Conference Series No. 13

THE ECONOMICS OF A NATIONAL ELECTRONIC FUNDS TRANSFER SYSTEM

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PROCEEDINGS OF A CONFERENCE HELD IN

OCTOBER 1974

FEDERAL RESERVE BANK OF BOSTON

THE ECONOMICS of a NATIONAL ELECTRONIC FUNDS TRANSFER SYSTEM

Proceedings of a Conference

Held at

Melvin Village, New Hampshire

October, 1974

Sponsored by
THE FEDERAL RESERVE BANK OF BOSTON

THE FEDERAL RESERVE BANK OF BOSTON CONFERENCE SERIES

NO. 1	CONTROLLING MONETARY AGGREGATES	JUNE, 1969
NO. 2	THE INTERNATIONAL ADJUSTMENT MECHANISM	OCTOBER, 1969
NO. 3	FINANCING STATE and LOCAL GOVERNMENTS in the SEVENTIES	JUNE, 1970
NO. 4	HOUSING and MONETARY POLICY	OCTOBER, 1970
NO. 5	CONSUMER SPENDING and MONETARY POLICY: THE LINKAGES	JUNE, 1971
NO. 6	CANADIAN—UNITED STATES FINANCIAL RELATIONSHIPS	SEPTEMBER, 1971
NO. 7	FINANCING PUBLIC SCHOOLS	JANUARY, 1972
NO. 8	POLICIES for a MORE COMPETITIVE FINANCIAL SYSTEM	JUNE, 1972
NO. 9	CONTROLLING MONETARY AGGREGATES II: THE IMPLEMENTATION	SEPTEMBER, 1972
NO. 10	ISSUES IN FEDERAL DEBT MANAGEMENT	JUNE, 1973
NO. 11	CREDIT ALLOCATION TECHNIQUES and MONETARY POLICY	SEPTEMBER, 1973
NO. 12	INTERNATIONAL ASPECTS of STABILIZATION POLICIES	JUNE, 1974
NO. 13	THE ECONOMICS of a NATIONAL ELECTRONIC FUNDS TRANSFER SYSTEM	OCTOBER, 1974

FOREWORD

The papers and comments included in this volume were presented at the thirteenth in a series of conferences sponsored by the Federal Reserve Bank of Boston. This Conference focused on the economics of the development of a national electronic funds transfer system.

Consideration of the issues raised in these papers will be necessary in the creation of a truly effective system, and we hope that this collection of papers will be useful to the wide number of policymakers, financial executives, and scholars with an interest in the evolution of the payments system.

Frank E. Morris
President

CONTENTS

Agendas for Action on The Payments Mechanism

George W. Mitchell

It now appears that coincident to this Conference, or a few days thereafter, a statute creating a Commission on Electronic Funds Transfer will have been adopted by the Congress. That statute will contain an agenda of public interest considerations the Commission shall take into account in its study of electronic transfer systems. The agenda set forth in the Act specifies several areas of potential public concern but does not purport to be inclusive of all relevant issues and interests. Your agenda specializes on the economics of electronic transfer. At the forthcoming annual meeting of the American Bankers Association, the agenda will focus on competitive issues in payments development.

My brief prefatory remarks today are intended to direct your attention to the importance of distinguishing payments issues that have public policy implications from those that are passé, are better left to data-handling technicians, or could be, in a truly competitive environment regarded as private arrangements between businesses and their customers.

The idea, for example, that the payments system should have a built-in element which can generate "float" and enables payors to defer actual transfer of funds by such strategems as paychecks delivered on Fridays or the writing of checks on remotely located banks is a relic of non-par banking days and 19th century transportation facilities. If, in fact, a payor needs a brief deferral in charges against his account, both banks and business payees have a variety of arrangements to accommodate him without perpetuating expensive, time-consuming check handling.

Other issues of limited public concern are the alternative techniques of electronic transmission and processing and the technical legal rules governing the movement of funds. The only real concern for policy makers in such areas is to be certain that the systems authorized permit equivalent access to public facilities and the ability of participants to use as wide a range of technical resources as possible.

George Mitchell is Vice Chairman of the Board of Governors of the Federal Reserve System.

Before turning to my agenda of public policy issues, which is partial at best, I need to characterize the status quo in our payments system as I see it.

In the United States most of the money transfer needs of individuals, corporations, and governments are now being met by a paper-based check system, which has developed through an evolutionary process over the past 300 years. Although many improvements have been made in this system — emanating both from technological and operational innovations — the basic method of making payments has remained essentially unchanged. A debtor prepares a paper instrument and forwards it to his creditor. The creditor deposits the instrument in his bank which, in turn, obtains the funds from the debtor's bank directly or through a clearing house or the Federal Reserve. The check, as the instrument of authorization, is physically transported from place to place and party to party in the process of payment. The actual movement of funds occurs, however, only at the end of a succession of processing operations and courier shipments.

Electronic data handling and transmission developments have shown that it is entirely feasible to alter this basic method of making money payments by replacing the paper instrument with an electronic image. The achievement of such a transformation is regarded by some as the ultimate goal in innovation in the payments mechanism. They choose to closely parallel the steps and procedures followed in the present paper system. Others look upon electronic processing as a revolutionary force providing not only a way of replicating check handling steps but of moving funds in an entirely different manner.

At the Federal Reserve we must be prepared to perform our clearing function so as to accommodate any technique of payment which involves the movement of funds from one bank to another and thus to cover the transition to an electronic payments mechanism which will be either evolutionary or revolutionary or both. During the transition period, and perhaps even beyond, it will be necessary to provide the consumer with alternative means of making payments. He will choose among these alternatives to fit his needs.

Federal Reserve offices now have the capability to clear and settle with member banks for credits and debits in check and wire form and very shortly will have the capability to clear and settle for payments on magnetic tape. Further, as is required in the automated clearing house operation, Reserve Offices will be capable of accepting payments in one form — such as magnetic tape — and delivering the payments in hard copy if the receiving bank is not equipped to handle wire input or tape.

Not everyone is aware that the upgrading of the Federal Reserve wire network was completed this past summer and at long last all Reserve Banks have installed integrated communications equipment. This wire network — in addition to the surface and air courier systems for the movement of paper — now provides the Federal Reserve with the capability to deliver payments by check, magnetic tape, hard copy, and wire form to

any bank in the nation, and for that matter to any other depository institution via a commercial bank. Increased volumes will not clog these delivery systems as they are capable of handling any expansion that is in reasonable prospect. Moreover, they are capable of extension to handle even larger volumes.

If the actual transfer of funds becomes separated from the flow of supporting information, as present trends suggest in the future it will, there should be a concentration of detailed money transfer information (payor and payee, their banks, date, amount and identification of transaction, etc.) in a limited number of major processing centers. Today, there are 620 major bank and non-bank processing centers whose activity is estimated to cover between 80 and 90 percent of the total U.S. check volume. In the thrift industry electronic accounting using contractual services has proceeded much more rapidly than in banking. I am told that in New England two-thirds of the mutual savings banks are serviced by three data centers and that as long ago as January 1973 three-fourths of the California savings and loan associations were serviced on-line by 11 data centers.

The implication of these recent developments is that one can envisage a payments system in which the movement of funds is completely divorced from the supporting documentation. As long as major banks maintain clearing balances at the Federal Reserve Banks, settlement will be by debits and credits to those accounts. But these settlements may be for aggregates involving large numbers of individual transactions which may go through entirely different channels. Thus, a payor bank in the case of credits would authorize a charge to its reserve account based on specified deliveries to processing centers of detailed item-by-item information. A payee bank could similarly receive a credit to its account for entries documented at one or more processor locations. Indeed, if this separation of payment from processing occurs, bank and non-bank credit card companies and retailers through their banking connections probably could displace a significant part of the check processing now handled by banks. As incongruous as it may seem to some, the economics and technology certainly are as congenial to such an eventuality as they are to the conventional handling of checks and settlement by commercial banks.

Turning now to issues of public concern, I would mention a few which seem to me to have been neglected, are particularly intractable, or urgently need early resolution.

One that has been neglected and should receive early attention concerns the confidentiality of data generated by payments transactions. This problem has been recognized by the public, the Congress, the banking system, and the Federal Reserve. The principal difficulties lie in how requisite security can be maintained in the depository and data processing institutions.

There is no question that access to individual customer data has been greatly facilitated in financial institutions — and their processing centers — by electronic payment processing and accounting. Given an intent to

achieve selective access to this body of data, the retrieval capabilities of the electronic system make possible the extraction of substantial amounts of information in a very short period of time. Statutory safeguards and standards probably should be incorporated into such systems to protect the public's interests and to insure complete confidentiality and privacy of customer financial information.

The problem is not a serious one for the Federal Reserve in view of our over-all security system covering money and check operations. We presently retain only that payment information required for settlement with member banks. This information is held in strict confidence within each Reserve Office and is retained only for the period of time necessary to complete settlement and reverse entries made in error. There is no reason for this policy to change in the transition to an electronic payments mechanism.

A more critical and very urgent matter that has been surfacing and resurfacing in the past year or two is the question of thrift institution participation in money payments. Most recently their access to electronic payment arrangements — mainly automated clearing house facilities — has become a contentious issue. In conjunction with the NOW account experiment in Massachusetts and New Hampshire, the Board announced a "pass-through" arrangement as the means by which thrifts could use Federal Reserve operated clearing and settlement facilities. This arrangement preserves existing competitive relationships between banks and thrift institutions in their payment role and thus does not prejudge Congressional action on the extent to which and the way in which thrifts can offer money transfer services. From the Federal Reserve point of view, it limits the number of endpoints in our settlement system and thus limits our costs.

So far as we can tell, the pass-through arrangement has operated successfully in the two-state NOW experiment, but there is doubt in the thrift industry that the arrangement will work satisfactorily in an automated clearing house operation. The reason seems to be that a separation of data processing and the movement of funds is contemplated in thrift-related transfers. In California, for example, a processor for a large number of thrift institutions would like to pick up tapes at the Federal Reserve office containing detailed credit or debit information affecting customers' accounts. While the movement of funds would continue to be in and out of the thrift institutions' commercial bank account, the processing of itemized transfer data would be performed outside of the banking system. ACH rules do not appear to accommodate such an alternative.

