the technologies underlying EFT. I then served as General Counsel of the National Commission on Electronic Fund Transfers, which was established by Congress and specifically instructed to examine this question. Finally, I was involved in an interagency task force under the Carter Administration taking still another look at this question. When I left government a few months ago, I was serving as Acting Chief Counsel of the Department of Commerce's National Telecommunications and Information Administration (NTIA), which also has a strong and continuing institutional interest in questions of government competition with the private sector. I am now Vice-President of the ICS Group, Inc., a consulting firm dealing with the financial services and telecommunications industries. Let me stress that I am speaking for myself alone, and not for my company or its clients.

Electronic funds transfers have been around for most of this century, operating between banks. But because they have only recently begun to be used by consumers in any significant degree, it might be useful to sketch out what these consumer systems are, who provides them, and how they fit with other parts of the

nation's payments systems. I will thus turn to the specific activities of the Federal Reserve System that are at issue today.

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feature.

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of telephone bill payment systems. But the difference between the ACH and these other payments systems is that 37 of the currently existing 38 ACHs are operated by the Federal Reserve System.

The way this came about is interesting. It provides an instructive lesson in inaccurate technical forecasting, institutional inertia, and the continuing attractiveness of an apparently free lunch.

The ACH concept started in 1968 when there were grave fears that the paper check system was in danger of breaking down. In an effort to reduce this paper flow by replacing paper transfers with electronic impulses, the Federal Reserve participated with a number of commercial banks who formed the Special Committee on Paperless Entries (SCOPE). Later in 1968 the American Bankers Association formed a committee to develop ways of improving the efficiency of the payments system. In 1971, that committee recommended the development of regional and eventually national automated clearing mechanisms.

In 1972 the first Automated Clearing House began operations in California. Two years later the National Automated Clearing House Association (NACHA) was formed, to provide rules and standards for the exchange of payments among ACHs.

Simultaneously, the Treasury Department, in coordination with the Federal Reserve, was examining ways of processing government payments. As a result of this study, the Federal Reserve began making payments instructions on magnetic tapes, acting as fiscal agent for the Treasury. And, the Federal Reserve provided the data processing and delivery systems used by the commercial banks that were participating in ACHs, at no charge to the banks.

From the beginning, this Federal Reserve operational involvement in private-sector payments raised serious policy questions. In 1973 the Federal Reserve issued for public comment proposed revisions in its Regulation J (which covers the Federal Reserve's check collection operations) and specifically requested comments on the appropriate roles for government and the private sector in owning and operating EFT systems. The Federal Reserve issued a revised proposal two years later.

In the meantime, the Federal Reserve had received a request from a group of Atlanta banks to operate the switching and processing center for a point of sale system. The Federal Reserve declined, noting that the policy issues raised by Regulation J had not been resolved, and that the Senate was considering establishing a commission to consider the area.

The National Commission on Electronic Fund Transfers (NCEFT) was subsequently established, and instructed to take into account when conducting its study of EFT:

> the need . . . to assure Government regulation and involvement or participation in a system competitive with the private sector be kept to a minimum. (Pub. L. 93-495, Oct. 28, 1974)

The NCEFT, after substantial deliberations, essentially recommended that the status quo be maintained. It believed that ACHs offered economic benefits, that it was proper for the Federal Reserve to provide ACH-type services for Federal recurring payments, and that given the small number of non-government payments being made it was efficient for the Federal Reserve to process these private payments in conjunction with the much larger volume of government payments. The Commission also recommended that the Federal Reserve charge for these private sector payments.

The Commission drew the line, however, at POS systems, and recommended:

> that the Federal Government not be involved operationally, at present or in the foreseeable future, in POS switching and clearing facilities except for the provision of net settlement among depository institutions. (EFT in the United States, p. 217)

The Commission foresaw that there might be circumstances in which it would be appropriate for the Federal Government to operate POS switching and clearing facilities. Those circumstances were if the check system became overloaded, if POS systems turned out to be natural monopolies, or if POS systems became a major portion of the nation's payment system, in which case the Government might decide to serve as a provider of last resort for portions of the country that could not support a switch.

The Commission said, however, that if these circumstances were to develop such that Congress were to consider Government operation of POS switches, Congress should consider the privacy implications of government operation, as well as the possible conflicts of interest inherent in having a regulator also act as an operator of systems in competition with the systems provided by the institutions it regulates.

The Privacy Commission, at the same time, was looking at government operation of EFT with specific regard to its implications for privacy. It recommended that government not be allowed to operate an electronic payments mechanism involving transactions among private parties. That Commission was concerned, as was the EFT Commission, that ACH systems would eventually mesh with POS systems. And, the Privacy Commission believed that the Federal Reserve's use of telecommunications technology to process private payments created privacy problems not present in paper-based systems.

Following the submission of the recommendations of the NCEFT and the Privacy Commission in 1977, the Carter Administration established an interagency task force, chaired jointly by the National Telecommunications and Information Administration and the Department of the Treasury, to consider what role the Federal Government should have in operating EFT systems for use by the private sector. That task force is currently in limbo.

In the meantime, the Federal Reserve has proceded to entrench and enhance its role at the center of EFT. Its most important step is its planned procurement of a sophisticated general purpose data communications network, a packet-switched system called FRCS-80 (Federal Reserve Communications System of the 80's). This network will replace several current Federal Reserve networks. Its characteristics are such that it greatly increases the likelihood that the Federal Reserve will expand its role in providing commercial transactions for the private sector, will have a significant involvement with POS transactions, and will forestall the development of competing and perhaps more efficient private sector alternatives.

This will come about because the proposed telecommunications system provides both an impetus and a means for the ACH, with the Federal Reserve at its hub, to provide the link among financial institutions for a variety of payments services.

As part of its ACH services, the Federal Reserve provides physical delivery of computer tapes to the banks using ACHs. This physical delivery is being replaced by a telecommunications system, FRCS-80, that will allow computer to computer communications between the Federal Reserve and ACH members. By the end of this decade, the Federal Reserve expects that all ACH imputs and outputs will be delivered electronically. Through the FRCS-80 telecommunications system, each bank originating items to or receiving them from an ACH will have some on-line connection to the

Federal Reserve. Once this network is in place, it will be far more difficult for a private sector firm to enter this market.

We should note that this new communicating system is not being designed primarily to handle Federal Reserve non-ACH information flows, nor to handle government payments, which still constitute the bulk of all ACH transactions. According to the Federal Reserve's design parameters, commercial ACH payments at peak volume (peak volumes are critical in determining the system's size) will account for over 5 times the volume from all uses other than government ACH transactions. And the Federal Reserve expects this ratio of 5 to 1 between commercial ACH transactions and other non-government ACH transactions to increase almost four-fold over the next four years. Furthermore, the Federal Reserve expects commercial ACH peak hour volumes to be 2½ times government peak hour volumes by 1985. In short, the system is not being designed to handle Federal Reserve administrative, accounting, or statistical data. Nor is it being designed to allow more efficient processing of government payments. It is being designed to allow the Federal Reserve to maintain itself as the core provider of electronic payments services.

The payments services projected by the Federal Reserve to flow through its system are illuminating. First, check truncation should provide 38% of ACH volume by 1990. Today, the Federal Reserve clears only inter-regional checks. Through the ACH, the Federal Reserve would be moving into clearing intra-regional checks

as well. The Federal Reserve has also required that FRCS-80 be designed to handle individually initiated items, including inter-bank settlement of batched POS transactions, and telephone bill payments.

The FRCS-80 is admirably designed to move the Federal Reserve into servicing individually initiated transactions, i.e., to move from a wholesale to a retail orientation. FRCS-80 not designed to improve the Federal Reserve's ability to provide pre-authorized government payments such as Social Security.

I have discussed the variety of payments systems, and the Federal Reserve's role in some of them. Let me now turn to the question of whether the Federal Reserve ought to be involved in providing these services in competition with the private sector.

Government's provision of services for use by the private sector is not new. The Federal government provided major support for developing the nation's transportation and communications infrastructure. Canals and railroads were build with large infusions of public monies. The postal system was established by the Federal Government at an early stage in our nation's history. More recently, the interstate highway system was developed by the Federal Government, partially under a national security umbrella. As recent events have emphasized, the Federal Government provides the system that controls most air traffic.

And, the debate over government's proper role in providing such services is an old one. An interesting parallel to today's question arose in the nineteenth century, when there was a vigorous debate over whether the Federal Government should establish and operate a national telegraph system.

More recently, of course, this question has been raised with respect to the Postal Service's role in electronic mail, and the government's role in general as a provider of information in competition with private firms.

Clearly, we have a national bias against government's owning and operating the means of production -- whether that production is of goods or of services. But it is also clear that this question is too important to be answered by quick reference to an ideology, and that historically the matter has been resolved by examining the particulars of the service that government is proposing to offer. It is, therefore, necessary to first examine the conditions under which government operation is appropriate, and then determine whether EFT systems fit those conditions.

The most obvious case for government operation is when the service is what an economist would call a "public good" -- a good such as national defense whose existence benefits everyone, whether he pays for it or not. For these goods, there is no way to keep someone who does not pay for them from sharing to a considerable degree in the benefits that the goods provide.

Parts of the payments system have the character of public goods. The widespread availability of currency that is accepted at par benefits everyone, and there is no way I know of to establish a market mechanism that would preclude somebody from enjoying those benefits if he chose not to pay for them. Similarly, one can argue that the check clearing system has some of those characteristics, though it is a harder case to make. But EFT systems, like credit card systems, augment rather than replace these basic payments systems. They do not significantly benefit those who chose not to use them. In short, the public good rationale does not justify government's providing EFT systems.

A second condition that may call for government involvement is when there is not enough competition in the market to do a satisfactory job of setting prices or determining what is to be produced and at what price. This can arise with natural monopolies, where the economies of scale are such that, over the relevant market size, each additional unit costs less to make than the one before it. In such cases, government commonly grants a charter to one company to operate the monopoly and regulates that company's rates, so that the public may benefit from the available economies of scale without having to pay monopoly profits. But, we have no reason to believe that EFT systems will turn out to be natural monopolies. The technologies used to produce EFT services are data processing and telecommunications, and those industries are highly competitive today. And, if EFT were some years from now to develop into a natural monopoly, public utility regulation would

be available to deal with it at that time.

A third situation calling for government intervention in the marketplace is the existence of externalities, in which the prices charged for a product or service do not fully reflect the costs that go along with producing it. An example is air pollution associated with a manufacturing process. Unless the government shifts the associated health costs back to the producer, through requiring him to recompense those whose health is damaged or to eliminate the pollution, the market will not force him to produce in the manner that minimizes the total costs of production. Again, there are no externalities that I know of associated with EFT services. And if there were, the cure would be government regulation, not government operation.

In summary, EFT services do not appear to have any of the qualities that have traditionally led to a major government role. Moreover, even if a government role were necessary, that role should be as a regulator, not as an operator. And, I believe that the Federal Reserve should have the burden of justifying its ongoing role within the context of a free enterprise economic system.

What I have suggested so far is that the Federal Government has no affirmative obligation, as a matter of generally accepted principles, to operate EFT systems for use by the private sector. But the Federal Reserve is already there. That being the case, it is a separate matter to decide whether they should abdicate their present and projected roles. I believe that they should, because their presence serves to keep competing systems from developing, to distort the market for EFT services, and to raise difficult problems of conflicts of interest.

The Federal Reserve services as operated to date, clearly deter the development of competing services. First, the Federal Reserve in the past was not specifically charging for providing ACH services (nor for processing paper checks). It is difficult for a private entrepreneur to succeed in selling what the government is giving away for free.

In response to these concerns the Congress, in the Depository Institutions Deregulation and Monetary Control Act of 1980, last year required the Federal Reserve to put out for public comment and then to implement a schedule of fees and a set of pricing principles. The Federal Reserve's proposals last year were strongly attacked by other government agencies, by private sector organizations, and by one of the twelve Federal Reserve banks. There are a number of technical quarrels one might have with the way the Federal Reserve generated its prices. But the major problem is that any pricing system established by a government body

will be highly arbitrary as seen by a prospective private-sector competitor. For example, the Federal Reserve Board and the Federal Home Loan Bank Board recently applied the same statutory pricing policies to their services. They are required by the Monetary Control Act to set prices so as to account for the taxes that a private sector firm would have to pay, and the return on capital that would be necessary. The Federal Reserve and the Bank Board differed substantially in the pre-tax cost of capital that they assumed. Either one might be correct; the point is that the process by which the Federal Reserve sets prices is inherently arbitrary, and not subject to the same market place discipline that faces a private sector competitor.

A second way in which the Federal Reserve's pricing system acts to preclude the development of competing systems is that the Federal Reserve is setting its prices so as to recover costs (and imputed profits and taxes) only when the system is running at far higher volumes that at present. A private sector firm thinking of going into competition with the Federal Reserve System knows that the Fed will be pricing below costs for however many years it takes to achieve a mature system. Few private firms have the luxury of waiting so long to recoup their investments. As Peter Drucker recently wrote:

> With interest rates at present levels, and with the well-tested rule that the risk of doing anything new requires an uncertainty premium at least as high as the interest rate, new investments must have a payout of less than two years to have any present value at all. (Wall Street Journal, October 15, 1981)

In addition to these pricing concerns, the development of FRCS-80 raises significant new barriers to the development of competing systems. The Federal Reserve Bank of St. Louis noted in its comments a year ago on the Fed's proposed pricing schedules that:

> The capability of the Federal Reserve to underwrite a system as extensive as the proposed FRCS-80 communications network may de facto eliminate future competitors in the ACH, net settlement and funds transfer product areas.

By greatly expanding its capacity through FRCS-80, the Federal Reserve is increasing the number of product lines that it competes with. And by setting prices so low that costs will be recovered only when this new capacity is fully utilized, the Federal Reserve insures that competition is unlikely to develop.

And it is clear that the Federal Reserve is not acting only to provide services that the private sector will not provide. The Federal Reserve is consciously going into competition with the private sector. Lyle E. Gramley, a Member of the Board of Governors of the Federal Reserve System, delivered what must have been a chilling message in a speech on September 8, 1980 before the 1980 Southern Regional Operations and Automation Workshop, entitled "Pricing and Access to Federal Reserve Services":

> I am confident that the new arrangements mandated by the Monetary Control Act of 1980 will be of substantial long-run benefit to the payments mechanism and to our nation's economy. Many of you in the private sector, I am sure, are anxious for the opportunity to compete with the Fed. We welcome your rivalry. We intend to give you a tough, but fair, battle. May the best and most efficient win.

There is a final aspect to the Federal Reserve's provision of services for use by financial institutions that should be scrutinized. That is the problem, mentioned by both the National Commission on EFT and the Privacy Commission, of conflicts of interest between the Federal Reserve as seller of services to financial institutions, and its role as regulator of those same institutions. The National Bank of Detroit spoke to this problem in a letter to the Federal Reserve Board on March 6, 1974. The Bank said:

> We do not think it sound for a major regulating agency to be a major part of the operation . . . of the electronic funds transfer system. Regulation, audit and control should be separate from operations so that policy may be set independent of day-to-day problems.
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> * * *
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> As we compose this answer to the Federal Reserve Board's request for comments, we cannot help but be aware that we are responding to our lender of last resort. Of necessity, this inhibits the truly arms-length relationship we should have with an organization performing a service for us.

More recently, the provision by Federal Home Loan Banks of services to Savings and Loan Associations has caused some commercial banks that do data processing for Savings and Loans to fear that their S & L customers will feel that it is prudent to give that processing business to their regulator. One need not

assume bad faith on the part of the regulator for there to be a problem. It was this concern about conflicts of roles that led some years ago to the splitting up of the Atomic Energy Commission so as to establish organizationally separate responsibility for development and regulation of nuclear energy.

Let me conclude with three observations. First, EFT is developing rapidly within the private sector in those areas in which the Federal Reserve plays no operational role. Second, if there were no market-driven demand for EFT services, the services are not so important that government should step in and subsidize their operations.

Third, and finally, it is time to resolve this debate. The Federal Reserve is on the verge of a major step that further entrenches it in the payments systems, the most recent in a series of steps it has taken without benefit of ongoing Congressional examination and approval.

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Mr. ENGLISH. Thank you.

Absent the Federal Reserve's virtual monopoly as far as the automated clearing house operation, do you believe private firms would begin to offer these types of operations?

Mr. HOWARD. I believe that private firms would offer a variety of ways of clearing payments transactions. The reason for my setting out the eight varieties of payments systems was to suggest that there are a great many ways of achieving the same result. There are a great many ways of achieving payments transactions.

When I mentioned 100 networks to exchange payments between automated teller machines, I did that to suggest that there are a great many ways to skin this particular cat. Whether the ACH system as it now exists would have grown up in that fashion without the Federal Government providing a subsidy, I don't know, but I think the service would be provided.

Mr. ENGLISH. Do you feel the recent actions of the Federal Reserve in developing the Federal Reserve communications systems project 80 and pricing ACH service will have a detrimental effect on the development of private sector competition?

Mr. HOWARD. I do. I think it will foreclose the development of competition in that area. It sets up a timetable for payback that private sector firms, particularly in a time of high inflation, cannot hope to meet, and it is offered by an institution which is selling its service in part to the institutions that it regulates. So if your private sector provider is thinking of going into that business, you know there is that link between your potential customers and their regulator.

You know that the regulator is pricing the service in a way you cannot afford to price it, and you know that is going to continue for some years. You are not likely to go into the business as a result.

Mr. ENGLISH. Do you believe that the planned configuration of the Federal Reserve communication system 80 will make the Federal Reserve a resale carrier in terms of the Communications Act of 1934?

Mr. HOWARD. That is an issue that the various staff members in the Federal Communication Commission have been looking at from at least 1976. I would rather let them respond to that question. I wish the Federal Communications Commission had taken more of a look at this matter than I believe it has. I will let them characterize it.

Mr. ENGLISH. The Electronic Fund Transfer Commission noted in its report that A.T. & T. may possess "dominant market power" that could force other firms out of EFT markets or preclude entry by competitors if A.T. & T. were to become an EFT service provider.

If one accepts this argument concerning A.T. & T.'s power, doesn't the same analysis apply to the Federal Reserve—not because of its technical expertise, but because of its traditional domination of the paper payments system, its control of existing facilities, its enormous financial power, and the chilling effect of its regulatory presence?

Mr. HOWARD. Let me clarify one thing about the Commission's concerns with A.T. & T. The Commission's basic thrust was to recommend that as much competition as possible be brought into the

marketplace for EFT services and the Commission felt that A.T. & T. was a proper provider of those services under certain conditions.

Furthermore, it felt that there might be circumstances under which the only way to provide EFT services was by the use of the telephone network, not a complicated system. If you have access to a touchtone phone from a rural community, you can access payments systems, and you are going to be using the facilities of A.T. & T. The Commission thought that was proper.

On the other hand, it is clearly important to make sure that revenues from a monopoly service are not and cannot be used to subsidize operations in competition with the private sector. I might add again that these concerns have animated Congress recently to look at the way in which A.T. & T. provides services, such as allowing A.T. & T. to get into the data processing business by setting up separate subsidiaries.

Mr. ENGLISH. Will the existence of a sophisticated network like FRCS 80 lead inevitably to the interconnection of POS systems through that network? Won't there be tremendous pressure to employ this existing network for national and regional interconnection, rather than go to all the expense of trying to duplicate it?

Mr. HOWARD. It makes it much less likely that the competing systems are going to arise. It sets up the links between the Nation's banks, and provides a telecommunications network. It depends for its volume on individually initiated transactions.

I would think it is going to have a baleful effect on development of alternatives, and it is designed to capture a substantial portion of the individually initiated transactions that are going to take place electronically.

Mr. ENGLISH. Are there any fundamental differences between the information contained in a single message or item in an ACH as opposed to a message in a POS system? Except, of course, for the time and location information necessary in a POS transaction?

Mr. HOWARD. I have not reviewed recently the requirement for such things as receipts in POS systems. So I cannot speak to that particular matter.

In general, the functional requirements are the same. You need information on the accounts in which a payment is to be made. You need instructions as to the dollar amount, the account to which it is to be deposited, and the banks at which each of these actions is to take place. So the exact information has to flow for both kinds of transactions.

Mr. ENGLISH. Are most of the privacy questions raised in the context of ACH operations the same as those raised by POS operations? With the exception, of course, of the problem of real-time surveillance in POS systems.

Mr. HOWARD. That is my view. It was not the EFT Commission's view, which felt that the privacy problems really began when you had substantial point of sales systems.

Mr. ENGLISH. Do any legal protections exist which would restrict the Federal Reserve from providing personal information obtained in its EFT operations to another government agency, whether Federal, State or local? For example, does the Right to Financial Privacy Act apply to the Federal Reserve?

Mr. HOWARD. My recollection is it applies to only financial institutions and some credit card companies. I could be wrong on this, but that is my recollection. The Federal Reserve has provided certain kinds of protections itself, but those protections take the form of internal requirements that do not impose legal obligations on the Federal Reserve, and that a private individual whose information was being sought could not use to impede that access.

Mr. ENGLISH. Are any new legal protections needed to preserve the privacy of information in the increasing variety of EFT services? Would the legislation proposed by the Department of Justice and NTIA in the last administration meet the need for new law?

Mr. HOWARD. It would meet some of the needs. It would not meet them all. It would meet the primary need, as I see it, of controlling the use of EFT systems to collect information, either about an individual's location or to collect information on an ongoing and cheap basis about patterns of behavior. It would not solve all of the problems, but it would be a good first step.

Mr. ENGLISH. I have no further questions, Mr. Howard. I want to thank you very much for appearing before us today. We appreciate it, and it has been very helpful and enlightening.

Next, we will hear from a panel. Mr. John F. Lee, who is executive vice president of New York Clearing House Association, and Mr. W. Robert Moore, senior vice president of Chemical Bank in New York representing the National Automated Clearing House Association.

I want to welcome both of you gentlemen, and as I mentioned to Mr. Howard, we would appreciate it if you could summarize your statements, and we would be happy to include your entire written statements as part of the record, without objection.

STATEMENT OF JOHN F. LEE, EXECUTIVE VICE PRESIDENT, NEW YORK CLEARING HOUSE ASSOCIATION

Mr. LEE. Thank you, Mr. Chairman. I am John F. Lee, executive vice president of the New York Clearing House Association. I am grateful for this opportunity to testify before you with respect to the role of the Federal Reserve System as a provider of automated clearing house services.

I will not read my whole testimony into the record. I will summarize it briefly.

I thank you for including it in the record in whole.

I would like to take a moment to place our present situation into its historical context. The Federal Reserve involvement in ACH transfers began with a preliminary study commenced by the private sector in California during the late 1960's. Heavy involvement began in 1972 with the commencement of the Federal recurring payments program. At that time the Federal Reserve, as the fiscal agent for the U.S. Treasury Department, distributed Treasury checks through which Federal payrolls were met and Federal assistance programs were disbursed.

The manual clearing process became increasingly expensive as the swelling Federal payroll and rapid proliferation of assistance programs dramatically increased the number of checks.

Electronic services were commenced by the Federal Reserve System, without exploring private alternatives and notwithstanding the need to expand the System's computer capacity and transportation system to perform the new task.

I might add because member banks' reserves provide the Fed with its operating capital, it was actually bank funds which paid for the new services.

We have previously questioned the wisdom of this course embarked on by the Fed as Government operation of a new payment system usually brings with it a certain amount of rigidity. Nevertheless, without explicit congressional authorization, the Federal Reserve took action to create a nationwide ACH network by offering its services free, first in California and later in other regions of the country.

This action was taken prior to a time when there was a public demand for such service, and before private enterprise had been stimulated in the traditional way, by customer demand, to enter the field.

Had the Federal Reserve not intruded prematurely into private sector activities, ACH services would have developed at a normal pace as the public evidenced a demand and a need. The Treasury Department requirements would have become a part of that need.

In December 1975 the New York Clearing House commenced the operation of its private ACH, the New York Automated Clearing House (NYACH). It holds itself out to service all the depositor institutions, not just banks, in the Second Federal Reserve District. Our 12 member banks underwrite the expenses of NYACH because competing Federal ACH services are heavily subsidized.

In addition, the Federal Reserve has insisted that the Treasury recurring payments, which make up the bulk of ACH traffic, about 60 percent, either flow through a Federal Reserve run-ACH or that any privately operated ACH agree to handle them without charge. The latter alternative effectively required us and any other potential private ACH, to pay for a Government program or to forego handling Federal items altogether.

Despite these obstacles, we believed private sector operation was necessary. Based on our observation at that time, Government entry into a payments mechanism tends to freeze current technology and stifle incentives for innovation.

This is because the Government has inherent power to exclude all competitors. The Government can afford to ignore the relationship between its costs and its revenues relating to a service because it can subsidize any cost overruns. The private sector cannot. The de facto result is that, regardless of intent, the Government's pricing becomes predatory, forecloses private-sector alternatives and results in a Government monopoly.

The New York Clearing House believed that public awareness of the impact of the Federal Reserve's free-services policy would ultimately lead Congress to direct the Federal Reserve System to price its services at rates commensurate with Federal Reserve costs. This expectation was fulfilled with the enactment of the Monetary Control Act of 1980, which was designed, among other things, to encourage private-sector alternatives in our payments mechanism.

The act instructed the Federal Reserve to develop a schedule of fees for its services, including ACH. The schedule of fees was to be structured on the basis of several statutory principles, including requirements that (1) all services were to be priced explicitly; and (2) over the long run, fees were to be established on the basis of all direct and indirect costs, except that the Federal Reserve could give due regard to competitive factors and the provision of an adequate level of services nationwide.

Legislative history indicates that the exception was designed to apply "where the Board determines that it is necessary to depart from this principle in order to prevent a serious and long-lasting impairment of the Nation's payment system."

In August of 1980 the Federal Reserve published for public comment its pricing schedule implementing the Monetary Control Act. ACH prices were stated to be 1.5 cents for an inter-regional item and 1 cent for an intra-regional item in most parts of the country. A small discount was given in New York to reflect the operation of NYACH.

While the Federal Reserve failed to release its actual cost figures, it was generally acknowledged that a significant subsidy existed for ACH services. Although no current information has been released as to nationwide ACH costs, we understand these costs are approximately 6 cents per ACH transaction. On this basis alone, the System's revenues account for only approximately 20 percent of its costs.

In its comment letter, dated October 31, 1980, the New York Clearing House urged the Board of Governors to decrease this subsidy, "unbundle" prices and give NYACH adequate credit for services it performs. Similarly, the Justice Department, in its comments dated November 7, 1980, noted that the ACH subsidy could ". . . disadvantage private industry, fail to provide incentives to enter the market, and firmly entrench the Federal Reserve as the operator of the ACH system." The Justice Department concluded, "the Board's proposal to utilize incentive pricing for ACH services is not justified."

The Fed nevertheless went forward with its originally proposed ACH pricing schedule. Private sector enthusiasm unquestionably cooled. For example, the Rocky Mountain Automated Clearing House in Denver made a study of the feasibility of running a private ACH operation, and it decided to continue to use the Fed because the cost per transaction for private processing was significantly higher than the present subsidized market price charged by the Federal Reserve System.

Now we, too, have regretfully been forced to conclude that the existence of NYACH itself may be threatened. The decision of the Federal Reserve System to subsidize heavily ACH services means that future operation of NYACH will require our members to continue to absorb significant operating costs. The Federal Reserve subsidy prevents NYACH, or any other potential private-sector ACH, from recovering ACH costs directly from all users.

Equally as negative in its impact on the private sector development is the failure of the Fed to price ACH services realistically on a component-by-component basis.

The significance of this aspect cannot be overstated. First, by charging one low, "bundled" price for all components of the ACH service, the Federal Reserve precludes private-sector competition on a component-by-component basis. Second, even in New York, where ACH prices are somewhat reduced to reflect the operation of NYACH, the discount does not adequately compensate NYACH for its role in the second district's payment mechanism. Raising ACH prices without providing adequate credits for the work performed by private-sector ACH's will exacerbate the private sector's problems.

To ameliorate the problem described, the New York Clearing House believes the following actions should be taken by the Federal Reserve Board: One, private-sector ACH's should be given credit for the work they do.

Two, the System's single price for ACH services should be "unbundled" into several component prices. Bundling for the prices of several component parts of a service is a classic means by which large organizations have tried to foreclose competition by small competitors. The courts have uniformly condemned the practice under antitrust laws.

Three, the Federal Reserve's subsidy of ACH's should be eliminated; and four, the Federal Reserve should actively seek other means by which to encourage private sector participation in the payment mechanism.

In short, the private sector has evidenced a strong interest in providing ACH services. This interest has been diminished by the Federal Reserve's subsidized pricing policy; a policy which directly conflicts with the congressional objective to encourage private-sector alternatives in our payments mechanism evidenced by the Monetary Control Act of 1980. Although the Federal Reserve Act does not authorize the creation of a universal ACH system by the Federal Reserve, the pricing policies of the Federal Reserve, if not changed, are likely to result in it being the one and only supplier of ACH services.

Thank you very much.

[Mr. Lee's prepared statement follows:]

Testimony of
John F. Lee
Executive Vice President
New York Clearing House Association

"A Private Automated Clearing House;
Its Struggle Against
A Government Operated System"

My name is John F. Lee. I am the Executive Vice President of the New York Clearing House Association, an association composed of 12 member banks located in New York City. We appreciate the opportunity afforded me to testify on behalf of the Clearing House with respect to the role of the Federal Reserve System in providing automated clearing house (ACH) services.

I. HISTORY OF ACH DEVELOPMENT

While my testimony will be directed primarily to the role of the Federal Reserve System in providing ACH services today, I would like to take a moment to place our present situation in its historical context. The Federal Reserve's involvement in ACH transfers began with a preliminary study commenced by the private sector in California during the late 1960s.

Heavy involvement began in 1972, with the commencement of the Federal recurring payments program. At that time the Federal Reserve, as the fiscal agent for the United States Treasury Department, disbursed Treasury checks through which federal payrolls were met and federal assistance programs were funded. This clearing process became increasingly expensive as the swelling federal payroll and rapid proliferation of assistance programs dramatically increased the

number of checks. The Treasury Department assumed that the Federal Reserve System had the legal obligation to provide electronic direct deposit facilities in order to reduce costs. These services were commenced by the Federal Reserve System, without exploring private alternatives and notwithstanding the need to expand the System's computer capacity and transportation system to perform the new task.

We have previously questioned the wisdom of the course embarked upon by the Federal Reserve at that time, as government operation of a new payment system usually brings with it a certain amount of rigidity. Nonetheless, without any explicit Congressional authorization, the Federal Reserve took action to create a nationwide ACH network by offering its services free, first in California and later in other regions of the country. This action was taken prior to a time when there was a public demand for such service and before private enterprise had been stimulated in the traditional way (customer demand) to enter the field. Had the Federal Reserve not intruded prematurely into private-sector activities, ACH services would have developed at a normal pace as the public evidenced a demand and a need. The Treasury Department requirements would have become a part of that need.

In December of 1975 the New York Clearing House commenced the operation of its private ACH, the New York

Automated Clearing House (NYACH). The Clearing House's 12 member banks were forced to underwrite the expenses of NYACH because competing federal ACH services were offered free. In addition, the Federal Reserve insisted that Treasury recurring payments (which make up the bulk of the ACH traffic) either flow through a Federal Reserve-run ACH or that any privately operated ACH agree to handle them without charge. The latter alternative effectively required NYACH, and any other potential private ACH, to pay for a government program or to forego handling federal items altogether.

Our members were willing to operate NYACH, despite these obstacles, because of their strong belief that private-sector operations in the domestic payments mechanism are not just desirable but necessary, and because they believed Congress would ultimately require a change in the Federal Reserve's subsidization policy. The belief that private-sector operation is necessary was based on the observation that government entry into a payments mechanism tends to freeze current technology and stifle incentives for innovation. This is because the government has the inherent power to exclude all competitors.

The government can afford to ignore the relationship between its costs and its revenues relating to a service because it can subsidize any cost overruns. The private sector cannot. The de facto result is that, regardless of

intent, the government's pricing becomes predatory, forecloses private-sector alternatives and results in a government monopoly.

Considerable national attention was focused on this issue in the late 1970s. Perhaps the most prestigious and ambitious study was undertaken by the Congressionally created National Commission on Electronic Funds Transfer. One of the key issues focused upon was the role the Federal Reserve should play in the provision of ACH services. Although the Commission did conclude, in its Final Report of October 28, 1977, that it was appropriate for the Federal Reserve System to continue to provide basic ACH-type services, the Commission also recommended that the Federal Reserve should assess charges on an equitable and fully allocated cost basis to depository institutions using Federal Reserve ACH services. The Commission noted that potential private-sector competitors could be discouraged from entering the market if the Federal Reserve did not so charge.

II. FEDERAL RESERVE PRICING UNDER THE MONETARY CONTROL ACT OF 1980

The New York Clearing House believed that public awareness of the impact of the Federal Reserve's free-services policy would ultimately lead Congress to direct the Federal Reserve System to price its services at rates commensurate

with Federal Reserve costs. This expectation was fulfilled with the enactment of the Monetary Control Act of 1980, which was designed, among other things, to encourage private-sector alternatives in our payments mechanism.

The Act instructed the Federal Reserve to develop a schedule of fees for its services, including ACH. The schedule of fees was to be structured on the basis of several statutory principles, including requirements that (1) all services were to be priced explicitly and (2) over the long run, fees were to be established on the basis of all direct and indirect costs, except that the Federal Reserve could give due regard to competitive factors and the provision of an adequate level of services nationwide. Legislative history indicates that the exception was designed to apply "where the Board determines that it is necessary to depart from this principle in order to prevent a serious and long-lasting impairment of the Nation's payment system."*

In August of 1980 the Federal Reserve published for public comment its pricing schedule implementing the Monetary Control Act. ACH prices were stated to be 1.5¢ for an inter-regional item and 1¢ for an intra-regional item

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* Statement of Senator Proxmire during floor debates on the Conference Committee version of the Monetary Control Act, 126 Cong. Rec. 53167 (March 27, 1980).

in most parts of the country. A small discount was given in New York to reflect the operation of NYACH. While the Federal Reserve failed to release its actual cost figures, it was generally acknowledged that a significant subsidy existed for ACH services. Although no current information has been released as to nationwide ACH costs, we understand these costs are approximately 6.0¢ per ACH transaction. On this basis alone, the System's revenues account for only approximately 20% of its costs.