The general competitive postures of commercial banks and thrift institutions make it likely that the two industries will be unable to resolve their differences on payments participation without Congressional guidance. The differences here are complicated by other long-standing differences as to comparative powers, reserve requirements, tax treatment, interest rate ceiling differentials, and other matters, all having a bearing on their competitive capacity to attract loanable funds.

While the conditions and terms on which thrifts can offer money transfer services is of great importance to both industries, the interest of the public has suffered for some time from a lack of resolution of this problem.

A third issue in which the public interest languishes has to do with POS. Attempts to establish or maintain competitive POS beach-heads by various interests has delayed important pilot installations. There are, however, many unresolved questions of public policy associated with this development. Paramount among these are the following:

- Should joint ventures be permitted in point-of-sale developments? If so, what conditions should be attached?
- Should the location of off-premise terminals and automated tellers be restricted?
- What type of transaction should be permitted from the off-premise devices?

The resolution of these issues involves questions of competition, government regulation, concentration of economic power, and public participation. It is very probable that in the end they will be settled through the legislative process. By way of illustrating the thorny character of the POS problem, some of the economic implications associated with the use of joint ventures for such operations are instructive.

Inherent in the mode of operation currently being considered for point-of-sale systems are three conditioning factors. First, front-end costs are high for developing a system having the capability to effect the transfer of funds at the point of purchase. For example, our staff estimates the one-time costs for development of the computer switch capability alone on the order of $1 million. Annual recurring costs to operate the switch, including the cost of communication lines, are estimated at $500,000. The costs for the other required equipment, such as terminals, concentrators, and bank computer systems, add to these costs. It is not unreasonable to expect that the total development costs for a medium-sized system would exceed $4 million.

In view of these high front-end costs, banks contemplating installation of such comprehensive systems must be assured that a substantial portion of transactions in the bank's market area are eligible to use the system. This eligibility provides the potential for cost-effective operations, as the system is volume-sensitive and requires a large number of transfers to be cost-competitive with other payment systems. In many regions, the level of market penetration necessary for a feasible operation requires the aggregate market shares of several banks.

A second factor to be considered is that a merchant or other user of the system should not be expected to maintain a separate terminal for each participating bank, but rather should be able to effect transfers for all customers, regardless of bank affiliation, from one terminal.

The third factor concerns market shares in a given transaction market. It is not reasonable to expect that the merchant and all of his customers will use the same bank for demand deposit services. Each funds transfer in a point-of-sale system will have a credit and debit side which will be directed, in most instances, to separate banks.

Thus, cooperation among participating banks is a necessity for a viable point-of-sale service. The public convenience seems to require that all terminals installed in merchant or other locations should be capable of accepting transfers from any customer desiring to use such a service regardless of bank affiliation. The consequence of this arrangement, however, is that such cooperation implies shared terminal, concentrator, and computer switch facilities. Thus, there are attendant legal problems and restraint-of-trade implications. How to resolve the competitive and anti-competitive aspects of this operation has been the major deterrent in the development of the point-of-sale system in this country.

Various parties are being discussed as potential candidates for the ownership role in a point-of-sale system, including a consortium of banks, a dominant bank, a third-party non-bank entity, the Federal Reserve, and various unregulated entities such as credit card companies. I have no problem with this list — provided the public interest in service, convenience and cost is effectively policed by regulation, competition or public participation.

Bringing the nation's payments system into phase with present-day data handling practices has been slowed until recently by lack of competitive pressures. Now these pressures are beginning to appear, mainly in the form of non-bank participation. That competition comes from the thrift industry, from the data processing companies, credit card companies and major retailers. It may well result in significantly reducing the operational role of commercial banks without disturbing the aggregate of their demand deposits. In doing so, however, it will give rise to a Congressional review of how money should move in our present-day economy.

I trust that this Conference, as well as others in prospect, will provide inputs which will aid the Congressional Commission on Electronic Funds Transfer to reach an early resolution of this vital payments issue.

Developing an Electronic Funds Transfer System: Incentives and Obstacles

Edwin B. Cox

Introduction

The purpose of this paper is to set forth the principal issues which face those responsible for decisions affecting the timing and direction of movement toward an electronic funds transfer system (EFTS) in the public and private sectors. Lest the word *issue* be read as a pale or vague generality, let us understand that we will be talking about the areas of fact or of policy around which there are sharp disagreements or controversy, either because we do not or cannot yet know what the facts are, or because we have recognized that actions may be taken which serve some interests and harm others. In developing the dimensions of these areas of disagreement or controversy, we will necessarily be confronted with the array of incentives operating on each of the interested parties, and the obstacles facing them. To tell the full story, we will find it useful to recognize some dis-incentives and some non-obstacles, as well.

The treatment of some issues in this paper will be brief, since the papers to follow will concentrate on a number of them and emphasize the perspective of each of the major payment system participants.

Background

This is neither the time nor the place for a detailed history of the development of elements of an electronic funds transfer system for the United States. That history is far from complete and a substantial number of those who have made and will make that history are participating in this conference. There are, however, several important facts in the history which must be understood because they shed considerable light on the issues.

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The views and legal opinions expressed herein are those of the author and are not attributable to any organization. Much appreciation is expressed for the patience and talents of the EFTS team of Arthur D. Little, Inc. of Cambridge who provided the author with some understanding of what EFTS could and should become.

Earliest concern with the payment system was rooted in the fear that growing check volumes posed a threat to the continued satisfactory performance of the system. Studies sponsored by the Federal Reserve System and by several national associations of commercial banks in the 1960s placed virtually their entire emphasis on two areas: measuring the national check volume, the pattern of the flows of checks into and through the banking system, and check processing costs; and offering technical and economic feasibility assessments of electronic alternatives of the time to the check clearing and collection system. The emphasis throughout was on the use of electronic means to replace checks, or to reduce check handling, through systems created and cooperatively operated by groups of commercial banks, with a key role implied or advocated for the Federal Reserve System. The SCOPE program in California was initiated during this period, and throughout its history has reflected the emphasis and philosophy of those early studies. It was designed to create, and did eventually lead to the creation of, a regional system for displacing checks by substitution of preauthorized electronic payments.

If one grants the premise that the paper-oriented payment system was inevitably headed for operational difficulties, there is no ground for arguing with the concepts or objectives of these early studies and the California SCOPE project. Clearly, it is in the interests of the commercial banking industry, and the society it serves, to make changes that will prevent an otherwise inevitable catastrophe. I think we will all agree that serious breakdown in the check payment system — such as inability of many banks to make the proper debit and/or credit entries ordered by their customers with the accuracy and promptness they expect — would be a catastrophe. The system is the most visible and most widely relied on service provided by commercial banks; and any widely known disruption in its performance would be taken as a serious indication of not only operational but financial difficulties in the nation's banking system.

Whether the risk of such a disruption ever has or ever will exist is a question that has been debated and researched, but there is still no consensus on the point. Some observers cited the rate of growth of check volume during the 1960s, and noted as an analogue the operational difficulties in the brokerage industry, as proof that trouble with the check payment system was inevitable. The analogy was false then, and still is. Research by our company for the Monetary and Payment System Committee in 1970 indicated that the banking system had at least 10 years during which the check payment system would survive, and that these years would afford time for experimentation and evolutionary development toward an electronic funds transfer system. Our conclusion did not embody a recommendation that the banks do nothing for 10 years, nor did we imply that a breakdown in the check payment system was inevitable some time after 1980. Experience with the check processing system since 1970 shows that our finding is at least 40 percent right — we have made it through 4 years of the 10-year decade.

However, there is still varied opinion on the ability of the system to be kept in a healthy condition. Clearly, it will not remain operationally sound without continuing careful management and investment; few systems do. There are those who insist that the system is not only performing well, but could be improved through wider use of available technology and through some procedural modifications involving agreements between commercial banks and with the Federal Reserve System. Others are deeply concerned about the evidence of high costs and large and rising numbers of malfunctions in the system. A recent study of the performance of the system by the Bank Administration Institute showed that the cost of processing exception items reaching the check processing area was approximately 25 percent of the industry's 1973 direct check processing costs, and attributed the increasing number of exception items to the extraordinary higher speeds of check processing currently experienced and the increasing volume of checks. The escalating cost of handling exception items results from growth in the complexities and time involved in resolution, reconcilement and adjustment of cash letter differences and discrepancies. Thus, one might conclude that it depends not only on the evidence in hand, but also on your view of the situation — whether you think efforts to develop an electronic funds transfer system can be justified entirely on the grounds of the necessity to avert inevitable disaster in the check processing area.

It must be recognized that we are talking about a system with a high level of interdependence among the participants. One bank, or the banks in one area, may, for whatever reason, have their portion of the system under tight control. However, they cannot maintain the health of the system alone. This interdependence seems likely to continue, no matter what changes are made to the current system or new systems introduced. The system has also been characterized as highly flexible and its flexibility has been cited as one of its great strengths. Only if this flexibility is preserved, and every check can move quickly and accurately by some means from the bank of first deposit to the writer's bank, will users of the system remain satisfied.

The Federal Reserve System has taken steps to speed the movement of checks and to reduce float, both aimed at providing a more efficient payments system to the public. The step with the greatest impact to date has been the combined introduction of regional check processing centers and the changes in schedules of fund availabilities. Spokesmen for the system maintain that these actions are having the desired effect. I have no reason to take issue with that view. However, we should recognize that there are three closely related characteristics of the check payment system. The amount of float, the quality of system performance, and the total cost of the system are like three sides of a triangle; none can change without changing at least one of the others. The desire to gain fund availability spurred commercial banks to speed up check processing in every possible way. The Federal Reserve System has introduced regional check processing centers and changes in operating rules and regulations to reduce

float, and these moves have the effect of making the commercial banks try to move checks even faster. The ultimate balance among float, system performance and system cost is determined by Federal policies and the profit maximizing decisions of commercial bankers. Thus, the Federal Reserve must recognize the possibility that actions it takes to achieve entirely proper goals may have negative impacts on the quality of performance of the system. Moreover, as the Federal Reserve assumes responsibility for a larger operating role in the check processing system, its own quality of performance gains greater importance in determining overall system performance. There are commercial bankers who express critical views of the operating performance of the Federal Reserve and hold their component of the system partially responsible for deteriorating check collection performance.