In its comment letter, dated October 31, 1980, the New York Clearing House urged the Board of Governors to decrease this subsidy, "unbundle" prices and give NYACH adequate credit for services it performs. Similarly, the Justice Department, in its comments dated November 7, 1980, noted that the ACH subsidy could ". . . disadvantage private industry, fail to provide incentives to enter the market, and firmly entrench the Federal Reserve as the operator of the ACH system". The Justice Department concluded, "the Board's proposal to utilize incentive pricing for ACH services is not justified."

Despite this criticism, the Federal Reserve System went forward with its originally proposed ACH pricing schedule. Private-sector interest in operating ACHs was high and, notwithstanding this pricing, several organizations began to

study the feasibility of operating non-Federal Reserve ACHs. Federal Reserve pricing quickly cooled their enthusiasm. A Phoenix ACH, for example, has recently commenced operation but because of Federal Reserve policies must confine itself to an extremely narrow segment of the market.

In addition, the Rocky Mountain Automated Clearing House Association, which now uses the Federal Reserve to process all ACH items, studied the feasibility of private operation. It concluded that:

> " . . . Private Sector Processing would be good for R.M.A.C.H.A. R.M.A.C.H.A.'s ability to expand into the Private Sector is extremely limited without the expanded capabilities and services that an aggressive partner could provide. R.M.A.C.H.A.'s trade area is dominated by the large, regional or multi-national corporations that want more, demand more, services than the present servicer is willing or able to provide."*

Nonetheless, it decided to continue using the Federal Reserve as processor, in large part because "[t]he cost per transaction [of private processing] . . . is prohibitive" and "signficantly higher than the present [subsidized] market price" charged by the Federal Reserve.

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* "Private Sector ACH Processing Study Submitted by the Private Sector Processing SubCommittee of the RMACHA Operations Committee" (1981) p. 32.

III. THE PROBLEM

Now, we have regretfully been forced to conclude that the existence of NYACH itself may be threatened. The decision of the Federal Reserve System to heavily subsidize ACH services means that future operation of NYACH will require our members to continue to absorb significant operating costs. The Federal Reserve subsidy prevents NYACH, or any other potential private-sector ACH, from recovering ACH costs directly from all users, for two reasons discussed below.

First, if a private-sector ACH prices at cost, there is currently a substantial monetary incentive for its participants to discontinue participation in favor of the less expensive, subsidized ACH service offered by the Federal Reserve System. As participants leave, volume decreases and per item costs increase. Carried to its logical conclusion, the private ACH will wither and die.

Second, those ACH participants that might agree to pay for private-sector ACH services on a fully costed basis are placed at a signficant disadvantage vis-a-vis federally subsidized ACH participants in other districts. The additional cost borne by these private-sector ACH participants

could not be passed on to their customers because corporate ACH users would simply switch to an originating financial institution in a district where subsidized Federal Reserve ACH services are provided. This is particularly unfortunate as, for reasons discussed below, we believe most banks and customers would still achieve significant savings from electronic payments even if they paid for actual processing costs.

Equally as negative in its impact on private sector development is the failure of the Federal Reserve System to price ACH services realistically on a component-by-component basis. The significance of this aspect cannot be overstated. First, by charging one low, "bundled" price for all components of the ACH service, the Federal Reserve precludes private-sector competition on a component-by-component basis. Second, even in New York, where ACH prices are somewhat reduced to reflect the operation of NYACH, the discount does not adequately compensate NYACH for its role in the Second District's payment mechanism. Raising ACH prices without providing adequate credits for the work performed by private-sector ACHs will exacerbate the private sector's problems. These issues will be discussed in detail below.

IV. A PROPOSED SOLUTION.

To ameliorate the problem described above, the New York Clearing House believes the following actions should be taken by the Federal Reserve Board: private-sector ACHs should be given credit for the work they do, the System's single price for ACH services should be "unbundled" into several component prices, the Federal Reserve's subsidy of ACH services should be eliminated, and the Federal Reserve should actively seek other means by which to encourage private-sector participation in the payments mechanism.

A. Credit Private ACHs for the Work They Perform. The Federal Reserve System should credit private-sector ACHs for services which they presently render to the Federal Reserve at no cost. With respect to NYACH, two areas are involved.

First, after the Federal Reserve delivers inter-regional items to the Second District over its bulk data network, NYACH processes the items. NYACH is not paid by the Federal Reserve for performing this service. However, the Federal Reserve does collect the full price for processing the inter-regional item. We understand that the Federal Reserve allocates .4¢ of its present subsidized prices to this function. At least that amount, and probably the full unsubsidized cost for processing each item, should be paid by the Federal Reserve to NYACH, or any other potential private ACH, for its work in this area.

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Conversely, when an item is originated in the Second District, NYACH, not the Federal Reserve System, does the initial processing. We understand that the Federal Reserve allocates .3¢ of its present subsidized prices to this function. Thus, it charges NYACH 1.2¢ per inter-regional item, rather than the 1.5¢ charged in other districts. This reduction for the Second District is unreasonably low. It clearly costs both the Federal Reserve System and NYACH more than .3¢ to originate an item.

Every district but New York benefits from a Federal Reserve subsidy to the extent that the Federal Reserve's actual processing costs exceed .3¢. New York, however, is penalized. Not only must NYACH pay fully for its own processing cost, it also is forced to forego the benefits of the Federal Reserve subsidy provided elsewhere. This could be rectified simply by reducing the Federal Reserve's stated charges by the full amount of its processing costs. By way of illustration, if it actually cost the Federal Reserve System 1¢ to process an inter-regional item, NYACH should be charged an amount equal to the System's present 1.5¢ charge minus its 1¢ cost, or only .5¢ per item. It goes without saying that similar arrangements should be made for any other private ACH.

B. "Unbundle" Prices. The Federal Reserve presently charges 1.5¢ for an inter-district ACH item and 1¢ for an intra-district item. The only deviation from this schedule is in the Second Federal Reserve District where inter-district and intra-district items cost 1.2¢ and .3¢, respectively. However, the ACH is not one service; rather, it is composed of several discrete components: (1) processing of ACH items (including use of terminals, customer relations and handling of electronic return items); (2) courier facility for delivery of ACH items to participating financial institutions; (3) inter-regional bulk data transmission; (4) settlement; and (5) handling of paper return items.

The Federal Reserve should acknowledge the diversity of "the ACH service" by pricing realistically on a component-by-component basis. The present lump sum approach discourages private-sector competition for discrete portions of the ACH service. Whereas, if the Federal Reserve System's ACH charges were separately stated for each component, private ACHs would be free to provide those components which they felt they could do more efficiently.

Integral to this proposal is the concept that each component will be appropriately priced to reflect costs and that charges will be incurred only to the extent of actual usage.

For example, under the present system, each ACH item bears a portion of ACH settlement costs. Thus, an ACH participant which engages in ten times more ACH activity than another participant, pays ten times more for settlement costs, although the actual expenses of the Federal Reserve are the same in both instances.

Similarly, the use of Federal Reserve courier facilities should be charged on a "per run", rather than on a "per item", basis. It costs the Federal Reserve the same amount of money to make a delivery whether 10 or 10,000 items are delivered. Charging on a per item basis, as is now done by the "bundled" pricing schedule, unfairly penalizes large, efficient users of the Federal Reserve's delivery service, such as private-sector ACHs.

Finally, ACH is basically an electronic payment mechanism, and many of its efficiencies are lost when institutions which cannot process an item for one reason or another send it back to its originator in paper -- rather than electronic -- form. The cost of handling these paper return items, which involve expensive manual procedures, is now spread throughout all ACH participants. Instead, only those institutions which use paper return items should be charged for them.

C. Eliminate the ACH Subsidy. The Federal Reserve should eliminate its ACH subsidy according to a reasonable schedule, certain in time. While we believe the Monetary Control Act necessitates the total elimination of the subsidy within a not far off date, we are mindful of the reliance placed by some financial institutions on the Federal Reserve's present pricing schedule. Accordingly, we would not object to the raising of ACH prices to only 80% of actual costs, plus the simultaneous announcement of a total elimination of the subsidy at a reasonably close future date. This procedure would enable potential private-sector ACH competitors to calculate the cost of their present and future operations.

The Federal Reserve apparently believes that its ACH costs cannot exceed its check processing costs without the loss of significant ACH volume. We respectfully disagree. It is our members' conclusion that elimination of the ACH subsidy will not have a significant adverse impact on projected ACH credit volume, approximately 75% of the present private ACH volume. The simple fact is that, in determining marketing strategy, a financial institution looks at the total costs of processing an ACH item versus the total costs of processing a paper check. Included are all of the costs incurred by the individual customer of the financial institution and the financial institution itself. Federal Reserve

prices for the service used are only one component. Costs incurred in the check environment range from manual paper handling, reconcilement and transportation costs, to ever increasing postage costs. All of these quite substantial expenses are eliminated in the ACH environment; thereby providing an incentive for ACH use even if the Federal Reserve's ACH prices somewhat exceed its check prices.

The point is simply that the efficiencies of an electronic environment create a substantial savings, even for the originator of a credit. The only exception to this statement arises from the existence of float. A substantial impediment to the growth of ACH volume, despite the Federal Reserve's greatly subsidized prices, has been the continued availability of float to originators of checks. Needless to say, if the Federal Reserve develops procedures to reduce float, ACH credit volume should expand accordingly.

Preauthorized debits constitute approximately 25% of nationwide ACH volume at the present time. These debits may be sensitive to the differential between ACH and check prices. Even so, average Federal Reserve check prices now exceed ACH prices by approximately 100%. Accordingly, ACH prices probably could withstand an increase before any negative impact from the loss of this volume would be felt. If

the Federal Reserve addresses the float problem, either by increasing availability schedules for checks or, as mandated by the Monetary Control Act, charging interest on items credited prior to collection, ACH items could be fully costed without a loss of volume.

D. Support for the Private Sector. Finally, the Federal Reserve should affirmatively support private-sector ACHs through any one of a number of available means, including subcontracting Treasury and access policy transactions, and better cooperation in software design. For example, we have recently asked the Federal Reserve Bank of New York to subcontract its Treasury items to NYACH for processing. We are hopeful that this will generate enough revenue to somewhat reduce NYACH operating costs. So far, we have received no definitive response from the Federal Reserve Bank of New York on this proposal.

V. CONCLUSION.

In short, the private sector has evidenced a strong interest in providing ACH services. This interest has been diminished by the Federal Reserve's subsidized pricing policy; a policy which directly conflicts with the Congressional objective to encourage private-sector alternatives in our payments mechanism evidenced by the Monetary Control Act of 1980. Although the Federal Reserve Act does not authorize the creation of a universal ACH system by the Federal Reserve, the pricing policies of the Federal Reserve, if not changed, are likely to result in it being the one and only supplier of ACH services.

Mr. ENGLISH. Thank you.

Mr. Moore, we are happy to have you summarize your statement.

STATEMENT OF W. ROBERT MOORE, SENIOR VICE PRESIDENT, CHEMICAL BANK, NEW YORK, N.Y., AND PRESIDENT, NATIONAL AUTOMATED CLEARING HOUSE ASSOCIATION

Mr. MOORE. As you indicated, I am W. Robert Moore and I am senior vice president of Chemical Bank in New York and president of the National Automated Clearing House Association (NACHA).

Today I am presenting testimony on behalf of NACHA, which I currently serve as president, with respect to the Federal Reserve's role in providing payment mechanism services only insofar as it relates to matters with which this organization is directly concerned, namely, the provision of automated clearing house (ACH) services.

You have a copy of my testimony. I would like to highlight some key points.

NACHA is a nonprofit organization, the membership of which is comprised of 32 regional organizations throughout the country. Those organizations, in turn, are comprised of over 13,800 financial institutions. NACHA and its member organizations provide the operating rules, procedures, and standards for the national and various regional automated clearing house (ACH) networks through which the transfer of debits and credits take place.

In 1974, NACHA was formed to coordinate the ACH movement nationwide by encouraging the development of ACH associations and creating a system for effecting preauthorized transfers between the geographical service areas of the member institutions. NACHA has continuously insured that a proper mechanism exists to facilitate exchange of such payments.

At present, 31 of the 32 associations are operated by the Federal Reserve. By this I mean the Federal Reserve provides the ACH associations and their members services in such areas as data processing facilities, personnel, a delivery capability, and of course, a system for effecting settlement. The other association, the New York Automated Clearing House, is operated by the New York Clearing House Association.

Membership within the 32 regional associations consists of approximately 11,000 commercial banks and 2,800 thrift institutions. Over 14,300 companies, organizations, and various government agencies participate in the ACH system.

The ACH mechanism is a paperless payment system which utilizes electronic alternatives to checks and other traditional paper instruments. It serves the identical function of the existing check and exchange system, but at a much lower cost.

As of September 1981, total monthly volume is approximately 26 million payments. Of these, about 15 million are Government payments, the vast majority of which are social security benefits, and 11 million are private payments. We believe that the future growth in ACH volume will come primarly from the private sector.

Statistical data certainly support such projections. For example, private ACH volume has been rising at approximately 90 percent per year while Government volume is increasing at about 20 percent. Although the U.S. Treasury has been very successful in its

marketing efforts, especially in the area of social security payments, the financial institutions have made great strides in their marketing programs, and exhibit a 40-percent increase in participating companies.

In addition, because the total amount of payments made by consumers and corporations number in the billions, the potential for increase obviously lies within the private sector.

These figures do not fully indicate the actual success of our industry's efforts. Not included is volume associated with payments initiated by corporations which are not sent through the ACH because they are destined for consumer accounts in the same financial institutions where the corporation maintains its account.

Estimates of these payments vary, but conservatively we believe they equal 100 percent of those that flow through the ACH network.

Since the inception of the ACH system, it has been NACHA's position that the Federal Reserve's role was one of providing operational support. This support was viewed as appropriate, in that it was a logical extension of the Federal Reserve's role in check clearing services. Participation by the Federal Reserve was addressed from a purely practical standpoint while the philosophical issue of their role was, and is still, debated. NACHA believes that, presently, the public benefits being derived from the Federal Reserve's operation outweigh all other alternatives available at this time.

NACHA and its members believe that, in general, the financial community is unwilling at this time to make the additional investment necessary to develop on its own a computer network delivery and settlement system for nationwide ACH transactions. The reason is simply that the level of ACH volume necessary to recoup the investment is not enough to warrant such a risk.

However, the financial industry continues to expend substantial amounts in providing many of the other essential elements necessary for a payments system. Some of these elements are, first, a legal and operational framework governing interchange among participants; second, an organizational structure through which participants may interact in innovation and for development to occur; third, participation on a broad basis by financial instititions in order to make the ACH system a viable payment device for their customers; and, fourth, a substantial educational and marketing effort to acquaint those customers and the public with the benefits to be derived from the system. We believe that the appropriate body to engage in marketing ACH services is the private sector.

As stated previously, it was and still is NACHA's position that the legal and operational framework necessary to provide a reliable system encompassing different types of transfers should be developed by the private sector.

On a number of occasions within the last few years, the Federal Reserve has proposed to add to its regulation J, a subpart C. The intent of these proposals was to create a legal framework to govern the transfer of ACH entries. Such a subpart would have replaced the legal agreements between financial institutions that have been the basis for ACH legal development and would have given the Federal Reserve control of ACH system development. In each case,

the proposals were strongly opposed by the entire financial community and they were withdrawn by the Federal Reserve.

With the advent of the Monetary Control Act, however, the Federal Reserve believed a different type of legal framework was necessary to insure the integrity of the system. The Monetary Control Act, which required the Federal Reserve to provide access to all depository financial institutions, exacerbated an already prevailing problem. That problem, known as the access issue, existed because:

First, there was no body of law comparable to the Uniform Commercial Code governing the rights and duties of financial institutions participating in the ACH system. The operating rules developed by NACHA and its member associations provided the framework of legal rules essential to the integrity of the payments system and the protection of the participants;

Second, relatively few financial institutions were willing to assume the risks involved in handling ACH items with no such legal protection. And under the Federal Reserve's previous interim access policy, those institutions were permitted access to Reserve Bank facilities for originating and receiving ACH items—provided they were Federal Reserve member banks; and

Third, ACH member financial institutions which originated ACH items—the majority of which were Federal Reserve member banks—did not wish them to go to non-ACH member receivers, since those items would not be subject to ACH operating rules or other protective agreements. But because of the practicalities of ACH operations, those originators could not be certain that each of the thousands of potential receivers of such items they originated was an ACH member and bound by ACH rules.

The Monetary Control Act required the Federal Reserve to provide access to its facilities to all institutions, ACH members and non-ACH members. For reasons stated, appropriate terms and conditions had to be established for such utilization.

Thus, in August of this year, to protect the integrity of the system, an ACH agreement between NACHA and the Federal Reserve was agreed to that complemented a uniform operating circular that made the operating rules of NACHA and its member associations applicable of all private sector ACH transfers handled by the Federal Reserve banks, including those involving non-ACH member financial institutions. The agreement provides a cooperative mechanism for the making of changes in those rules and that circular. I believe that the Automated Clearing House Agreement solidifies the partnership between NACHA and the Federal Reserve in the future develoment of the ACH system.

With implementation of the Fed's operating circular and the ACH Agreement, the financial industry can be assured that the integrity of the ACH system will be maintained and all items flowing through the ACH system will contain the appropriate warranties.

Mr. Lee has addressd the issue of incentive pricing and I will not make any further comment on that other than to say that it is NACHA's position that until a mature volume level is reached, the Federal Reserve should gradually reduce the incentive subsidy factor as the volume of ACH transactions increases.

Our executive committee believes that in order for ACH private processing to develop efficiently and competitively, the Federal Re-

serve should establish and announce a future date to end incentive pricing. This does not change our basic position that incentive pricing is currently justified. But such a target date will enable potential processors to evaluate better their investment and more likely expend the resources necessary for development cost.

In summary, NACHA endorses the following principles concerning the Fed's role in providing services. Furnishing of such services is an appropriate role for the Federal Reserve at this time providing, the freedom to choose between Federal Reserve and private operators remains unimpaired.

Two, the Federal Reserve's role in furnishing ACH services should be limited to an operational one alone, not involving control over that system or the customer services it makes possible.

And finally, ACH and other services should be individually offered; for example, unbundled, and ultimately priced by the Federal Reserve on a fully costed basis to promote private sector competition. The Fed should continue the concept of incentive pricing but establish and announce a timeframe for its phaseout.

Thank you.

[Mr. Moore's prepared statement follows:]

STATEMENT OF W. ROBERT MOORE

ON BEHALF OF THE

NATIONAL AUTOMATED CLEARING HOUSE ASSOCIATION

BEFORE THE

SUBCOMMITTEE ON GOVERNMENT INFORMATION AND INDIVIDUAL RIGHTS

OF THE

U. S. HOUSE OF REPRESENTATIVES

COMMITTEE ON GOVERNMENT OPERATIONS

October 22, 1981

INTRODUCTION

My name is W. Robert Moore and I am Senior Vice President of Chemical Bank in New York and President of the National Automated Clearing House Association (NACHA).

I am presenting testimony today on behalf of NACHA with respect to the Federal Reserve's role in providing payment mechanism services only insofar as it relates to matters with which this organization is directly concerned, namely, the provision of automated clearing house (ACH) services.

BACKGROUND OF NACHA

NACHA is a non-profit organization, the membership of which is comprised of 32 regional organizations throughout the country. Those organizations, in turn, are comprised of over 13,800 financial institutions. NACHA and its member organizations provide the operating rules, procedures, and standards for the national and various regional automated clearing house (ACH) networks through which the transfer of debits and credits take place.

In 1974 NACHA was formed to coordinate the ACH movement nationwide by encouraging the development of ACH associations and creating a system for effecting preauthorized transfers between the geographical service areas of the member institutions. NACHA has continuously insured that a proper mechanism exists to facilitate exchange of such payments.

NACHA does not dictate the membership, access, pricing, or ACH operator policies of member ACH associations; these matters are regarded as solely within the province of the individual ACH association.

At present, thirty-one of the thirty-two associations are operated by the Federal Reserve. By this I mean the Federal Reserve provides the ACH associations and their members services in such areas as data processing facilities, personnel, a delivery capability, and, of course, a system for effecting settlement. The other association, the New York Automated Clearing House, is operated by the New York Clearing House Association. Membership within the 32 regional associations consists of approximately 11,000 commercial banks and 2,800 thrift institutions. Over 14,300 companies, organizations, and various government agencies participate in the ACH system.

PURPOSE AND DESCRIPTION OF THE ACH SERVICES

The ACH system was created because of the enormous and rapidly increasing volume of checks issued and processed each day throughout the country during the early 1970s. It was designed to improve the nation's payments system by elimination of paper checks to effect the transfer of periodic, recurring payment amounts to or from deposit accounts, thereby reducing costs, increasing efficiency, and providing the public with a cost beneficial service alternative to more traditional methods of receiving and making payments.

Various types of ACH applications are in effect throughout the country. Both preauthorized payments and direct deposits are being offered by different segments of industry. On the debit side, for example, alumni groups, churches and universities collect dues, contributions and tuitions, respectively. Financial institutions process mortgages and installment loans via the ACH and of course insurance companies use the ACH to collect premium payments. In fact, insurance premiums are the largest single type of private ACH debit currently flowing within the system. The ACH services made available to a customer allow the consumer to eliminate the time and cost involved in writing checks, eliminate postage expenses, and assist in establishing an excellent payment and credit record.

On the credit side, millions of consumers are paid via the ACH direct deposit program. In addition, retirees receive pensions and stockholders receive dividends through this service. Of course, the principal user of ACH credits is the U.S. Treasury Department which uses the ACH to effect social security and other government benefit payments.

Consumers, by using direct deposit eliminate time and cost involved in check depositing, receive consistent availability of their funds (even when they are on vacation, business trips, or are ill), and eliminate the problems associated with lost or stolen checks.

NACHA has also made it possible for the consumer to gain additional convenience and efficiency in the transaction of their payments. Acting upon the recommendations of the National Commission on Electronic Fund Transfers concerning Giro-like payments, NACHA amended its rules to accommodate customer initiated entries (CIEs).

The basic concept of the CIE is that the customer (payor) instructs his or her depository financial institution to originate a transfer entry (credit) to the payee's account at a receiving depository financial institution. The term "CIE" directly refers to such a credit entry transaction when it is initiated via telephone or written instructions. The customer can also initiate such a transaction through a machine, such as an automated

teller machine. This transaction is referred to as a Machine Transfer Entry (MTE). The originating depository financial institution forwards these electronic entries in the same batch processing mode as other ACH transactions and the ACH performs the necessary settlement and distribution functions.

Thus, the operating rules and standards providing the legal and operational framework of ACH transfers have been augmented and revised to meet the realities and potentialities of the marketplace.

Currently the ACH system is being utilized by companies for their depository transfer checks. These are cash concentration items which are originated by or for a corporation or government entity to collect funds from the proceeds of the day's business. They are deposited in accounts at financial institutions by the corporation's or government entity's branches, franchises, or agents. The program has been quite successful with over 20.2 billion dollars flowing though the system in August of this year. A major user of this cash management system is the U. S. Postal Service.

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Another type of application being considered is corporate-to-corporate payments. NACHA is currently engaged in a major research project to determine the feasibility of having corporate trade payments flow through the ACH network.

Applications such as these are examples of new and innovative uses in electronic fund transfers. Innovations in existing services and the development of other new services are readily foreseeable.

The ACH mechanism is a paperless payment system which utilizes electronic alternatives to checks and other traditonal paper instruments. It serves the identical function of the existing check and exchange system.

Except for the medium utilized for exchanging payment data, an ACH transaction closely parallels the process used to effect clearing and settlement of checks. Payment data is routed from one bank to a central facility for clearing and transmittal to another bank. Settlement of accounts between banks is effected through the Federal Reserve System.

VOLUME PROFILE

We believe that future growth in ACH volume will come primarily from the private sector. Statistical data certainly supports such projections. For example, private ACH volume has been rising at approximately 90% per year, while Government volume is at about 20%. Although the U.S. Treasury has been very successful in its marketing efforts, especially in the area of social security payments, the financial institutions have made great strides in their marketing programs and corporate acceptance (40% increase in participating companies). In addition, because the total amount of payments made by consumers and corporations number in the billions, the potential for increase obviously lies with the private sector.

As of September 1981, total monthly volume is approximately 26 million payments. Of these, about 15 million are government payments and 11 million are private payments (7.2 million debits and 3.6 million credits).

These figures do not fully indicate the actual success of the industry's efforts. Not included is volume associated with payments initiated by corporations which are not sent through the ACH because they are destined for consumer accounts in the same financial institution

holding the corporate account. Estimates of these payments are approximately 100% of those that flow through the ACH system.

THE FEDERAL RESERVE'S ROLE IN PROVIDING ACH SERVICES

Since the inception of the ACH system, it has been NACHA's position that the Federal Reserve's role was one of providing operational support. This support was viewed as appropriate, in that it was a logical extension of the Federal Reserve's role in check clearing services. Participation by the Federal Reserve was addressed from purely a practical standpoint while the philosophical issue of their role was, and is still debated. NACHA believes that, presently, the public benefits being derived from the Federal Reserve's operation outweigh all other alternatives available at this time.

NACHA and its members believe that in general, the financial community is unwilling at this time to make the additional investment necessary to develop on its own a computer network delivery and settlement system for nationwide ACH transactions. The reason is simply that the level of ACH volume necessary to recoup the investment is

not high enough to warrant such a risk. However, the financial industry continues to expend substantial amounts in providing many of the other essential elements necessary for a payments system. Some of these elements are

1) A legal and operational framework governing interchange among participants;
2) An organizational structure through which participants may interact in innovation and for development to occur;
3) Participation on a broad basis by financial institutions in order to make the ACH system a viable payment device for their customers;
4) A substantial educational and marketing effort to acquaint those customers and the public with the benefits to be derived from the system. We believe that the appropriate body to engage in marketing ACH services is the private sector.

ACH volume still has not reached such a level. However,

NACHA continues to believe that the opportunity for private sector alternatives to the Federal Reserve can exist in the future and such competition can be fostered through Federal Reserve pricing. I will discuss this concept shortly.

OPERATING CIRCULAR AND ACH AGREEMENT

As stated previously, it was and still is NACHA's position that the legal and operational framework necessary to provide a reliable system encompassing different types of transfers should be developed by the private sector.

On a number of occasions within the last few years the Federal Reserve has proposed to add to its Regulation J, a Subpart C. The intent of these proposals was to create a legal framework to govern the transfer of ACH entries. Such a subpart would have replaced the legal agreements between financial institutions that have been the basis for ACH legal development and would have given the Federal Reserve control of ACH system development. In each case, the proposals were strongly opposed by the entire financial community and they were withdrawn by the Federal Reserve.

With the advent of the Monetary Control Act, however, the Federal Reserve believed a different type of legal framework was necessary to insure the integrity of the system. The Monetary Control Act, which required the Federal Reserve to provide access to all depository financial institutions, exacerbated an already prevailing problem. That problem, known as the "access issue" existed because

(1) There was no body of law comparable to the Uniform Commercial Code governing the rights and duties of financial institutions participating in the ACH system. The operating rules developed by NACHA and its member associations provided the framework of legal rules essential to the integrity of the payments system and the protection of the participants;

2) A relatively few financial institutions were willing to assume the risks involved in handling ACH items with no such legal protection. And under the Federal Reserve's previous interim access policy, those

institutions were permitted access to Reserve Bank facilities for originating and receiving ACH items - provided they were Federal Reserve member banks; and

3) ACH member financial institutions which originated ACH items - the majority of which were Federal Reserve member banks - did not wish them to go to non-ACH member receivers, since those items would not be subject to ACH operating rules or other protective agreements. But because of the practicalities of ACH operations, those originators could not be certain that each of the thousands of potential receivers of such items they originated was an ACH member and bound by ACH rules.

The Monetary Control Act required the Federal Reserve to provide access to its facilities to all institutions, ACH members and non-ACH members. For reasons stated, appropriate terms and conditions had to be established for such utilization.

Thus, in August of this year,to protect the integrity of the system, an ACH agreement between NACHA and the Federal Reserve was agreed to that complemented a uniform Operating Circular that made the operating rules of NACHA and its member Associations applicable to all private sector ACH transfers handled by the Federal Reserve Banks, including those involving non-ACH member financial institutions. The agreement provides a cooperative mechanism for the making of changes in those rules and that circular. I believe that the Automated Clearing House Agreement solidifies the partnership between NACHA and the Federal Reserve in the future development of the ACH system. With the implementation of the Fed's Operating Circular and the ACH Agreement, the financial industry can be assured that the integrity of the ACH system will be maintained and all items flowing through the ACH system will contain the appropriate warrantees.

In addition to providing a process for the amendment of ACH operating rules and the Federal Reserve circular, the agreement contains provisions that cover such areas as requirements for the distribution of the NACHA and

local Association rules, and the use of existing and future ACH computer software.

For now, with both the ACH Agreement and the Operating Circular in effect, the private sector role in ACH development continues.

INCENTIVE PRICING AND PRIVATE SECTOR COMPETITION

NACHA has always supported the concept of Federal Reserve pricing of its services. It was deemed to be advantageous to all ACH participants and, most importantly, to enhance the opportunities for private sector development in the ACH payments system.

For reasons stated earlier regarding private sector expenditures in the ACH system, NACHA has always supported the concept of incentive, or subsidized pricing, to encourage development of the ACH system. In our comments to the Federal Reserve regarding pricing on October 31, 1980, we took the position that incentive pricing would encourage electronic fund transfers and ultimately improve the efficiency and capacity of the nation's payments system. However, the need for incentive pricing should only be for an interim basis, that when the

system reaches a mature level, subsidization should be eliminated and the Federal Reserve should price its services at actual cost. It was the position of NACHA that until mature volume is reached, the Federal Reserve should gradually reduce the incentive subsidy factor as the volume of ACH transactions increases.

Almost a year has gone by since that position was taken. Fedederal Reserve pricing has been implemented for ACH services, financial institutions and ACH associations are prepared for new and additional costs and we are all anticipating future growth in ACH volume. However, NACHA feels so strongly that private sector competition must be fostered, that NACHA's Executive Committee has reevaluated and revised its previous position.

The NACHA Executive Committee believes that in order for ACH private processing to develop efficiently and competitively, the Federal Reserve should establish and announce a future date to end incentive pricing. This does not change NACHA's basic position that incentive pricing is currently justified. Such a target date will enable

potential processors to evaluate better their investment and more likely expend the resources necessary for developmental costs. Further, such action by the Federal Reserve will demonstrate to the private sector that their role in the ACH movement is one that may be changed because of the marketplace.

This revised position by the Executive Committee will be considered by the NACHA Board of Directors at their next meeting.

CONCLUSION

In summary, NACHA endorses the following principles concerning the Federal Reserve's role in providing ACH services:

1) The furnishing of such services is an appropriate role for the Federal Reserve at this time, provided the freedom to choose between Federal Reserve and private operators remains unimpaired.

2. The Federal Reserve's role in furnishing ACH services should be limited to an operation alone, not involving control over that system or the customer services it makes possible.

3. ACH and other services should be individually offered and ultimately priced by the Federal Reserve on a fully costed basis to promote private sector competition. The Fed should continue the concept of incentive pricing, but establish and announce a time frame for its phase-out.

Mr. ENGLISH. Mr. Moore, am I correct in understanding that all the existing ACH's, except the New York Clearing House, are operated by the Fed, Federal Reserve?

Mr. MOORE. Yes, sir. Let me qualify that by saying there is an agreement in place between a local ACH and its local Fed that the Fed will provide the operational service for that association.

Mr. ENGLISH. Am I correct in that all the ACH facilities are located within the Federal Reserve banks?

Mr. MOORE. With the exception of New York.

Mr. ENGLISH. You believe that the Federal Reserve essentially should be a data processing and communications provider?

Mr. MOORE. At the current time, Mr. Chairman, that is how we visualize the Fed's role as a service provider for the local associations.

Mr. ENGLISH. That would only be for the time being, is that correct?

Mr. MOORE. Yes, sir. What we are saying is that we believe if the Fed fully priced its services there would be the opportunity for private sector competition, and perhaps better pricing.

Mr. ENGLISH. Mr. Lee, in your testimony you suggested the Federal Reserve unbundle prices as a method of insuring more equitable fee structures and competition with the private sector. Would unbundling prices be sufficient incentive for other ACH's to become privately operated?

Mr. LEE. I don't think it would be alone, but it would greatly help. The Fed has approached the product as a monolith. In fact, the product has at least five parts that could be separately considered.

For example, the processing of the items is one part. The courier facility and the delivery system is another part. The interregional data transmission is another part. The settlement is the fourth part and the handling of paper return items is a fifth part.

There are opportunities in each one of these segments for private sector competition with the Fed. If the Fed would price each component part of this service separately, that would help greatly.

I do think, however, that it is important that the Fed reduce its current subsidy substantially, and as Bob has said, as Mr. Moore has said, announce a date when it will completely eliminate the subsidy.

Mr. ENGLISH. You mentioned other ACH's have considered the feasibility of becoming private operations, but have not pursued this course due to the Federal Reserve's subsidized pricing policy.

If that policy were altered, do you think that sufficient private sector alternatives would develop?

Mr. LEE. I do. I mentioned in my statement and the written statement covers it in more detail, a study made by the Rocky Mountain Automated Clearing House Association. They were certainly interested in the private operation of their automated clearing house. They felt they could not do it. In Phoenix there is a small private operation now. It has to remain small because of the pricing, but it is able to operate within a narrow limit. I am sure, because I have been told so informally, that there are at least three other ACH's now which are getting operational services from the Fed that would consider going private if they could receive back

from their users the costs which presently they cannot do because the Fed offers the service at a substantial discount.

Mr. ENGLISH. What impact do you see the new FRCS–80 network having on current and future competition from private ACH's?

Mr. LEE. I am not a theoretician. I am a manager of systems. Mr. Moore is our chief theoretician.

Mr. ENGLISH. Mr. Moore, do you want to take a crack at that?

Mr. MOORE. Yes, but I suspect that others may be able to give you a more precise answer.

Clearly from NACHA's viewpoint, a weak link in our nationwide capability today is the existing communication system. So that from a purely personal prejudice point of view, I would like to see that improve.

But clearly, the issue of FRCS–80 will no doubt have anticompetitive implications. But I am simply trying to say that the Fed wire network today is, I don't want to use an extreme term, but it is in a difficult condition and it must be improved. It ought to be improved even if they did nothing, did nothing but process Fed wire transactions on it.

Mr. ENGLISH. Mr. Lee, you mentioned attention was focused on this issue in the late 1970's. However, the Federal Reserve continued to pursue policies which you consider to be anticompetitive.

What type of action do you feel is necessary to change this situation, and would you favor legislation prohibiting a Government agency from providing electronic services to a private sector, particularly if such legislation provided for the disengagement of the Federal Reserve?

Mr. LEE. I don't think any more legislation is required. I think ample legislation is on the books. We maintain that just because the Federal Reserve is charged with regulating the payment mechanisms, that does not mean they are charged with operating it. We have always said, and I think will continue to say, that if the private sector is able to provide the service the private sector should do so. Only when the private sector is not able, or evidences an unwillingness to do it, and when the Fed gets statutory authority to do so, should the Fed enter into what otherwise should be private sector work.

With respect to the other half of your question as to what should be done now, I think the present law was intended to remedy the situation, certainly the way we wanted it remedied, and we would simply like the Fed to take another hard look at the way they are functioning under the Monetary Control Act. We would like them to accelerate their review of the pricing of the ACH product.

The statement that has been made that in the long run we will all be dead. It is absolutely correct, and the New York automated clearinghouse I imagine will be dead inside a year unless the Fed does something.

Mr. ENGLISH. I want to thank both of you gentlemen very much. You have been very helpful.

Our next witness will be Dr. Allen Lipis, president, Electronic Banking, Inc.

Thank you for coming. Again, as I mentioned to our other witnesses, we would appreciate it if you would summarize your state-

ment, and without objection, we will include your complete statement as part of our record.

STATEMENT OF DR. ALLEN LIPIS, PRESIDENT, ELECTRONIC BANKING, INC., ATLANTA, GA.

Dr. LIPIS. Thank you. I will summarize it for you.

Mr. Chairman, my name is Allen Lipis and I am the president of Electronic Banking, Inc., a research, education and consulting firm in Atlanta, Ga., specializing in the field of electronic banking.

Our clients constitute some of the largest banks, savings and loans, and mutual savings banks in the United States and Canada. We also include vendors, such as IBM and A.T. & T. as our clients, the American Bankers Association, the Bank Administration Institute, the U.S. League of Savings Association, and the U.S. Treasury. The Federal Reserve has been an excellent client of ours and has participated in many of our studies.

Prior to that, I was with Payment Systems, Inc., a research firm and a subsidiary of American Express, and before that in the early 1970's from 1971 to 1975, I was the project director of the Atlanta Payments Project, which was responsible for installing the second automated clearinghouse in the United States. I helped to work on the organization of the National Automated Clearing House, and the Georgia ACH was the pilot program for the Government social security direct deposit program.

Over the years with regard to electronic fund transfer, I have conducted a number of studies, perhaps as many as 100 studies in the field.

I thank you for the opportunity of being here this morning as requested by Mr. Vizas to discuss the role of the Federal Reserve in the automated clearinghouse area.

In the 9 years of its operation, it has generated tremendous payment system activity and today it generates somewhere in excess of about a quarter of a billion transactions nationwide. Most of them are credits. And most of them are Government-originated, but the private volume sector has been growing and growing steadily.

Today private volume constitutes about 40 percent of the volume. Two-thirds of the private volume transactions are debits, one-third credits. There are over 10,000 banks, and over 3,000 thrifts and almost 13,000 corporations that deliver transactions through the automated clearinghouse. In the 9 years of its operation, it has become a national payment system.

As you know, about a year ago the Federal Reserve issued pricing principles in charging for its services, and these were implemented just recently in August of this year. The charge is 1 cent for intra-ACH transaction, and 1.5 cents for inter-ACH transaction, except in New York.

In looking at that charge that they make, it is unquestionably a subsidized price, although the Federal Reserve does not indicate exactly what it costs. We estimate it is about 5 cents a transaction to handle for the Federal Reserve. In the legislation that moved forward with regard to ACH pricing, Congress allows the Fed to price over the long run. The question is how long is the long run and how much subsidization is allowed, and how should it be modified.

Those are issues that go to the basic free enterprise system in this country.

With about a 75 percent subsidy, one could argue that that kind of a subsidy should only last for a limited amount of time. Yet no time period is specified. We believe that the long run could be as much as 10 years to reach the Fed's volume level, which is 2 billion transactions a year. If the subsidy would last only 5 years, that might be an insufficient time to get the volume to a point where the cost per transaction could be reasonable.

In essence, I think the subsidy undermines the free competition for the operation of an automated clearinghouse, and a long-term subsidy would unquestionably produce a Federal Reserve monopoly of the automated clearinghouse.

In comparing the price for ACH items against the price for a check item, which runs about 3 or 4 cents a transaction, the difference is about 2 cents a transaction between an automated clearinghouse item and a check item. We believe that that difference, which was designed to stimulate automated clearinghouse transactions, will not have very much impact on the automated clearinghouse volume. The reason I say that is because there is much more impact on volume caused by float within the payment systems than by the subsidy.

For example, a check that takes 3.5 days to clear at a 10-percent interest rate would generate at least 10 cents in float for a $100 check, which is far greater than the 2 cent difference in price between an ACH item and a check item.

In addition, a subsidy does not get to the heart of consumer acceptance in the marketplace, since it is unlikely that that price would be passed on to either corporations or to the public at large.

Finally, the savings within a bank are far greater in using the automated clearinghouse than a 2-cent differential between an ACH item and a check, and in some cases like a direct deposit of a social security check, a bank might save in excess of 20 cents a transaction as compared to taking a check over the counter from a social security beneficiary.

So, in effect, we have concluded that the subsidy would have little impact on stimulating volume through the automated clearinghouse. Yet if the Fed expects to reach a 2-billion transaction level, it would need a twentyfold increase in private volume growth in order to get there.

We have taken a look at some of the growth in the automated clearinghouse, and we think within the next 5 years, the ACH will grow substantially, as much as tenfold increase. This is about half of what the Federal Reserve would like, to perhaps a billion transactions in 5 years, but not a twentyfold increase that would be necessary.

The real question is who should control the automated clearinghouse. It was developed by the private sector and put into a national framework by the national automated clearinghouse, but as you know it is today run by the Federal Reserve. It is dominated and controlled by the Federal Reserve. Let me provide some examples to support that.

It has certainly been at the instigation of the Federal Reserve that the thrift institutions now participate fully in the ACH. The

Federal Reserve helped to rewrite the software for automated clearinghouses and implemented a faster processing schedule to encourage the use of cash management transactions. They have implemented a subsidized price. They could if they wanted to, supplant the rules of NACHA by implementing regulation J. They do that somewhat today by dealing with all the banks, those in the automated clearinghouse and those outside the automated clearinghouse. I think they undermine local automated clearinghouses themselves.

In the midseventies I favored and supported the operation of the automated clearinghouse by the Federal Reserve. The system was new. It needed a sponsor to underwrite the cost. It needed somebody to put together a nationwide system and the Federal Reserve made a tremendous, in fact, perhaps the greatest contribution to the development of the automated clearinghouse.

As a pilot, they were an ideal candidate, but we are now 9 years into the operation of ACH. It is no longer experimental. It is a substantial payment system that handles Government payments, direct deposit to payroll, preauthorized payments, interbank automated teller machine transactions. It is now involved in paying bills by phone.

Telephone bill payments flow through the ACH and no doubt it will handle home banking when and if it gets underway.

It provides cash management services to major corporations. It is involved in a pilot operation called check safekeeping to handle checks that are truncated by a number of major banks around the country, and no doubt it could handle credit cards and debit card transactions because the technology is available to do so.

It is in sum a giant payment system, and it is my opinion that it is no longer useful to let the Federal Reserve control its development. It is for that reason that I oppose a subsidy. I think it will not increase the volume but it will continue the monopoly operation run by the Fed.

It is an arbitrary judgment as to what that price should be at best, and while I am not a laywer, it may well be in conflict with some antitrust laws in this country.

The subsidy can continue until some mature volume level is reached under the Federal Reserve's definition, but that mature volume level is not defined. If it is 2 billion transactions a year which is the often quoted number, it might take as much as 10 years to get to that point.

Finally, let me just say in summary that the ACH's are in a dilemma. The subsidy is supposed to encourage volume and volume is supposed to encourage competition. But to continue the subsidy, I think, destroys competition. It allows the Fed to decide how much subsidy they want to continue and therefore how much competition they want. Only by forcing ACH's to be self-supporting can we produce an incentive for private operation of automated clearinghouses.

With Federal Reserve monopolization of ACH, there is little incentive to develop a more efficient alternative. The ACH is dependent upon how efficient the Federal Reserve is, a situation that could preserve subsidies indefinitely. In effect, the Federal Reserve

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is using the subsidy to produce desirable long-term changes in the payment system, but I think the subsidy will not produce that.

More importantly, it allows the Federal Reserve to determine what is desirable and in my opinion, that is better determined in a marketplace.

Mr. ENGLISH. I am going to have to go vote. We will recess for 10 minutes.

[Recess taken.]

Mr. ENGLISH. Dr. Lipis, please continue your statement.

Dr. LIPIS. If you let me just sum up. To take a look at the automated clearinghouse in comparison with other payment systems in the country, the checks-collection system has less than half the volume processed through the Federal Reserve for interbank checks. For wire transfers, the independently run bank wire will substitute for the Fed wire. But there is no substitute for the ACH. Virtually all interbank ACH transactions are processed by the Federal Reserve. The Fed operated ACH's are a Government-run monopoly today with no end in sight. The Fed has determined that a substantial price incentive is necessary, which will do more to maintain their monopoly than to increase the volume. The Federal Reserve sets the ACH rules for U.S. Treasury payments and they can set the rules for private volume any time they wish.

The Federal Reserve operates a monopoly payment system that they are authorized to regulate. They set the rules for the very system they run. This is a classic case of a conflict of interest. There is no one to regulate the regulators. Except Congress.

Thank you very much.

[Dr. Lipis' prepared statement follows:]

STATEMENT OF DR. ALLEN LIPIS, PRESIDENT, ELECTRONIC BANKING, INC., ATLANTA, GA.

Mr. Chairman:

INTRODUCTION

My name is Allen Lipis and I am the President of Electronic Banking, Inc., a research, education and consulting firm specializing in the field of electronic banking.

Our clients constitute some of the largest banks, savings and loans, and mutual savings banks in the U.S. and Canada. We also include vendors, such as IBM and AT&T as our clients, the American Bankers Association, The Bank Administration Institute, the U.S. League of Savings Association and the U.S. Treasury. Finally, we have served the Federal Reserve as well, across a broad range of activities, from research to consulting to education.

Prior to founding Electronic Banking, Inc., I was Senior Vice President of Payment Systems, Inc., a subsidiary of American Express, which also conducts studies on payment systems. From 1971 - 1975, I was project director of the Atlanta Payments Project, one of the pioneering research efforts on Electronic Funds Transfer. In that capacity, I worked for the five largest Atlanta banks, while being quartered in the Federal Reserve Bank of Atlanta. As part of that effort, I spearheaded the implementation of the second automated clearing house in the U.S., produced some research on the ACH, and pioneered the social security direct deposit program with the U.S. Trasury. In over a decade of research on payment system developments, I have been responsible for conducting over 100 studies in the field.

Today I am here at the request of your committee counsel, Mr. Vizas, to contribute what I can toward your deliberations on the role of the Federal Reserve regarding the automated clearing house. This year, the ACH will handle over a quarter of a billion transactions.

While most of the transactions are still government credits, mainly for social security payments, it is encouraging to note that private volume has had enormous growth in recent years, where today it represents nearly 40% of the total volume. Of that private volume, about 2/3 is private debits, mainly for preauthorized bill payments, and 1/3 is private credits, mainly for direct deposit of payroll. The new York ACH leads the country in originating private volume, followed by the Calwestern ACH, New England ACH, and Mid-America ACH located in Kansas City.

In April this year, there were over 10,000 banks and nearly 3,000 thrift institutions participating in the ACH. Together they are originating private volume transactions for 12,836 companies. In less than ten years of operation, the ACH has become a national payments system. The ACH has had a short but exciting past and it promises a long and exciting future.

INCENTIVE PRICING

In September, 1980 the Federal Reserve System issued for comment a set of pricing principles and a proposed schedule of fees for Reserve Bank services to financial institutions. That schedule of prices was implemented in August, 1981. As part of that package, the fee schedule for ACH services is: 1¢ for intro-ACH transactions and 1.5¢ for inter-ACH transactions. There is one exception to this pricing fee - - The New York Clearing House Association, which has a lower

pricing schedule. This, of course, reflects the fact they run thier own private ACH and the Federal Reserve does not do as much work in processing ACH transactions.

The Fed has presented a pricing schedule considerably lower than its actual cost, thereby subsidizing the ACH. The actual cost to process an ACH item by the Fed is estimated at 5¢. Whether they should be allowed to do that is not the issue becasue Congress allows the Fed to price based on the principle of an "over the long run" environment. The issue is how long is long-run and how much is subsidy and how is it modified. This is an explosive issue because it goes to the heart of the free enterprise system.

The subsidy is substantial - - no more than 25% of the real cost. A subsidy of that magnitude should be tolerated at most for a limited period of time. But no time period is specified by the Fed.

If the subsidy is based on long run volumes, then the subsidy can run until the volume is reached, which could be ten years or more. If the subsidy is for a fixed time period, five years, then the volume may not be high enough by then to give an efficient cost/transaction. On the other hand, keeping the subsidy for an extended time will certainly undermine the free competitive development. What seems perfectly clear is that a long term subsidy will bring about a Federal Reserve monopoly of the ACH.

VOLUME

The Fed's ACH subsidy causes an ACH entry to be about 2¢ less than the fee for the average check. Since the ACH did not blossom during the period when the Fed did not charge for its

services, one must now try to assess what effect a 2¢ per item pricing differential will have on the attractiveness of the ACH.

A pricing break of 2¢ per payment is not likely to change corporate interest in ACH's. For most credit payment applications, the loss of float involved is about 10¢ per $100 of the payment value, which is significantly higher than the Federal Reserve subsidy.

A 2¢ pricing incentive is not likely to have a major influence on corporate payment practices. Loss of float relative to check payments and a lack of consumer enthusiasm for ACH services are factors that far outweigh pricing at this time.

There is little likelihood that Fed pricing will result in the more than 20-fold growth in private sector ACH volume that is needed to reach the Fed's objective of two billion ACH payments by late 1986. Without Fed pricing the last five years, the ACH grew, but it has had no impact on check volume. Using the same ACH concept and a 2¢ per item pricing inventive, there is not likely to be a major change in the views of banks, corporations, or consumers concerning the attractiveness of ACH services.

Nevertheless, EBI believes that private ACH volume can grow by a factor of 10 over the next five years, with or without the Fed's subsidization pricing. We belive that the 1986 ACH volume will be about one billion transactions if the Fed pursues its current plans, which is only half the Fed's planning number of 2 billion annual transactions.

PRIVATE OPERATION OF THE ACH

Well, if the use of the ACH produces substantial cost savings and if the ACH appears to have the potential of a ten-fold increase in volume in the next five years, then it is

appropriate to address the most fundamental issue surrounding the ACH and that is: Who will control the development of the ACH? While NACHA, National Automated Clearing House Association, composed of local ACH's, might argue that the ACH has been under private control since its inception, I believe the evidence suggests that the government, particularly the Federal Reserve, has dominated and controlled the ACH. The reason is simple: The Federal Reserve operates all the ACH's except the New York ACH. Because they operate the ACH, they set many of the rules under which they operate. For example:

- The Fed forced thrift participation in the ACH.
- The Fed rewrote the ACH software and will probably do so in the future.
- The Fed speeded up the processing schedule for certain cash management items, be sending them over the Fed wire.
- The Fed is setting the subsidized price for processing ACH items.
- The Fed can issue at any time it likes a revised regulation J that can supplant NACHA's rules and regulations under which the ACH operates today.
- The Fed will collect ACH fees from individual banks and thrifts, thereby undermining the local ACH fee structures.
- The Fed will deliver ACH entries to all financial institutions whether it is a local ACH member or not.

In the mid 70's, I argued forcibly in favor of having the Federal Reserve operate the ACH's. At that point in time, the system was new, it needed a sponsor to underwrite the operational cost and it needed someone to pull it together into a nationwide framework. The Federal Reserve made the greatest contribution

toward this objective. As a pilot operation, the Federal Reserve was the ideal candidate to run the ACH's. But today, about nine years after the initial volume, the system is no longer experimental. It has become a substantial payment system with expectations of tremendous growth potential. It can handle most government payments, direct deposit of payroll, preauthorized payments for insurance, mortgage and other fixed recurring bills. It now is beginning to add inter-bank automated teller machine transactions, payments by phone and eventually all home banking transactions. Recently the ACH offered a fast clearing time, which is encouraging corporations to use the ACH for cash management services. Finally, the ACH is being used to clear checks electronically under a nationwide pilot program called check safekeeping. Technically, it could clear all bank credit card transactions and it certainly can be used to clear debit card transactions. In sum, the ACH is a sleeping giant. And because it is a potential giant payment system, I believe that it is no longer useful to let the Federal Reserve control its development.

SUBSIDIZATION

It is for this reason that I am opposed to the subsidization of the ACH by the Federal Reserve. Subsidization will not increase ACH volume much, if at all, and the price is the continual monopolization of the ACH by the Federal Reserve. Subsidization is arbitrary at best and potentially is in conflict with the anti-trust laws of this country. Under the Federal Reserve's rules:

1. Subsidization will continue until the ACH volume reaches a mature volume level.

2. The mature volume level is not defined.

3. There is no indication that the subsidy will be reduced before the mature volume level is reached.

4. No time period is defined for the subsidy.

5. EBI's estimate is that the lion's share of future ACH growth must be private volume, and that must grow 22 times its present level to produce 2 billion items per year, the specified goal of the Federal Reserve. If private volume grows at 35% a year, it will take 10 more years to reach that volume level.

In sum, the ACH's are put in a dilemma. Subsidization is supposed to encourage volume, and volume encourages competition. But continued subsidization destroys competition. Subsidization continues to allow the Federal Reserve to decide how much subsidy they want to continue and, therefore, how much competition they want.

Only by forcing the ACH's to be self-supporting can we produce the incentive for private operation of the ACH's. With the Federal Reserve monopolization of the ACH, there is little incentive to develop more efficient alternatives. The ACH is dependent upon how efficieint the Federal Reserve is, a situtation that could preserve subsidies indefinitely. In effect, the Federal Reserve is using subsidization of the ACH to produce desirable longer run changes in the payments mechanism. However, subsidization will not produce that result, but more importantly, the Federal Reserve is determining what is desirable. In my opinion, that is better determined in the market place.

CONCLUSION

For the check collection system, the Fed handles less than

than half the inter-bank checks and there are many alternatives to clear checks than using the Federal Reserve. For wire transfers, the independently run Bank Wire will substitute for the Fed wire. But there is no substitute for the ACH. Virtually all interbank ACH transactions are processed by the Federal Reserve. The Fed operated ACH's are a government run monopoly today with no end in sight. The Fed has determined that a substantial price incentive is necessary, which will do more to maintain their monopoly than to increase the volume. The Federal Reserve sets the ACH rules for U.S. Treasury payments and they can set the rules for private volume anytime they wish.

The Federal Reserve operates a monopoly payment system that they are authorized to regulate. They set the rules for the very system they run. This is a classic case of a conflict of interest. There is no one to regulate the regulators. Except Congress.

Congress can see to it that the market place has an opportunity to compete against the Federal Reserve in the operation of the ACH's. Given a chance, I believe the banking industry will pay the price for operation of their own ACH's. We must get rid of the subsidy quickly or face the prospect of the long term control by the government of the newest and potentially most effective payment system in the United States.

Mr. ENGLISH. Thank you, Dr. Lipis.

Dr. Lipis, you indicate NACHA suggested that Federal Reserve has been simply a service provider to the ACH Association and the ACH's have been under private control. You seem to disagree with that. Do you believe the Federal Reserve has essentially full control of ACH's?

Dr. LIPIS. When you run an automated clearinghouse you have a great deal of control over schedules. You have control over settlement. You have control over software. You control participants. You can set control over the price that is paid for the service. If you have the ball, bat, and glove, you decide what the rules and regulations are.

Mr. ENGLISH. Has there been increased competition with the Federal Reserve in the paper check clearing process since the Monetary Control Act led to full cost pricing of the Federal service in that area?

Dr. LIPIS. It is hard to tell, but I think the evidence indicates there is certainly underway today a substantial number of banks beginning to think about investigating privately operated check clearing networks substantially greater than existed before pricing of checks.

We conducted a study for the Bank Administration Institute on how local banks could set up local clearing arrangements. We concluded that there are many cities around the country that are beginning to set up local check clearing arrangements in order to bypass sending checks to the Federal Reserve. There are without any question a substantial number of banks beginning to think about how check clearing networks could be set up on an interstate basis without using Federal Reserve facilities.

In summary, I would say the answer is yes, there is more competition because of the pricing of checks by the Federal Reserve.

Mr. ENGLISH. Do you believe that full cost pricing of ACH service would lead to similar results?

Dr. LIPIS. I absolutely do.

Mr. ENGLISH. What impact do you see the new FRCS-80 network having on current and future competition from private ACH's. For example, what kinds of additional services or operations do you see being offered by the Federal Reserve in your or other Federal Reserve districts?

Dr. LIPIS. I see a great deal of services, a great number of services that could flow through the automated clearinghouse over the next 5 or 10 years. I mentioned some in my testimony.

I think there is no doubt that significant telephone bill payment services will flow through the automated clearinghouse. I think corporate payment service both in the collection area and in the disbursement area will flow through the automated clearinghouse. I think of check safekeeping and check truncation services which are just in their infancy will flow through an automated clearinghouse. We have an investment called debit cards. They could flow through the automated clearinghouse. Virtually every service in this country that has some kind of electronic banking and involves more than one bank could flow through an automated clearinghouse.

Mr. ENGLISH. What should be the role of the Federal Reserve today and what do you feel it should do? What should it not do?

Dr. LIPIS. I think it should continue to operate the ACH's, but I think they should price them at full cost so that private enterprise can offer an alternative to the Federal Reserve. I think they have played a substantial role in the past and they can continue to play a substantial role in the future, but I think it should be in a competitive environment. It won't be so long as the subsidy continues on the books.

Mr. ENGLISH. Thank you very much, Dr. Lipis. We appreciate your testimony. You have been most helpful.

Our next witness is Mr. Donald Moehrke.

We will be happy to receive a summary of your testimony and we will include and make your complete testimony a part of the record, without objection.

STATEMENT OF DON P. MOEHRKE, MANAGER, BUSINESS DEVELOPMENT, A. O. SMITH CORP., BROWN DEER, WIS.

Mr. MOEHRKE. Thank you. It seems I am the only one present here today who is in the business of EFT to make a profit, at least directly by processing transactions.

We at the A. O. Smith are a provider of EFT services. A. O. Smith itself is a large manufacturing firm, but I represent Data Systems which is a computer service division of the corporation. We have been providing service to outside organizations both large and small since 1968, as well as serving the needs of our parent corporation.

The electronic funds system that we support is called Tyme, take your money everywhere, and it is primarily an ATM and point of sale system. We have processed the system and have been selling the software associated with it since 1978. It is currently installed or being installed in a number of locations around the country and as of right now, it is the most widely disbursed system technology in the country. There is a lot of competition in this area, a lot of innovation and we see a lot of very interesting developments taking place.

We actually offer a number of software products as well as processing services that all relate to the delivery of electronic transactions, either on a proprietary basis where an individual financial institution deploys terminals or, more typically, in a shared system where a group of financial institutions get together and form a shared system. The Tyme system in Wisconsin is a primary example of the shared EFT system.

We have recently introduced a new product called Continet which is a national switch. The intent is to provide service for interconnecting EFT networks for the purpose of allowing cardholders to use their EFT cards to take money out anywhere in the country.

We are very concerned with the role of the Government in this marketplace. We certainly recognize the role of the Fed in regulating and protecting the interests of the consumer. We and the organizations that we service have been very much involved in the for-

mulation of the Reg. E changes and have no problems on the regulation side.

From my brief description of the kind of activities that we are engaging in as a processor, you can see that we have a lot of concern about what a highly subsidized nationwide online network can do to us or anyone else in a private sector role of trying to provide very similar services to the financial community.

We feel that there have been numerous cases where the lack of competition can be demonstrated to inhibit innovation, variety and, therefore, be a disservice to the consumer, and we are very concerned with that as well.

As I sit back and listen to the testimony being given this morning, it reminds me a great deal of a lot of the arguments regarding some of the deregulation or the introduction of competition into the telephone industry and how the telephone companies took a very strong position that they had to maintain the integrity of the system. Because they were a natural monopoly, it was accorded that they be the sole provider, but, we have seen more novelty in that industry since the introduction of the unregulated private sector and free competition. The consumer has benefited. Both the retail consumer and organizations like our own have benefited dramatically from some of the things that happened in that industry. I can see exactly the same kind of problems if the Federal Reserve were to assume an extremely dominant role in providing EFT service.

We have in EFT an infant multibillion dollar industry, an industry with the market potential to bring unparalleled convenience and efficiency to the payment system. Consumers, merchants, financial institutions, and society in general stand to benefit from the continued development of these systems. The economic benefits of EFT systems should be allowed to accrue to society, free from either the encumbrance of overly restrictive Government regulation or the stifling effect of subsidized competition by Government agencies in a market where the private sector has proven to be ready and willing to provide a continuing stream of novel and competitive offerings.

[Mr. Moehrke's prepared statement follows:]

PREPARED STATEMENT OF DON P. MOEHRKE, MANAGER, BUSINESS DEVELOPMENT, A. O. SMITH CORP.

1. A. O. SMITH - A PROVIDER OF EFT SERVICES

A. O. Smith, with its subsidiaries and affiliates, is a diversified manufacturing and service organization. Its product lines include electric motors, agricultural feed storage and handling systems, automotive and truck structural components, water heating equipment, fiberglass reinforced plastic piping, computer services and agricultural financial services.

As one of the 500 largest publicly-owned manufacturing corporations in the United States, A. O. Smith holds leading market positions in many of its product lines and sells its products around the world.

A. O. Smith was founded in 1874 in Milwaukee, Wisconsin, and is still headquartered there. The company employs over 9,000 people worldwide and manufactures products in 22 plants in the United States, Canada, England, Ireland, Mexico, the Netherlands, and Japan.

The Data Systems Division of A. O. Smith Corporation has been providing computer services to outside organizations, both large and small, since 1968. In addition, Data Systems has serviced the needs of its parent corporation, a Fortune 500 company, for over twenty years.

Our original primary product offering was a computerized manufacturing control system known as MDS. Today, MDS remains one of the most comprehensive and cost-effective systems available and is still the country's only system which has been successfully implemented in the seller's own manufacturing operations.

This same dedication to software excellence has been exhibited in our new product offerings in the areas of Engineering (since 1975) and Electronic Funds Transfer introduced in 1978. For example, A. O. Smith "magnetic" is the country's premier computerized method for computing electrical flux distribution.

Our TYME(TM), Take Your Money Everywhere, software is the country's most widely used shared Electronic Funds Transfer system.

In addition to the industry specific applications mentioned above, A. O. Smith has acquired an excellent reputation for the professional design, implementation, and management of a wide array of generalized data processing functions.

Our primary marketing areas are the major industrial and financial centers of the country. In 1978, our services penetrated the European market for the first time with significant installations in the Netherlands and in France. Data Systems has branch offices in Chicago, Cleveland, and Milwaukee.

In 1980, record sales were recorded for the twelfth consecutive year. The single most important aspect of this record of success has been growth through targeted key accounts. These relationships have provided the necessary foundation for an orderly, controlled growth.

2. STATE-OF-THE-ART REVIEW

Basic EFT services provided by the ATM are well understood. Deposits, cash withdrawals, transfers, and balance inquiry are provided in most offerings. Modern ATMs offer much flexibility in structuring other applications for the devices.

The penetration of EFT into the Point of Sale (POS) market has been very light. A major reason is that the single purpose terminal is not an integral part of the retail checkout process. Generally, response times and overall availability have not been adequate. Merchant acceptance has been poor.

Another trend, however, will have a complementary effect on EFT at the point-of-sale. The electronic cash register (ECR) has penetrated the market extensively. Many of these devices are connected to a computer and are capable of considerable function in inventory control, sales analysis, cash control, and accounting. The capture of credit transactions is in place in many systems, and it is a relatively simple extension of these capabilities to provide full EFT services. The ECR interfaces should expand rapidly in the next few years.

POS networks will serve as natural concentrators for their own interchange traffic. Authorized credit transactions may well be captured and stored for batch transmission after closeout. In these cases, the traffic is essentially no different than ACH type of transactions, i. e. one-way complete electronic items.

Check authorization/verification is an odd facility in an EFT system. The need is presently there, but the mechanism is poor. As the consumer and merchant are educated (probably through transaction fees), the check will be replaced by the direct debit (with cash back if desired).

In-home banking is capturing considerable interest as experiments proliferate utilizing several technologies. In this case, it appears clear that financial services will "piggy-back" on delivery mechanisms designed primarily for entertainment and information services. Competition is fierce for primary delivery services, and the consumer benefits from the alternatives available. Unless the telephone companies manage to force their low speed technology on the market place, the other providers will offer an exciting array of highly interactive capabilities, including financial services. Given the pattern of a variety of providers af in-home services coupled to an even wider variety of financial service organizations, the requirements for transaction switching look much like those of an EFT network.

3. PRODUCTS AND COMPARATIVE FEATURES

The A. O. Smith EFT Products include five major offerings:

1. Automated Teller Machine (ATM) Support System

   The ATM Support system provides the primary support vehicle for basic deployment and management of a proprietary terminal network. The transactions allowed in the system include:

   - deposit
   - withdrawal
   - cash advance
   - payment to
   - payment from
   - transfer
   - balance inquiry
   - credit authorization
   - merchandise purchase
   - merchandise credit

   The ATM Support supports terminals manufactured by Burroughs, Concord, Diebold, Docutel, Honeywell, IBM, NCR, TRW/Fujitsu, and others as requested by financial institutions.

2. EFT Intercept Processor System

   The Intercept Processor System supplements the ATM Support System to provide the capability to separate "on us" transactions from interchange transactions in a shared environment. Interchange traffic is formatted for transmission to either a TYME/ Switch or the CONTINET Switch for authorization, and the responses are routed back to the terminals. (The Intercept Processor is not a switch. It provides communication to a switch.)

3. Cardholder Authorization System

   The Cardholder Authorization System performs transaction authorization on behalf of financial institutions. Just as some institutions may choose to have their transactions authorized by another bank (a Processor), so they may choose to have the Cardholder Authorization Processor do this.

4. TYME EFT Switch System

   The TYME System has been in operation since December, 1976. The system currently services cardholders from over 350 financial institutions who share more than 300 ATM and POS terminals installed throughout the states of Wisconsin and upper Michigan. Network architecture includes 9 computer centers with processors operating both in front of and behind the switch. Performance of the technology has been thoroughly demonstrated in millions of transactions.

In addition to the Wisconsin network, the system has been installed at major financial institutions serving Pennsylvania, New Jersey, Texas, and Virgina. The Michigan Automated Clearinghouse Association in conjunction with A. O. Smith is also using the system to implement its shared ATM network on a statewide basis as is the Minibanks organization in Colorado. We are now installing a system in Arizona to service the Southwest and a system for the thrift industry in New York. Contracts have been also signed for Illinois and Florida networks. The system currently supports a comprehensive transaction set and a wide variety of terminal devices, discussed above.

The accounting integrity of the settlement system has been demonstrated by over four years of audit and examination experience covering banks, savings and loans, and credit unions.

The system of contracts, rules, and regulations that create the legal framework for shared EFT operations is included with TYME/Switch. The legal package supplements deficiencies in the Uniform Commercial Code with respect to electronic fund's transfers. In fact, the American Law Institute's 3-4-8 Committee drew heavily on the work contained in TYME's legal package to prepare the proposed EFT amendments to the Uniform Commercial Code. In addition the package more than satisfies the technical requirements of the Electronic Fund's Transfer Consumer Protection Act.

5. CONTINET Nation Wide Switch System

A. O. Smith is developing a system to link regional networks together in a nation wide interchange network. CONTINET will standardize transaction flows to and from regional networks and will handle the settlement effects of multiple cutoffs, multiple time zones, float and foreign exchange processing.

Each of the products utilizes advanced capabilities of IBM and Tandem Non-Stop computer systems to effect the highest system availability and simple expandability to support a variety of customers who, in turn, can offer high quality, high availability service, responsive to market trends and technologies in this highly dynamic business.

4. GOVERNMENT COMPETITION WITH THE PRIVATE SECTOR IN EFT

Responsible technological innovation is the economic key to the social benefits of EFT. The private sector and the free market system represent the most efficient factors of production for developing and operating EFT systems. Any public policy which expands the role of government or quasi government utilities in this process delegates the responsibility for technological innovation to a mechanism that will likely:

- o Reduce the rate of technological advancement.
- o Insulate inefficiency in existing systems with the attendant effects on productivity.
- o Retard growth in a multi-billion dollar market.

The contrasting effects of EFT development in the public vs. the private sector can be seen by comparing experiences in the development and deployment of automated clearinghouse based services to the development and deployment of automated teller machine base services. The development of ACH services over the last several years has been slow despite the supportive government policies of the Treasury and substantial cost subsidy by the Federal Reserve System. In contrast, ATM services have experienced rapid market acceptance and deployment in recent years in a demonstration of EFT technology left to the private sector and the forces of free market competition. The rates of technological and marketing innovation for the two services contrast sharply.

Responsible technological innovation should be encouraged within the payment system. The Congress has acted through recent EFT legislation to protect the essential rights of consumers who choose to use EFT systems. The Federal Reserve System has taken further steps to iplement appropriate supportive guidelines through Regulation E. These steps serve to protect the public trust as it relates to the deployment of EFT technology by private enterprise. Given this direction, the private sector seems well-positioned to continue the evolutionary development of EFT systems.

As the electronic payment system emerges, technical supports and reporting systems must be introduced to assure the Federal Reserve's continued ability to manage the money supply effectively. Expanded Fed membership and potentially improved reporting systems will be required. Presumably, the Fed will play a key role in the EFT settlement process. Clarification of this role seems appropriate. Settlement - that is, the movement of funds through the central banks's account, should be separated from the clearing/delivery mechanism - the technology used in providing EFT services to consumers, merchants, and financial institutions. Delivery technologies such as terminals, communications facilities, computers, and value-added applications software are the competitive factors of innovation in EFT systems. Any regulation of technology which goes beyond socially responsible audit standards and consumer protections should be avoided. Competition in the marketplace, free from government operation of EFT delivery systems, will produce technically innovative and economically efficient EFT systems. In short, these competitive markets provide the key to the efficient

allocation of society's resources. Fed operation of delivery systems is not required.