To sum up this point, it is still not clear that the original reason cited for undertaking development of an electronic payment system is valid, nor is it clear that the cooperative, check-processing-oriented changes resulting from following through on that assumption would be successful in displacing enough check volume to avert the expected system breakdown.

Fortunately, commercial banks, other depository institutions, several agencies of government, and private nonfinancial corporations have shown interest — in varying degree — in participating in the development of an electronic funds transfer system, for reasons having little or nothing to do with present or possible future inadequacies of the check collection system. The most important single lesson in the brief history of the development of an electronic funds transfer system is that the original reason for advocating change did not and never would have attained the necessary broad support, but incentives unrelated to the original reason have appeared which now seem likely to bring major changes, including the displacement of a substantial portion of total check volume.

So, while events are moving ahead to replicate the results of the California SCOPE program by creating automated clearing houses in other parts of the country and coordinating this activity through the National Automated Clearing House Association, the emphasis in thinking and action in EFTS development is elsewhere.

With the exception of the concern of thrift institutions over their means of access to automated clearing houses, most of the controversy and serious policy issues now center on the point-of-sale terminal, automated banking equipment, and supporting communications facilities. These technological possibilities raise serious questions of locations, sharing, control, standards, and access because depository institutions and retailers perceive their considerable potential for improving or endangering competitive relationships in the provision of payment services and credit to consumers. Thus, most of the action in the payment system arena now results from strong competitive incentives and fears of partial or complete loss of market position. "Serving the public" is advanced as the motivation by spokesmen for financial and nonfinancial institutions involved in payment-system developments. Concern for the public may

not be lacking, but the old Quaker motto appropriately describes the real motivation — "Doing well by doing good".

If we are to deal realistically with the subject at hand, we should recognize the true incentives and obstacles that affect the behavior of government, private institutions, and individuals with respect to payment-system change. In many respects, they are not mutually compatible. Only by recognizing and understanding the basis for the forces currently operating in the payment-system area can viable public policy and private strategic and tactical plans be formulated and implemented.

Incentives and Obstacles

In searching for an appropriate title to describe the content of this paper, we looked for a pair of words which would suggest a balanced treatment dealing with the factors which are currently operating to lead in the direction of change in the payment system and those operating to preserve the status quo. Pairs of words like pro and con, positive and negative, benefits and costs, and others came to mind, but each was inadequate to some degree. The longer I have lived with "incentives" and "obstacles" the more uncomfortable I have become, since there is a strong value connotation in these words. "Incentive" suggests a good or ennobling motivation and "obstacle" suggests a regrettable, negative, potentially harmful barrier we wish were not there. Beyond that, the characterizing of forces or realities as incentives or obstacles persumes the writer has identified with a particular perspective or viewpoint on the situation, since one man's incentive may be another man's obstacle. Unfortunately, we have found no better terms, so I must leave to you the discounting of the value judgments inherent in the two words.

I propose to set down briefly the incentives and the obstacles that appear to be operating currently for each of the participants in payment-system developments and then discuss the sources of these incentives and obstacles in terms of a series of focused issues, which have emerged from research by the Arthur D. Little team during our current assessment of the impacts of payment system changes for the National Science Foundation. Several other participants in this conference are related to the project in some way and I am sure their prepared papers or occasional comments will amplify — and perhaps occasionally differ from — my remarks.

There are three major incentives operating, and in the interest of alliteration, I will express each beginning with the letter "P" — Profit, Personal Benefits, and Public Good. Profit is the ultimate aim sought by any private business organization in considering its role in the payment system. This includes commercial banks, and other depository financial institutions, non-depository financial institutions, retailers, and all other non-financial and non-retail private business organizations. The particular characteristics of each business organization dictate the manner in which payment system change can influence profits, and therefore the issues which appear to dominate its thinking in this area.

For example, an integrated steel producer has devoted no thought to point-of-sale terminals, acceptance of a debit card for purchases, Bill-Check, or any other consumer-payment-oriented mechanism. The firm's financial officers may be considering the effect on payroll preparation costs and on employee attitudes — particularly evidenced through union behavior — since these are the forces operating to influence a decision to take part in a preauthorized payroll deposit program. Effects of such a program on float, and the effects on float of any change in the manner of handling business-to-business payments are of great importance to the integrated steel producer and are ultimately expressed in implications for costs, income, and profits.

The consumer-oriented, non-financial business that is not in the retail merchant category, such as a utility, a transportation company or a professional service business, is concerned with the profit implications of changes in the means of billing and receiving payments from customers, as well as changes in payroll and business-to-business payments. Retail merchants have the added requirement to weigh the profit implications of changes in the way payments are received from customers at the point of purchase and whether the payment procedure may impact current practices in the use of credit as a merchandise tool.

Finally, financial institutions recognize the possible implications on profits of providing new payment services, with attendant implications for costs and revenues. Major concerns over gains or losses in market share, opening up new markets to themselves or competition, and possibilities for cross-selling customer services make the implications of payment-system change on profit abundantly clear to financial institutions, and most particularly depository institutions. Thus, profit, or its surrogate in a cooperative or mutual organization, must be the ultimate incentive in decisions on the role of the private business in payment-system change.

Personal Benefits, when compared to personal costs, will ultimately determine the acceptance of new patterns of payment-related behavior by individuals. Thus changes which preserve or improve choice and control, offer convenience and a necessary degree of privacy at acceptable costs will be welcomed by the individual. Individuals appear from our research, and from the research of others, to be quite well satisfied with the service they receive from the present payment system; therefore, the word incentive hardly seems appropriate in characterizing current attitudes of individuals toward payment-system change. Incentives will have to be created, in the form of enhanced service characteristics and/or lower costs in time, effort, or dollars, before individual attitudes will begin to change significantly.

Public Good and its enlargement lie at the root of actions by Federal Government agencies to influence payment-system developments. The direct deposit program of the Treasury is an attempt to increase the security of the public funds distributed to individuals and lower the cost involved. The Federal Reserve System seeks to improve the efficiency of the nation's payment system, increase the efficacy of monetary control, and

reduce float. In the name of the Public Good, other regulatory agencies with the responsibility for monitoring and preserving the financial integrity of certain types of depository institutions are taking varying degrees of initiative in fostering payment-system initiatives on the part of institutions they monitor.

It is easier to catalogue the incentives than the obstacles, since the obstacles are numerous and considerably diverse in nature. The outstanding obstacle, from the point of view of those who wish to stimulate changes in the payment system, is the inertia among present users, which is rooted largely in their satisfaction with the present system. One of the ironies of the subject before us is that it is the producers, not the consumers of payment services, who find strong motivations to change.

Another obstacle of consequence is the necessity to build new interfaces between business organizations. In some cases these interfaces will be relationships involving cooperation between competing organizations, while in others they are relationships between organizations that have never been forced to interact in the area before. Commercial banks have long cooperated in check clearing, but some aspects of the operations and administration of automated clearing houses have required new forms of cooperation among commercial banks, and between commercial banks and the Federal Reserve. At the same time, the commercial banks are carefully preserving the competitive opportunities for new services they can provide through the automated clearing house. A new dimension was added by thrift institutions, which have sought, and to a degree won, new relationships with commercial banks and with the Federal Reserve System because of automated clearing houses. Their claims in this area are not yet fully satisfied. Point-of-sale technology is raising issues centered on the creation of a merchant-depository institution interface. The bank card began this process, but point-of-sale technology may carry it much farther into complexities and controversy.

The regulatory and legal environment reflects technical realities of the past, but in many areas it is unprepared to deal with the technological possibilities of the future that will quickly become the technological realities of the present. Recent events have clearly established the legal and regulatory environment as the source of serious obstacles to payment system development. To illustrate with a few examples: Is the check acceptable as, or required as, proof of payment by the Internal Revenue Service in an income tax audit? Are funds directly deposited into a demand deposit account by an employer subject to attachment when they would not be if paid in cash? Is an automated teller machine a branch of a commercial bank — or of a savings and loan association or a mutual savings bank? Can a commercial bank install an on-line terminal at a merchant location and offer the services of the terminal to other card-issuing organizations for a fee? Can a commercial bank install in a merchant establishment a terminal device allowing deposits and withdrawals by its customers? Can depository institutions of the same type or of different types share an automated teller machine owned by one of them, or

owned by an independent service organization? and, Who is liable for losses suffered by individuals or organizations through system malfunction?

Obstacles exist in a host of other areas including the absence of agreement on a number of critical, technical standards, uncertainties surrounding costs of system design and implementation, lack of agreement on pricing of new services, uncertainty regarding performance of critical system components, need for training personnel, substantial investment in present systems, concern over risks of invasion of privacy or financial fraud, and uncertainty as to the impact of float loss or gain.

In the following section of the paper several of the critical issues just mentioned will be considered at greater length. These will undoubtedly be issues taken up by subsequent speakers and examined from several perspectives.

Critical Issues

On June 13, 1974 in conjunction with our technology assessment project for the National Science Foundation, Arthur D. Little, Inc. sponsored a day-long conference at which representatives of the constituencies with interest in payment-system change discussed the issues they saw as critical from their perspective. Participants included representatives of commercial banks, savings and loan associations, mutual savings banks, credit unions, consumer finance companies, large retailers, corporate financial officers, small businesses, equipment suppliers, union members, and consumers. In 3 hours of presentations and 20 hours of small group discussions among participants, several areas of consensus were established:

- The public interest is of primary importance in EFTS decisions; public policy should be guided by a determination of the economic and social costs and benefits of payment-system change and should be especially concerned with how these costs and benefits are shared.
- The technology through which possible changes in our payment system can be effected is not yet fully identified, so that even potential impacts of changes using the technology will be subject to considerable uncertainty for some time to come. Change probably will and should occur in the face of this uncertainty, suggesting that decisions in the public and private sectors must be made subject to review and change as events unfold.
- Each participant in the process of payment-system change will play his role (initiate, cooperate, resist, or prevent) according to his reading of his own interests. There is no consensus that the need for change is obvious, or that change is inescapable. Therefore, those who favor change will have to win the support and participation of those adequately satisfied with the present arrangements.

Acceptance

One of the concerns which is shared widely by government and private agencies and organizations involved in fostering payment-system change is the extent of willingness on the part of individuals and business organizations to accept change. Considerable survey research has been conducted to determine the attitudes of individuals and business organizations toward particular payment-system innovations, and we have some limited evidence of actual behavior toward new payment-system concepts as they have become available. Time and space prevent a detailed review of this evidence here. In general, individuals have not shown a strong interest in payment-system changes when they have been described to them in the abstract during an interview or on a questionnaire. Considering the fact that we see little evidence of dissatisfaction with the present payment system, this should not surprise us. In effect, people are telling us that they are well served with a system that is familiar and satisfactory to their needs. An abstract description of alternatives, which would require new patterns of behavior and the acceptance of some risk and perhaps new costs, is unlikely to elicit strong positive support, no matter how acceptable the alternative may later become when it is a reality.

Usually, that which is new has a stronger appeal to the young and to the better educated, the "style setters" and "opinion leaders" in marketing terminology. Payment-system changes are no exception. Those who have already shown interest in innovative products with some characteristics similar to those of proposed new products also tend to look with greater favor on the new ones. Users of bank charge cards show a somewhat stronger interest in payment-system innovation than non-users. Those who are heavy users of checks show greater interest in new payment services than average or infrequent check writers.

These are survey results. What evidence do we have from actual experience? The results are mixed. Financial institutions that have installed automated banking equipment — cash dispensers and automated teller devices — report reactions varying from keen disappointment to outstanding success. These reactions reflect the amount of use made of the equipment and the evidence that it has helped increase market share by attracting new business and cross-selling present products. The growth in the number of bank card holders through the relatively few years of the bank cards' existence as a national phenomenon must be counted as a tribute to the marketing ability of commercial bankers. Merchant acceptance has continued to improve, and as current volume expands, merchant satisfaction grows proportionately. Banker satisfaction with the card varies widely, depending upon the earning experience of the individual bank and belief in the card's ability to further the overall retail marketing objectives of the bank. In light of recent interest rate levels, the statutory ceilings on interest rates charged on outstandings have served to dampen bankers' enthusiasm with the card, at least in terms of its ability as a revenue generator. I recognize that there are those who do not consider the card as

precursor of payment-system changes or as an integral feature of a new payment system. My point is not to take issue with those views, but to cite the market acceptance of the card as an indicator of customer response to new banking services when they are designed and promoted with customers' needs in mind.

The checking account must be considered a phenomenal success, once again demonstrating the ability of banks to secure heavy market penetration with a product designed and promoted with customers' needs in mind.

Preauthorization is another story. Preauthorized payroll deposit has not been aggressively promoted, and has achieved acceptance to only very limited degree, primarily among salaried employees. Something under 10 percent of those on regular payrolls now have their paychecks deposited directly. Preauthorized payments of insurance premiums, utility bills, mortgage payments, and installment loan payments, while growing slightly in numbers in recent years, still are relatively rare situations affecting a very small percentage of consumer financial obligations.

The impression this varied experience creates is that consumers in substantial numbers show interest in new financial services when they meet felt needs and are aggressively promoted. Consumers are not out shopping for new financial services and are unlikely to embrace them merely because they are available.

The attitudes of business toward new payment services are best described as extremely cautious. Businesses show little interest in changing the means by which they pay or are paid by other organizations — government, business, or institutions. With the help of their bankers, the managers of financial affairs for most businesses have refined the art of cash management to minimize their balances and maximize float in their favor, and see little merit in any changes that are not to their advantage. Changes which may speed money from individuals to businesses have appeal for these same reasons, but the appeal is tempered by the desire, particularly on the part of retailers, to preserve methods which have customer support. Businesses do not want to enter into new payment mechanisms if their relations with customers or employees are threatened. Employers suggest, for example, that they might be willing to make the necessary changes to provide for direct payroll deposit of their employees' paychecks, but only after the financial institutions have convinced individuals that this is desirable, so that the business organization is not seen as the perpetrator of some new technique likely to serve its interests and not those of its customers or employees.

Merchants play a special role in payment-system change. Retailers accept a substantial percentage of checks written by individuals, either at the point of sale or by mail in payment for merchandise; they also often provide check cashing service as a customer convenience. The principal concern of merchants is that full consideration be given to the importance to them of the merchant/customer relationship in the design and introduction of new payment means. Merchants are quick to point out that the

means by which customers make payments are of little or no concern to the merchant; that his sole concern is selling merchandise to satisfied customers. Retailers large enough to preserve unique relationships with their customer group will do so as long as possible.

To sum up, new payment techniques are not being demanded actively by payment-system users, since they are satisfied with the present system. However, if new payment techniques can be designed, priced, and marketed so that early users discover genuine advantages in comparison with the present means available, acceptance will follow and penetration will occur in a way characteristic of many new consumer products. The rate and magnitude of this penetration will be known only when we have several years of experience. It is likely to be speeded if the government and business interests who favor change can make allies of the other participants in the payment system — individuals and business organizations, with emphasis on retailers. Allies are those who have recognized that common interests are served by cooperative action. If you seek allies, you must find and call attention to areas of common interest and demonstrate willingness and ability to act cooperatively. This is a lesson being learned very slowly in payment-system development.

Competition

As noted earlier, competition is proving to be a much more effective force leading to payment-system change than the early concern over the threat from growing check volumes. Commercial banks and other depository financial institutions have recognized the potential of the new technologies associated with the payment system for the creation and marketing of new products to individual and commercial accounts. Various other types of financial institutions see the promise and threat of the technological possibilities and are moving to capitalize on the promise and defend against the threat. Financial and non-financial organizations are each recognizing — in some respects with amazing slowness and hindsight — the actual or potential role that others play in the payment system.

All of this ferment contains the seeds of substantial realignment among businesses of varying types or of varying sizes within the same type group. For example, the thrift institutions and the commercial banks are jockeying for position both nationally and in local markets. Evidence of this abounds. Thrift institutions have sought and won membership in national "bank" charge card organizations. They have gained the power to offer interest on accounts which are in the consumer's eyes equivalent to demand deposit accounts. We are all aware of the dramatic breakthrough in Lincoln, Nebraska, where the First Federal Savings and Loan placed terminals in supermarkets so that its account holders can make withdrawals or deposits at the supermarket without regard to the hours of business at the savings and loan branches. Service innovations, such as the WSFS plan of the Wilmington Savings Fund Society and the shared automated facilities in Bellevue, Washington demonstrate the intention of thrift institutions to innovate.

Commercial banks have not been idle. The bank credit card certainly proved that the commercial banks can successfully innovate customer services related to the payment system. I need not belabor the thesis that the bank card in many ways is a base on which both individual banks and the commercial banking industry can build new payment-related services. The evidence is clear in the existence of a national authorization system for each of the major bank cards, and strong commitments, being backed up by action, to elaborate the systems into payment information transfer systems and ultimately fund transfer systems.

There are some in the commercial banking community who have committed substantial effort and financing to concepts which may prove to be successful in displacing or substantially altering the role of the national bank credit card as we have come to know it. It is my impression from published information that Citibank has been hard at work in technical and market research designed to help reach decisions leading to a major entry by the bank into payment-system activity involving individuals, other depository financial institutions, and other business organizations in new patterns of relationships and using new technologies. The commitment to these research and development activities is consistent with Citibank's highly articulate and well-reasoned presentation to the Federal Reserve Board of Governors in response to the invitation for comments on proposed changes in Regulation J. The theme of the Citibank response is that any governmental actions should be grounded in the principle of maintaining a free marketplace for the introduction of payment services, consistent with the public need for service. Donald Baker of the Justice Department has stressed this reasoning in his compelling statements in this area.

The views of retailers on payment-system change are consistent with this philosophy to the extent that they urge a minimal role for the Federal Government, both in the regulatory and the operations aspects of the payment system. The retailers are also very clear in their view that they want to retain their freedom and ability to establish and maintain relationships with customers without a financial institution being involved. Major retailers want to preserve their freedom to compete with each other and with medium and smaller-sized retailers. But with regard to the payment system, their greatest concern is the preservation of their freedom to compete with financial institutions in the offering and management of credit—an activity they regard as vital to their marketing.

Businesses outside the depository financial institution and retail categories have not made much impression thus far, but what little has been said also carries the sense of preservation of existing independence and options. In effect, no one wants to give up any real or perceived independence and freedom to act in his own interests.

Consistent with this philosophy is the widespread view that the role of the government in the payment system should be restrained. However, the point at which the restraint should be exercised depends heavily on

each organization's reading of the potentials for benefit or harm to it arising from government involvement. Thus, commercial banks, which have long accepted the key role of the Federal Reserve System in the payment system, have, with few exceptions, supported the notion that there is a proper operational role for the Federal Reserve System in an electronic funds transfer network. This role, by almost unanimous consent, includes the operation of automated clearing houses and their interconnection to form a national network. Where the matter was under active consideration, commercial banks seemed to favor the Federal Reserve's operation of switching and processing centers in support of point-of-sale networks for limited geographic areas.