Competition for EFT services can and will occur in the private sector. Historically, the private sector has operated at a substantial disadvantage when forced to compete with government or quasi governmental agencies on an unequal basis. Specific examples include the difficulties experienced by private telephone companies in competing with the Bell system until the monopolistic controls were selectively removed. Our own experience will attest to the superior offerings of relative newcomers to the telephone marketplace, even when compared to the "latest" offerings of Bell. It is not clear that all of the current Bell offerings would be available today if they had not found themselves in competition. The convenient PhoneCenter stores could have been provivided many years ago. It took the competition of retaillers selling telephones to create this obvious cunsumer benefit.

Another example involves the experience of private data services companies competing with the Federal Reserve System in automated clearinghouse processing. Here, the Federal Reserve System enjoys a virtual monopoly by virtue of providing a subsidized service. It is not in society's best interest to expand these inequities by promoting increased governmental or quasi governmental participation in the development of a new multi-billion dollar market.

In summary, the private sector has the technological resources and incentive to responsibly serve the growing market for EFT services. Expanded government involvement in the development and operation of EFT systems is neither required nor socially desirable.

5. CONCLUSION

We have in EFT an infant multi-billion dollar industry, an industry with the market potential to bring unparalleled convenience and efficiency to the payment system. Consumers, merchants, financial institutions, and society in general stand to benefit from the continued development of these systems. The economic benefits of EFT systems should be allowed to accrue to society free from either the encumbrance of overly restrictive government regulation or the stiffling effect of subsidized competition by government agencies in a market where the private sector has proven to be ready and willing to provide a continuing stream of novel and competitive offerings.

Mr. ENGLISH. Thank you very much, Mr. Moehrke.

If the Federal Reserve ties its current ACH operations together through a sophisticated digital communications network, will the resulting system be able to interconnect POS systems?

Mr. MOEHRKE. Yes, it would appear so. I would like to make one distinction between types of transactions that occur in the systems.

There is the authorization type of transaction that represents some mechanism to determine the validity of the cardholder submitting that transaction. This is a real-time requirement. The implementation of that varies dramatically from system to system, but it is evolving more and more to online access of large data base. That portion of the transaction requires a rapid response. The current ACH stucture does not support that kind of transaction. The proposed network could, but I really do not know whether there are plans to support that sort of transaction or not. Once the transaction is authorized at the point of sale or at the ATM, there is a subsequent transaction which is the actual transfer. That transfer does not have to travel in real time. It often does. Many times it does not.

The second type of transaction is clearly totally compatible with the ACH. In fact, we use the ACH frequently in providing these services to financial institutions. The second type are batch electronic since they are batch transactions which are processed in the stream of normal nightly data processing, and the ACH format happens to be a very convenient format. So I can speak with confidence that these types of transactions can be handled even in the existing system.

Mr. ENGLISH. Will it be technically difficult to interconnect the ACH's with the POS systems?

Mr. MOEHRKE. No, not at all.

Mr. ENGLISH. Given the $10 million the Federal Reserve has spent on packet-switching hardware to tie together the ACH's, and the millions more it will spend on private lines and operational costs, do you think it is reasonable to expect that any businessman will want to compete with the Federal Reserve in the ACH and wire transfer areas?

Mr. MOEHRKE. It is very difficult to imagine competition with that system, given the current pricing structure.

Mr. ENGLISH. I think that would be particularly so if they continue to charge below the cost.

Mr. MOEHRKE. That is very true.

Mr. ENGLISH. Will the existence of the large and sophisticated telecommunications network being built by the Fed lead inevitably to interconnection of POS systems and ACH's through that network?

Mr. MOEHRKE. With the possible exception of the real-time authorization transaction, I see no reason why there would not be considerable pressure for the other types of transactions. If the installation is in place, and if it is very attractively priced, it is going to be used and there will be considerable pressure for its extension.

Mr. ENGLISH. Wouldn't there be tremendous pressure to employ this network for national and regional interconnection rather than go all through the expense of trying to duplicate it?

Mr. MOEHRKE. If it is working effectively, yes. Right now the ACH would be utilized a lot more for the kind of EFT we are in if it were responding quickly. It currently is a slow response system. It requires movement of magnetic tapes and it is not quick enough to satisfy the needs in the retail EFT area. When this new system goes on line, it should be much more capable of satisfying these needs.

Mr. ENGLISH. What markets do you see developing in EFT? What different kinds of services are businesses, banks and consumers going to want in the next decade?

Mr. MOEHRKE. Probably the most explosive area, initially, will be the retail point of sale. The advent of the electronic cash register has finally provided a capability that can be utilized to capture credit transactions or debit transactions—using the new debit cards—at the point of sale electronically, such that it is not necessary to pass this paper through the system. Once these kinds of terminals are programed and interconnected effectively, we will see an explosive growth of electronic transactions from the point of sale.

Long term, bank at home service will probably be the largest offering in terms of the number of points of transaction origination. With this service nearly any TV set could become a transaction origination point. Bank at home will see fierce competition among the communication providers and the service providers. You will see interesting competition among the financial institutions to provide service. Bank at home will be a multiinstitution, multicommunication provider environment. We see that as a very natural marketplace for products like our Tyme switch. It is also a rather natural place for the Fed to provide communcation capabilities with extentions of the ACH type of offering.

Mr. ENGLISH. How will continuing Federal Reserve operations affect the ability and willingness of companies like A. O. Smith to offer any or all of the EFT services that may be demanded?

Mr. MOEHRKE. We had a business plan last year that included exploration of providing services to ACH's. We are in the computer service field and the method of processing ACH transactions is a natural service for us to be in, very analogous to many of the other data processing functions we perform. We did not do an extensive evaluation of that because when explicit pricing came out with the kind of prices they announced, it was obvious that we could not compete in that marketplace and make a profit.

Mr. ENGLISH. Your company is excluded now from a particular part of the EFT service market such as ACH. Will the cost of entering it in the future be greater for you and your customers?

Mr. MOEHRKE. The communications based systems, particularly the on-line systems, are dependent on building a transaction volume to sustain the relatively high costs of communications themselves. The larger the communications network, the more potential cost savings there are from economies of scale.

What it sounds like to me from my private sector perspective, is that what the Fed is saying is that as soon as they have enough volume built up and can drive their own costs down far enough, then they will fairly price.

At that point, it would be very difficult to put together an equivalent network because they are so far down what we call the learn-

ing curve of experience cost that it is extremely difficult to enter the marketplace. It is an excellent method for anticompetitive activities if you can get away with it. We in the private sector can't get away with those sort of things.

Mr. ENGLISH. Mr. Conyers.

Mr. CONYERS. Thank you, Mr. Chairman.

I appreciate that you may have amendments to offer to the legislation on the floor, and if you leave before I finish I will understand.

Mr. ENGLISH. Thank you.

Mr. CONYERS. I am interested in the size of the company you are affiliated with, and whether it is part of a larger corporate structure.

Mr. MOEHRKE. We are a direct part of the operating division of a three-quarters of $1 billion, fundamentally manufacturing company. The corporation is primarily in the manufacture of automobile components, electric motors, water heaters, and livestock feeding equipment.

Mr. CONYERS. Are you multinational?

Mr. MOEHRKE. Yes, we are.

Mr. CONYERS. Fortune 500?

Mr. MOEHRKE. Yes.

Mr. CONYERS. Does this projected activity of the Federal Reserve Board distort the free enterprise system as you see it?

Mr. MOEHRKE. Yes.

Mr. CONYERS. What should we do to stop it besides incarcerate the Federal Reserve Board or some extreme solution of that nature?

Mr. MOEHRKE. We have in our current EFT systems a need for the Federal Reserve or a similar mechanism. We generate transactions that settle among different financial institutions. What you have are cardholders from one financial institution using terminals that belong to another financial institution, and making deposits and withdrawals and other transactions, and you end up with a net position.

It is important for us to be able to settle that net position. On that basis, we generate transactions that we would like the Fed to process. Right now that can't be done across Fed districts, but we will figure out other ways to get this accomplished. That particular service is an important one, but the volume is rather low. One transaction per day per financial institution. That does not require an FRCS-80.

Mr. CONYERS. How do they distort the free enterprise process by horning in at this early juncture on this electronic situation?

Mr. MOEHRKE. By making it unprofitable to enter the business.

Mr. CONYERS. That might violate antitrust laws.

Mr. MOEHRKE. If they were subject to them. As I said, it appears to me that there is from the point of view of trying to dominate a marketplace, they are doing everything right. But it seems unfair.

Mr. CONYERS. While you are visiting Washington, wouldn't it be great if you could get a word in to the Federal Reserve Board about the prime interest rates.

Mr. MOEHRKE. Yes.

Mr. CONYERS. Right. So why don't you give me your feeling about that as you are at the witness stand.

[No response.]

Mr. CONYERS. Do you want them to go up?

Mr. MOEHRKE. Certainly not.

Mr. CONYERS. Do you want them to go down?

Mr. MOEHRKE. Yes.

Mr. CONYERS. How come?

Because you are not a banker?

Mr. MOEHRKE. That is right. I happen to represent a company that has suffered dramatically as an indirect result of the high interest rates.

Mr. CONYERS. You mean the multinationals are hurting too?

Mr. MOEHRKE. Everyone is hurting.

Mr. CONYERS. I know small and intermediate size businesses are hurting, if they are still in business, but I didn't know that the multinationals were being adversely affected. This is very shocking and distressing news. Tell me more.

Mr. MOEHRKE. To be correct, we are primarily a domestic corporation. We have multinational operations but we are primarily a domestic corporation, and our main businesses are tied to agriculture, housing starts, and the auto industry. One might observe that we have done a marvelous job of getting in the wrong businesses. One might also observe listening to the testimony today, we may have done it again by getting into the EFT business.

Mr. CONYERS. So what will you be able to report back to the company, now that you have been here in Washington, testified before this subcommittee, and inadvertently got in a few blows on the interest rate. What is it you want to tell us about the interest rates besides that you want them to come down.

Do you have any particular views to pass on to the Federal Reserve Board representative that is in the room and will be testifying next?

Mr. MOEHRKE. I am hard-pressed to represent my company without their views on this basis, but it is a difficult line to draw between the benefits of high interest rates in the international economy, and severe cost of those same high interest rates on the domestic marketplace that we see right now.

From the point of view of someone who is trying to make a profit at providing things to people who have to pay for them on time, we certainly hope that the interest rates will come down soon or there may be a lot of us around who are no longer providing those services. And what we see, unfortunately, is that there are a lot of foreign people around who are willing to step into the breach. We are very concerned about that.

Mr. CONYERS. What figure would you like to see the rate drop to? Are you a double digit man or a single digit man?

Mr. MOEHRKE. Ultimately single digit. I don't think you can do it instantly.

Mr. CONYERS. I have an indication of where you are coming from. I think it is something this committee and this Congress has to pay particular attention to or it won't matter who gets here first in electronic transfers because there won't be enough people around to do anything about it.

I appreciate your testimony. I don't have any further questions, Mr. Chairman.

Mr. ENGLISH. Thank you, Mr. Conyers.

Mr. Moehrke, we certainly want to thank you for attending today. Since you are in the automobile business and the agriculture business, both interests that are close to the heart of Mr. Conyers and me, you have our sympathy as you leave, and we wish you better luck in the future.

Thank you very much.

Our next witness is Mr. Theodore E. Allison, who is Staff Director for Federal Reserve Bank Operations with the Board of Governors, Federal Reserve in Washington, D.C.

Mr. Allison, please identify those with you.

STATEMENT OF THEODORE E. ALLISON, STAFF DIRECTOR, FEDERAL RESERVE BANK ACTIVITIES, BOARD OF GOVERNORS, FEDERAL RESERVE SYSTEM, WASHINGTON D.C., ACCOMPANIED BY BRYAN CAREY, SENIOR VICE PRESIDENT, FEDERAL RESERVE BANK OF CHICAGO, AND ELLIOTT McENTEE, ASSISTANT DIRECTOR, DIVISION OF FEDERAL RESERVE BANK OPERATIONS, BOARD OF GOVERNORS, FEDERAL RESERVE SYSTEM, WASHINGTON, D.C.

Mr. ALLISON. I would be happy to introduce Mr. Bryan Carey, Senior Vice President of the Federal Reserve Bank of Chicago. He is our project manager for the FRCS-80 program.

On my right is Mr. Elliott McEntee, Assistant Director of the Board's Division of Federal Reserve Bank Operations.

Mr. ENGLISH. If you would summarize your written statement, without objection we will include your written statement as part of the record.

Mr. ALLISON. I will make my comments brief. I am pleased to be able to discuss with your subcommittee the role of the Federal Reserve in the provision of payments mechanism services, particularly those that are often referred to as electronic fund transfer services [EFTS].

In addition, I will explain why the Federal Reserve's operation of a highly secure and flexible network is needed to carry out the System's monetary policy and payments mechanism responsibilities, and why technological obsolescence has made it necessary to replace the current network. This replacement project, incidentally, isn't at all remarkable—the System has upgraded its communications facilities every 10 to 20 years since 1915.

The Federal Reserve, as the Nation's central bank, has a number of diverse, but highly interrelated, responsibilities—for monetary policy, bank supervision and regulation, and payments system operations. Our basic responsibility for the efficiency and integrity of the Nation's payments mechanism dates from the Federal Reserve Act of 1913, and was confirmed by the Congress only last year with the passage of the Monetary Control Act of 1980.

This legislation makes it clear that the Federal Reserve should participate in the payments mechanism in ways that will promote competition, contribute toward greater efficiency, and insure an adequate level of payments services nationwide. This is accom-

plished by requiring the System to make available its payment services to all depository institutions, and over the long run to charge for such services at their full cost. This is a major development in the evolution of the payments mechanism, and I will discuss its implications later on in my statement.

There is a longer discussion in my written statement about the history of these operations. I will skip that for this morning.

Despite changes in the mechanism used to carry out these responsibilities, however, the basic central banking role performed by the Federal Reserve has not changed since 1913.

The 12 Federal Reserve district banks and their 25 branches maintain reserve accounts and clear directly and indirectly with all depository institutions in the Nation. A depository institution wishing to transfer funds from its reserve balance to another depository institution uses the Federal Reserve's wire transfer system. Reserve balances are transferred by depository institutions to purchase or sell Federal funds; that is, to make interbank loans, to move correspondent bank balances from one institution to another, and to send funds to another bank on behalf of its customers.

The Treasury Department and Federal agencies maintain accounts at Federal Reserve offices, and they use these accounts and the wire transfer system extensively to disburse and collect moneys. In 1980, 43 million reserve balance transfers took place, involving an aggregate of $78 trillion.

The settlement of funds transfers and reserve account maintenance functions of the wire transfer system contribute to an efficient payments mechanism. Settlement through the Federal Reserve, with the full force and power of a central bank behind it, substantially reduces the risk of settlement failure which could result in serious disruptions in financial markets.

A word about the wire transfer network and monetary policy.

Depository institutions must have access to their reserve accounts to adjust them in response to fluctuations in their reservable liabilities. One way this access is provided is by the wire transfer system. This system is also used by the Federal Reserve, the Treasury, and depository institutions to transfer U.S. Government and agency securities. It is also through this network that Federal Reserve open market operations are facilitated.

Open market operations are the primary method used to expand or contract the money supply. The wire transfer system improves the efficiency of open market operations by promoting a large, secure, and liquid market for Government securities. This arrangement not only facilitates the marketing of Government debt, but also results in lower cost to the Treasury.

The Federal Reserve's communication system. The Federal Reserve's communication network is also used for two other principal purposes. First, it is used to transmit timely bank deposit data to the Federal Reserve Board for day-to-day monetary policy purposes. These data include daily deposit information on 14,000 depository institutions. Second, it is used to transfer small dollar value recurring payments such as direct deposit of payroll and bill payments among automated clearinghouses.

The ACH was established jointly by the banking industry and the Federal Reserve as a vehicle to clear and settle certain types of electronic payments. In 1980 about 60 million commercial and 160 million Treasury payments were processed through the ACH. Incidentally, over 30 percent of the social security recipients in the United States have elected to have their benefits sent through the ACH mechanism.

The ACH, we believe, has the potential to offer significant benefits to the public in terms of decreased cost, increased convenience, and greater security for certain types of payments. This judgment is shared by the financial industry, the Federal Government, which is the largest user of the ACH, and by the National Commission on Electronic Fund Transfers [NCEFT]. The NCEFT further concluded that Federal Reserve involvement in the operation of ACH's was necessary because the private sector was not yet able to operate ACH facilities economically without this assistance.

A brief word about the Federal Reserve's communication network. The Federal Reserve uses data processing and communications to receive, process, and deliver payments. The computers used are general data processing machines of the type used by most large multipurpose organizations, both public and private. Our need to transmit data among the Federal Reserve offices, the Board, and the Treasury is accomplished through the use of three communications networks. The networks include the interdistrict Fedwire, the interdistrict bulk data network, and the local district networks.

On the Fedwire, more than 175,000 messages containing wire transfers of funds and securities, along with administrative information, are being communicated each day among the Federal Reserve Banks through a central store-and-forward message switch in Culpeper, Va. This network, including its extensions from head offices to branches and offices, was installed between 1969 and 1974 and replaced an antiquated semiautomated network that was installed in 1953.

A bulk data network, which uses high-speed switched circuits to connect the 12 Federal Reserve Banks and the Board of Governors, was implemented in 1976. This network is used to transmit bank deposit data and ACH payments.

Each Federal Reserve Bank has also implemented its own local network between the head office and its branches. These facilities are used to move accounting data and other local traffic within the District.

The new Federal Reserve Communications System. As it has done on the average of every 10 to 20 years, the Federal Reserve System is now replacing its communications network. The current upgrading is needed because the present system and its technology are 10 years old, and more cost-effective and reliable technologies are available. Moreover, the present system relies in large part on an A.T. & T. service that will terminate in 1983, and its central switch is maintained by a vendor that will cease its maintenance responsibilities in 1985.

Within the Federal Reserve, the replacement project is known by the acronym FRCS-80 [Federal Reserve Communications System for the Eighties]. Conceptual planning for FRCS-80 began in late

1975 on the assumption that a more efficient communications technology would be available in the 1980's and that the Federal Reserve System would be making its payment services available to all depository institutions. These assumptions have proven correct with the development of packet switching technologies and the passage of the Monetary Control Act of 1980.

The new system will be a general-purpose data communications network that will satisfy the Federal Reserve's internal communications requirement of providing services to the financial community, the Treasury, and other Government agencies. FRCS-80 will be used for the transmission of the same data that is sent over the current network.

A word about pricing of Federal Reserve services. The Monetary Control Act of 1980 required the pricing of certain Federal Reserve services. These services include all payments mechanism services, such as check processing, wire and securities transfers, settlement, and ACH transactions. We are now charging for all financial services except cash transportation. Charges for cash transportation are scheduled to commence in early 1982.

Over the long run, the revenues derived from the sale of financial services will cover all Federal Reserve costs in providing them, including an amount to reflect private sector costs not incurred by the Federal Reserve, such as taxes and financing costs. As a result, services will be offered competitively, allowing the private sector adequate opportunity to enter or expand their share of the market for payments mechanism services.

Even before pricing began, significant competition already existed in check processing. Large money center correspondent banks and private service bureaus clear a substantial proportion of total checks written. Bankwire, CHIPS, and SWIFT are private-sector competitors for domestic and international large dollar funds transfers.

ACH operations, because of their economies of scale and potential for improving the efficiency of certain types of funds transfers, is being priced temporarily based on long-run costs to encourage its development. In the near future, ACH services will be priced based on actual costs and as ACH volume grows, we expect competitors to enter this market.

The role of the Federal Reserve in point-of-sale [POS]. It is our understanding that certain parties are concerned that FRCS-80 is being designed to accommodate point-of-sale switching capabilities. The National Commission on Electronic Fund Transfers in 1977 reported to Congress on the role of the Federal Government in EFT. The Commission recommended "that the Federal Government not be involved operationally, at present or in the foreseeable future, in POS switching and clearing facilities except for the provision of net settlement among depository institutions."

The design of FRCS-80 does not contemplate any point-of-sale switching activities, and the Federal Reserve has no intention of getting involved in such activities.

Privacy considerations. Before I conclude my remarks this morning, I would like to explain briefly the Federal Reserve policy on retention and disclosure of electronic payment records containing

data on individuals. I will focus on our ACH policy since data identifying an individual is rarely part of a wire transfer.

While the ACH's do not process enough information to serve as a privacy threat, the Federal Reserve has taken affirmative steps to insure the privacy of data in our possession. Various ACH records contain individual and business names, bank account numbers, and social security and other individual identification numbers. Such transaction data are retained by Federal Reserve banks only for the limited time needed to fulfill operational requirements.

Records maintained on computer media are retained no longer than 30 business days following settlement of the transaction. Microfiche historical records containing individual transaction data are retained for 60 business days following settlement. Microfiche historical records not containing individual transaction data are retained for 1 year. At the end of their respective retention periods, all records are destroyed.

The Federal Reserve data disclosure policy pertains to all payments services, including the ACH. The Federal Reserve banks will not disclose individual transaction data except to parties that are part of the transfer, such as the originating and receiving financial institutions, or when a grand jury subpena or an order of a court with proven jurisdiction is presented.

In conclusion, the subcommittee's invitation for the Board to testify at this hearing requested the Federal Reserve to comment on what it believed its appropriate role to be in the provision of the telecommunications services. As I have explained today, the Federal Reserve offers payments services to the banking industry and uses telecommunications for its internal operations.

The Federal Reserve clears, delivers, and settles interbank payments. In doing so, we use computer and telecommunications equipment and facilities, and we appreciate the subcommittee's concern that the provision of these facilities occurs in a competitive environment.

[Mr. Allison's prepared statement follows:]

PREPARED STATEMENT OF THEODORE E. ALLISON, STAFF DIRECTOR, FEDERAL RESERVE BANK ACTIVITIES, BOARD OF GOVERNORS, FEDERAL RESERVE SYSTEM

Introduction

I am pleased to be able to discuss with your Subcommittee the role of the Federal Reserve in the provision of payments mechanism services, particularly those that are often referred to as electronic fund transfer services (EFTS).

In addition, I will explain why the Federal Reserve's operation of a highly secure and flexible network is needed to carry out the System's monetary policy and payments mechanism responsibilities, and why technological obsolescence has made it necessary to replace the current network. This replacement project, incidentally, isn't at all remarkable--the System has upgraded its communications facilities every 10 to 20 years since 1915.

The Federal Reserve, as the nation's central bank, has a number of diverse, but highly interrelated, responsibilities--for monetary policy, bank supervision and regulation, and payments system operations. Our basic responsibility for the efficiency and integrity of the nation's payments mechanism dates from the Federal Reserve Act of 1913, and was confirmed by the Congress only last year with the passage of the Monetary Control Act of 1980. This legislation makes it clear that the Federal Reserve should participate in the payments mechanism in ways that will promote competition, contribute toward greater efficiency, and ensure an adequate level of payments services nationwide. This is accomplished by requiring the System to make available its payment services to all depository institutions and over the long run to charge for such services at their full cost. This is a major development in the evolution of the payments mechanism, and I will discuss its implications later on in my statement. First, however, a brief history of the Federal Reserve's role in the payments mechanism may be helpful.

The U.S. Payments Mechanism: A Brief History.

Prior to 1800, exchange of currency (and gold) was the primary method used to transfer funds. Paper checks became widely used in the mid-1800's, and they have played a dominant role in the U.S. payments mechanism ever since. With over 30 billion checks per year moving through the economy and the cost of labor and transportation increasing, electronic payment systems are being developed to supplement the check system. Electronic fund transfers, which are only in their infancy, have the potential to improve greatly the security, efficiency, and reliability of the money transfer system.

Prior to the creation of the Federal Reserve, checks were cleared, and funds transferred, through a network of interbank correspondent balances. In order for one bank's check to be cleared when deposited at another bank, the check moved through one or more correspondent banks. The number of correspondent banks involved in clearing a check depended on many factors including the distance between the two banks. This process led to pyramiding of correspondent balances and a slow collection system.

The establishment of the Federal Reserve in 1913 altered the U.S. payments system in at least two important respects. First, it reduced the need for banks to maintain a complex network of correspondent balances to clear checks and other payments. Instead, Federal Reserve member banks could transfer funds by wire using a single reserve account balance. Indeed, the Federal Reserve Act directed that reserve accounts be used to clear payments transactions among depository institutions. Today correspondent balances are still used to clear payments of primarily smaller depository institutions. Book-entry accounting using reserve accounts, however, has all but eliminated the need to ship currency between banks to settle payments flows between geographic regions of the United States.

The second change in the payments system was the establishment of a national wire transfer network to provide access to these centralized reserve accounts. In 1915 the wire network was a telegraphic communication system. It has evolved into a high speed, computerized network. Besides its role in the payments mechanism, the wire network is a vital element in the conduct of monetary policy and the operation of the government securities market.

Despite the changes in the mechanism used to carry out these responsibilities, however, the basic central banking role performed by the Federal Reserve has not changed since 1913.

Federal Reserve Wire Transfer and Settlement Operations.

The 12 Federal Reserve District Banks and their 25 branches maintain reserve accounts and clear directly and indirectly with all depository institutions in the nation. A depository institution wishing to transfer funds from its reserve balance to another depository institution uses the Federal Reserve's wire transfer system. Reserve balances are transferred by depository institutions to purchase or sell federal funds, (that is, to make interbank loans), to move correspondent bank balances from one institution to another, and to send funds to another bank on behalf of its customers. The Treasury Department and federal agencies maintain accounts at Federal Reserve offices and they use these accounts and the wire transfer system extensively to disburse and collect monies. In 1980, 43 million reserve balance transfers took place, involving an aggregate of $78 trillion.

The settlement of funds transfers and reserve account maintenance functions of the wire transfer system contribute to an efficient payments mechanism. Settlement through the Federal Reserve, with the full force and

power of a central bank behind it, substantially reduces the risk of settlement failure which could result in serious disruptions in financial markets.

The Wire Transfer Network and Monetary Policy.

Depository institutions must have access to their reserve accounts to adjust them in response to fluctuations in their reservable liabilities. One way this access is provided is by the wire transfer system. This system is also used by the Federal Reserve, the Treasury, and depository institutions to transfer U.S. government and agency securities. It is also through this network that Federal Reserve open market operations are facilitated. Open market operations are the primary method used to expand or contract the money supply. The wire transfer system improves the efficiency of open market operations by promoting a large, secure, and liquid market for government securities. This arrangement not only facilitates the marketing of government debt but also results in lower cost to the Treasury.

Other Uses of the Federal Reserve's Communication System.

The Federal Reserve's communication network is also used for two other principal purposes. First, it is used to transmit timely bank deposit data to the Federal Reserve Board for day-to-day monetary policy purposes. These data include daily deposit information on 14,000 depository institutions. Secondly, it is used to transfer small dollar value recurring payments such as direct deposit of payroll and bill payments among automated clearing houses. The ACH was established jointly by the banking industry and the Federal Reserve as a vehicle to clear and settle certain types of electronic payments. In 1980 about 60 million commercial and 160 million Treasury payments were processed through the ACH. Incidentally, over 30 percent of the social security recipients

in the United States have elected to have their benefits sent through the ACH mechanism.

The ACH, we believe, has the potential to offer significant benefits to the public in terms of decreased cost, increased convenience, and greater security for certain types of payments. This judgment is shared by the financial industry, the federal government, which is the largest user of the ACH, and by the National Commission on Electronic Fund Transfers (NCEFT). The NCEFT further concluded that Federal Reserve involvement in the operation of ACHs was necessary because the private sector was not yet able to operate ACH facilities economically without this assistance.

A Description of the Federal Reserve's Communication Network.

The Federal Reserve uses data processing and communications to receive, process and deliver payments. The computers used are general data processing machines of the type used by most large multipurpose organizations, both public and private. Our need to transmit data among the Federal Reserve offices, the Board and the Treasury is accomplished through the use of three communications networks. The networks include the Interdistrict Fedwire, the Interdistrict Bulk Data, and the Local District Networks.

On the Fedwire more than 175,000 messages containing wire transfers of funds and securities, along with administrative information, are being communicated each day among the Federal Reserve Banks through a central store-and-forward message switch in Culpeper, Virginia. This network, including its extensions from head offices to branches and offices, was installed between 1969 and 1974 and replaced an antiquated semi-automated network that was installed in 1953.

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A bulk data network, which uses high-speed switched circuits to connect the 12 Federal Reserve Banks and the Board of Governors, was implemented in 1976. This network is used to transmit bank deposit data and ACH payments.

Each Federal Reserve Bank has also implemented its own local network between the head office and its branches. These facilities are used to move accounting data and other local traffic within the District.

The New Federal Reserve Communications System.

As it has done on the average of every 10 to 20 years, the Federal Reserve System is now replacing its communications network. The current upgrading is needed because the present system and its technology are 10 years old, and more cost-effective and reliable technologies are available. Moreover, the present system relies in large part on an AT&T service that will terminate in 1983, and its central switch is maintained by a vendor that will cease its maintenance responsibilities in 1985. Within the Federal Reserve, the replacement project is known by the acronym FRCS-80 (Federal Reserve Communications System for the Eighties). Conceptual planning for FRCS-80 began in late 1975 on the assumption that a more efficient communications technology would be available in the 1980's and that the Federal Reserve System would be making its payment services available to all depository institutions. These assumptions have proven correct with the development of packet switching technologies and the passage of the Monetary Control Act of 1980.

The new system will be a general-purpose data communications network that will satisfy the Federal Reserve's internal communications requirement of providing services to the financial community, the Treasury, and other government agencies. FRCS-80 will be used for the transmission of the same data that is sent over the current network.

The functions of the existing separate communications networks will be consolidated into a single network providing better service at less cost. Historically, as the need for new data communications applications emerged, the most frequent solution was the implementation of independent data communications systems tailored to a single application. With FRCS-80, new communications requirements can be met without additional networks or major design changes.

FRCS-80 will:

- o Improve the reliability and efficiency of the Federal Reserve's communications operations.
- o Reduce the total cost of System communications through a more efficient use of circuits.
- o Increase security of data moving within the Federal Reserve System.

The conceptual design of FRCS-80 is that of a distributed "packet-switched" network. No single central switching site, such as the current switch in Culpeper, Virginia, will be required to coordinate the operation of the network. Rather than revolve around a computerized hub, as does the current Fed Wire, FRCS-80's computer power will be distributed among the Federal Reserve offices.

As part of the process of selecting a new communications network, the Federal Reserve compared two network approaches: A public access network and a private network. The private network approach was chosen because of security risks involved in using a public network and the lack of control over the flexibility of the public network. Flexibility is critical because the Federal Reserve must respond to rapid legislative or monetary policy changes.

After evaluating proposals from several vendors, the Federal Reserve awarded a $10 million contract to Northern Telecommunications, Inc. to provide hardware, software and install the network on a turn-key basis. Recently a

factory acceptance test was completed and equipment is now being installed in the Federal Reserve offices. The network is expected to be fully operational in early 1983.

Pricing of Federal Reserve Services.

The Monetary Control Act of 1980 required the pricing of certain Federal Reserve services. These services include all payments mechanism services, such as check processing, wire and securities transfers, settlement, and ACH transactions. We are now charging for all financial services except cash transportation. Charges for cash transportation are scheduled to commence in early 1982. Over the long run, the revenues derived from the sale of financial services will cover all Federal Reserve costs in providing them, including an amount to reflect private sector costs not incurred by the Federal Reserve, such as taxes and financing costs. As a result, services will be offered competitively, allowing the private sector adequate opportunity to enter or expand their share of the market for payments mechanism services.

Even before pricing began, significant competition already existed in check processing. Large money center correspondent banks and private service bureaus clear a substantial proportion of total checks written. Bankwire, CHIPS,1/ and SWIFT1/ are private-sector competitors for domestic and international large dollar funds transfers.

1/ The Clearing House Interbank Payments System (CHIPS) is a nongovernmental facility that clears international transactions for its 100 members. It is operated by the New York Clearing House Association, which has as its controlling members the 12 largest New York City commercial banks.

The Society for Worldwide Interbank Financial Transactions (SWIFT) is a cooperative company located in Belgium that operates a communications network to exchange payment instructions among its over 800 members.

ACH operations, because of their economies of scale and potential for improving the efficiency of certain types of funds transfers, is being priced temporarily based on long-run costs to encourage its development. In the near future ACH services will be priced based on actual costs and as ACH volume grows we expect competitors to enter this market.

The Role of the Federal Reserve in Point-of-Sale (POS).

It is our understanding that certain parties are concerned that FRCS-80 is being designed to accommodate point-of-sale switching capabilities. The National Commission on Electronic Fund Transfers in 1977 reported to Congress on the role of the federal government in EFT. The Commission recommended "that the federal government not be involved operationally, at present or in the foreseeable future, in POS switching and clearing facilities except for the provision of net settlement among depository institutions." The design of FRCS-80 does not contemplate any point-of-sale switching activities, and the Federal Reserve has no intention of getting involved in such activities.

Privacy Considerations.

Before I conclude my remarks this morning, I would like to explain briefly the Federal Reserve policy on retention and disclosure of electronic payment records containing data on individuals. I will focus on our ACH policy since data identifying an individual is rarely part of a wire transfer.

While the ACHs do not process enough information to serve as a privacy threat, the Federal Reserve has taken affirmative steps to insure the privacy of data in our possession. Various ACH records contain individual and business names, bank account numbers, and social security and other individual identification numbers. Such transaction data are retained by Federal Reserve Banks

only for the limited time needed to fulfill operational requirements. Records maintained on computer media are retained no longer than 30 business days following settlement of the transaction. Microfiche historical records containing individual transaction data are retained for 60 business days following settlement. Microfiche historical records not containing individual transaction data are retained for one year. At the end of their respective retention periods all records are destroyed.

The Federal Reserve data disclosure policy pertains to all payments services, including the ACH. The Federal Reserve Banks will not disclose individual transaction data except to parties that are part of the transfer, such as the originating and receiving financial institutions or when a grand jury subpoena or an order of a court with proven jurisdiction is presented.