Could it be that the commercial banks see the Fed as a friendly and cooperative ally in protecting their role in the payment system? Certainly, the savings and loan institutions, and their regulatory agency, the Federal Home Loan Bank Board, see it this way and have flexed their muscles at every opportunity to gain parity in the payment system. Where legal or regulatory opportunities opened, thrift institutions have taken several significant steps in payment-system activity beyond anything that commercial banks can presently achieve. Depending on your point of view, the savings and loans have either narrowed the disadvantage gap which still exists between themselves and commercial banks with respect to payment-system powers, or gained a new competitive edge which is unfairly detrimental to commercial bank interests.

Lest we forget, there are several powerful points to be aired on the negative side of the competition issue. We are talking about complex and expensive technology. The claim is made that only the rich, i.e., large and well-financed members of any constituency, will be able to establish a position of independence and control in an electronic payments environment, so that the vast majority of banks, merchants, and other organizations which rely heavily on efficient payment services will become dependent upon the few who are large enough to "play the game." Thus, the glories of competition are sung most loudly by the few who know that they have the resources to play the game, while everyone else quivers at the thought that they may lose some of their independence and options when the smoke on the battlefield of competition clears. At the extreme, this concern leads to the conclusion that the government, directly or through sanctioned and closely regulated private organization(s), should pursue whatever electronic fund transfer system is deemed "best" and be sure that it is available on equitable terms to all who wish to use it. Any policy falling short of this will confer unfair, and, in some sense, undeserved advantages to organizations which are either larger than or different in nature from those making this argument. The rebuttal, in its simplest form, is that relying on actions in an open, competitive marketplace will improve the chances that society will ultimately be served by a "better" system at the lowest cost with options preserved in terms of both sources of service and services to choose from.

The technology likely to characterize the future electronic funds transfer system is such that major investment will be required to bring the system to maturity and large transaction volumes will be required to realize low costs, and thereby low prices, for users. The competitive approach is likely to involve substantial duplication of investment and fragmentation of volumes among competing systems. Therefore, those who question allowing free reign for competitive efforts assert that the costs to society will be much greater than if government action or government-sanctioned private action is relied on to bring about the ultimate system. Using the present dual bank charge card systems as an example, proponents of this viewpoint submit that merchant discounts could be lowered and bank card operating results improved for the banks if the duplication of investments and operating costs were eliminated. Further support for this view is argued from the fact that, from an early multiplicity of competing private telephone companies, a single national company has emerged to dominate the scene, with only pockets of independence remaining and those dependent on the national system for survival.

A third argument, which is related in degree to the earlier two, but sufficiently different for separate discussion, is that new payment-system technology requires such a degree of cooperative effort among participants that only a single monopolistic system, separate from the control of any of the participants, can avoid the legal roadblocks which will thwart realization of the full potential of an electronic payment system as long as initiative and control from the private sector are relied on. The sharing of facilities by different financial institutions is both possible and desirable from the technical and customer point of view, but there is much in present law and regulation frustrating the introduction of shared facilities. Single, full inter-connected communications systems are essential if the ultimate of convenience and control sought by consumers is to be achieved.

Summing up this area of concern, the merits of preserving an atmosphere in which all who elect to are free to create and market payment services deserve serious consideration, together with the goals of the preservation of options for system users, the achieving of maximum efficiency at minimum cost, and the need for cooperation to achieve the full potentials for service and economy.

Impacts

Much of the preceding discussion dealt directly or indirectly with concern over the implications of changes in the payment system on various parties at interest, i.e., the impacts of these changes. There are several areas that hold the potential for important impacts which deserve mention that they have not yet reached.

Consumers have not been represented by any organized voice in discussions of the pros and cons of payment-system change, since these discussions have usually gone on at conferences sponsored by national or local groups of financial or nonfinancial business organizations. In the

conference I earlier referred to, spokesmen from labor and consumer groups raised several serious concerns. Consumers fear that the advent of a national integrated electronic payment system will deprive them of choice in a variety of ways. They feel they may have to concentrate all their financial relationships with one depository institution. They may no longer have the varying sources of credit now available to them if retailers turn over the credit-rating function to financial institutions. Preauthorization arrangements, direct payroll deposit, point-of-sale terminals, and other innovations present the image of submission by the individual to the requirements of a complex, impersonal, massive and unresponsive system. Make no mistake about it, descriptive statements, non-return of checks, direct payroll deposit, preauthorized payments, plastic cards, computerized audio responses, and the other innovations allowed by or required by technology seem to be dehumanizing influences. Individuals are concerned with the matter of privacy, fearing that the further accumulation of information about them, in places and under jurisdictions they neither know nor control, can only expose them to unfair harassment. The very capability that leads some bankers to emphasize the possibility of offering consumers services designed to help them manage their financial affairs is a menace some consumers fear. Furthermore, consumers cannot believe that a new system which requires some visible and vast amounts of invisible investment in hardware and software is not going to increase the costs of getting and spending money; and they are convinced that they will pay the bill. Consumer and labor spokesmen are alarmed at the possible "disenfranchisement" of members of lower income and minority groups from their right to participate in the payment system. Any suggestions that the receipt of a paycheck or any form of payment from public funds may require the recipient to have a bank account is seen as an unfair form of compulsion. From first-hand experience or rumor, many in these segments of the population believe they cannot establish a banking relationship. Others feel that a banking relationship will expose their personal affairs to agencies of government they do not trust. There is also the feeling that participation in the new ways of receiving money will inevitably lead to some restriction on the freedom to use that money as they wish. The possibility of wages deposited directly into a banking account being attached by a creditor alarms those familiar with the money management habits of the poor.

The possible impact on the ability of individuals to obtain credit in the new payment system environment has been argued from all sides. Some argue that the possibilities will be restricted and that is bad, while others see the same possibility and label it good. Some feel the possibilities for credit will be increased and that this is bad — or good — depending on the point of view. I think the truth of the matter is that there is no way to know now how the situation will develop, but some reason to conclude that accessibility to credit will improve. As long as merchants see the extension of credit as a useful adjunct to their total merchandizing

strategy, they will continue present practices. So long as financial organizations see the extension of credit as a profitable business, they will maintain present practices. Changes in the factors influencing decisions of merchants, or of other lenders, will, as they always have, affect the availability and terms of consumer credit. The most likely development is one leading to a lower cost for credit as lenders find better and lower cost information available on which to base credit decisions. As the element of risk is reduced in credit decisions, the cost to the borrower can be reduced. This need not mean that persons who previously received credit will no longer get it if information suggests that the risk associated with lending to them is higher than it seemed to be in a less "information-rich" environment. Rather, it means that the pricing of credit can be refined so that those who are in fact better risks will pay less, while those who are poorer risks will pay more. However, some will find that they can borrow from new, and lower-cost sources of credit that were closed to them in the past. Thus, on balance, it appears that consumers will be better served with respect to the availability and cost of credit under an electronic payment system.

Concern over the impact of an electronic funds transfer system on the float position of various participants depends, naturally, on what each expects the effect to be. Individuals express some concern when they recognize that it may become more difficult for them to obligate funds not yet credited to their accounts. However, their degree of concern over this is tempered by recognition that they do not yet understand the timing of credit for a deposit, or debit for a withdrawal, under the new system. The managers of funds for business organizations, on the other hand, perceive with much greater accuracy the possibilities under the present system, and under an electronic based system, for managing float in their behalf. They are aware and quite negatively influenced by the probability that float will be diminished to their detriment. Consequently, business spokesmen tend to favor those features of an electronic funds transfer system that increase float in their interest and strongly oppose those that affect their float adversely. The income represented by float will have to be replaced by at least equal reductions in cost before cash managers will support payment-system innovations harming their float positions. Moreover, any change in business payment practices will have to be adopted universally and at the same time if the effects are to be uniform; piecemeal change will not be acceptable if it alters float relationships, aiding some and harming others.

An area not often mentioned by spokesmen for individuals or interest groups in the private sector which must necessarily be of considerable importance to policy makers in the public sector is the impact of payment-system change on the nation's money supply and the means to monitor and influence that supply. The architects of our current instruments of monetary policy were able safely to assume that expansion and contraction of the money supply could be influenced through changes in reserve requirements and the rediscount rate, and through open market operations. The technology of an electronic funds transfer system offers the

possibility of significant increases in the velocity of circulation of money and may force the monetary authorities to devise new instruments for monitoring and influencing the money supply in light of changes.

Conclusion

Significant progress toward widespread use of electronic funds transfer may occur in a number of ways, but two major issues must be resolved for the progress to occur.

First, the organizations which seek change, for whatever reason, must find ways to win participation by the customers — individual and corporate — who now appear apathetic, and to a degree negative, toward change. These attitudes are not eternal; they may not be difficult to overcome. But they will persist widely until the attempts to overcome them are based on genuine efforts to understand and deal with their causes.

Second, the role of government, as lawgiver, regulator and system operator must be clarified. A number of the early attempts to innovate payment-system change have been limited or frustrated by constraints rooted in law or regulation. Others have been possible only because of silences or quirks in law or regulation, perhaps unforeseen or unintended. These situations are inevitable as technology opens possibilities not considered when past governmental actions were taken. However, we now understand the possibilities of payment-system technology well enough, and are rapidly coming to understand the potentials for beneficial or harmful impacts so that law and regulation can be brought up-to-date in this area. I do not mean to minimize the difficulty of this effort, or imply that it is devoid of serious value conflicts calling for resolution through the legislative process. Rather, I urge recognition of the fact that continuing ambiguity or silence in the legal and regulatory areas will frustrate progress. For the same reasons, decisions on the nature and degree of government's role as an active participant in the design, implementation or operation of an EFT system are needed to clarify where private sector emphasis should be placed. The cost of progress will be substantial, whatever the final mix of government and private sector roles. Let us not enlarge the cost through unnecessary duplication of effort.

I think it is reasonable to conclude that we can not entirely rely on profit maximization and consumer sovereignty to determine the configuration of our payment system, including the relative roles for electronic funds transfers, checks, and cash. We should rely on government action where it is required to preserve endangered social goals or personal freedoms. It is the balance of these reliances which we may help clarify in this conference.