Conclusion

The Subcommittee's invitation for the Board to testify at this hearing requested the Federal Reserve to comment on what it believed its appropriate role to be in the provision of telecommunications services. As I have explained today, the Federal Reserve offers payments services to the banking industry and uses telecommunications for its internal operations. The Federal Reserve clears, delivers, and settles inter-bank payments. In doing so, we use computer and telecommunications equipment and facilities, and we appreciate the Subcommittee's concern that the provision of these facilities occurs in a competitive environment.

Mr. CONYERS [presiding]. Why don't these guys believe you?

Mr. ALLISON. We are glad you scheduled these hearings to explore those issues. We hope our testimony can shed some light on that. We are also in the process of currently, in an ongoing process, reviewing our ACH prices for next year.

We will be changing these prices regularly as our costs change, and we will be presenting an analysis of the entire ACH situation to the Board of Governors in the not-too-very-distant future, within the next couple of months, and I expect the Board will take that opportunity to clarify its position and outlook on its role in ACH services and its intention regarding pricing of ACH services, as it will continue to do periodically in the future.

Mr. CONYERS. Mr. Carey, would you care to comment about our discussion?

Mr. CAREY. I would be happy to answer any questions that you have, Congressman.

Mr. CONYERS. All the questions I have asked him, I now put to you.

Mr. ALLISON. If you have any questions at all, Mr. Congressman, about the detail of the wire, the new wire system itself, the FRCS-80 system as we call it, or our procurement policies and practices with respect to that system and so on, Mr. Carey is completely knowledgeable about those areas, and will be happy to respond.

Mr. CONYERS. Whenever we get in a jam in government we call a meeting. We have a conference, don't we? Why don't we schedule a huge conference early next year with all of the Federal Reserve Board people and all the private sector people. I frankly have a hunch that when these hearings are concluded, we may not have persuaded one person in the private sector differently from their original view.

So I am throwing out for your consideration in advance—I would like you to share this with Mr. Gramley—that we ought to have a huge national conference in Washington. We can break the conference down into several days of panel discussions. We will also need a huge location, such as the Washington Hilton.

We should have the Chairman of the Federal Reserve Board kick it off with appropriate remarks, the chairman of the Government Operations Committee, maybe the Speaker of the House and, somebody from the White House can come down. We can then generate a far larger record than this small subcommittee is capable of doing.

We can employ God knows how many people to go through, condense, and synopsize the discussion. Production of books, pamphlets, excerpts, and recommendations would take volumes. Everybody would get a hearing on this.

It would probably stimulate the economy somewhat, give many hard working people in both the public and private sector an opportunity to do their rigorous assignments, and generally, we would all feel better about this thing.

Mr. ALLISON. It is an intriguing idea.

Mr. CONYERS. I am glad to hear your conditional support for it.

Mr. ALLISON. Governmental procedures, the Government-in-the-Sunshine Act and Administrative Procedure Act, give us a microcosm of that process as it is, inasmuch as the Board discussion will

take place in an open meeting. We will put out for public comment any proposed changes in our prices and pricing policy. We will develop a fairly extensive record and make it available to anyone who wants to see it and take full account of that record in making final decisions.

Mr. CONYERS. Let me ask counsel to raise some other questions that are important.

Mr. VIZAS. The chairman and I discussed some of the questions I will be asking you this morning.

I would like to go through several questions regarding FRCS-80, and a few questions regarding Federal Reserve attitude toward such service. The initial contract for FRCS-80 was let to Northern Telecom for approximately $10 million. What additional contracts do you anticipate being let to complete the building of the FRCS-80 network?

Mr. ALLISON. May I ask Mr. Carey to respond to these questions?

Mr. CAREY. We anticipate a competitive contract for some time in late 1982 or 1983 for procuring circuits for the system which could be procured on a lease basis. We anticipate procuring some additional interface devices in the next few years and we anticipate possibly procuring additional security devices for the system sometime in 1982 or 1983.

Mr. VIZAS. I am not sure what you mean by interface and security devices.

Mr. CAREY. Small computer systems to permit any other type of terminal or computer system or a large number of them, types of terminals, to connect directly into the communication facility.

Mr. VIZAS. When is the final completion of the network contemplated?

Mr. CAREY. We anticipate having the initial network begin live operations in July of 1982.

Mr. VIZAS. What do you estimate the total cost of the system will be, including hardware, software, telecommunications lines, development costs, operating expenses, personnel, and overhead?

Mr. CAREY. The total procurement costs for equipment to be purchased by the Federal Reserve System will approximate somewhere around $12 million to possibly $14 million depending on the number and types of devices procured. The lease of circuits for the system and the annual operating costs will be somewhere around $3 million a year for the full communication facility once it is in operation.

Mr. VIZAS. Would you provide us with the breakdown of the figures for the operating, circuit costs and hardware costs for the record?

Mr. CAREY. I can give you estimates. I prefer to submit something in writing.

Mr. VIZAS. That is fine.

According to your RFP "the major portion of the traffic to be accommodated by FRCS-80 will be files containing commercial ACH payments." At what point in time do you see commercial transfers overtaking Federal payments?

Mr. CAREY. The volume figures contained in the RFP were not intended as a statement of policy or as a planning statement by the

Federal Reserve System as far as use of the network was concerned.

The figures were developed to provide estimates of possible volumes, load levels that the system might be operating under at a point in the future, and to extrapolate those load levels in the large volumes so vendors responding to the RFP would have to tell us what their system's expansion capability was and what the logical expansion capacity was for each of the system elements concerned.

Mr. VIZAS. If I could interrupt you for a moment, as I read the RFP and many of the accompanying documents, it strikes me that you are asking for someone to design a system that will be used fundamentally for commercial ACH payment transfers—is that correct or am I misreading the RFP?

Mr. CAREY. You are misreading the RFP.

Mr. VIZAS. That is not what it says.

Mr. CAREY. The RFP was not requesting a vendor to propose a system to support the inter-regional—that was not the intention of the system. The intention of the system was to provide design parameters for vendors to submit proposals to the Federal Reserve System for equipment to replace existing telecommunciations facilities in the Federal Reserve System.

Mr. VIZAS. Rather than get into discussion here, I would appreciate if for the record you could submit the rationale that lay behind the inclusion of those specifications requested in the RFP.

Mr. CAREY. I will be happy to.

Mr. VIZAS. As I understand FRCS-80, the Federal Reserve will own all the facilities in the network except the telecommunications transmission lines. Is that correct?

Mr. CAREY. Essentially that is correct.

Mr. VIZAS. And you are going to lease private line services for the circuit?

Mr. CAREY. That is correct.

Mr. VIZAS. Do you intend to lease those circuits from common carriers?

Mr. CAREY. Yes.

Mr. VIZAS. Will that leasing be done with competitive procurement?

Mr. CAREY. The initial circuits installed for the test system and for the initial production system will be circuits replacing existing A.T. & T. circuits, and they will be leased from A.T. & T. Once the network stabilizes, we intend to solicit competitive bids for some or all of the circuits in the system.

Mr. VIZAS. At what point do you see the network stabilizing?

Mr. CAREY. We are estimating it will take approximately 3 to 6 months of live operation.

Mr. VIZAS. So sometime within the first year of operation you will go out for competitive bids?

Mr. CAREY. Yes.

Mr. VIZAS. Will that be a procurement for the entire network, or would you permit bids on only a portion of the network if someone could come in with half the circuits?

Mr. CAREY. We probably will permit bids on part of the network as opposed to requiring one large bid.

Mr. VIZAS. I think this next question requires a response by Mr. Allison as well as Mr. Carey.

If the FRCS-80 determined that the current structure of FRCS-80 placed the Federal Reserve in competition with existing private communications carriers, because of the way you configured your transmission facilities, for example, would the Federal Reserve Board restructure the system so that it did not compete with private carriers?

Mr. ALLISON. That is a highly hypothetical question. My understanding is our legal staff has looked at that issue and answered it in the negative.

Mr. VIZAS. Postal Service answered it in the negative as well.

Mr. ALLISON. I am not sure I can commit the Board to what it might want to do, how it might want to respond in that hypothetical event.

Mr. VIZAS. Rather than get into a long discussion, I would ask you to take a look at that. If you feel there is an additional response that you can make, we would appreciate it for the record.

Mr. CONYERS. I might want to ask the Board.

Mr. VIZAS. In your prepared statement, you mention the security needs of FRCS-80. Has the Federal Reserve analyzed and assessed the security needs of transactions which are relatively small, such as most commercial and consumer transfers, as distinguished from large dollar volume transactions? If you have done such a separate analysis, would you please provide a copy to the subcommittee.

Mr. ALLISON. Security does take on a different meaning in the one context as opposed to large volume transactions, which has to do with the authenticity of the transfer and that sort of thing.

Security to an individual who is the recipient of a small recurring Government payment may be more important in terms of the reliability with which that payment can get to the account, and it would have more to do with security in that sense.

We have the matter of security under constant consideration.

Mr. VIZAS. I would appreciate it if you have something, provide it for the record.

Mr. MCENTEE. Are you interested primarily in network security or overall security?

Mr. VIZAS. Both. Overall security and network security as a subset of that.

Has the Federal Reserve Board or any of the Reserve banks or any other portion of the System made any forecast of the growth of ACH volume over the next decade?

Mr. ALLISON. I think we have in mind some growth parameters.

Mr. VIZAS. Could you provide us with copies of any such analysis and reports?

I also understand there was an ACH environment task force within the Federal Reserve which produced a report on the future of ACH operations in November of 1979. We would appreciate a copy of whatever documents were produced by that task force.

Finally, in terms of this line of questions, have you prepared any analysis of anticipated return on investment for FRCS-80? In other words, if you were a private business.

Mr. ALLISON. We perform an ROI analysis individually on our major procurements. Certainly item-by-item we have looked at that question. Mr. Carey, have we done an overall analysis of that sort?

Mr. CAREY. I am not aware of what the figures would be if we had.

Mr. VIZAS. We would like to know if you have, and if you have, provide us with a copy.

I have five questions, three of which are brief, but I don't think they will take long to answer.

The first is: Is the Federal Reserve in your opinion required by law to provide ACH wire transfer for any other electronic fund transfer service?

Mr. ALLISON. We are required by law to price ACH and electronic fund transfers.

Mr. VIZAS. Are you required to offer the service?

Mr. ALLISON. We are required by the Federal Reserve Act to provide an efficient and reliable payment system. Other than that, I am not aware of any explicit provision of law.

Mr. VIZAS. Correct me if I am wrong, doesn't the authority on which the Fed rests its EFT operations, its wire transfer operations, its check clearing operations, flow from the powers given to the Board in section 248-O of the Federal Reserve Act (12 U.S.C. 248), which is a permissive and not a mandatory grant of authority.

Mr. ALLISON. That I must refer to legal counsel.

Mr. MCENTEE. It varies from service to service.

Mr. VIZAS. I would appreciate if we could be given legal analysis.

The final two questions revolve around statements, one made by Chairman Volker, the other by Governor Coldwell.

Two years ago, in September 1979, Governor Coldwell of the Federal Reserve Board stated that the Federal Reserve needed flexibility in determining what ACH services it would offer at what price. If the flexibility were not available, Coldwell said, "we [the Fed] face the prospect of major volume losses and our ability to offer a price competitive alternative to private clearing arrangements will be severely undermined."

Has the Federal Reserve's opinion changed since Governor Coldwell's statement? Would you still agree that unless you have the flexibility in terms of your pricing, you would lose major volume potential, and you would not have been able to offer a competitive alternative?

Mr. ALLISON. I would not have put it the way Governor Coldwell put it. I would say the Monetary Control Act gives the Federal Reserve Act rather explicitly the flexibility to depart from full cost pricing in certain limited circumstances. I think that is the kind of flexibility he wanted.

We have used that flexibility to adopt a pricing structure intended to develop volume and to develop growth in this area, which again I think is what Governor Coldwell had in mind.

Mr. VIZAS. If the Federal Reserve cannot compete with private clearing arrangements on a full-cost pricing basis, why should it be in the business of offering ACH services?

Mr. ALLISON. I think the ACH area is clearly an exception to the other forms of payment service that we are involved in, especially check clearing and large dollar volume transfers. We regard our

role in ACH as a research and development role, and it is in its infancy.

Mr. VIZAS. Except it has been going on for 9 years. It strikes me if there are indeed private alternatives available, we operate theoretically in a free enterprise system, and at least my understanding is that if businesses over a course of years cannot compete, they go out of business, if they can't compete, don't they?

Mr. MCENTEE. I can answer that question, Mr. Vizas. It is true the ACH system has been in existence for 9 years. However, it has been a nationwide service for only 4 years. In the early years, it was very experimental, and there were only a few ACH's in operation and the volume was less than a couple million items a year.

We relied a lot on what the private sector told us when we published our ACH prices for comment. The feedback we got was that if we charged at full cost it would affect the development of the ACH adversely. Certain types of payment applications would be affected and some corporations and banks would probably not participate if prices were set at current costs.

I think we used our best judgment and we considered the judgment of the private sector before establishing our pricing policy.

Mr. VIZAS. One last question.

In his letter to this committee last year, Chairman Volker explained that the proposed rules for automated clearinghouse—ACH—services and the development of a new Federal Reserve Communications System—FRCS-80—"are not related to one another and were undertaken for reasons unrelated to expanding Federal Reserve EFT operations."

As discussed earlier, however, the RFP for FRCS-80 flatly states that the major volume of traffic on the network will be commercial ACH files. How do you reconcile these two statements? According to the RFP, isn't FRCS-80 expressly intended to expand EFT operations?

Mr. ALLISON. I don't have Chairman Volker's letter in mind, I am sorry to say.

The impression I would hope to leave with the committee is that the Federal Reserve would have been, in any event, at the moment, replacing its communications facilities, with or without a role in the ACH system. Our existing facilities are simply at their limit during peak periods of the day at present. Moreover, parts of our present system won't be available in the future.

Mr. VIZAS. There will be a number of other questions, as the chairman indicated, for the record.

Thank you, Mr. Conyers.

[Additional questions to Mr. Allison, with replies, follow:]

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

OFFICE OF THE STAFF DIRECTOR
FOR FEDERAL RESERVE BANK ACTIVITIES

January 18, 1982

The Honorable Glenn English
Chairman
Subcommittee on Government Information
and Individual Rights
House of Representatives
Washington, D.C. 20515

Dear Mr. English:

This is in response to your letter of November 5, 1981, requesting the Federal Reserve to provide answers to questions raised at your Subcommittee's hearings on October 22, 1981.

Enclosed you will find five attachments. The first attachment is the response to the questions raised in your November 5 letter. Attachment 2 contains answers to questions raised in the hearings that were not contained in your letter. Attachment 3 is a letter received from the National Automated Clearing House Association concerning the pricing of ACH services. Attachments 4 and 5 are the Federal Reserve documents you requested.

If there are any questions concerning this matter, please let me know or call Elliott McEntee at 452-2231.

Sincerely,

Theodore E. Allison

Theodore E. Allison
Staff Director

Enclosures (5)

ATTACHMENT 1

ANSWERS TO ADDITIONAL QUESTIONS
FROM THE GOVERNMENT INFORMATION AND
INDIVIDUAL RIGHTS SUBCOMMITTEE

1. What is the status of the work being done on the FRCS-80 contract with Northern Telecom?

Factory acceptance and single site (Chicago) testing was completed at the end of November. In early November, multi-site tests commenced involving the Federal Reserve Banks of New York, Cleveland, Chicago, and Richmond (Culpeper Office). Testing is proceeding smoothly with only minor problems encountered thus far. Site preparation is in process at ten other Federal Reserve offices where FRCS-80 equipment will be installed in the near future.

2. What private sector alternatives were explored before making the decision to build a new private leased-line communications network?

The Federal Reserve views FRCS-80 as an evolutionary replacement for its existing telecommunications network. As such, the Federal Reserve included as criteria for the FRCS-80 system the following capabilities on its first day of "live" operations: (1) ability to carry all inter-district communications traffic to each of 14 Federal Reserve locations that are connected to the current network; (2) implementation without the need for hardware or software changes to Reserve Bank computer systems that will interconnect to the network; (3) communications security and control at least equal to the present system; and (4) ability to accommodate large shifts in traffic patterns as new applications software is implemented. Commercially operated circuit switching systems, packet switching systems, message switching systems, and hybrid systems were evaluated against these criteria in

1977 and early 1979 by both Federal Reserve staff and its consultants. On both occasions, existing commercially operated systems were found to be deficient in one or more of the minimum criteria.

3. What volume of communications traffic will the finished FRCS-80 system bear?

It is estimated that when the FRCS-80 transport network is placed in production during the summer of 1982 it will be handling an aggregate, peak volume of 50 million characters per day (9 million characters per peak hour).

4. Prior to October 1981, did the Federal Reserve discuss with the Federal Communications Commission any aspects of the FRCS-80 project or ascertain whether it might be considered either a common carrier subject to regulation or an enhanced service offering?

Informal discussions were held with the Federal Communications Commission staff in the late 1960's when the present message switching system in Culpeper was being installed. Since the uses of the system were exclusively to support central banking functions, such as fiscal agency, payments mechanism, supervision and regulation, and monetary policy, it was concluded that the use of the communications network was incidental to the Federal Reserve's responsibilities. The primary functions of FRCS-80 are the same as the current network and, therefore, are also considered incidental to the Federal Reserve's responsibilities.

5. Do you see FRCS-80 as a communications network competing with existing private data communications carriers; particularly enhanced service providers?

The FRCS-80 system will not be offered as a general purpose data communications utility and, therefore, will not be in competition with private data communications carriers, including enhanced service providers. The primary purpose of the FRCS-80 network is to provide a link between Federal Reserve offices and, secondarily, to permit depository institutions to communicate with Reserve offices in connection with the Federal Reserve's performance of central banking functions.

6. Has the Federal Reserve prepared any studies or analyses which justify the development or cost of FRCS-80 other than those you have already agreed to supply to the Subcommittee? If you have, what are those studies? Please provide the Subcommittee with copies.

Attached is the FRCS-80 "Phase III" report which was the basis for the approval to proceed with the implementation of FRCS-80.

7. a. What technical barriers, if any, do you believe exist to the interconnection of POS systems through FRCS-80 and the Federal Reserve ACH operations?

As we anticipate the future development of point-of-sale (POS), FRCS-80 will not have the capability to interconnect with POS systems. To connect POS terminals directly to the FRCS-80 network with a volume approaching current credit card usage and to effect an immediate transfer of funds would be orders of magnitude beyond the capacity of the FRCS-80 system. Even handling only those items which would be interregional on an immediate credit basis would probably be beyond the expansion capacity of the FRCS-80 system. Among the most formidable technical barriers would be: (1) lack

of trunk capacity between FRCS-80 nodal processors--the trunks operate at 72kb maximum; (2) substantial district host computer development to handle hundreds of thousands of on-line accounting entries per hour; and (3) development and emplacement of technical control equipment for handling tens of thousands of terminals per district.

Federal Reserve ACH facilities are designed to handle batched payments among depository institutions with funds being transferred after the transfer instructions have been processed and delivered. Generally, settlement takes place one or two days after the payment is processed. While ACH facilities will be interconnected through FRCS-80, they would not be useful for verifying the efficacy of transactions while the customer was on the merchant's premises--at the point of sale--nor for actually effecting the transfer on an immediate basis.

b. In your prepared statement you indicated that the Federal Reserve has no intention of offering POS services of any kind. Would you support legislation to that effect, prohibiting interconnection of FRCS-80 and POS systems, for example?

The Federal Reserve has no intention of offering interbank POS clearing services and, therefore, would consider such legislation unnecessary. In addition, the Federal Reserve believes that it would be very difficult to draft language which would precisely define POS, POS systems, and transactions at the POS and further to define how those transactions and systems would be excluded from interconnection through FRCS-80.

8. Do you see viable private sector competition developing in the areas of ACHs in the future? When?

The Federal Reserve believes that, when ACH volume approaches mature levels in the future, the private sector will have the necessary profit incentives to provide interbank clearing services for ACH payments. We believe that the clearing of ACH payments will probably evolve in a manner similar to the nation's check collection system. In this system, correspondent banks, data processing services, and the Federal Reserve provide interbank clearing services in a highly competitive environment.

If the current growth rate of ACH volume continues, we would anticipate that in a few years, correspondent banks and service bureaus will enter the ACH clearing market.

9. Do you see conflicts resulting from the Federal Reserve performing the job of industry regulator and at the same time being a major provider of services to the banking industry?

   a. In certain instances won't you be faced with deciding policies that have an effect on the competitive position as a service provider?

   b. As the Federal Reserve increases its day-to-day operations of EFT services, might it become less responsive to broad public policy concerns?

Since its inception, the Federal Reserve has had responsibilities as a regulator and provider of payments services. The System has carried out its dual responsibilities without difficulty. We do not anticipate problems arising in these areas in the future.

10. A major concern surrounding EFT systems is personal privacy. What has the Federal Reserve done to ensure that confidential data is not abused?

Our testimony outlined the basic policy of the Federal Reserve with respect to retention and disclosure of electronic payments records processed by the Federal Reserve Banks. (See page 86.) The principal point of that testimony was that transaction data are retained by Federal Reserve Banks only for a limited time and Federal Reserve Banks will not disclose individual transaction data except to parties that are part of the transfer or when a grand jury subpeona or a proper court order is presented.

10a. Do any legal prohibitions exist against the F.R. providing personal financial data in its system to other agencies of the Federal government?

The Right to Financial Privacy Act of 1978 (12 U.S.C.A §§ 3401 et. seq.) restricts Federal agencies' and employees' access to information derived from a customer's financial records that are maintained by a financial institution. Generally, the Act prohibits transfer of financial information obtained by the Federal agency to another Federal agency, unless the transferring agency notifies the customer from whose records the information was obtained of the transfer and otherwise complies with the transfer procedures of the Act. Although the Act requires Federal agencies to comply with prescribed procedure in order to obtain information from a financial institution's customer financial records, the Board and the other Federal financial supervisory agencies are specifically exempted from these requirements when such information is sought in connection with these agencies' supervisory, regulatory, or monetary policy functions.

10b. As Federal Reserve ACH facilities are used increasingly to process point-of-sale (POS) and automated teller machine (ATM) transactions, do you see the need for additional protections or possible legislation?

First, we have no evidence that ACH facilities operated by the Federal Reserve are being used increasingly to clear interbank POS and ATM transactions. Second, as we view the current development of electronic funds transfer, we do not foresee that POS or ATM applications will use the ACH mechanism as a primary means of interchange. It is of course possible that the ACH mechanism could be utilized as a backup. With respect to the ACH mechanism, we do not believe additional protection or legislation is necessary at this time.

11. What is the current status of the proposed Subpart C to Regulation J?

a. Is the F.R. planning to reissue a revised proposal?

b. Is any further action planned or will the F.R. continue to rely on existing agreements?

We do not have any plans to promulgate Subpart C to Regulation J at this time. However, to ensure that all depository institutions follow a common set of rules, operating circulars issued by the Federal Reserve Banks have incorporated the National Automated Clearing House Association rules relating to the interbank exchange of ACH payments.

12. Will the new networking capability among ACHs provided by the FRCS-80 increase the need for amendment to Regulation J? Will new procedures be required as a result of the new communications system?

The implementation of FRCS-80 will not require modifying Regulation J.

13. What formula have you used to establish fee schedules for ACH services?

The Monetary Control Act provides that over the long run, fees should be based on total costs with due regard being given to the provision of an adequate level of service nationwide. ACH prices are based on staff estimates of the costs of providing the service at an annual volume of approximately two billion items, which it is believed can be achieved in approximately five years. When the Board adopted the policy in December 1980, it stated that it would review the fee schedule for ACH services on an annual basis to determine the appropriateness of continuing its ACH pricing policy. This review is currently underway and will be completed in early 1982.

14. What was the reaction to the proposed fee schedule for ACHs by both private enterprises and other agencies of the Federal government?

The following summary of comments received on ACH pricing was provided to the Board in November 1980.

"Thirty-two respondents generally supported the proposal to price ACH services as if they were being offered in a mature volume environment in order to encourage conversion to electronic payments. However, over 20 of these respondents felt that such action should be taken only if the Federal Reserve discloses its actual costs in providing ACH services, clearly defines mature volume environment, and sets a specific timetable for ending what it viewed as a subsidy. Five years was suggested as an appropriate time frame.

"Ten respondents, including the Justice Department, the Federal Trade Commission, and the National Telecommunications Information Agency, opposed incentive pricing of ACH services, because it precluded private sector competition from providing ACH services, while some suggested that ACH prices be further unbundled to encourage direct sending of ACH items."

15. How does this affect the ability of the private sector to compete with the Federal Reserve in providing similar services?

The Board considered the impact of alternative ACH pricing policies on the development of private sector alternatives, and concluded that the existing policy would best serve that objective. This is because the development of ACH interbank clearing services in the private sector, in our view, is not hindered so much by the Federal Reserve pricing policy as it is by a lack of volume. Thus, the present approach--which is designed to encourage volume growth--is in the public interest, will result in a more efficient payments mechanism in the long run, and is consistent with the objectives of the Act.

16. Do you plan to modify the fee structure as the volume of ACH transactions increases? If you do, through what process and on what schedule?

The Board has stated that it would review the fee schedule for ACH services on an annual basis to ensure the appropriateness of continuing its ACH pricing policy. As stated in a previous answer, a study of the issues associated with how long the policy should be continued is underway. This study will consider carefully the request of the National Automated Clearing House Association (Attachment 3) that the Board "adopt a policy for the pricing of ACH services which will result in a gradual reduction of incentive

pricing currently prevailing for the services with the ultimate objective of charging the actual cost plus the private sector adjustment factor no later than August 1, 1985."

17. What is the daily volume of electronic transactions necessary to adjust reserve liabilities and to conduct open market transactions?

Because many different types of financial transactions are conducted through the reserve accounts of depository institutions, it is not possible to obtain a precise estimate of the number of electronic transactions undertaken by depository institutions to satisfy reserve requirements alone. However, a significant number of transactions (purchases and sales of funds) are undertaken by depository institutions during the course of the day to adjust reserve balances to the required level as deposits are received and withdrawals made by customers.

The number of electronic transactions necessary to conduct open market operations is a small percentage of the total number of all types of transactions completed through the Federal Reserve's electronic communication network. The number of Federal Reserve Open Market transactions averaged 64 per day over a recent three month period (April-June 1981). These transactions include repurchase agreements, System purchases and sales of securities, and matched sales.

ATTACHMENT 2

QUESTIONS RAISED AT THE
OCTOBER 22ND HEARINGS

1. Question by Mr. Vizas on page 92 of testimony: Would you provide us with the breakdown of the figures for the operating, circuit and hardware costs for the record?

FRCS-80 COSTS
(in millions of dollars)

		Operating Costs	Circuit Costs	Hardware Costs	Project Office Costs	Total
Actual	1981	0	0	0	$2.4	$ 2.4
Anticipated	1982	$ 2.7	$ 1.8	$ .805 1/	6.0	$11.305

2. Question by Mr. Vizas on page 93 (lines 2148-2151): Rather than get into discussion here, I would appreciate it for the record if you could submit the rationale that lay behind the inclusion of those specifications requested in the RFP.

The rationale that lay behind the inclusion of the 1982 and 1985 volume figures in the RFP is as follows:

> The Federal Reserve recognized, based on experience, that the upgrade of data communications systems is a multi-year program requiring careful planning to avoid disruptions in service. Because of the time and difficulty involved, it was desired to implement facilities which would have the capacity to meet all of the data communications needs of the Federal Reserve for approximately a decade. Because the operations planning

1/ Approximately $8 million will be paid to Northern Telecom for hardware during 1982. These capital expenditurers are being depreciated over a 10-year period.

for the System's automation enhancements generally requires from three to five years to complete, flexibility and the potential for expansion were included as paramount criteria. The RFP was structured to request vendors to configure their systems to meet basically three sets of increasing volumes. The purpose of supplying several sets of volume projections was to force the vendors to demonstrate what equipment would have to be added at each location and also how the layout of connecting circuits (topology) would change under varying assumptions. The basis for the distributions of the volume figures between Federal Reserve sites was a check study performed by the Federal Reserve Board staff in 1978 which had included input from commercial banks on "direct send" check volumes. This study was selected as a basis both because the data were accessible in computer files at the Board and because they provided a volume basis (checks) that the proposal evaluators (Federal Reserve staff) could readily analyze. Further, these check volumes were in different source/destination patterns than currently communicated data and, therefore, required vendors to design systems for each volume level rather than simply extrapolate. In response to the RFP, each vendor configured its system to the standard volume sets and the Federal Reserve staff was able to respond with some realism to questions posed by the vendors concerning the communications characteristics of the hypothetical data.

3. Mr. Vizas also requests a brief legal analysis of the Federal Reserve's authority to maintain a presence in the payments system. The Federal Reserve's authority stems from a number of specific provisions of the Federal Reserve Act ("Act"). Sections 13 and 16 of the Act (12 U.S.C. § 342) provide the basic authority for the Federal Reserve's presence in the payments mechanism. Section 13 provides that Reserve Banks may receive checks and other items for collection from any depository institution.

This provision has been in the Federal Reserve Act since its passage and provides the System with express authority to offer payments services. Section 16, paragraphs 13 and 14 of the Act [12 U.S.C. §§ 360, 248(o)], also provides the System with authority to provide payments mechanism services. Section 16, paragraph 13 provides that every Federal Reserve Bank shall receive, at par, checks and other items deposited by depository institutions. Further, section 16, paragraph 14 states that the Federal Reserve Board shall make regulations governing the transfer of funds among Reserve Banks and may designate Reserve Banks to function as clearinghouses for member banks. Section 11A of the Act [12 U.S.C. § 248(a)] also requires the Federal Reserve to establish fee schedules for the services it provides. This section expressly states that fee schedules shall cover services, such as check clearing and collection, wire transfer of funds, automated clearinghouse (ACH), settlement services, and any new services offered, including payment services to effectuate the electronic transfer system. In addition, the section requires that such Federal Reserve services be made available to all depository institutions on the same terms and conditions.

We believe that the legislative history of the Act and its amendments indicate Congressional concern over the lack of viable alternatives to the private check collection system (see remarks from Mr. Stephens, 50 Cong. Rec. 4920, September 13, 1913). During the Congressional debates on the original Federal Reserve Act, sponsors of the Act indicated that a Federal Reserve presence in the Federal check collection system would be beneficial (see remarks from Senator Owen, 50 Cong. Rec. 5999, November 24, 1913). We believe that passage of the Monetary Control Act (Title I of P.L. 96-221) reconfirms Congress' concern that the nation's payments mechanism be operated in an efficient and competitive fashion. Furthermore, the Monetary Control Act requires that the fees for priced Federal Reserve services give due regard to competitive factors and the provision of an adequate level of such services nationwide. We believe that these provisions indicate Congressional concern that the Federal Reserve monitor and participate in the payments mechanism to ensure that the nation's payments system provides a level of service to the public consistent with the maintenance of a sound economy. Accordingly, it is our view that the Federal Reserve's role in the payments mechanism is supported by the Federal Reserve Act and its legislative history.

ATTACHMENT 3

NATIONAL AUTOMATED CLEARING HOUSE ASSOCIATION 1120 CONNECTICUT AVENUE N.W., WASHINGTON, D.C. 20036

President
W. Robert Moore
Senior Vice President
Chemical Bank
55 Water Street, Room 1800
New York, New York 10041
212/820-2814

November 13, 1981

The Honorable Lyle E. Gramley
Member of the Board
Board of Governors of the
Federal Reserve System
21st & Constitution
Room B-2052
Washington, D.C. 20551

Dear Lyle:

The official NACHA position on Federal Reserve pricing of ACH services was stated in a letter dated October 31, 1980 to the Board of Governors of the Federal Reserve System. The letter stated that "NACHA supports the adoption of a fee schedule for ACH services based on Federal Reserve System costs in a mature volume environment" and that there was a "need for incentive pricing on an interim basis in order to encourage the development of electronic funds transfer." The letter further stated that the private sector is willing to bear expenses related to the legal and organizational structure, the education and marketing costs of obtaining volume growth and a part of the current cost of the services provided by the Federal Reserve. Additionally, it said "Imposition of the full cost of (Federal Reserve) services at this time would seriously impede, if not preclude altogether, the development of a mature volume ACH system."

The letter made a number of specific suggestions concerning the pricing of ACH services. Several other organizations also commented on the Federal Reserve proposal in specific terms, including the American Bankers Association, the New York Clearing House and the United States Department of Justice. Each group called for an end to incentive pricing at some time, ranging from immediately (Justice Department) to mature volume level (NACHA). Each group requested more information about the Federal Reserve's definition of "mature volume." Most of the comments indicated that the reason for incentive pricing was to encourage the move to a more efficient payments method. The Justice Department commented, however, questioned the effect of the incentive pricing policy upon the Federal Reserve's future role as the operator of the ACH system.

The Federal Reserve did not respond to a number of comments nor did it provide any schedule for eliminating incentive pricing, which was requested by the ABA. Failure to respond in this area causes speculation regarding the Justice Department's concern over the future role of the Federal Reserve. The specification of a date or method for the elimination of incentive pricing would have removed the possibility of this speculation.

Since the pricing was announced, several potential providers of ACH services have indicated that they are not actively planning to develop alternatives to Federal Reserve processing. In working with such providers, NACHA has determined that several years and several million dollars might be required to develop a fully competitive system. Without a schedule for the end of incentive pricing, it is not possible for a system developer to assess the risk of such an investment. As a result, potential competition appears to be eliminated for the present and for several years following the time when a definitive schedule is set for the end of incentive pricing.

It seems to be in the best interest of the Federal Reserve and the private sector to have a fixed date for the end of incentive pricing. Potential processors would be able to better evaluate an investment, the Federal Reserve would end speculation concerning its future role and NACHA would be able to improve its long range planning. A fixed date for the end of incentive pricing does not change NACHA's basic position that incentive pricing is currently justified, rather it removes an unknown from the environment.

Therefore, NACHA requests that the Federal Reserve Board adopt a policy for the pricing of ACH services which will result in a gradual reduction of incentive pricing currently prevailing for the services with the ultimate objective of charging the actual cost plus the private sector adjustment factor no later than August 1, 1985.

Your comments and views on this subject would be welcomed.

Sincerely,

W. Robert Moore

WRM:fp

Mr. CONYERS. I hope you have persuaded everybody out there. We will be able to tell from the response. Normally we get letters, comments, and personal visits. We appreciate the time you have spent in preparing for this, and we appreciate your candid comments.

The subcommittee will be in recess until the next hearing. The subcommittee stands adjourned.

[Whereupon, at 12:35 p.m., the subcommittee adjourned, to reconvene subject to the call of the Chair.]

APPENDIXES

APPENDIX 1.—STATEMENT SUBMITTED BY THOMAS J. CAMPBELL, DIRECTOR, BUREAU OF COMPETITION, FEDERAL TRADE COMMISSION

On behalf of the staff of the Federal Trade Commission, I am pleased to have the opportunity to submit our views concerning the provision of Electronic Funds Transfer (EFT) and related services by the Federal Reserve System. Our comments encompass the policy considerations raised by public enterprise generally as well as the specific case of the Federal Reserve.

It is, of course, the fundamental presumption of our economic system that goods and services should be produced by private firms operating in open and competitive markets. Long experience as well as economic theory teaches that it is the free interaction and competition among independent firms that produces the most efficient allocation of resources and the highest quality for the lowest price, fosters innovation and progress, and helps preserve our democratic institutions.

There are, however, situations where it has been determined, for better or worse, that the free market may not or cannot function adequately or where very important social objectives can be better fulfilled by direct government involvement. In such cases, government may intervene in a variety of ways, most often by imposing regulation or by providing assistance in one of many forms, but also by providing the goods and services itself, that is, by public enterprise. There are numerous examples of public enterprise on all levels of government, ranging from liquor stores to libraries to airports.

We have become painfully aware that excessive regulation is very costly and leads to poor performance. It distorts the interplay of market forces by substituting government decision-making for competition. It stifles innovation and leads to long-term inefficiencies. We are now at a time in our nation's history in which there is a broad consensus for reducing regulatory interference in the marketplace. Even where some level of regulation is warranted to assure the protection of an important public interest, we are seeking to minimize the degree of governmental interference.

Public enterprise, either as a monopoly or in competition with private firms, constitutes an even greater interference with, if not an elimination of, competitive market forces. Government enterprises are by their very character insulated from the commercial realities and competitive pressures which influence the behavior of private firms. Business decisions must be made by persons who respond to signals that emerge more often from the political arena than the marketplace.

Government enterprise should be viewed as the last alternative. Government should engage in enterprise activities only in the rare instances where it is clear that the private sector is incapable of producing necessary or highly desirable goods or services in an acceptable manner. Moreover, less obtrusive alternatives to public enterprise, such as incentives, financing assistance, regulation, or other means, should generally be considered preferable.

It is against these principles that government enterprise in the area of telecommunications and related information services should be measured. Viewed broadly, it is difficult to identify a sector of the economy less likely to warrant government enterprise. Over the past decade, innovation in the computer and communications industries has proceeded at an astonishing pace. The cost of data processing equipment is declining rapidly, particularly relative to capability. A wide variety of new telecommunications, data processing, and information services is being introduced into the market by a number of firms. The communications industry is undergoing structural changes, led by the FCC's Computer Inquiry II decision and pending legislation, intended to increase competition and innovation. The question before your Subcommittee today is whether, in the face of a dynamic and innovative marketplace for communications and processing services, there has been demonstrated adequate justification for a public agency to offer a particular communications and processing service--EFT--on a commercial basis.

We believe that no sufficient rationale has been advanced to overcome the presumption that private enterprise should be preferred to public enterprise in the EFT industry, and we are skeptical that such rationale exists. No persuasive case has been made that the private sector is incapable of providing EFT services in an adequate manner.

95-980 O—82——10

It is useful to take a brief look at the history of the Automated Clearing House (ACH). The concept of the ACH was originated in 1968 with the establishment of the Special Committee on Paperless Entries by the Los Angeles and San Francisco Clearing House Associations. The ACH was originally designed as a mechanism to clear and settle recurring payments of various types, such as payrolls and mortgage payments, in electronic form rather than using the paper-based check clearing system. In late 1972, the California Automated Clearing House Association began operations. Through the 1970's, many more ACH's were established and a national trade association came into existence to promote ACH's and develop standards for inter-ACH payments.

Today, there are 39 ACH facilities, 38 of which are operated by the Federal Reserve which provides clearing, delivery, and settlement services. The only privately operated ACH is the New York Automated Clearing House Association. The Federal Reserve is in large measure responsible for the establishment of the ACH's, and has subsidized them from inception by not charging fees to participating institutions.

The nature of the ACH has evolved with changing technology and the introduction of new customer services. Originally, ACH's processed a narrow range of recurring and pre-authorized payments in a localized batch-processing environment. Tapes with payment instructions from originating financial institutions were delivered to the ACH facility, where the payment instructions would be processed and delivered by courier to receiving institutions.

Today, the operating environment has changed considerably. The various ACH's are linked via the Federal Reserve's telecommunications network, and physical delivery of tapes is giving way to on-line transmission. Moreover, the mix of payments has changed. For some time, government payments comprised the overwhelming portion of ACH volume; today, commercial payments volume is increasing dramatically. ACH's are processing a wider range of transactions with the addition of point-of-sale (POS), shared automated teller machine (ATM), and automated bill payments. Check truncation is likely to add considerable volume in the next few years.

It is difficult to predict precisely where Federal Reserve ACH services are headed. The Federal Reserve has decided to upgrade its communications and data processing capabilities and has awarded the initial contracts for a new communications system, generally referred to as FRCS-80. FRCS-80 is a highly-flexible, state-of-the-art distributed telecommunications system based on packet-switching technology, designed to handle large volumes of data traffic. The major portion of the traffic is expected to be commercial ACH payments.

To date, the Federal Reserve seems to be taking each next logical technological step, with the result being continued expansion of its role. The FRCS-80 system certainly has the potential to be used for a wide range of EFT services, as there is nothing inherent in the technology mandating the handling of only particular types of transactions. The ACH function is just one application for a distributed data processing and

communications system; FRCS-80 will be capable of forming the basis of a system which also could, for example, switch POS transactions among financial institutions, just as many existing systems could and have in fact accommodated such applications.

What the Federal Reserve intends is unclear. In a recent letter to Congressman St Germain, Chairman Volcker noted that the Federal Reserve Board has stated that it regards its ACH activities "as analogous to a research and development program that will provide technical data and experience that will enable the private sector in the future to compete in the operation of these facilities in a cost-effective manner."[1] On the other hand, FRCS-80 represents a unusually substantial managerial and financial investment to make for a short-term demonstration project. The ACH volume projections of the Federal Reserves ACH Future Environment Task Force Report forecast substantial volume growth through 1990.[2] Moreover, on more than one occasion, Board members have made statements strongly suggesting that the Federal Reserve intends to remain a provider, and will meet any private

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1 Letter to Hon. Fernand St Germain, Chairman, Committee on Banking, Finance, and Urban Affairs, U.S. House of Representatives, from Paul Volcker, Chairman, Board of Governors of the Federal Reserve System, July 2, 1981, at 2.

2 Report to the Subcommittee on Electronic Payments of the Committee on Communications and Payments, November 26, 1979, Appendix A.

sector competition.[3] Indeed, Federal Reserve pricing of ACH services is based on a continuing subsidy for what is estimated to be five years.

Despite the expansion of Federal Reserve operations, there has really been no explicit decision by the Board or by Congress as to the ultimate scope of this growing government enterprise. In November 1973, the Board solicited public comment on, among other things, the appropriate role of the Federal Reserve in the ownership and operation of the various components of an EFT system.[4] Many comments were filed which argued that such a role was inappropriate and usurped the role of the private sector.[5] No finding on this issue was ever announced, and later requests for public comment regarding ACH operations did not raise this issue. Nonetheless, many comments with respect to subsequent proposals were filed protesting Federal Reserve involvement,

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3 E.g., Lyle Gramley, "Pricing and Access to Federal Reserve Services," speech before the 1980 Southern Regional Operations and Automation Workshop, September 8, 1980; Phillip E. Coldwell, "The Fed's Role in Defining the Payments System," speech before the Bank Administration Institute Conference on Contemporary Issues in Cash Management, September 13, 1979.

4 Request for Comments on Proposed Amendments to Regulation J, November 19, 1973, 38 Fed. Reg. 32952 (1973).

5 E,g., Comments of the U.S. Department of Justice before the Board of Governors of the Federal Reserve System In the Matter of Proposed Amendments to Regulation J (1974); Letter to Chester B. Feldberg, Secretary of the Board of Governors of the Federal Reserve System from Norman B. Weston, Vice Chairman of the Board, National Bank of Detroit, March 6, 1974.

arguing that although the private sector could operate such systems, Federal Reserve activities were a deterrent to private entry.[6]

The National Commission on Electronic Fund Transfers (NCEFT), established by Congress to make recommendations regarding a number of issues inherent in EFT development, concluded that provision of the then-offered services through the ACH was appropriate. The rationale for this conclusion was that the Federal Reserve was already deeply involved and a termination would disrupt ACH development.

However, the NCEFT recommended that the Federal Reserve not expand its operational role further into POS transactions, because of its concern that

> government entry into an operational role for POS switching and clearing would tend to freeze current technology and stifle incentives for innovation in this rapidly evolving area. Even if government operated its POS facility free of subsidies, . . . its very presence would dampen private sector investment and deter entry by new competitors.[7]

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6 E.g., Comments of the National Telecommunications and Information Administration before the Board of Governors of the Federal Reserve System In the Matter of Proposed Amendments to Regulation J, Docket No. R-0262, March 14, 1980; Citicorp Comments on the Federal Reserve Board Revised Proposal to Amend Regulation J (March 1976).

7 EFT in the United States, Final Report of the National Commission on Electronic Fund Transfers, October 28, 1977, at 216. The NCEFT also expressed concern for the privacy consequences of centralizing the large amounts of sensitive personal data generated by POS transfers in a single government-run system.

Congress did not act on this recommendation and the underlying distinction between POS and ACH networks is no longer technologically meaningful. The Federal Reserve is now processing POS and other types of transactions.

In 1979, an Interagency EFT Task Force was created to examine the appropriate Federal Reserve role. The Task Force received evidence and its members engaged in debate, but in the summer of 1980, the Task Force disintegrated without having reached conclusions.

In 1980, Congress passed the Depository Institutions Deregulation and Monetary Control Act, which requires that the Federal Reserve establish fees for its services on the basis of all direct and indirect costs, and also imputed costs. These requirements were intended to place Federal Reserve prices in line with what a private firm would charge, so that private development would not be discouraged by the government's ability to subsidize its services. By statute, the fees were also to give due regard to competitive factors and the provision of an adequate level of service.[8] We will come back to the pricing issue, but the point we are making here is that while the Congress determined that the Federal Reserve should charge fees for all of its services, it did not address the scope of the services that the Federal Reserve should offer.[9]

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8 Title I, Public Law 96-221, March 21, 1980.

9 Statement of Sen. Proxmire, 126 Cong. Rec. S3167 (March 27, 1980).

It would seem that in view of the extraordinary changes occurring in financial and information services markets and regulatory changes intended to foster increased competition, as well as the advent of FRCS-80, it is particularly appropriate at this time for Congress to deal specifically with the scope of Federal Reserve commercial operations.

We believe that Federal Reserve operation of EFT systems has not been adequately justified. At the outset, let us note that EFT services may not be of such special value that we would insist on their provision by government; at any rate, there should be no a priori assumption that in the absence of market demand and supplier response, there must be government provision. The present payment systems are quite serviceable and are certain to remain with us for some time.

However, even making the assumption that EFT services are in some sense essential, we are unaware of any persuasive evidence that the private sector is incapable of providing EFT services in a fully acceptable manner, subject to standards and oversight if found to be appropriate. To the contrary, private sector development of POS, ATM, and other EFT services, not to mention other data communications services, has advanced rapidly and there are a substantial number of financial institutions, computer services firms, and communications firms which are or could be capable of providing all types of EFT services. Indeed, large-scale private sector communications networks and clearing and settlement facilities, such as the bank card networks, already exist. That private sector ACH facilities have not

proliferated despite existing capabilities and interest is hardly surprising in view of the subsidized operations of the Federal Reserve.

Let us turn briefly to the pricing issue. In our view, the requirement of the Monetary Control Act that the Federal Reserve price its services to encourage private sector competition does not resolve the fundamental policy issue. First, to require that a government agency price its commercial activities may to some extent ameliorate the damage, but it does not explain why the agency should be in the business at all. Second, the pricing policies announced by the Federal Reserve with respect to ACH services are unlikely to encourage competitive private development. The Federal Reserve, in order to promote use of its ACH services, is basing ACH prices on an estimate of what processing costs would be in a "mature" environment which, if their growth projections are accurate, will be reached in five years.[10] The Board will review its fees annually to ensure that the assumptions are reasonable and that in a mature environment, prices will cover costs. Although a private firm might develop its position in a new market by a promotional pricing scheme that could involve pricing temporarily below short term marginal costs, it certainly could not maintain the subsidy for five years in order to match the Federal Reserve's aggressive strategy, nor could it under any circumstances set its prices to equal average cost at mature volume levels since the initial losses would never

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[10] See note 1, supra.

be recouped. Unless private firms enjoy a substantial cost advantage, it is difficult to identify incentives for private firms to compete against the Federal Reserve. This is an example of how government enterprise can be insulated from the commercial realities faced by the private sector, and this insulation can make it unlikely that private competition will evolve.

Finally, we would like to stress that while there may be disagreement over the appropriateness of Federal Reserve commercial activities, or how they ought to be conducted, it seems to us beyond cavil that this is an area worthy of Congressional attention, before the Federal Reserve becomes further entrenched. We applaud the Subcommittee's interest in this area, and appreciate the opportunity to submit our views.

APPENDIX 2.—LETTER FROM GERALD M. LOWRIE, EXECUTIVE DIRECTOR, GOVERNMENT RELATIONS, AMERICAN BANKERS ASSOCIATION, PRESENTING VIEWS ON THE ROLE OF THE FEDERAL RESERVE IN PROVIDING ELECTRONIC FUNDS TRANSFER

AMERICAN BANKERS ASSOCIATION

1120 Connecticut Avenue, N.W.
Washington, D.C.
20036

EXECUTIVE DIRECTOR
GOVERNMENT RELATIONS

Gerald M. Lowrie
202/467-4097

November 19, 1981

The Honorable Glenn English
Subcommittee Chairman on Government
Information and Individual Rights
Committee on Government Operations
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman English:

The American Bankers Association welcomes this opportunity to present our views on the role of the Federal Reserve in providing electronic funds transfer and other telecommunications services. Our Association's membership includes over 90 percent of the more than 14,500 full service banks in the United States.

The Association believes that several principles are key to determining appropriate Federal Reserve involvement in EFT and telecommunications services:

1. Payment services should be provided primarily by the private sector.

2. The Federal Reserve should offer payments services only if the private sector is unable to provide the services which are judged clearly for the public good.

3. The Federal Reserve prices the service in such a way as to not preclude future entry by the private sector.

Given these guidelines, our discussion will focus on Federal Reserve involvement in the automated clearing house system, development of an enhanced communications network (FRCS-80), and possible implementation of Electronic Check Collection.

AUTOMATED CLEARING HOUSES

Federal Reserve involvement in the automated clearing house network was essential to the viability of this payments system during its developing years. Since the necessary facilities, transportation system, and settlement functions were already in place, the Federal Reserve operation of an ACH was a logical extension of its traditional role of providing check clearing services. This involvement was appropriate -- Congress assigned responsibility to the Federal Reserve for the maintenance of an efficient payments system. This responsibility was reaffirmed by Congress in the Monetary Control Act of 1980.

However, the potential for development of private sector alternatives to Federal Reserve operated ACHs must be kept open. This potential exists only in an environment which fosters competition among providers. At present, only one out of thirty-two associations is operated privately. The key to ensuring private alternatives to government ACH operation is explicit pricing by the Federal Reserve for ACH services. Ultimate ACH prices must be set at a level which would not impede the development of competing private sector alternatives.

The Association supported the adoption by the Federal Reserve of a subsidized fee schedule for ACH services, based on System costs in a "mature volume" environment. These costs are not cost justified in the short term, and the only probable current alternative to providing this "mature volume" subsidy is to forego the availability of this service.

The ACH provides a mechanism by which the nation's payments system can be substantially improved. The potential benefits from this improvement warrant that the "mature volume" subsidy be provided. This subsidy is not inconsistent with the pricing policies of the private sector of a newly introduced service. However, we consider it essential that the Federal Reserve issue a timetable for phasing out the subsidy of ACH services. This would better enable analysis of the feasibility of, and planning for the establishment of potential ACH operations.

FRCS-80

The Association believes that Congressional examination of the development of the Federal Reserve's upgraded communication system is warranted. However, it is appropriate for the Fed to maintain, and periodically modernize its network. This communication system is an essential tool in fulfilling many of the Federal Reserve's responsibilities, including the conduct of monetary policy and the provision of an efficient payments mechanism. The banking industry has supported the development of an enhanced system, in part to enable the ACH system to provide improved services.

However, the Federal Reserve should not use FRCS-80 as a mechanism to expand its service scope to compete in payment services offered by the private sector. We recognize that such an expansion may not be necessarily due to the introduction of a service distinctly different from those currently provided by the Fed. Rather, it could come from the enhancement of a current service. Clearly, it is difficult to delineate the precise boundaries of proper Federal Reserve involvement in these areas. We believe it is important for the Fed to seek public comment on the appropriateness of any significant enhancement of an EFT-related service or introduction of new service.

ELECTRONIC CHECK COLLECTION

We would also like to bring to the Committee's attention an issue with major implications for Federal Reserve System competition with the private sector. This issue - whether large dollar checks should be electronically collected by the Federal Reserve System - has not yet been formally proposed by the Board of Governors, but has been the subject of discussions between Federal Reserve staff and bankers on ABA committees since early this year.

Electronic check collection (ECC) has the potential of significantly improving the nation's payment system and therefore deserves careful review. At the same time, however, too rapid or imprudent implementation of ECC could impose very substantial costs on the nation's commercial banks. In addition, there is a significant danger that the ECC's implementation could eliminate certain private sector check collection services that now compete with and complement the Federal Reserve's check collection network.

Design of its ECC system is still in progress and our Association is continuing its attempts to correct what we perceive as flaws in its development. We are hopeful that the ECC can ultimately be designed in such a way as to allow and, indeed, encourage private sector counterparts, and to provide for implementation without undue cost, extensive operational burdens, or unrealistic timetables.

We appreciate this opportunity to express our views.

Sincerely,

Gerald M. Lowrie
Executive Director
Government Relations

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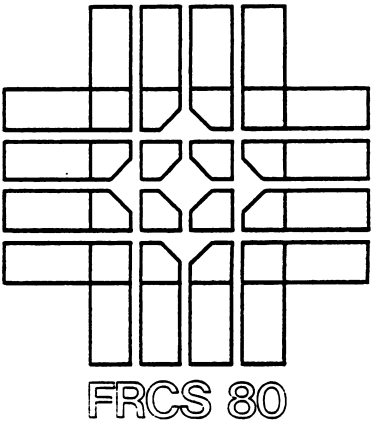
APPENDIX 3.—"FRCS 80 PHASE III FINAL REPORT: IMPLEMENTATION PLANNING," REPORT OF THE FEDERAL RESERVE SYSTEM, JULY 20, 1979

Phase III Final Report: Implementation Planning



FRCS-80 Project Directorate
Federal Reserve System

July 20, 1979

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Section 1
Introduction

The Federal Reserve System recognized almost five years ago that its highly successful but aging FRCS data communications networks would eventually have to be replaced to provide for the System's data communications needs in the 1980s. Beginning in 1974, a series of studies was undertaken to forecast the useful life of the present networks, to explore state-of-the-art data communications technologies, and to define the capacity and capabilities needed in an enhanced network. The communications network to meet future needs was given the name "Federal Reserve Communications System after 1980" and is referred to as FRCS-80. Milestones in the FRCS-80 planning project can be summarized as follows:

October 1974 — **Communications System Development Study**—This report represented the first formal recognition that the Fedwire network (Culpeper and District switches) could not meet the government payments and commercial ACH demands of the electronic payments mechanism. The report recommended the development of a separate Bulk Data network and the initiation of planning for a future communications capability.

October 1975 — **Federal Reserve Communications System After 1980 (SOC Study Report No. 39)**—Approved by the Conference of First Vice Presidents in October 1975, Study Report No. 39 contained the initial plan for FRCS-80. The project was divided into five phases (definition, conceptual design, vendor selection, contract negotiation, and implementation). It was estimated the project would span 4 1/2 years, and Federal Reserve System personnel were to be used to complete it to the extent possible.

October 1976 — **An Assessment of Major Policy Issues and Their Implications on a Future Communications Capability**—This report presented major policy issues, identified service needs of the future, established the management objectives, and defined the design criteria for FRCS-80. Approved by the Conference of First Vice Presidents in October 1976, it marked the end of FRCS-80, Phase I (Definition).

July 1978 **Conceptual Design Report (SOC Study Report No. 59)**—Approved by the Conference of First Vice Presidents in August 1978, this report concluded that a distributed packet-switch network would best satisfy the future communications requirements of the Federal Reserve System. This report marked the end of FRCS-80, Phase II (Conceptual Design).

In November 1978, the Conference of First Vice Presidents' Committee on Communications and Payments established a FRCS-80 Project Directorate. The Directorate was to report directly to the Committee and was responsible for the remaining planning necessary before making a final commitment to procure and implement the network. The specific objectives for FRCS-80, Phase III (Implementation Planning), were to:

- *develop technical specifications and a Request for Proposal (RFP);*
- *define the appropriate procurement approach;*
- *develop an implementation plan and timetable;*
- *develop a plan for ongoing operation of the FRCS-80 network following implementation; and*
- *estimate procurement, implementation, and operating costs.*

During the six-month period from January through June 1979, four separate task groups involving more than 40 System staff members have worked to accomplish these objectives. Their work has required more than 100 staff-months, supplemented by 4 staff-months of specialized consultant work. The detailed results of that work are reflected in the seven reports listed in the Supporting Documentation section of this report. This final report is intended to highlight the major issues which have been addressed during Phase III and to request final approval and delegated authority for the Committee on Communications and Payments and its Project Directorate to procure and implement FRCS-80.

Work continues on the development of technical specifications which will form the foundation for the eventual construction of the RFP. The complexity of this task, combined with limited staff resource availability, dictated that this segment of Phase III be scheduled for later completion.

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Section 2
Conclusions

The substantial work completed to date on the FRCS-80 Project, including the work conducted during Phase III, supports the following major conclusions.

- The Federal Reserve System needs to upgrade its data communications capability to meet its projected needs during the 1980s. The existing melange of special-purpose networks does not have the capacity to economically accommodate the enormous growth in traffic that is anticipated to come with the ACH and electronic payments services which the Federal Reserve System is committed to provide.

- A technology known as packet-switching, which uses specialized communications-oriented computer hardware and software, is the state-of-the-art in data communications. General-purpose packet-switch networks of the kind described in the FRCS-80 Conceptual Design Report and FRCS-80 Request for Information are currently available as standard products from a number of vendors. Such a privately owned, standard-product, packet-switch network should replace all existing Federal Reserve data communications networks and will meet System needs for the foreseeable future. In addition, FRCS-80 will provide state-of-the-art capabilities in the important areas of reliability, security, and modularity.

- The FRCS-80 network should be independent of general data processing computers and vendor communications architectures. Computers and terminals in Federal Reserve offices and member banks should connect to the new network through internationally accepted standard interfaces to insure maximum flexibility and full competition in the selection of the network and such equipment.

- A 14-node[1/] inter-District network will provide sufficient capacity and connectivity to support the projected requirements of the various computer systems and terminals throughout the Federal Reserve System that will be using the network for the five

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1/ A node is a site at which packet-switching occurs. One or more physical components may be used to accomplish packet-switching. The 14 sites are the 12 Head Offices, the Board of Governors, and Culpeper.

critical applications.[2/] Concurrent with the implementation of this inter-District network, each District should be required to develop plans for utilizing FRCS-80 facilities to support intra-District needs. While some Districts may elect to connect all Branch and RCPC computers and terminals directly to the District node, others may wish to acquire additional FRCS-80 nodes for certain of these offices. It is anticipated that these additional nodes would be acquired when cost or performance benefits would be realized by the District.

- Assuming a final FRCS-80 procurement decision is made in August 1979, along with the prompt commitment of defined resources, vendor selection could be completed by 3rd quarter 1980 and pilot installations begun by year-end 1980. By 4th quarter 1981 the full 14-node network, with interconnection of Branch and RCPC offices, could be in operation. Depending upon final schedules developed by the Subcommittee on Automation Services (SAS), systems and software for the five critical applications could be installed to allow release of the Culpeper FRCS message switch by 4th quarter 1982.

- Procurement and implementation of the FRCS-80 network is a large and complex technical/management undertaking estimated to require 108 staff-years of "special project" effort. The implementation work can be accomplished by using a combination of staff resources. The focal point for the implementation effort should be a FRCS-80 Project Manager and a full-time System-level project staff of up to 24 people located in a single Reserve Bank. Some of the implementation workload can be transferred to FRCS-80 hardware/software vendors, and it would be advantageous to obtain some special assistance from consultants. In addition to this System-level effort, considerable support and coordination will be required from the communications staff in each District.

- A capital expenditure of approximately $7.4-$9.8 million will be required in 1981 for the purchase of the basic packet-switches, customized software, and encryption/security devices and services. One-time non-capital implementation expenses totaling $5.3 million will be incurred during the 3 1/2-year implementation period from

2/ Funds transfer, CPD transfer, Bulk Data/ACH, administrative messages, and inter-District accounting.

mid-1979 through 1982. Annual operating costs for the network, including amortization of the capital costs, will be approximately $2.9 million when the network is fully operational in 1982. Annual operating costs of $2.3 million for the existing FRCS and Bulk Data networks can be fully eliminated by late 1982, after FRCS-80 systems and software for the five critical applications are implemented. The enhanced system will allow the accomplishment of all original objectives approved by the Conference, provide an immediate volume capacity increase by a factor of 5, enable necessary contingency backup operations, and allow for continued expansion of the system as required by future service demands.

Section 3
Recommendations

Based on the major conclusions outlined in Section 2, which are supported by extensive work accomplished over a five-year period, the Project Directorate recommends that the Federal Reserve System procure and install FRCS-80 and immediately establish the implementation staff and organization to put that network into operation. Specifically, it is recommended that the following actions be taken:

- Approve continuation of the FRCS-80 Project Directorate, reporting directly to the Conference of First Vice Presidents' Committee on Communications and Payments, as the System's senior management groups directly responsible for the FRCS-80 project. Authorize the Committee and the Directorate, under delegated authority, within the cost estimates defined in this report, and subject to Board of Governors approval, to proceed with the procurement and implementation of a 14-node inter-District network. On a quarterly basis, the Committee will monitor the progress of implementation and, as necessary, review highlights and/or policy issues with the Conference.

- Approve the issuance of a Request for Proposal (RFP) and the selection of vendors to provide the inter-District packet-switch network, customized software, and encryption/security devices. Authorize contracting for equipment acquisition entailing a capital expenditure of approximately $8-$10 million during the implementation period described in Table III, page 34. (After vendor responses to the RFP have been analyzed, a cost checkpoint could allow the Conference to reaffirm or modify funding authority limits.)

- Approve the assignment of a Project Manager and a full-time System-level project team, as defined in this report, to coordinate and complete FRCS-80 implementation under the direction of the FRCS-80 Project Directorate. This will entail personnel-related expenses (including travel and relocation costs) of approximately $5-$6 million, described in Table IV, page 35.

- Approve the designation of the Culpeper facility as the Network Management Center (NMC) for FRCS-80. The NMC would be a Conference entity, administratively

reporting to the Federal Reserve Bank of Richmond, to support FRCS-80 as requested by the Directorate and to perform duties associated with operation of the implemented network.

- Approve the timetable for implementation set forth in Table I, page 25.

- Commit the necessary planning resources, beyond those required for national network development, to prepare intra-District communications network plans. Costs for these activities will be borne by the Districts using a redeployment of existing staff.

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Ten-Year Cost[1/] Summary
(In millions)

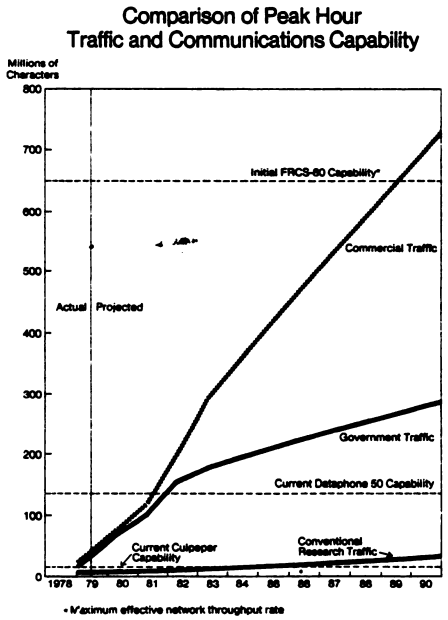
FRCS-80	$34.5[2/]
Less current network costs displaced	$18.7
Net increase in cost	$15.8

1/ From Table V, page 37.

2/ Expressed in 1979 constant dollars. Ten-year cost projection stated in Study Report No. 59, July 1978, $45.1 million.

Section 4
Federal Reserve Communications Requirements

The diagram below illustrates the phenomenal growth in communications traffic which is projected for the next 10 years.



When the Federal Reserve System installed its first modern-day communications network in 1970, total communications traffic between Districts in the System was approximately 3.5 million characters per day—consisting of three basic types of short, throughout-the-day "conventional" messages (wire transfers of funds, security transfers, and administrative messages). This FRCS network, designed for a ten-year life, is currently handling more than 16.5 million characters per day. New traffic demands, combined with

significant growth in conventional traffic, have generated much greater total traffic volumes than expected. Only by off-loading some traffic onto separate supplementary communications networks has the current system been able to meet present demands.

The types of communications traffic which developed after FRCS was conceived have volume patterns, time cycles, and routing very different from previous traffic. The FRCS network has neither the design characteristics nor the capacity to handle this traffic. Large files of research data, for example, were first delivered by data communications during the early 1970s using a separate off-line magnetic tape transmission system. Later these large files of data were transmitted between some of the Banks and the Board of Governors, using computer systems to emulate the magnetic tape transmission systems. In 1976, the FRCS network, with the addition of expanded scheduling, was adapted to carry some of the large files of Bulk Data during off-hours. With the beginning of increased government payments and ACH data transmission in 1978, another separate network (Dataphone 50) was implemented to carry that traffic between high-volume endpoints. Consequently, the Federal Reserve System currently has several overlapping and special-purpose networks—facilities which are adequate today, but do not have the capacity or the state-of-the-art communications features to economically handle the exponential increase in traffic which is projected for the 1980s.

The original FRCS message-switching network connected only to special terminal devices in the Federal Reserve Banks. By 1974, each District had installed its own District message switch to handle communications traffic within the District and to interconnect with the inter-District FRCS network. Today there are 12 distinctly different District switches, each independently maintained and operated by the respective District staffs.

An improved, high-capacity and high-reliability communications capability is clearly essential if the Federal Reserve is to adequately fulfill its future responsibilities. Policy decisions and commitments have already been made which will cause a dramatic increase in communications traffic. Government payments and the interregional exchange of ACH data could generate traffic dwarfing that of today. Check truncation schemes, greater movement of data in connection with some centralized data processing, and continued demands from the Treasury to improve delivery of electronic payments all point to an

environment in which still more data will be moved over Federal Reserve System communications facilities. Facsimile transmission, voice communications, and electronic mail delivery are other applications, not possible with current technology, which could be integrated into the FRCS-80 environment.

A final area requiring consideration in assessing Federal Reserve communications needs is how data is moved within the System—the reliability of the network, the potential for major outages in the network due to component failures, the security and integrity of data being moved, and the response time of the network. Current Federal Reserve communications systems employ the best features available at the time those systems were designed (late 1960s). However, the networks currently in use are not state-of-the-art and new capabilities are available now which include significant advances in communications quality, reliability, and integrity.

Section 5
Overview of FRCS-80

Several documents must be reviewed to obtain a complete technical and conceptual understanding of the FRCS-80 network and its benefits: Conceptual Design Report (Study Report No. 59), FRCS-80 Request for Information, and FRCS-80 Overview. However, it is possible to highlight some of the most important features or characteristics of the proposed network—those which explain the kind of communications services it will provide and how it will differ from the current networks.

Distributed Switching—Unlike the current FRCS networks which route all communications traffic into a single switching center (Culpeper) and then on to its destination, FRCS-80 will provide multiple paths over which communications traffic can be sent. In the FRCS-80 network, any message may travel a number of paths to its destination, depending upon traffic loading on the different circuits and the availability of network components (i.e., some could be experiencing downtime conditions). This distributed switching not only provides great flexibility and efficiency in using the network, but also prevents the serious problem caused by a failure of the central switch by isolating network problems to a single location while permitting all other communication within the network to operate as usual.

High-Speed Circuits Carrying Packetized Data—FRCS-80 will use private 56 KB digital circuits, which will provide higher speed, higher quality, and more reliable links between switching locations—a significant improvement over present circuits. These single, high-capacity "pipelines" between switching centers can be more efficiently utilized than the current multitude of medium-speed, special-purpose circuits because of the new concept of packet-switching. Current networks and their switching equipment make it impractical to use the same circuit for both short, quick turnaround messages and for huge bulk files of ACH or research data. Packet-switching has the capability to intersperse differing traffic types by having the packet-switch break each message into any number of small "packets" and then route each packet by the quickest path through the network to its destination, to be reassembled by the receiving packet-switch. The inability of the present FRCS, because of its basic design, to concurrently handle both conventional traffic and the large files of data is the primary reason it has been necessary to develop separate special-purpose networks.

Applications Independence—Another basic difference between FRCS and FRCS-80 design is the relationship between the communications facility and the applications for which data is transmitted. The present Federal Reserve communications networks require that special programs and procedures for handling each kind of data transmitted be built into the communications systems. FRCS-80 will be a general-purpose communications-only vehicle. The network will simply take certain data from one point to another, with internal checks to insure that data entered into the network actually arrives at the appropriate receiving point. The FRCS-80 communications network will have a transparent relationship to the kind of data being moved. Applications (operating procedures and computer programs) which have been designed by Federal Reserve operating and data processing personnel will provide all the necessary procedures for checking, storing, controlling, and using various kinds of data.

Because of its applications independence, FRCS-80 will offer a general-purpose facility which will allow its users to design their applications completely independent of the communications network. Conversely, modifications and improvements to FRCS-80 can be implemented without requiring application systems to be changed. In the current environment, any change to the communications system directly involves users and the applications developers.