Discussion

Robert H. Long

I believe that Ed Cox has given us an excellent beginning for the consideration of the incentives and obstacles affecting EFTS development. For the most part, I am in full agreement. However, there are a few differences in our viewpoints. I offer them not as criticism but as considerations. Throughout the conference, I expect that we will find many such differences arising. Hopefully, by considering each other's views, we will all leave with a little more accurate perception of the mountain we call EFTS and how it might best be climbed.

One System or Many?

In reading Ed's paper, I ran into trouble right at the title "Developing An Electronic Funds Transfer System . . ." Even though anyone can call anything a system — the boundaries of a system are completely arbitrary — I prefer to believe that it is perhaps more productive to think of EFTS in the plural. I don't believe that we have either the systems or the political skills to build *one* effective system. Today we are building and must continue to build numerous systems. They will serve different, but perhaps overlapping constituencies, that will cater to different specialized interests. They will compete with one another and at some point they will interchange information.

Secondly, in his background presentation, Ed seems to feel that "concern over check volume" was really one of the driving forces in EFTS development. From my point of view this was not so. Since the implementation of MICR, I have found no EFTS implementor who believed that check volume was a serious problem. Rather, I believe this fear was and is a straw man, a useful prod that EFTS promoters used to arouse some degree of cooperation and support from the industry at large.

It appeared to me at the time, and it still does, that the central drive for the development of EFTS systems has always been composed of (1) a desire to develop a more flexible and profitable financial service system; (2) a desire to use the new technology to lap the competitive field; and (3) a fear that others would do it first and thus gain ascendancy in the marketplace.

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If ever there is any concern about the check system, it seems to me that it centers on fraud, costs, and float.

Thirdly, while Ed seems to have stressed the flexibility of the check system, I feel that it is important to realize that this may be true if we consider "operational flexibility," but not true if we consider "service flexibility." The check system is very inflexible from a service standpoint and that is one of its major defects.

Ed has correctly noted the high degree of interdependence in today's check collection system. And, it is this need that constitutes one of the chief obstacles in the development of an electronic system. It would appear that the nation needs "a basic standardized payment system," but one that allows various specialized competitive systems to overlap and detour around it. We need standardization too, but not so much that it unduly hinders competition.

We have had the check system as a "basic" system with lock box, bank wire, credit card, Fed wire, etc. acting as special purpose "overlap" systems. This basic pattern is being repeated in EFTS with greater variety.

The EFTS developmental field looks confusing because all systems are being built at once. It is a bit like building a beehive by building all layers at once. It looks confusing, but if the top layers don't get too far along before the foundation develops, it will come out all right.

The ACH is perhaps our best example of one of the more standardized EFT "base layers". And I have every reason to believe that it is coming along satisfactorily. The first experiments concentrated on technicalities, but with the excellent example set by the Upper Midwest Automated Clearing House Association (UMACHA), I have every reason to believe that we have moved out of this technical stage of development into the marketing and educational and promotional stage — which will begin to generate ACH volume.

Ed notes the increasing interest in POS. This is expected. POS relates directly to established marketplace desires. It is a promising new pathway. But it is one of the more specialized overlay systems. ACH provides a great capability for EFT services that have not yet been developed. But they will be, as the competitive forces begin to come into play. Bill paying, credit transfers, credit receipts and even the handling of POS transactions that have been validated or guaranteed by an on-line inquiry response system seem to be looming in the near ACH future.

Incentives and Obstacles

Except for man's innate desire to explore and to try out new things, I believe that most of the incentives and obstacles revolve around one word . . . FEAR. Only a few really want to take the risk simply for the sake of improvement. Only a few are in a position to really use the leverage of successful innovation to obtain a satisfactory profit. The rest move because they are afraid of:

— Losing out in the marketplace.

— Allowing someone else to achieve a more dominant position.

— Losing image or status.

— Missing out on cost saving and other benefits.

— Being left behind.

Furthermore, they don't move because they are afraid that:

— The cost or trouble of changing is more than the gain.

— A change to a new system will result in a loss of control or benefits that they currently enjoy.

— Employees or customers won't like the system.

— The system will fail and they will look like fools.

— They will lose important relationships.

— They will be caught in an unresponsive, complicated system or in the middle of a competitive war between redundant systems.

— The new system is too vulnerable to fraud.

This may not be an exhaustive set of the fears that keep people from moving, or that make them decide to move, but it is representative. The problems that EFTS developers have been having in getting marketplace support for their new systems is natural. They simply have not yet strengthened the perceptions of the fears that cause people to move, nor weakened those that anchor them in place. In general, they have been too preoccupied with EFT technicalities to structure the necessary examples or communications. But that phase is passing.

Ed mentions the problem of antiquated laws and regulations. They do contribute some serious obstacles, but there are signs that many of them will be remedied. The chief thing to remember here is that generally "law follows, it seldom leads." The pioneers and experimenters have to "do their thing" and then the law comes along and either approves or disapproves. Thus, no one should be dismayed that we do not yet have all the necessary legal structures for EFTS. Rather, I believe that we should be optimistic because there are signs that we have intelligent and concerned legislators and regulators who have shown that they are giving these matters serious consideration.

Ed mentions that there seem to be some obstacles in the area of standards. That is true if you think of EFT as one coordinated system, but it is hardly true if you view it as a number of developing separate but overlapping and interconnected systems. The situation is not as bad as it

looks. It is important that the "basic system" standards be set. But the overlay systems will always be somewhat out of phase with one another. They serve different purposes and being competitive, they thrive on being different.

Acceptance

One of the concerns seems to be that "the public is not clamoring for EFTS." My reply is, naturally, the public never clamors *for* anything! They only clamor *against*. If you run a survey, you should really ask them what they don't like — not what they might like in the future. In general, they know what they want to get away from, but not what they want to get into . . . They will not make that decision until they actually stand at the fork in the trail. By and large, people act to minimize inconvenience, to get away from insecurity and to escape from uncertainty. Anything new that does not directly relate to any of their current dissatisfactions appears at first glance as uncertain and inconvenient.

In general, the public or the marketplace does not "demand," it simply chooses between alternatives. When people say that they like checks, I ask you what alternative do they have?

The public did not clamor for TV to be invented; they did not ask for the touch-tone phone; nor did they ask for the horseless carriage or the airplane. Yet, despite all the negative surveys and predictions (at the time of these developments) the public has embraced these devices . . . simply because, when the choice was presented, they appeared to be the more convenient or the more appropriate to the way they would like to live. The same will be true of EFTS, which I wish we would call Electronic Financial Transaction Systems — when they are available and proven and properly designed and marketed.

Our present day EFT services are much like the smoky, balky, flat-tire-prone early autos. With the poor road systems and the scarcity of service, they were considered rich man's toys. But, as they were perfected, it became a different story.

Competition

Ed has rightly identified competition as one of the prime driving forces in EFT development. The fear of being out of the marketplace is one of the strongest in our present day environment.

More and more businessmen are coming to realize that money and credit and financial information will flow over the most convenient channels. If they do not have these "most convenient" links, they may be bypassed.

The real competition in EFT is that of developing and strengthening important relationships and assuring continued flows of financial data.

Retailers are guarding their customer links for fear that banks or other financial organizations may weaken them. Banks are trying to become "the" bank for their customers and S&Ls and others are trying to strengthen their relationships and expand their services.

As Ed points out, we are talking about a highly expensive and complex technology and not every institution can afford it. That is true. There will be few, if any, solo climbs up the EFTS mountain. Roles will change and new climbing teams will be formed. That is really what is happening in the midst of the confusion and dust in the EFTS field today.

In the auto industry, most of the two or three hundred auto makers of the early 1900s moved into roles of sales and service agencies when mass production techniques reduced the price and made "cottage industry" manufacturing uncompetitive. This will happen in the financial industry. Those that do not become manufacturers will become agents, surviving on their ability to service their customers. And who today would not rather be a Cadillac dealer than a defunct Stanley Steamer manufacturer, or a McDonald's owner than a struggling hot-dog-stand operator?

Impacts

Perhaps the most important negative impact of EFT services will be in the area of dehumanizing financial services. This is where the service "agents" will gain in value. In the world of more complicated money management, it is highly likely that a financial account manager, counselor or guide backed up by an array of terminals, information and computer programs will take on the importance equal to that enjoyed today by the family doctor or the personal psychiatrist. These analogies are not lightly chosen. Poor money management already causes as much mental anguish, broken homes, unhappiness and lost productivity for the nation as bona fide physical ailments. By delegating routine to the computers, we can free up people and train them to be financial service guides and attack these problems.

Thus it would appear that, as financial services become more and more automated, there is a necessity for a parallel development of a personal banker or account management program . . . or its equivalent. But to a realist, the incentive to do so is there. I am ever mindful of the IBM/UNIVAC computer competition in the early '50s. IBM chose to educate the marketplace, UNIVAC tried to win it through superior equipment and systems.

UNIVAC used to be synonymous with the word computer. Today, to the man on the street any computer is an "IBM." Whether or not they have the best systems, IBM owns the marketplace . . . simply because they took the trouble to educate it. The same will be true in financial services. Whoever takes the trouble to build a "people system" that educates and serves can with barely adequate systems dominate the marketplace. They'll have the relationships and the money flows.

This of course means that, with all of our emphasis on systems and hardware and software, at some point in time we will have to shift gears and "humanize" the systems. The personal banker programs that some banks have been experimenting with have met with good marketplace response. It appears that "humane" systems are good business!

Finally, Ed has surfaced two important final questions:

— What should be the role of government?

— How can financial institutions convert customers to new EFT services?

It seems to me that the time has come for the government to stop trying to do things that private institutions can do as well or perhaps even better. It may have been necessary for the Fed to step in and operate the check collection system years ago. It is not self-evident that such is the case today with regard to every aspect of EFTS. Their excellent efforts in the ACH area can be described as aid in modernizing the check system. This effort ensures the development of a basic EFT system. I think that is proper, but that their operational efforts should stop there. Too much involvement in operations weakens their role as a regulator. It appears to me that there is a basic conflict between being an operator *and* being a regulator.