Systemwide Standardization of Communications Equipment—The current FRCS began as a network of standardized equipment, with each District utilizing standard Western Union M-37 teletype terminals. As the network matured and grew, each District developed its own intra-District switching network utilizing different switch equipment, software, and terminals. This development path has necessitated independent maintenance and support of these unique District switches, with limited opportunity for shared software and system development and limited capability for contingency backup. With FRCS-80 and its standard packet-switches, a consolidated approach can be used with new opportunities to plan and implement backup for critical applications.

Contingency Backup--Improved Reliability—Due to the distributed design of FRCS-80, the probability of an outage affecting a large number of users significantly decreases. With the modular design employed, any component outage can be quickly isolated for repair. Further, FRCS-80 will handle all user data in the same manner, thus assuring that

each will be afforded the same level of services deemed necessary to accommodate the Federal Reserve's most critical communications needs.

State-of-the-Art Equipment—The current equipment was built upon the best hardware and software available a decade ago. Since then, significant technological advances have been made providing greater reliability, maintainability, and more modular diagnostic and repair techniques. FRCS-80 will incorporate these new features. Not only is there more reliability and redundancy built into the hardware devices, but the latest communications-oriented software provides for automatic recovery of the network in the event of failures, the ability to bypass failed components without affecting network users, and the increased capability to add new components to the network as conditions warrant.

Management-Oriented Operations—FRCS-80 will use an operating concept much different than employed in the current environment. The packet-switches installed in the Reserve Banks will operate in an unattended mode, whereas the present FRCS requires each District to maintain a dedicated operations staff. Network status will be reported continually to the Network Management Center (NMC) and District personnel will only be required to attend to network problems the NMC has identified as isolated in their area. Because of the various networks and dispersed operations responsibilities involved in the current FRCS, obtaining an accurate perspective on overall network performance and potential capacity on a timely basis is extremely difficult, if not impossible. Management personnel will have a much better gauge of the overall performance of the network due to the improved reporting mechanism provided by FRCS-80. The timeliness of this information will provide better tools to use in making decisions concerning the use of the network.

Security—The only method currently available for protecting both the integrity and privacy of data within a communications network is the use of encryption techniques. Currently, the full implementation of encryption is not feasible for the various FRCS networks due to cost and operational considerations. A common network, such as FRCS-80, for all communications needs allows provision of a fully secure service through an encryption methodology. In addition, improved access authorization and authentication schemes may be used with FRCS-80 to insure user and data integrity. With FRCS-80, all

traffic could be provided the same high-level security deemed necessary for the most sensitive Federal Reserve operations. The combination of improved accountability procedures to be employed in the new application systems and the security features planned for FRCS-80 will provide a safer and more secure communications service.

Standard Interfaces—Work during this and previous phases has supported the conclusion that standard interfaces should be used for the connection of computer systems to FRCS-80. Today the most widely accepted standard for general-purpose access to a packet-switch network is one which has been proposed and approved by CCITT, an international standards-setting organization. This interface, known as X.25, greatly facilitates the FRCS-80 goal of applications independence by clearly defining the role of the communications network and the procedures which must be used by computer systems to access and use the network.

Other than X.25, the only alternatives currently available are vendor-related interface standards designed to work with their particular hardware and software. These interfaces are not conducive to an environment in which many different vendor products will be employed by FRCS-80 users. Thus, the proper choice is an X.25-based network.

The FRCS-80 RFI verified that almost all computer and communications vendors now support or plan to support some form of the X.25 standard. The availability of the X.25 standard and its use in FRCS-80 is the key to competitive procurement of the network, the computer systems, and the terminals which will use it in the future. It must be recognized, however, that several important technical issues remain to be resolved concerning such interfaces between individual vendors' proprietary communications software and the X.25 standard. These issues are currently being addressed under Project Directorate sponsorship.

Standard interfaces for FRCS-80 are as important to the success of the network as MICR was for automating check processing during the early 1960s.

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Section 6
Procurement of FRCS-80

A major objective of FRCS-80, Phase III, was to identify procurement alternatives and to determine the extent to which vendors' standard products could be used to meet FRCS-80 specifications. To meet that objective, answers to the following questions were needed:

- *Are standard packet-switching networks available in the marketplace which meet the conceptual design requirements and specifications for FRCS-80?*

- *To what extent can a customized development effort be avoided and to what extent will it be necessary to integrate separate subsystems from multiple vendors?*

- *Is it possible that a public packet-switching network might be used for all or part of FRCS-80?*

- *How should the FRCS-80 Request for Proposal (RFP) be packaged—as one complete network to be bid on an all-or-nothing basis, or as several distinct subsystems?*

To answer these questions, the Directorate surveyed the marketplace with a formal Request for Information (RFI). On March 5, 1979, the RFI was sent to 40 major vendors of communications and computer equipment. Through a notice of the RFI in a trade publication, the total number of interested vendors increased to over 50. In the final analysis, 34 vendors made formal responses describing their products and services. Some vendors submitted only letters of interest or product catalogues, but 13 complete network solutions were offered for consideration. The vendors that responded to the RFI were:

Full Network Solutions	Letters of Interest/Component Responses
AT&T	American Satellite Inc.
Burroughs	Associated Computer Consultants
Computer Automation Inc.	Benton, Schneider and Associates
Honeywell	Bolt, Beranek and Newman
IBM	Codex
Nippon Electronics Corporation	Computer Communications Inc.
Northern Telecom	Comten
Tandem	Control Data Corporation
Telenet*	Data Architects Inc.
TRAN (Computer Transmission Corporation)	Defense Communications Agency
TYMNET	Digital Communications Corporation
UNIVAC	Ford Aerospace and Communications Corporation
Western Union	General Automation
	General Data Communications Industries Inc.
	Interbank Card Association
	Linkabit
	MITRE Corporation
	Monchik-Wieber Associates Inc.
	Network Solutions, Inc.
	Satellite Business Systems
	TMI Systems Corporation

* Analysis of this vendor's potential was performed without a formal response from the vendor.

The consulting firm of Network Analysis Corporation (NAC) was retained to analyze the vendor responses, identify procurement alternatives, and recommend changes to the RFI necessary to develop a Request for Proposal (RFP). Each vendor offering was checked against a list of FRCS-80 design criteria (throughput, reliability, modularity, security, vendor stability, etc.) and the following conclusions were drawn:

Marketplace Availability: There are a number of vendors capable of providing the basic network needed for FRCS-80. Several of the most viable vendors have similar networks

installed and operating. Furthermore, there are actually three classes of solutions for the basic FRCS-80 requirements:

Packet Switches. Seven (7) vendors proposed pure packet-switching solutions (as specifically requested in the RFI). This approach is based on specialized communications hardware and software, a high degree of component redundancy, automatic reconfiguration in event of component failure, unattended operation, and a high degree of modularity.

Vendor Architecture. Four (4) vendors suggested pseudo packet-switch solutions—the adaptation of general-purpose data processing systems and the adaptation of the vendor's general-purpose communications software.

One-of-a-Kind. Two (2) vendors proposed one-of-a-kind networks—integrating hardware and software from different vendors. A great deal of custom development is required for this solution.

Each of these solutions can be configured to meet the FRCS-80 specifications and the cost data available does not indicate any significant difference in the initial cost of the alternative networks. However, a consideration of the developing packet-switching industry does indicate that vendors with standard packet-switch products, which are likely to be used as part of many different customers' networks, can be expected to enhance their present systems with new technology as packet-switching matures. The same can hardly be expected of vendors that have constructed one-of-a-kind networks, and it is reasonable to expect that each customer with a unique system would have to "go it alone" on future enhancements (much as the Federal Reserve System has done with its present communications system). It is clear the Federal Reserve, as far as possible, should select a basic packet-switch from a vendor's standard product line.

Minimized Development: Because of the complexity of FRCS-80 implementation, early FRCS-80 studies concluded that research and custom system development for the network should be avoided to the extent possible. The ideal solution was considered to be a single vendor delivering a complete and fully operational network, one which had been installed and operating for other customers. A major objective of the RFI was to determine if such an ideal solution is feasible. It was found that it is not possible to avoid all minor

development work. While the basic packet-switch, with all its hardware and software, can be procured without development, the Federal Reserve System has some unique requirements which will require the development of customized software and integration of security devices. This development and integration effort is manageable and acceptable and is no more complex than previous endeavors in this area.

The RFI responses indicated that it will be necessary to develop certain customized software—to facilitate the transition from the present FRCS and to permit the independent connection of a variety of host data processing equipment. There are three possible sources for this software—the network vendor, an independent software house, or an in-house programming effort. All these options should be left open throughout the RFP bidding process.

The security/encryption equipment specified for FRCS-80 is available from several vendors, although it is not generally available from packet-switch suppliers. The consultant's report provided extensive information on encryption products currently available in the marketplace. The RFP will be prepared based on this information and should result in a competitive procurement for the encryption subsystems.

Applicability of Public Networks: The RFI responses helped to answer earlier questions about whether all or part of the data communications services needed by the Federal Reserve should be obtained from a public network or from a privately operated Federal Reserve network. There are four public networks in operation or preparing to go into operation—TYMNET, Telenet, ACS (AT&T) and XTEN (Xerox). Of those four, only Telenet is presently tariffed for the type of service required by FRCS-80. (TYMNET expects to have that service in early 1980, but it may be several years before ACS and XTEN are in full operation.) Furthermore, significant questions remain regarding the public network capability to provide the special security required by the FRCS-80 specifications. For these reasons, the consultant indicated that the necessary customization for security and other purposes might result in a public network operator having to segregate FRCS-80 into a separate network. Most public networks are designed to provide service to a wide group of users that independently would not have the volume requirements to justify the capital expenditure necessary to establish a private network. The Federal Reserve System, like other large communications users (e.g., Xerox, Exxon,

Citicorp), has projected traffic requirements which warrant the establishment of a private network. Private networks are the most cost-effective solution for users with requirements similar to the Federal Reserve's.

These points lead to the conclusion that FRCS-80 should be a privately owned and operated, standard-product, packet-switch network, integrated with some customized software and with security/encryption devices.

RFP Packaging: The foregoing discussion suggests that the RFP should be prepared in three distinct sections: (1) the basic packet-switch network, (2) customized software, and (3) encryption/security approach. The consultant has recommended the RFP be released to the marketplace as one package, with vendors invited to bid on any or all of the three sections. Should only the packet-switch vendor decision be clear following an evaluation of the responses to that RFP, it would be possible to go back to the marketplace to find the most compatible customized software and encryption approach. Several iterations of the RFP process may be necessary to effectively hone market response to our needs.

Section 7
Implementation of FRCS-80

Another major FRCS-80, Phase III, objective was to develop a comprehensive implementation plan (including a detailed list of the tasks required to achieve full implementation of FRCS-80), a timetable for accomplishing those tasks, an estimate of the staff resources required, and the associated organization for managing those resources. A comprehensive document titled FRCS-80 Implementation Plan has been developed which provides a sound basis for assessing the implementation considerations. The plan focuses on the following key objectives which should guide the overall implementation effort:

- *reduce implementation risk;*
- *minimize implementation costs;*
- *encourage District Bank participation;*
- *minimize the impact on District Banks; and*
- *minimize the implementation time period.*

To satisfy these objectives, the best strategy was determined to be a phased implementation approach spanning a period of three years from the time the RFP is issued to the time when full implementation of FRCS-80 is achieved. Full implementation is defined as the time when all Districts have FRCS-80 facilities installed, new software for the five critical applications has been implemented, the Dataphone 50 Bulk Data service has been eliminated, and the present FRCS message switch in Culpeper can be released. At that time, the computing capacity in each District devoted to inter-District communications will no longer be needed.

Based upon a favorable Conference decision on FRCS-80 in August 1979, the implementation milestones identified in Table I (page 25) appear reasonable. The total three-year conversion effort can be thought of in terms of four phases:

Procurement (3rd Quarter 1979-3rd Quarter 1980): This phase will include the completion of the specifications for FRCS-80 in the form of a Request for Proposal (RFP), distribution of the RFP to vendors, evaluation of the proposals received from the vendors, selection of the vendor(s), completion of the contract negotiations with

the selected vendor(s), and development of the detailed plans for subsequent implementation phases.

Inter-District Network Installation (3rd Quarter 1980–3rd Quarter 1981): This phase will cover the installation of the FRCS-80 packet-switches and circuits at each District head office, the Board of Governors, and the Network Management Center. At this point, Districts may elect to connect their Branch and RCPC offices to FRCS-80 through the District switches or, where traffic warrants, they may connect those offices to FRCS-80 through new circuits between the District FRCS-80 packet-switch and the Branch office computer systems. District switches and application software will remain unchanged, but the present Bulk Data System (Dataphone 50) and the present FRCS circuits between District switches and Culpeper can be removed. When this initial installation is complete, the FRCS-80 network will be fully operational and the base facilities to support major increases in traffic volume will be in place.

Conversion of Five Critical Applications (3rd Quarter 1981–4th Quarter 1982): Although all current inter-District traffic will be moving over the new FRCS-80 network at the completion of the prior phase, the FRCS Culpeper switch and the District switches cannot be removed because they will still provide certain essential software functions for the five critical data communications applications (Bulk Data/ACH, transfer of funds, CPD transfer of securities, administrative messages, and exchange of inter-District accounting data). As a high-priority effort, the Subcommittee on Automation Services (SAS) will be coordinating the development of new software for these applications, so that the FRCS message switch in Culpeper and the District switches can be released. Also in this phase, member bank and Federal Reserve terminals requiring backup support can be connected to FRCS-80 and new application systems for contingency support will be available.

Intra-District Planning, Network/Application Expansion (August 1979–Ongoing): During this phase, FRCS-80 services will be extended to application areas other than the critical services previously addressed. The majority of activity will be focused on intra-District communications needs with individual District Banks determining the extent to which FRCS-80 facilities will be used in their respective Districts. Coordinated planning between FRCS-80 and 2nd District staffs on the replacement of the

New York communications switch, beginning in August 1979, will address important design precedents for subsequent intra-District planning efforts elsewhere.

Table I
FRCS-80 PROCUREMENT AND IMPLEMENTATION MILESTONES

Date	Milestone Event
4th Quarter 1979	Completion and issuance of RFP for FRCS-80
1st Quarter 1980	Receipt of vendor proposals
2nd/3rd Quarter 1980	Selection of vendor(s) and contract negotiations
4th Quarter 1980	Beginning of pilot installations
3rd Quarter 1981	Completion of installation of 14-node network
4th Quarter 1981	Completion of extension of FRCS-80 facilities to Branch and RCPC locations (Bulk Data traffic only)
4th Quarter 1982	Completion of conversion of new applications for the five critical services
4th Quarter 1982-Ongoing	Network enhancements and addition of new traffic
August 1979-Ongoing	Intra-District planning

The three-year implementation work described in general above translates into a large and complex management/technical undertaking. The detailed FRCS-80 Implementation Plan identifies more than 175 tasks to be accomplished and estimates that work will require a total of 108 staff-years of "special project" effort during the implementation period of 1979-1982. (It does not include the substantial coordination and support that will be required in each District. That work is considered to be part of each District's ongoing communications planning and support and should be accomplished by each District's current communications staff.)

This 108 staff-years of System-level implementation work involves several distinct kinds of tasks. There will be overall project administration work such as contract management, budget management, and implementation coordination. There will also be a large amount of complex technical work to be done in cooperation with vendors—detailed network

configuration, design and development of software, and development of test and acceptance and cutover procedures. Finally, there will be a need to provide extensive training and support to FRCS-80 users—applications programmers, District communications planners, and others. All of this work is necessary not only to insure a sound conversion to FRCS-80, but to prepare the core staff that will assume responsibility for operating and supporting the network on an ongoing basis.

Resources for the 108 staff-years of implementation work should be drawn from a combination of sources—a full-time System-level FRCS-80 project team located at a single Reserve Bank, the continued use of part-time task forces and work groups, and services purchased from vendors and consultants. Table II summarizes the recommended staffing to accomplish the implementation work; the paragraphs which follow discuss the role of each group.

Table II

FRCS-80 SYSTEM-LEVEL
IMPLEMENTATION STAFF REQUIREMENTS

		Staffing Requirements (Staff-Years)		
Year	Total	Project Team (Full Time)	Task Forces (Full Time Equivalent)	Vendor/Consultant Services
1979 (2nd Half)	12	3	7	2
1980	36	18	12	6
1981	36	24	6	6
1982	24	14	4	6
Totals	108	59	29	20

- **Full-Time System-Level FRCS-80 Project Team**–More than half of the total project personnel should be concentrated in a full-time FRCS-80 project staff. The FRCS-80 Project Directorate will select a Project Manager to head this group as soon as the final FRCS-80 commitment decision is made, and during the last half of 1979 up to six project team members would be assembled. The project team would be expanded in early 1980 and would average 18-20 persons during the three-year period from 1980 to 1982, with the staff level varying with the

workload. Part of the project team staff should be recruited from existing staffs in the System— ideally one from each District. This would provide a core group knowledgeable in Federal Reserve operations and current communications and, assuming these people would return to their respective Banks after the implementation work is complete, would provide each District with at least one person trained in depth on FRCS-80. The remaining full-time project staff would be hired from outside the System with the understanding that, following implementation, at their option, they would become part of the Network Management Center staff or the System FRCS-80 technical/development staff. The relationship between the two groups (NMC and technical/development staffs) for the post-implementation period should be left open for the time being—pending developing events. Many of the outside hires would not be selected until vendors are chosen, since experience and knowledge of the particular hardware and software to be used would be the most important criteria.

- **Part-Time Task Forces**-For a number of years the System has made extensive use of task forces to address specific communications problems and needs. During FRCS-80, Phase III, alone, an equivalent of 15 full-time people have been working on task forces. As indicated by Table II, it is expected that there will be a continuing need for this kind of part-time effort, although it will be lessened by the full-time work of the project team.

- **Vendor/Consultant Services**-Approximately one-fifth of the total implementation work can probably best be done by vendors and consultants. As part of their hardware/software contracts, vendors could contribute in the area of planning network management and operations. Vendors could also help with the extensive documentation and education effort that will be required. Consultants could effectively assist with RFP development, vendor selection, overall project administration and planning, application support efforts, and security planning.

Management of the the large implementation staff effort will be crucial to the success of the project. There is a clear need for a broadly-based senior management group to provide overall guidance and direction to FRCS-80 implementation work. A continuation of the present Project Directorate, reporting directly to the Conference of First Vice

Presidents' Committee on Communications and Payments, seems to be the ideal structure. The Directorate membership probably should be expanded to provide representation from more Districts and to provide input from a variety of interests and expertise.

There is also a need for an FRCS-80 Project Manager, reporting to the Directorate, to oversee the day-to-day work of the full-time project team. In order to coordinate the group's work, the Project Manager should be physically located at the Federal Reserve office that houses the project team.

It is also important to recognize that the entire implementation organization, including the project team and the Project Manager, would be disbanded as soon as the implementation work is completed in 1982. All staff would be relocated to the Reserve Districts, the Network Management Center, or to the Reserve office selected to house the ongoing FRCS-80 technical support/development staff.

Section 8
Operation of FRCS-80

FRCS-80 should be in partial operational status in early 1981 and in full operation by the end of 1982. Partial operational status is defined as the time when any network component is in use for the communication of "live" traffic, and full operation is the time when the five critical application systems have been cut over in all Federal Reserve Districts.

The operation of FRCS-80 encompasses two major areas: (1) the normal day-to-day operating functions of the network (i.e., system start-up and shut-down, monitoring system status, network problem detection and resolution, etc); and (2) the ongoing planning and analysis of network performance and user requirements in order to make the required modifications and enhancements to the network to meet future demands.

The organization, staffing, and location of the support groups to address the ongoing operational requirements of FRCS-80 are discussed below:

Network Operations: Although FRCS-80 will be a distributed network, there will still be a need to centrally coordinate its nationwide operation. During Phase III, a great deal of attention has been given to the functions of the Network Management Center where this coordination would occur. The details of that analysis are covered in a report titled Operation of FRCS-80 and are highlighted here.

The major role of the Network Management Center (NMC) will be to perform and coordinate those activities that can best be handled on a central basis. These include:

Continuous monitoring of the entire network and the status of all its components—so there can be intervention in the event of serious malfunction or failure. (The District nodes will normally operate in an unattended mode. If physical intervention is required, it will be requested by the NMC.)

Collection of network statistics on loading, routings, etc., as a basis for network evaluation, planning, and user billing.

Coordination of continuing interaction with vendors on hardware maintenance for the network.

Provision of assistance to District operations staffs.

In order to accomplish these tasks, the NMC will require a FRCS-80 packet-switch node of the type installed at other sites and a modest general data processing capability for storage and manipulation of data. Based on actual experience with other packet-switch networks, the consultant estimates an NMC staff of 18 will be required for operation, troubleshooting, District assistance, and statistics collection. The complete operating staff will be needed at the end of 1982 when full operation is achieved, but initial staffing should begin in midyear 1980 when a core group of operations personnel should be identified for training on FRCS-80 equipment. This initial staff should be drawn from current Culpeper personnel and others familiar with the operating concepts of the selected vendor equipment. In selecting the complete NMC staff, some of the full-time project team personnel involved in the implementation effort may be reassigned to the NMC as their implementation assignments are completed.

Another question which has been addressed is the most suitable location for the NMC. There are strong arguments for locating the NMC in Culpeper with the present FRCS switching center. This would facilitate the phased cutover to FRCS-80 because the current operations staff could be trained on the replacement system while remaining available to operate the existing system. There appears to be no reason to change an arrangement which has resulted in a satisfactory operation of FRCS. Further, having a full communications facility in Culpeper will provide that site with the capability it requires as an emergency relocation center for Board of Governors operations.

Technical Support and Development: After the initial implementation is complete and the implementation project team is disbanded, the ongoing development of FRCS-80 will require communications analysts and software specialists to perform planning and development tasks to satisfy the evolving needs of FRCS-80 users. Ongoing training, education, and user support functions will also continue once the network is fully operational.

During the implementation period, these tasks will be guided by the Project Directorate, the Project Manager and the System-level project team, as discussed in the previous section. Following implementation, the staff to provide these System-level services on an ongoing basis can be obtained from the implementation project team when it is dissolved at the end of 1982. It is estimated that a total technical staff of ten will be needed for this group. This ongoing staff can be located separately from the operations staff, presumably at the Federal Reserve Bank which assumes the technical support responsibilities during the implementation period. Like the operations staff of the NMC, the technical support/development group would report to the System subcommittee or System-level management group that is assigned ongoing responsibility for FRCS-80. The exact pattern of physical and organizational deployment for network staffing should remain open pending developing circumstances.

Section 9
FRCS-80 Costs

Initial estimates of FRCS-80 costs were made as part of the 1977 Conceptual Design Task Force's report, Federal Reserve Communications System FRCS-80 Project Conceptual Design. The RFI test of the marketplace in March 1979 provided the first opportunity to obtain acutal cost data from vendors. As part of its consulting contract, NAC was asked to use this data to develop new cost projections for FRCS-80. In addition to the RFI responses, NAC used its own prior experience cost estimates for components and features needed to provide a complete network.

In interpreting the cost estimates which follow, several points should be considered. First, no vendor provided firm prices for the customized software that will be required, and no vendor equipment configurations were as detailed and complete as will be provided in response to a RFP. Consequently, there are ranges of costs which could be used as estimates; however, "most likely" costs are presented whenever possible—those that the consultant and the FRCS-80 Planning Task Groups have judged to be most representative of what will actually occur. The anticipated costs of vendor-supplied hardware and software are combined, treated as capital costs, and amortized over a ten-year period since it is not currently possible to determine whether vendors will opt to provide various features via hardware or software. Current accounting procedures do not provide for amortization of software costs. However, neither accounting method alters the total cost of the project. Further, PACS rules, which will be used for handling the actual expense accounting involved in network installation and operation, will result in a spread of costs on Reserve Bank books different from that described in the Report. Finally, all costs expected to be incurred over the three-year procurement and implementation period are expressed in 1979 constant dollars.

There are actually three separate cost issues that must be considered: (1) capital costs associated with the purchase of the network hardware and software; (2) one-time non-capital implementation costs; and (3) ongoing operating costs for the new network. Each of these areas is discussed separately in the following paragraphs.

Capital Costs—Total purchase cost for the 14-node inter-District packet-switch network is expected to be $7.4-$9.8 million; the component cost breakdown is shown in Table III. Based upon the implementation timetable presented in Section 7, it is expected that this capital expense would be incurred in 1981. The largest cost is for hardware and software for the 14 basic packet-switch nodes. During a review of RFI responses, the consultant identified $7.4 million as the most likely level of capital expenditure. The Project Directorate, however, feels that significant uncertainty exists in the estimates of software and security costs. Capital costs are expressed in a range to reflect this uncertainty. The actual costs for customized software and the security/encryption devices will depend upon the final specifications which are still being developed, but the numbers shown represent reasonable estimates.

One area in which additional costs not included in the consultant evaluation may appear is the development cost for host system interface software. Efforts are currently under way with IBM and Burroughs to identify the level of effort required to develop the software to interface the Federal Reserve host computers to the FRCS-80 network. Based on the work to date, the estimated development cost will be in the $1.5-$3.0 million range. All or part of that cost may be borne by the Federal Reserve—largely depending on the vendors' ability to find additional customers for that particular software.

Table III

CAPITAL COSTS OF FRCS-80 NETWORK
(Based on 14-Node Inter-District Configuration)
(In millions)

Item Description	Purchase Cost
Packet Switches and NMC	$ 5.0
Customized Software	1.5-3.0
Security/Encryption Devices	.9-1.8
Total	$7.4-9.8

One-Time/Non-Capital Costs—There will also be significant one-time, out-of-pocket costs associated with the implementation of FRCS-80, primarily the expenses of the System-level project team and consultants. Estimates of these costs have been developed based upon the staffing requirements outlined in Section 7 and the assumption that budget authority would be granted for staff drawn from various Banks for the project team. Part of the travel costs in 1979 and 1980 are for relocation of the 12 staff members from the various Federal Reserve Banks to the site where the project team will work, and the 1982 travel expense estimate provides for transferring these people back to their respective Banks or to the Network Management Center. There are, of course, other expenses that may be allocated to the FRCS-80 project, such as the expenses of task force work and District-level communications support staff. The costs of the former are included in the net additional costs for implementing FRCS-80 to indicate the overall resource allocation the project will require on a Systemwide basis.

Table IV

ONE-TIME NON-CAPITAL SYSTEM-LEVEL
FRCS-80 PROCUREMENT AND IMPLEMENTATION COSTS

	Annual Expense ($000)				
Description	1979 (2nd Half)	1980	1981	1982	Total Expense
System-Level Full-Time Project Team	$105	$ 630	$ 840	$ 525	$2,100
System-Level Task Forces	245	420	210	140	1,015
Consultant Fees	100	400	400	400	1,300
Travel	93	310	173	263	839
Totals	$543	$1,760	$1,623	$1,328	$5,254

Annual Operating Costs—Operating expenses have also been projected for the new FRCS-80 network. Table V details those operating costs for a fully implemented FRCS-80 compared with current costs for Bulk Data and FRCS communications. The cost of existing service is shown only to answer the question "How much are we paying now and how does that compare with what FRCS-80 will cost?" It must be remembered that FRCS-80 as configured for initial installation will provide a volume capacity 5 times that of existing networks and will provide a much different kind of communications capability from the standpoint of reliability, security, flexibility and contingency backup. Additionally, for comparison purposes, current costs do not include any portion of the current application processing computer systems in the Reserve Banks. While the completion of this project will eliminate the need for District-level computing capacity devoted to inter-District communications (as opposed to applications), sufficient data is not available to measure the resulting potential for cost reduction. In some Districts, it may be possible to release an entire dedicated computer system, but in others it will only result in freeing a portion of the capacity of multi-purpose systems.

Table V

ANNUAL OPERATING COSTS
FRCS-80 AND EXISTING NETWORKS
($000)

Component	Annual Operating Costs: Existing Switching Center and Inter-District Networks[1]	Annual Operating Costs: Fully Implemented FRCS-80
Switching Equipment (Amortization)	$ 34[2]	$ 740[3]
Equipment Lease	38	—
Circuits	1,061[4]	1,380[5]
Maintenance (Hardware/Software)	440	145
NMC Staff	760	396
Technical/Development Support	—	264
Total Annual Cost	$2,333	$ 2,925
Ten-Year Operating Cost		29,250
System-Level Implementation Cost (Table IV)		5,250
Total Ten-Year Cost		34,500
Eight-Year Displacement	18,664	
Net Increase Over Ten Years		15,836

1/ Based on 1979 Culpeper budget. Does not include any current District switch costs or enhancements to the Culpeper switch that would be necessary to accommodate future volume demands.

2/ Represents only hardware purchased in recent years. Initial equipment purchases were expensed in the year of purchase in accordance with accounting procedures then in effect.

3/ Amortization of $7.4 million purchase cost over ten years (Table III).

4/ Includes $670,000 for Dataphone 50 service and $165,000 for Branch and RCPC Bulk Data circuits. Remainder of cost is for medium- and low-speed circuits between Culpeper and the District Reserve Banks.

5/ Includes all circuits between District nodes and circuits to Branch and RCPC offices.

Finally, it is important to be aware of when the new network operating costs will occur, how long there will be an overlap in expenses between the current networks and FRCS-80, and when various current costs can be expected to be displaced. The following cost tabulation and notes of explanation summarize these costs.

Table VI

TOTAL ANNUAL COMMUNICATIONS OPERATING COSTS

Federal Reserve Data Communications Networks
1979-1983
($000)

Year	Current Network(s)	FRCS-80 Network	Total Operating Costs
1979	$2,300[1/]	---	$2,300
1980	2,300	$ 100[2/]	2,400
1981	1,400[3/]	1,300[4/]	2,700
1982	1,100[5/]	2,400	3,500
1983	---	2,900[6/]	2,900[7/]

1/ Does not include any cost related to District hardware and software for current communications and applications processing.

2/ The first pilot FRCS-80 installations should begin in the last half of 1980, but none of the existing networks will be displaced during this test period. FRCS-80 operations costs will be incurred for operations staff to participate in the pilot operations.

3/ The full 14-node FRCS-80 network should be operating during the second half of 1981, and the complete Dataphone 50 system and all inter-District FRCS circuits can be released.

4/ Includes half-year cost of fully operational FRCS-80 network.

5/ By last half of 1982, all five critical applications running on FRCS should have been rewritten for FRCS-80 and the FRCS Culpeper switch released.

6/ Assuming the critical applications rewrites are completed during 1982, 1983 should be the first full year of operation on the new FRCS-80 network.

7/ Expressed as 1979 constant dollars.

Section 10.
Supporting Documentation

Studies completed during Phase III - Implementation Planning:

Report Title	Prepared By	Date
FRCS-80 Request for Information	Task Group 2 FRCS-80 Project Directorate	March 5, 1979
FRCS-80 Overview	Task Group 2 FRCS-80 Project Directorate	April 12, 1979
Evaluation of Responses to FRCS-80 RFI	Network Analysis Corporation (Consultant)	June 19, 1979
Implementation Plan	Task Group 2 FRCS-80 Project Directorate	June 15, 1979
Operation of FRCS-80	Task Group 3 FRCS-80 Project Directorate	June 28, 1979
FRCS-80 Costs	Task Group 4 FRCS-80 Project Directorate	July 15, 1979
FRCS-80 Summary of Security Features	Conference of General Auditors' Committee on EDP	July 3, 1979

Studies completed earlier:

Report Title	Prepared By	Date
Communication System Development Study	Communication System Expansion Task Force Subcommittee on Communications	October 1974
Federal Reserve Communication System after 1980 (SOC Study Report No. 39)	Subcommittee on Communications	October 3, 1975
An Assessment of Major Policy Issues and Their Implications on a Future Communications Capability	Ad Hoc Task Force of the Committee on Communications and Payments	October 12, 1976
Augmented Packet Switch (SOC File No. 61.21)	Conceptual Design Task Force Subcommittee on Communications	November 30, 1977
Conceptual Design Report (SOC Study Report No. 59)	Subcommittee on Communications	June 19, 1978
Organization for Federal Reserve Communications System-80 Project Management	Committee on Communications and Payments	November 1, 1978

Appendix 4.—"Provision of Electronic Funds Transfer Services: Technological Developments and Policy Considerations," Prepared by The Congressional Research Service for the Government Information and Individual Rights Subcommittee.

Congressional Research Service
The Library of Congress

Washington, D.C. 20540

PROVISION OF ELECTRONIC FUNDS TRANSFER SERVICES:

TECHNOLOGICAL DEVELOPMENTS AND POLICY CONSIDERATIONS

Prepared at the Request of the Subcommittee

on Government Information and Individual Rights

Committee on Government Operations

U.S. House of Representatives

by

Jane Bortnick
Specialist in Information Science and Technology
Science Policy Research Division

September 23, 1981

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I. INTRODUCTION

Information technology is playing an increasingly important role in industries, such as banking, which rely upon the rapid transfer of data for managing operations and delivering services. In recent years, the merger of traditional data processing and telecommunications capabilities has produced new types of enhanced services which facilitate data handling activities and improve efficiency. Although these technological developments provide distinct advantages over earlier methods of information tranfer, they also create new questions of public policy.

The problem of establishing appropriate legislative and regulatory frameworks for the provision of a growing array of information products and services is compounded by the fact that the data processing industry traditionally has been unregulated while the telecommunications industry has been highly regulated. During the last several years, however, the courts, the Federal Communications Commission, and the Congress have taken actions to deregulate the telecommunications industry to reflect the changing nature of the technology and the economic realities of the marketplace. These efforts represent the U.S. Government policy that the Government should promote natural competition within industries while minimizing constraints or supports.

It is within this context of rapid technological advancements, an expanding information industry, and a changing regulatory structure that this report addresses the provision of electronic funds tranfer (EFT) services. This report does not attempt to analyze monetary policy, banking regulations generally, or provide an in-depth look at all forms of electronic funds transfer. Rather, by focusing on automated clearing houses (ACHs) and

large telecommunications networks which provide funds transfers (so-called "wholesale" EFT activities), various options for providing EFT services will be explored.

The key issues which emerge revolve around which organization(s) should operate electronic funds transfers systems and under what conditions. In particular, what is the appropriate role of the Federal Government in developing, implementing, and providing EFT services? Furthermore, to whom should these services be offered and at what price? How can the Federal Government ensure the efficient transfer of funds within the Federal Reserve System and comply with its legislative mandates without competing with the private sector?