I would further suggest that government should not undertake any additional EFT operations until it is clearly evident that private enterprise cannot carry the burdens of development. However, it does appear to be necessary and appropriate for government to act in a guidance and regulatory role to insure reasonably orderly development, interchange and to act as a central funds settlement facility. If it is necessary for government organizations to act as "operators" of EFTS systems, such operations should be limited to the most basic and most standardized operations. Above all, their operations should not infringe in an operating way on the leading edge of new service developments.

Secondly, causing customers to switch to new EFT services once they are developed may be expensive but certainly can be solved. For example, in the retail sector I would suggest — develop the personal banker sales effort, strengthen the contact, and then offer a choice of EFT or check services — priced according to their real cost. Also sell against the check. Sell against its inconvenient reconciliation, against the uncertainty of the mail systems, against its cost and against its vulnerability to theft. These things have been buried too long. Of course, when we do this, we will need to have a good, secure, proven EFT system in operation — an alternative.

There are two remaining comments relating to competition as the appropriate driving force and about the so-called evil "duplication of effort."

Competition is a good way to achieve progress, but it needs mature management or it gets out of hand. Headlong, fear-driven stampedes into fields which it doesn't understand has cost banking dearly in the near past — especially in credit card competition. I believe that this could happen again in EFTS. Such stampedes are not only expensive — but they can easily cause the implementation of hastily designed systems that may give rise to massive fraud. I have reason to believe that computer fraud and

automated terminal fraud are greater than generally believed. In a competitive stampede, perhaps only the crooks will win. This in itself might be argument enough for a number of non-standard specialized systems — simply to cut losses and to experiment with different varieties of security.

The duplication of effort argument is not universally applicable. If you are seeking to just do the same old thing more efficiently, it may be valid. But if you are really seeking to determine which of many new things should be done, operational efficiency is not what you are after. What you are after is finding the best things to do and that requires experimentation, which essentially is duplication of effort. However, the payoff is great. Thus, the duplication can be justified. EFTS is in the formative stage. We are still seeking "the best things to do." The best way to find them is to have many different groups experimenting.

In summary, the obstacles facing EFT are the same that have faced every major system change in any society. They will be reconciled. Those who are most able to cope with the difficult formative pressures will be the new institutions of power in the new structure of society. It is not clearly evident that banks will continue to dominate the financial-services arena. There is a tendency to drive for progress only until we reach a level of satisfaction. Too many bankers have been satisfied with the status quo for too long. Their climbing muscles have atrophied. In addition, they have accumulated a fatty burden of restrictive legislation which may not be worked off in time. It is entirely possible that, despite bankers' experience on the financial-services mountainside, they may well be outpaced by fresher and younger climbers who will form appropriate teams and who will open up trails that bankers consider too difficult or too risky.

Discussion

John S. Reed

It's good to be here. I suspect as I look around that a lot of us in this room spend a lot of our life talking to each other because we keep seeing each other in these types of sessions. Hopefully, the word is slipping out to new people also.

I share with Bob Long the feeling that Ed Cox laid out the issues for us this morning as well as they can be laid out. He set down the basic outline of what is concerning all of us here with regard to the developing payment mechanism. I do not expect to add in any material way to what Ed has given us nor do I intend to make a speech myself. What I will do is, first, comment on the two hooks that Ed baited for me and, second, I will expand somewhat and emphasize his list of incentives and obstacles.

The first of the two hooks that I was provided concerns paper substitution and the driving force of many involved in the early EFTS efforts to seek an alternative to the check processing system based on the view that the system was potentially fragile. I would, however, disagree with Bob Long's comments about the reality of that as a driving force today.

I do believe that at least in Washington and possibly elsewhere a number of people once honestly and thoughtfully felt that there was a real possibility that the paper system could crack. They felt that, for reasons of public policy, the crack-up should not occur and much of the original driving force in the change to the EFT system and in the role of the Fed has come from a very legitimate belief that collapse was possible. Because this was, in fact, a legitimate concern, it justifiably caused the banking industry to look into the issue and to commission various studies as to the likelihood of a breakdown of the paper-based payment mechanism.

My own perception, however, having had responsibility for the operations at Citibank for a number of years, is that there is no serious likelihood of a failure in the paper-based system. On the contrary, it is possible — if bankers are willing to invest in the required managerial disciplines — it is possible to run an extremely efficient paper-based system. At Citicorp, we certainly view our terminal system as an add-on cost

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which can only be traded against changes in marketplace. It is not a cost substitution effort and we don't anticipate it ever will be. If, using our technology, we cannot deliver services that are in some sense more desirable to our customers, we will simply scrap the effort, because it certainly is not going to cut our paper processing costs in any way. Across the United States banks that have been innovating in managing their back offices have all pretty well concluded the costs are rising. There is no reason why they need rise even as fast as the inflation within the economy, and I have every reason to believe that we could face the '80s and '90s in a paper-based system that would be totally manageable from a quality point of view and quite desirable to the banks from a cost point of view. So the view that developments in EFTS are today being motivated by an effort to get away from paper does not, in my mind, have much substance. In fact, if that were to be the sole source of justification for EFTS development, I would argue very hard that we should all discontinue and go back to work right now.

The second hook that was provided me had to do with competition. You may all be relieved to hear that I am going to leave that to our next speakers. I am on record many times, as is Citicorp, with regard to our feeling about competition, and I do not really believe there is any need to burden you all again with that. I think our next speakers will get into it hot and heavy and I have always felt that I could trust the Department of Justice to defend the little people of the world, so . . .

Now that that issue has been effectively handled, let me go on to expand or really to emphasize the list of incentives and obstacles which I think are the key to framing the discussions that we will be having in the next couple of days. I will begin with incentives.

One thing that is immensely interesting to me by its absence from all of these discussions is a discussion of the changing EFT system insofar as it affects distribution mechanisms and distribution costs. Let me talk here specifically about an industry which has generally been left out of a lot of these discussions, namely, the consumer finance industry. It has been left out primarily because it has no Washington-type regulators. And, I might add, it volunteers to be left out because its members are scared to death that if they appear in Washington, they will get a Washington regulator.

The consumer finance industry is extremely important in the United States in the extension of credit to consumers. It also is an extremely high-cost source of credit to these consumers. The reason for a high cost is not that the consumers who receive the credit are necessarily higher risks than those receiving credit through a commercial banking system — I think we can demonstrate that mathematically. Nor does the cost reflect the fact that this industry is more profitable to its stockholders than the commercial banking industry. The extremely high cost of the consumer finance companies and the rates that they charge on commercial loans result from their distribution costs.

Consumer finance companies make loans in small dollar amounts, and they have to build very large branch distribution systems in order to get the customers to stop by. There are some extraordinary self-selection phenomena within the marketplace. It can be demonstrated that well over half the people who go to consumer finance companies could in fact get the same loan at substantially less cost were they to present themselves at the offices of a commercial bank. They don't do so primarily because there is a psychological self-selection phenomenon having to do, I'm afraid, with the way people view commercial banks. There's a general feeling on the part of these people that if they come into a bank, they would be given bad treatment, if any. And so these consumers tend to go to the consumer finance industry. However, one of the impacts of the changing EFT system that must be taken into consideration is that in a card-driven electronic environment, the viability of that consumer finance industry in a branch distribution system is probably questionable. The question arises out of the distribution costs in the consumer finance area.

I speak with some knowledge on this subject because, as you may know, Citicorp has bought some consumer finance companies as have many of the larger banks within the United States. We have also operated consumer-finance activities overseas for many, many years, and so we have some first-hand internal knowledge as to what cost structures look like. Typically, in the United States, if you charge 25 percent interest on a consumer loan, which is not unusual for a consumer finance company, two-fifths of that 25 percent is branch delivery costs. When I say branch, I mean central loan administration as well as branch costs. Of the remaining three-fifths some is accounted for by money costs which, under a normal interest rate environment, if we can ever have one, would be 8 percent to 9 percent. The rest is split about equally between pre-tax profits and write-offs.

The money costs for commercial banks are conceivably somewhat different but nonetheless within the ballpark. The write-off experience in personal bank lending is not substantially different, and the profit margins of this type of business, pretaxed, are also not substantially different. The difference is that in a commercial banking operation distribution costs are more typically about 5.5 percent as opposed to the 10 percent figure. And on a credit card-based system — and all of us are tending to put our small dollar items onto credit cards — it is more likely to be 3 percent.

Now, assuming underlying laws of physics towards which we all tend, and, being an engineer by training, I hold that assumption, I just don't believe that an industry that has that extra 7 percent built into its cost structure can easily survive. So if we accept that the changing payment mechanism will make credit available to the consumer at a substantially lower cost i.e., those who are paying 25 percent can conceivably pay 18 percent, which is a typical bank kind of number — we ought to consider the effect of that upon the market. And I'm always interested that no one does consider that when we talk about various issues in EFTS.

For that reason, we have urged that the Presidential Commission about to be set up should certainly include representatives from the consumer finance industry because that industry will be very much affected by some of these issues. As you may know, in most of the states in the United States, it is against the law for a consumer finance company to extend revolving credit, which is probably a requisite to get into an EFTS-type of situation. But if the thrifts have already asked for membership in the national cards, it certainly won't be long before Household Finance and Beneficial and others will be asking for it. It clearly is something that must come. And I would argue that that is an incentive that one should add to the list of incentives.