In regard to major banks providing electronic funds tranfers services, other questions emerge. For example, will large banks have an unfair advantage over other information service providers in offering EFT systems? Will smaller banks be unable to compete with larger enterprises which have substantial capabilities for data processing and electronic transfers? Would changes in current banking laws be required to enable banks to provide the full range of EFT services?

Finally, what concerns result from a situation where EFT services are offered in an openly competitive market? Can "universal" service be provided? Will inefficiencies and increased costs result from underutilized or redundant systems? How can useful standards be established to ensure interconnection between key participants in the payment system?

II. SELECTED EFT SERVICES AND SYSTEMS

A. CHRONOLOGY OF THE FEDERAL RESERVE BOARD'S INVOLVEMENT IN EFT

1. Automated Clearing Houses(ACHs)

During the late 1960s and early 1970s, the concept of automated clearing houses was explored in an attempt to find an alternative to the increasingly expensive paper check clearing process. Today there are 37 ACHS operating within the United States. The ACHs are administered by private associations which establish common standards and procedures. However, with the exception of the New York City ACH -- which primarily handles private transactions -- the other 36 are operated under the auspices of the Federal Reserve Services which provides clearing, delivery, and settlement services. 1/

Automated clearing houses were designed originally to handle recurring preauthorized payments, including commercial transactions, such as direct deposits of payrolls or mortgages payments, and Federal obligations, such as social security payments. Magnetic tapes containing instructions for payment or collection of funds are prepared by originating depository institutions which then deliver the tapes to the ACH facility for processing and delivery to the receiving depository institutions. Upon receipt, the appropriate accounts can be debited or credited. The deliveries primarily have been by courier with processing performed in a batch mode rather than in a real-time data processing environment.

1/ Mier, Edwin. Bank Data Networks: Moving Millions Electronically. Data Communications, April 1981: 87.

Due to the substantial number of Federal payments handled by ACHs and the traditional role of the Federal Reserve banks in providing check clearing services, it has been argued that the Federal Reserve is the most appropriate entity to provide ACH services. 2/ The changing state of technology combined with the growing use of ACHs for different types of transactions, however, has led some observers to question whether the Federal Reserve should continue its predominant role in ACHs. For example, in a filing before the Board of Governors of the Federal Reserve System, the National Telecommunications and Information Administration (NTIA) of the Department of Commerce documented the changing nature of Government ACH activities. Specifically, it was noted that the "physical delivery of magnetic tapes to clearing centers by couriers...is gradually giving way to direct computer-to-computer communications between the Federal Reserve processing centers and banks." 3/ In addition, while Federal Government transactions continue to be predominant, the rate of increase of commercial transactions is significant and they may become a considerable percentage of ACH activities in the future. 4/

Furthermore, there is growing evidence that ACHs will be used for a broader range of EFT activities than was originally envisioned. The

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2/ EFT in the United States: Policy Recommendations and the Public Interest. Final Report of the National Commission on Electronic Fund Transfers. Washington, D.C. October 28, 1977. p. 208.

3/ Comments of the National Telecommunications and Information Administration before the Board of Governors of the Federal Reserve System in the Matter of Proposed Amendment of Regulation J: Docket No. R-0262. March 14, 1980. p. 6.

4/ Ibid., p. 7.

growing impetus to utilize electronic, rather than paper, methods of funds transfers will tend to foster new uses of ACHs. For example, transactions resulting from telephone payment systems and automated teller machines (ATMs) are beginning to be processed by ACHs. Another potentially high volume use of ACHs is through check truncation. According to one industry official, "it is ironic that the ACHs were initially planned as an alternative for checks, but may get their greatest volume from truncated checks." 5/

The issue of check truncation -- whereby the information contained on the check is transmitted electronically rather than sending the paper check itself -- is receiving much attention. In an effort to reduce the level of float, 6/ the Federal Reserve has proposed a system whereby checks over a certain dollar amount would be separated and payment data would be electronically transmitted to the paying bank. At a later time, the actual check would be delivered. A task force of the American Bankers Association recently criticized the proposal on the basis that it did not provide sufficient warranty to protect banks and would require additional equipment and staff to support such a system. 7/ The check truncation issue also raises the question of Government competition with the private

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5/ White, George, C. Jr. Payment Systems Today--and Tomorrow. The Bankers Magazine, v. 163, March/April 1980: 30.

6/ "Fed float occurs when funds for checks presented to the Federal Reserve System are paid to the depositing institution on the next or second day following regardless of whether the checks reach the institution on which they are drawn in the prescribed time." from: White, George C.,Jr. Developments in United States Payments Systems. Journal of Bank Research, v. 11, Winter 1981: 201.

7/ Trigaux, Robert. ABA Would Amend Fed Electronic Check Plan. American Banker, v. CXLVI, August 12, 1981: 1, 19.

sector. There is some concern that : 8/

> Should the Fed implement electronic check collection, float for large dollar items will be eliminated - and, to a large degree, so could a significant portion of correspondent bank business, as financial institutions begin sending their large dollar checks to the Fed for immediate delivery.

The private sector has expressed skepticism about the rationale behind the check truncation proposal. Although admitting that check truncation is probably inevitable, some analysts state that "incentives are lacking", "truncation cannot be cost justified on the basis of marginal cost improvements alone," and Federal action will be needed to provide the impetus for developments of such a program. 9/

2. Pricing Policies

Efforts by the Federal Reserve System, such as check truncation, are stimulated, in part, by the requirements of Title 1 of the Monetary Control Act of 1980 (P.L. 96-221). Among the provisions of the Act are those calling for the Federal Reserve to begin charging for the services it provides, including the cost of the float. The intention of the pricing provisions was to eliminate free services provided by the Federal Reserve, encourage efficiency, and foster more competition within the industry. Since the announcement of the pricing guidelines by the Federal Reserve in August 1980, there has been a great deal of criticism concerning the formulas used for establishing fees. The American Banker's

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8/ Ibid., p.19.

9/ Shain, McFeely, and Jakubowska. Check Truncation: Ahead of its Time? The Magazine of Bank Administration, v. 57, April 1981: 31.

Association (ABA) charged that the pricing plans of the Federal Reserve "could seriously damage the ability of the private sector to compete with government in the offering of services." 10/

Although the ABA did not include pricing of ACH services in its attack, others in the private sector and the Federal Government opposed the Federal Reserve's ACH proposed fee schedule because it was calculated on the basis of a "mature volume environment" rather than current levels. This approach, it was argued, can be seen as a subsidy to encourage use of ACHs that will eliminate the ability of the private sector to compete in this area. Among the adverse comments made concerning pricing of ACH services were the following:

> "The Fed's low prices for automated clearing house services suggest that the central bank has every intention of being the predominant operator of that electronic funds tranfer system well into the future." 11/
>
> "Without a detailed evaluation of that subsidy, incentive pricing can be used by the Fed to monopolize ACH for the next decade at a minimum. By then, it may be too late for competition to flourish." 12/
>
> "The only result that appears likely to flow from the Board's proposal is the continued domination of ACH services by the Federal Reserve, with little opportunity for private sector participation." 13/

10/ Battey, Phil. ABA Sees Fed Pricing Plan As Thwarting Competition. American Banker, v. CXLV, November 3, 1980: 1.

11/ Kutler, Jeffrey. Controversy Builds over Fed's Approach to Pricing. American Banker, v. CXLV, September 2, 1980: 1.

12/ ACHs Should Be Run Privately, Not by Fed, Exec Says. American Banker, v. CXLVI, April 3, 1981: 2.

13/ Battey, Phil. Justice Dept. Joins ABA in Calling Fed's Proposals for Pricing Anticompetitive. American Banker, v. CXLV, November 12, 1980: 3.

What these comments reflect is a growing concern that the Federal Reserve is entering the EFT marketplace having the advantage of subsidized financial services and thereby precluding alternative offerings by the private sector. As one critic charges, "the Fed, to date, has proposed a role of quasi-competitor that still will maintain control of the market." 14/

3. Federal Reserve Communications System (FRCS)

Throughout this century the Federal Reserve System has employed available technology for supporting its networking needs among the Federal Reserve Board, the U.S. Treasury, and Federal Reserve Banks. Beginning in 1918 messages were transmitted via Morse code. Later, teletype equipment was used, and during the 1950s new automated teletype switching equipment was acquired. The current Federal Reserve Communications System began operation in 1970 and enables Reserve banks to be linked through a central switch located in Culpeper, Virginia which is supported by several computers and and communications processors.

Often referred to as "Fedwire", this on-line telecommunications network provides large funds transfers between financial institutions. Corresponding reserve accounts are adjusted at the time the message is sent. Fedwire is used also for transferring Government securities, sending administrative messages, and gathering economic data. Standardized formats and operating procedures are set by the Federal Reserve. It is significant to note that the predominant number of transactions handled by the Federal Reserve is generated by

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14/ Shain, John H. The Fed's New Hat-Competitor. American Banker, v. CXLV, October 13, 1980: 4.

checks. However, the total dollar value moved through electronic funds transfers is the most substantial portion of Federal Reserve business. The average value of a check handled by the Federal Reserve in 1979 was $560 while the average value of an electronic transfer was approximately $2 million. 15/

The existing Federal Reserve Communications System actually contains several components. In addition to Fedwire, there are several local networks supporting internal Federal Reserve District operations and a bulk data transmission system which is used for connecting automated clearing houses (ACHs) and moving large volumes to the Federal Reserve for clearance and settlement. 16/

The Federal Reserve is, at present, in the process of modernizing its electronic communications network. Called the Federal Reserve Communications System for the 80s (FRCS-80), the new system is designed to replace the several existing operations with one flexible network. The approach will be a distributed telecommunications system using packet-switching 17/ technology rather than the centralized Culpeper, Virginia switch. It will connect the 12 Federal Reserve District Banks, the Treasury Department, and the Culpeper operations center. Generally, a message will have to travel through only two nodes of the network to reach its

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15/ Mier, op. cit. p. 88.

16/ Request for Information (RFI) for FRCS-80. Federal Reserve System. Forward.

17/ A packet switch breaks up digital messages into fixed-length segments or blocks called "packets." The packets then travel independently through the network using the most efficient route depending on the load and availability of data links. Each packet has addressing information appended to it so that it can be routed to its eventual destination and reassembled in proper sequence.

destination. In the case of computer malfunctions at individual Federal Reserve Banks, back-up support will be provided and increased circuit capacity can be made available during peak traffic hours.

The final implementation of FRCS-80 will take several years, but the initial contract for software, hardware, services, and training was let to Northern Telecom, Inc. of Nashville, a subsidiary of the large Canadian communications equipment manufacturer in December 1980 at a cost of over $10 million.

Major benefits to be derived from FRCS-80 according to the Federal Reserve include: 18/

> Accomodate more efficiently the significant communications traffic volume increase that has already taken place and the further increases projected in future years.
>
> Reduce the impact of communications outages.
>
> Accomodate evolving Federal Reserve System policies regarding centralization, decentralization, and regionalization of specific applications processing on both an intradictrict and interdistrict basis.
>
> Provide an internationally recognized communications standard for interconnecting authorized financial institutions to Federal Reserve System communcations services.
>
> Offer increased security of data moving within the Federal Reserve System.

The need for FRCS-80 is predicated on the Federal Reserve's problem that the current system is "now being pressed to its limits with a volume of 175,000 funds transfers and other bank-to-bank messages on an average day" 19/ and it will be unable to accommodate anticipated future traffic. Major concerns

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18/ Request for Proposal (RFP-1) for FRCS-80. Federal Reserve System. December 17, 1919. 21.

19/ Mitchell and Hodgdon. Federal Reserve and the Payments System. Federal Reserve Bulletin. v. 67. February 1981: 110.

center on reliability of the system, data security, lowering telecommunications costs, and the need to reduce Federal float in compliance with the Monetary Control Act of 1980. It is anticipated that FRCS-80 will enable the Federal Reserve over the coming decade to fulfill its requirements to service both the Federal Government and the financial community at large.

There is some debate about FRCS-80 placing the Federal Reserve in an unfair competitive position with the private sector. (The broad issue of Government competition with the private sector is addressed in Section III, below.) FRCS-80 will interconnect ACH processing sites and financial institutions and replace the old "bulk data system" between Federal Reserve offices. In fact, according to the Federal Reserve, "the major portion of the traffic to be accommodated by FRCS-80 will be files containing commercial ACH payments." 20/ Questions have been raised by representatives of private sector firms and some executive branch agencies about the chilling effect on competition created by the use of FCS-80 to support commercial ACH activities combined with alleged artificially low prices charged by the Federal Reserve for ACH services. There are related concerns that, given these factors, commercial wire transfer systems and the growing number of multipurpose electronic message systems will be unable to compete with FRCS-80.

4. Amendments to Regulation J

Federal Reserve Board Regulation J governs the clearing and settlement of payments. Subpart A specifies procedures for clearing and settling checks, while Subpart B specifies procedures for electronic transfers. The

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20/ RFP-1, op. cit., p. 30.

proposed Subpart C would set corresponding rules for use of Federal Reserve ACH services. The Federal Reserve Board issued proposed revisions to Regulation J for comment in November 1973. After consideration of these comments, the proposal was reissued for comment in January 1976. Subpart B was adopted shortly thereafter, but action on the more controversial Subpart C was again postponed. On November 26, 1979 the Board of Governors of the Federal Reserve System offered a new proposal to establish Subpart C of Regulation J. To date, no further action has been taken on adopting this provision, and existing agreements between the Federal Reserve and participants in the local and regional ACHs remain in effect.

There was substantial opposition to these proposals, each time they were offered, both by the private sector and several agencies of the Federal Government. In the case of the most recent 1979 proposal (Docket No. R-0262), both the Department of Justice and the National Telecommunications and Information Administration (NTIA) filed comments urging that action on Subpart C be deferred until some of the underlying policy concerns were addressed by the executive branch and the Congress.

Although the Federal Reserve consistently postponed action on Subpart C of Regulation J, it continued to enhance its ACH activities. For example, NTIA noted in its comments before the Federal Reserve that, while ACH operations by the Federal Reserve commenced in early 1973, it was not until the November 1973 proposal to amend Regulation J that the Board of Governors sought public comment on the appropriate role of the Federal Government in providing EFT services. 21/ Likewise, despite adverse comments on

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21/ Comments of the National Telecommunications and Information Administration. op. cit, p. 3.

the proposed interregional link-up between ACHs in 1977-78, the Federal Reserve completed this network of ACH facilities prior to reissuing its proposal to adopt Subpart C of Regulation J in November 1979. 22/ As previously stated, plans are now underway to upgrade the networking capability between ACHs through use of FRCS-80, although no further action concerning Subpart C has been taken.

B. PRIVATE SECTOR EFT SYSTEMS

A number of private sector electronic funds transfer services currently are available, although they are primarily in the area of point-of-sale (POS) systems used by merchants to verify credit and tranfer funds or automatic teller machines (ATMs). In addition, there is a growing number of timesharing services employing packet-switched networks to provide electronic message capabilities and access to various information and communications services. A few specialized interbank communications networks do exist as well which provide "wholesale" domestic and international EFT services.

1. BankWire

BankWire provides data communications services to commercial banks and depository institutions through a store and forward message switching network. Approximately 200 banks are members of the system and comprise the cooperative Payment and Administrative Communications Corporation (PAAC) which administers the network. BankWire provides EFT message service between participating banks, although settlement is done through

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22/ Ibid., p. 6.

the Federal Reserve. At present, a system to interface BankWire with Fedwire is in active development and is targetted for completion by the end of 1981. This would enable BankWire to provide settlement services to its members and guarantee same day availability of funds. In addition to its on-line network, BankWire offers a TWX/Telex interface which allows its customers to send messages to TWX/Telex addresses of non-member banks. 23/ Although not currently a clearing house, BankWire may be a potential provider of ACH services. Its President expressed concern, however, that Federal Reserve policies and pricing proposals could make it extremely difficult for operations such as BankWire to compete with federally supported ACH services. 24/

2. Clearing House Interbank Payments System (CHIPS)

CHIPS provides an international telecommunications system for transferring U.S. funds among the major world banks. Originated by the New York Clearinghouse Association, CHIPS handles approximately 90 percent of international interbank dollar transfers. One hundred financial institutions paricipate in CHIPS through a network of terminals and computers all linked to a main computer center in New York City. The system handles a daily increasing number of transactions. Recent figures show the average daily amount handled by CHIPS to be between $150 and $160 billion. Beginning in October 1981, CHIPS is scheduled to begin providing same-day settlement services.

23/ Halpin, William E. BankWire- Banking's Data Communication Utility. Cash Management Forum, v. 5, December 1979.

24/ Kutler, Jeffrey. BankWire President Urges Total ACH Overhaul. American Banker, v. CXLVI, February 9, 1981: 3.

This is expected to have an impact on both operating procedures and the amount of risk associated with meeting settlement obligations. 25/

3. Society for Worldwide Information and Funds Transfer (SWIFT)

Another established international electronic funds transfer system, SWIFT, began in 1973 as an effort to improve the efficiency of handling commercial transactions between major banks in Europe and the United States. Today it has a membership of approximately 750 financial institutions from 26 different countries. SWIFT operates its international message-switching system for processing bank transactions through a network of computers linked via leased lines to major switching centers in Belgium, the Netherlands, and the United States. SWIFT is wholly owned by the member banks and users are tariffed on a cost recovery principle which includes one-time charges, recurring direct costs, and per-message charges based on actual traffic. 26/

25/ Blanden, Michael. New Moves on Clearing Systems. The Banker, v. 131, April 1981: 125.

26/ Society for Worldwide Interbank Financial Telecommunications s.c., SWIFT, n.d.

III. POLICY CONSIDERATIONS

Modern technology is advancing at such a pace that government institutions often are unable to address the wide range of associated public policy concerns before these technologies receive widespread use. The increased efficiency often afforded by technological advances may be the overriding rationale for moving forward with implementation of new systems and services. As a result, there may be little attention paid to long-range technological impacts or broader national policies. Electronic funds transfers may be such a case in which new technologies are employed within the context of traditional operating procedures before underlying policy concerns are fully examined.

Throughout the last several years, there has been continuing congressional interest in the development of EFT services. Congress created the National Commission on Electronic Funds Transfer (P.L. 93-495) to address the complex issues surrounding electronic funds transfers and to recommend appropriate administrative and legislative actions. Included among the recommendations of the Commission were those concerning the effect of EFT on the consumer, the role of government in providing EFT services, and technological issues relating to privacy, security, competition, and standards. In addition, several legislative approaches were considered in the 95th Congress, but generally the need for EFT legislation was considered premature. The consensus of opinion was that a competitive environment with minimum restrictions would foster the most satisfactory EFT systems and that should abuses develop, necessary legislation could be introduced at that time. Further legislative actions are discussed in Section IV. C.

A. GOVERNMENT PROVISION OF EFT SERVICES

The Federal Reserve views its role in operating automated clearing houses as an extension of its statutory authority to provide check collection services. 27/ Furthermore, the Federal Reserve apparently sees the situation today for ACHs as parallel to that of the early twentieth century when the private sector could not support an efficient nationwide check clearing operation. Because Federal Reserve Banks also act as fiscal agents of the Federal Government, employment of modern technology is considered vital to fulfilling their responsibilities in the most cost-effective manner. In sum, the need for Federal ACH services and the establishment of FRCS-80 are justified by the Federal Reserve System on the basis that there must be universal availability of the payment mechanism; private sector alternatives at present do not exist; and more efficient methods for handling money transfers must be sought -- particularly in light of the requirements of the Monetary Control Act of 1980.

Several arguments have been made in response to this position as discussed in the following paragraphs.

1. Government Competition with the Private Sector.

The Federal Government traditionally defers to the private sector in providing goods and services with the exception of cases where it is specifically determined that non-government alternatives either do not

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27/ 12 U.S.C. Secs. 248(j), 248(o).

exist, are uneconomical, or otherwise fail to satisfy societal needs. OMB Circular A-76, which was most recently revised in March 1979, reaffirms this basic policy of reliance on the private sector for goods and services.

While it is believed that sufficient commercial alternatives to federally-operated ACHs do not now exist, there is concern -- especially in segments of the financial and data processing industries, the executive branch of the Federal Government, and Congress -- that future private sector offerings are being inhibited by the policies of the Federal Reserve. The pricing of ACH services at an apparently artificially low level was previously discussed in this paper in terms of its impact on private enterprise competition and provides one such example.

The issue of competition, however, may be viewed within the broader spectrum of the growing information and telecommunications marketplace. Many of the labels applied to computer and telecommunications products and services no longer fit in an environment where the technologies are merging and creating new capabilities. Furthermore, in the past, specific systems often were designed to provide distinct services, but today multipurpose data processing and telecommunications systems are able to support a number of different concurrent operations and activities.

The changing technological setting is illustrated by various EFT services. The Final Report of the National Commission on Electronic Fund Transfers issued in 1977 found that significant differences existed between POS and ACH systems. It therefore recommended that while the Federal Government should not be involved in POS operations, it was appropriate for it to continue to provide basic ACH services. 28/ The National Telecommunications and Infor-

28/ EFT in the United States, op. cit., pp. 210-219.

mation Admmnistration in 1980 argued, however, that these distinctions no longer were valid. It stated: 29/

> An ACH facility is merely an application of data processing and communications technology; it is not a service in and of itself, but rather a computer/communications systems through which transactions emanating from a diversity of EFT service offerings can be processed (e.g., POS, ATM, etc.) The system used to support the ACH functions is not unlike any other modern computer/communications system. Furthermore, it is an arbitrary technical distinction to differentiate between POS and ACHs, because there is nothing inherent in the technology that dictates that such a system is usable for only one function but not the other.

If one accepts the argument that ACH facilities are similar to other kinds of automated computer and communications systems and are capable of handling a wide range of operations, existing private sector technological and service alternatives are seen to be numerous. Payment systems utilized by VISA and American Express, in addition to service bureau operations like Automatic Data Processing, Inc., provide such examples of existing commercial EFT-like operations.

2. Conflicting Role of the Federal Reserve System

Another frequent topic in this debate is the question of conflict of interest. As stated by one commentator, "the Federal Reserve is placed in a position of conflict of interest by assuming the dual role of regulator and operator, supervising the very private entities with which it competes

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29/ Comments of the National Telecommunications and Information Administration, op. cit., p. 9.

or with which it participates in operating an EFT system." 30/

This dual role as regulator and competitor is accentuated by the recent establishment of pricing structures for services which the Federal Reserve provides. In certain instances, the Federal Reserve Board may be faced with deciding policies that have an effect on its competitive position as a service provider. The potential for conflicts between its responsibilities on the one hand as the regulator of the banking industry and on the other as the operator of major EFT systems may increase. Furthermore, there is some concern that the more involved the Federal Reserve is in the on-going operations of an EFT system, the less responsive it may become to broad public policy concerns.

3. Privacy Concerns

Modern technology provides for increased efficiency in the collection, storage, processing, and dissemination of information. At the same time, it also increases concern that fewer safeguards to personal privacy exist when large amounts of identifiable data are stored in central computers and are accessible through numerous communications links. In the case of EFT systems, there is the additional factor that new records are created where previously none existed -- for example, where electronic funds transfers are made rather than cash transactions.

The issue of personal privacy in EFT systems was a major topic addressed by both the National Commission on Electronic Fund Transfers and the Privacy Protection Study Commission. The reports of these

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30/ Einhorn, Theresa A. The Federal Government's Operational Role in EFT. University of San Francisco Law Review, v. 13, Winter 1979: 436-437.

Commissions saw specific threats to privacy posed by the increasing use of EFT services by both public and private sectors. The report of the Privacy Protection Study Commission concluded that: 31/

> the Federal Reserve System, which acts as a fiscal agent of financial institutions and the Treasury Department in some respects, is not constrained by either its government or its commercial clients, much less by any individual bank client, from disclosing information about a bank customer's account to other government agencies.

It does not appear that the Right to Financial Privacy Act of 1978 (12 U.S.C. 3401 et seq.) would alter this situation since the Act limits disclosure of customers' accounts by financial institutions, not by government agencies.

The use of ACH facilities for clearing POS transactions also increased the potential for abuse in the opinion of the Privacy Protection Study Commission. The ability to monitor an individual's movements could be enhanced through the use of information provided by POS transactions. Expanded regional and national networks for effecting EFT services, combined with the processing of POS transactions at ACH facilities, would increase the availability of information about a person's activities. In the Commission's view, "the surveillance potential of an EFT system becomes much more formidable...if government operates the facilities than when the service is controlled by private parties." 32/ It is for these reasons that the Privacy

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31/ Personal Privacy in an Information Society. The Report of the Privacy Protection Study Commission. Washington, July 1977, p. 116.

32/ Ibid., p. 122.

Commission recommended: 33/

> That no government entity be allowed to own, operate or otherwise manage any part of an electronic payments mechanism that involves transactions among private parties.

In recognition of these concerns, the Federal Reserve maintains strict internal policies for protecting the confidentiality of information. In addition, the description of FRCS-80 includes specific references to the use of encryption to safeguard information transmitted through the system. However, as discussed above, there are underlying privacy issues posed by Government operation of EFT systems that may need to be addressed further.

B. ALTERNATIVE PROVIDERS OF EFT SERVICES

Arguments can be made pro and con the provision of EFT services by parties other than the Federal Government. For example, other large banks which utilize Federal ACH facilities eventually could become private sector entities like the New York City Clearinghouse Association. The potential for more private sector ACHs may increase, particularly as the number of commercial ACH transactions grows. In addition, once BankWire is interfaced successfully with the Federal Reserve System, it may provide the impetus for the development of other systems of its kind.

Finally, there is increasing activity within the financial community to develop a variety of new computer and telecommunications services. Citibank, for

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33/ Ibid., p. 123.

example, is involved actively in acquiring computer service companies and establishing subsidiaries to handle a wide range of offerings -- from time-sharing services to database services. As part of these long-range plans, "two of its subsidiaries...will acquire and develop service bureaus to build up a nationwide computer network to service smaller and regional banks... When interstate banking networks are allowed, perhaps in the mid-'80s, Citibank is positioned to meld them all into a massive national banking network." 34/

Although some observers are in favor of large banks increasing their role in EFT activities, there are others who oppose it for a variety of reasons. One argument is that it is preferable to have a government entity universally offer financial services rather than allow the major banks to control service offerings. The concern here focuses on ensuring access to the payments system and protecting the competitive position of smaller banks. There are also those who fear that the major banks have an unfair advantage over the computer services industry when competing in the growing financial services market. The Federal Reserve Board currently is holding an inquiry on a challenge by the Association of Data Processing Service Organizations (ADAPSO) to Citicorp's proposal to create a data processing subsidiary. At issue is whether such data processing service activities are in conformity with current banking statutes.

> They point out that banks (especially the largest) can operate from a position of privilege that is denied the rest of the service industry. As well as fueling business with their money,

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34/ Emmett, Ralph. Citishare or Citigrab? Datamation, v. 27, March 1981: 48.

> they are privy to all kinds of sensitive information from their customers and the government alike. 35/

An alternative future situation may be one in which an openly competitive marketplace would provide the framework for offering EFT services. The growth in POS, ATM, and telephone bill payment systems, combined with the expansion of networks supporting credit card operations, gives an indication of the kinds of competitive EFT service offerings that are already in place. Some see this type of environment as optimal for ensuring efficiency and cost-effectiveness in comparison to monopoly operations run either by the Government or by the major banks. Although not ruling out the potential need for some kind of government regulation of EFT services, there is the widespread belief in Congress, the executive branch agencies, and information industries that services -- particularly for the private sector -- should not be provided by the Government.

On the other hand, there is concern that while competition might be effective for so-called retail EFT services, "wholesale" EFT services are more efficiently handled by the Federal Reserve. In addition, it is argued, by Federal Reserve officials, some portions of the banking industry, and others that the establishment of effective standards and the universal availability of the payments system may require Government involvement. Although there are alternative views as to which organization or organizations should provid EFT services to the financial community, there is general agreement that existing laws and regulations may need to be reexamined and amended to reflect changing technology and industry structures.

35/ Ibid., p. 48.

IV. CURRENT POLICY ARENAS

There are several arenas where debates on EFT policies have occurred which may serve as fora for future actions affecting the development of EFT services. At present, there is little focus on the issue of Government provision of EFT services. However, it is a topic which may receive renewed attention in light of the emphasis on competition in the telecommunications industry and as a result of Federal Reserve pricing policies and enhanced EFT services.

A. EXECUTIVE BRANCH

An interagency task force was established in 1980 to prepare an options paper for the President on whether and to what extent EFT systems should be provided by the Government. The task force existed for several months, but then became inactive. Each agency then focused its efforts on individual filings that it was submitting to the Federal Reserve Board. The task force has not been reestablished under the Reagan administration, nor have any specific policies regarding this issue been enunciated.

B. INDEPENDENT REGULATORY AGENCIES

1. The Federal Reserve System

The Board of Governors of the Federal Reserve System issued for comment proposed Subpart C to Regulation J most recently in November 1979. (See Section II.A , above for a summary of proposed amendments to Regulation J.) In addition, the proposed schedule of fees for Federal Reserve Bank services was published for comment on August 28, 1980.

Both of these occasions provided an opportunity for public and private sector entities to comment, not only on the specific proposals, but also on the underlying policies and principles.

Subpart C was proposed because the Board "felt it necessary to have a uniform, integrated set of rules under which ACH services would be available to depository institutions on similar terms and conditions." 36/ The Board received a good deal of public comment on the proposed Subpart C and to date no further action has been taken. As a result, the numerous individual agreements between Federal Reserve Bank facilities and ACH associations remain the basis for ACH operations. At the same time, the Federal Reserve has gone forward with the development of FRCS-80, which will provide an enhanced networking capability for ACHs. The Board considers that these actions (Subpart C and FRCS-80), however, "are not related to one another and were undertaken for reasons unrelated to expanding Federal Reserve EFT operations." 37/

2. Federal Communications Commission (FCC)

To date, the Federal Communications Commission has deferred to Congress and executive branch agencies concerning the issue of Government provision of EFT services. Former FCC Chairman Charles D. Ferris indicated that he agreed with the positions of the Department of Justice and the NTIA that "the proposed role of the Federal Reserve System in electronic funds transfer services raises significant

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36/ Letter from Honorable Paul Volker, Chairman of the Board of Governors of the Federal Reserve System to Honorable Richardson Preyer, Chairman, Subcommittee on Government Information and Individual Rights, House Committee on Government Operations. September 12, 1980.

37/ Ibid.

questions with regard to the inhibition of private sector competition." 38/ In addition, Chairman Ferris stated that the Commission has the authority to institute proceedings on its own motion under Section 403 of the Communications Act. However, he concluded that "it would not be desirable to do so in this case when the matter is being studied elsewhere...[and because] the scope of the Commission's jurisdiction over enhanced services like those which will apparently be provided over the FRCS-80 system is at issue...in the Computer Inquiry II proceeding." 39/

It may be noted that since Chairman Ferris' letter last year several changes have occured. First, the FCC approved the final text of Computer Inquiry II in December 1980 at which time it asserted that, in certain cases, it did have jurisdiction over enhanced services, although it did not define the specific limits of that jurisdiction. In addition, as noted above, the interagency task force which was to address the issue of Government provision of EFT services disbanded without issuing any final report.

Finally, although the FCC has not initiated any proceedings concerning this matter, it did become involved extensively in what may be regarded as a parallel situation — that is, the provision of electronic mail services (ECOM) by the U.S. Postal Service. In the case of ECOM, the FCC asserted that ECOM constituted a telecommunications service and was therefore subject

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38/ Letter from Honorable Charles D. Ferris, Chairman, Federal Communications Commission to the Honorable Richardson Preyer, Chairman, Subcommittee on Govenment Information and Individual Rights, House Committee on Government Operations. October 17, 1980, p. 2.

39/ Ibid., p. 3.

to FCC regulation. In addition, "the FCC's Common Carrier Bureau examined, and rejected as discriminatory on its face, the tariff application it had required Western Union to file." 40/ It is unclear if the FCC would consider FRCS-80 either a common carrier subject to tariff or an enhanced service which falls within the scope of Computer Inquiry II. The ECOM case, however, provides an example of how the FCC might choose to use the tariff process (for example, by placing certain restrictions on the common carrier) for inhibiting what they consider anticompetitive activities by a Government agency in providing telecommunications services.

C. LEGISLATIVE BRANCH

While both the executive branch and the Federal regulatory agencies are players in determining future EFT policies, ultimately the Congress may have to resolve this issue. This may be done either through the oversight process or through the amendment or introduction of legislation.

The recently enacted Monetary Control Act of 1980 provides one opportunity for new oversight activity. A review of the requirement to establish a fee schedule for the services of the Federal Reserve might address the question of whether these prices truly allow competition.

40/ Government Regulation of Government: the USPS, the PRC, and the FCC. Regulation, v. 4, May/June 1980: 6.

As stated by FCC Chairman Ferris, 41 /

> For example, while prices are to be set to recover total costs for all priced services over the long run, "[f]ee and service level incentives may be established to improve the efficiency and capacity of the present payments system and induce desirable longer run changes in the payments mechanism. "[45 F.R. 58690] This and other factors indicate that the establishment of a fee schedule will not eliminate the potential for non-compensatory pricing.

Legislation which would limit the Federal Government's role in providing EFT services was introduced in the 95th Congress. S. 2293 included a provision to prohibit Federal Reserve Banks and Federal Home Loan Banks from engaging in the offering of EFT services. Although hearings were held, the bill received no further action. Other legislative measures in the 95th Congress focused on consumer protection aspects of the issue. The Financial Institutions Regulatory and Interest Rate Control Act (P.L. 95-630) was signed into law on November 10, 1978. Title XX of the law, the Electronic Fund Transfer Act, deals with such problems of liability, error resolution, records of transactions, disclosure and stop payment. 42/

Since that time several EFT bills have been introduced and the Right to Financial Privacy Act passed. The focus of this legislation, however, continues to be on issues of confidentiality and questions of liability. For example, H.R. 1046 in the 97th Congress would require

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41/ Letter from Chairman Charles D. Ferris. op. cit., p. 3.

42/ U.S. Library of Congress. Congressional Research Service. Electronic Fund Transfer (EFT) Systems: Developments During the 93rd, 94th and 95th Congresses. [by] Pauline Smale. [Washington] March 18,1980. p. 9.

an electronic funds transfer service to destroy individually identifiable account information 45 days after the date of each transaction. Whether Congress will take any new actions in the area of Government provision of EFT services — either in the form of new legislation or amending existing laws -remains uncertain at this time.