The second incentive that I would urge adding to the list has to do with customer satisfaction. Here I tend to agree with some of the comments Bob Long made. Customers tend not to express themselves very well on the subject or their needs, particularly not to large, bureaucratic institutions. It has been our experience that things that we do not believe are of any significance to our customers have turned out in retrospect to have been quite important to them. You may know that in all our branches we have put terminals that are available to customers where they can inquire about their balances and various details about transactions in their accounts. We did that thinking it was essentially a freebie — we already had paid the base cost of the system, and while the service would not be used very much, it might be nice. Inquiries have been running in excess of 100,000 per day over that system. Now when you're talking about 250 branches, 100,000 inquiries represent a lot of people who went by a branch of their bank to find out the amount of money in their account or whether a specific check had cleared, people who previously had never asked because of their inhibitions in having to go up to a teller who basically was not prepared to provide that kind of answer. Now this costs customers nothing; it's a freebie, but it has absolutely amazed us that you could get 100,000 people per day continually for the last six or seven months to do that.

Obviously, I am a private sector advocate and I believe that the private sector is in the business of seeking to know its customers, gauging what they want, and providing it. If we are wrong we simply will lose money, which is what the game is all about, and if we are right, we will have more satisfied customers. I would suggest to you that customer satisfaction really has to be viewed as a tremendous incentive, because I personally believe the banks have done a lousy job of providing consumer financial services. I think we have done a first-class job of providing consumer financial services, but in the consumer sector, every little bit of innovation that we have been involved in suggests to me that there is a level of frustration — at least in the New York environment (which admittedly is not typical of the world) — a level of frustration hidden beneath the surface that is there to be tapped precisely because we have done a lousy job. The fact is, we haven't changed our market share in 15

years, and our customers do not know if they deal with us or the Chase. We all spend $10 million a year trying to remind them, and it does not make any difference. There is no product differentiation; I do not believe there is particularly good service. So I would suggest to you, on the incentive list, that although customer satisfaction is difficult to quantify, you've got to take a businessman's bet and go for it. If you are wrong, you will lose money; if you are right, you will gain customers. But it is there and I believe it is going to be a big incentive.

As to my list of obstacles, I really have only three. The first has already been mentioned, and I just want to emphasize it again because I feel it is extremely, extremely important — that is, technology itself. I list technology as an obstacle because technical decisions are something that we have to manage, and it is not going to be easy for a service type of organization to manage them. But they are issues that are of extreme importance to the effective cost and quality characteristics of any of these EFT systems. If you go into the systems business on the assumption that you go to your local IBM salesman and buy an EFT system, you are talking about quite a different type of technological service than that which you might have under a managed approach. A full range of technology is available to the world here, in terms of solving some of the fundamental problems that we are trying to solve. And the key point is that the decisions made and the process by which one manages this technology will be as important to the eventual outcome of any specific development as the decisions made with regard to the marketplace.

I would say that there is a factor of 10 in the difference in cost between alternative available technologies, and no one, not even the Federal Government, can look at a factor of 10 and simply smile. George Mitchell's comments today gave us some numbers and I think you have to look at those numbers and ask are they right or are they wrong. Again, and this is from first-hand experience, there are better and worse paths by which to approach these EFT systems. The technological decisions that will have to be made constitute a very important part of the development of the systems. I view the decision-making as an obstacle because the decisions will be difficult ones.

I do believe sufficiently, however, in the flexibility of the American economy, providing we don't have a depression that ends absolutely everything. That means that I don't think that those who provide EFT systems need do what Citicorp has done — namely, try to integrate some of the technical development. There are tons of suppliers around who can supply the appropriate technologies. They are not going to be found in the list of the *Fortune* 500, but there is tremendous motivation on the part of entrepreneurs who are on the technical side of things to become suppliers. And these people are going to be around knocking on doors, providing we don't preclude them of the opportunity by organizing ourselves in such a way that we can only deal with one or two potential vendors.

The problem, the real heart of the obstacle for bankers, is: do we have the mental capacity to handle that dimension of the set of definitions that are before us? If we were a class in the Harvard Business School, and the instructor described the banking industry and some of its attributes and asked, now is this a likely group to be an innovator in a technical side of life, I suggest that answer would be no. There are organizations that could probably get into the service business more easily from a technical base than we're going to be able to go from our service base into the technology business. But making the move is just going to be absolutely fundamental and should get some emphasis, so I would like to add it to the list of obstacles.

A second obstacle on that list has to do simply with the distribution of what I call "intellectual capital." The banking industry really does not have at this time the managerial capital, if you will, to manage its way over this transition in the payment mechanism. That seems to be abundantly clear also to the many bankers who throw up their hands and say: "Look we just can't handle this kind of thing. Why don't we all either give it to the Fed or, you know, hand it out to somebody else?" This obstacle ranks with that inertia in the marketplace that Ed talked about. It is managerial inertia within the institutions that must be the innovators — and I am talking now about collectives or what have you.

The organization that in my mind has done the best job today is BankAmericard. It is interesting to me that this group had to extract resources away from any given bank, which is really designed to do other things, and set up a stand-alone, independent organization that was totally dedicated to trying to get some of this stuff done. I think they have done a first-rate job. By the same token, it has been very, very difficult for any of us involved in this transition who are also part of traditional banking organizations to break free. And so I would add that the inertia of the organizations that are crucial to EFTS is an important obstacle.

The final obstacle I would list has to do with the retailer. The retailer has two problems that are going to interact with us, as these developments proceed. One has to do with the fact that the retailer very properly has a deathly fear that banks could disintermediate him from his customer franchise. If we think branch banking is subject to change, do not be surprised to know that retailers are very convinced that for a large number of the items they handle, store retailing is also becoming obsolete. For example, catalog sales, as you know, represents one of the rapidly growing parts of the retail industry. There are people who are very concerned about the fact that banks, through the payment mechanism could in fact get into this catalog-selling business. Already, most people who issue Master Charge and BankAmericard are offering different kinds of goods and services to cardholders. So the retailers, looking across a long-time horizon toward the end of this century, naturally fear that the development of EFTS is going to lower the entry barriers to certain types of retailing business. They fear its being lowered to the point where they will

be entirely disintermediated by anybody who is in the payment mechanism side of things and who captures the customer franchise by a card. A likely example is the American Express card which has been superbly effective in a narrow range of the market so the retailer's fear of such a card has to be viewed as an obstacle.

The second problem in the retailer's obstacle, as I see it, has to do with the fact that the retailers are following a totally separate chain of development with regard to the installation of electronic point-of-sale devices. This separateness puts them totally out of synch with what is going on here, and there is some question whether the financial side of the service community may not find itself in a funny position vis-à-vis some of the changes taking place in the retailing area. We are, after all, both doing very similar things, but from a totally different motivation and with a different time-frame and a different sense of rhythm and according to a different pattern. So I would suggest that, on these grounds, the retailer should definitely be added to the list of obstacles.

But that is why we are here — to talk about the incentives and obstacles to EFTS development. And more than just adding items to lists, I think the issue here is one of adding to understanding for all of us. I think the issue we must understand is the role of the private financial sector in providing some of these consumer financial services. I don't think the issue is earthshaking. I would rather solve the oil crisis. I do think that the people in this room collectively are going to feel the frustration of seeking to solve some of these problems at the macro level, because we are not smart enough, nor is any other gathering of such people smart enough to solve them. I think we could exchange views and ideas and maybe achieve some kind of consensus as to what is up, but I think that we would be kidding ourselves if we believe that a session such as this will leave us with some master plan for changing the world that everybody could embrace and rapidly go out and sell. Thank you very much.

Competition, Monopoly and Electronic Banking

Donald I. Baker

When I hear people talking about *the* electronic funds transfer system (or EFTS), I worry. These people are apparently looking to a single system, remotely analogous, I suppose, to the check clearing system. But looking at EFTS in this way overlooks the profound changes now taking place in the financial sector. These changes proceed from radical advances in technology comparable to those of the Industrial Revolution — but in fact they are even more revolutionary because they are occurring far more rapidly. They raise questions that go to the very fabric of the financial system: not only *what* things are going to be done, and *how* — but *who* is going to do them. What I see coming is not a single EFTS, but a diversity of related electronic services and systems. Consumers will demand many different banking services; bankers and others will find many ways to serve them.

We must recognize that the particular form of consumer services depends heavily on the technology used to produce those services. When each bank, or group of banks, decides to offer a new service based on its own technical ability, the range of customer services will be great. It will go all the way from simple on-line check-guarantee systems to the elaborate point-of-sale debit-switching and inventory-control systems and more. So far, however, the electronic banking industry is still in its infancy. No one can yet foresee exactly what the public will want and think worth paying for, and accordingly no one can predict how the financial system will fulfill its demands.

We must also recognize that new technology can reduce everyone's costs. Credit card clearing offers a good example. The credit card slips in transit represent "float" from financial institutions to their customers. Every financial institution shares a desire to reduce or eliminate that "float":

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if new techniques and new technology can do that job, all the institutions share our interest in developing those techniques and that technology. The check clearing system works somewhat differently, since increased or decreased "float" tends to favor certain institutions vis-à-vis others. Nevertheless, even check clearing float can impose costs on all institutions as it affects the flow of funds very erratically. Accordingly, all may share the desire to improve clearing technology as well.[1]

The financial world, however, is a world of compartments created by law. Financial services are divided between banks, thrift institutions, finance companies, insurance agents and stockbrokers, among others. They are divided between institutions in different states and communities. Although the legal compartments may have once responded to regulatory needs and technical capabilities, new technology is making the old barriers obsolete. The barriers are falling between those who have branch offices and those who do not; between commercial banks and thrift institutions; between depository institutions and other offerers of financial services; and between debit and credit offerings and offerers.[2]

Some people — usually those whose places in the old order were made secure by laws and regulations — are trying to rejigger the old rules to protect themselves from the opportunities and risks of this new, fluid world. The rest of us — particularly the regulators — should ask why we have the restrictions in the first place. In my view, law should serve the consumers (large and small) of financial services, and do so by promoting

[1]The number of checks written in the United States has increased from 12 billion in 1960 to an estimated 26 billion in 1973. At the current growth rate volume will double by 1985. The cost of the existing payments systems is high. It is estimated at $13.8 billion a year — $12.6 billion for writing and processing checks, and $1.2 billion for the production, safeguarding, storage and use of currency. See *Banking*, Journal of the American Bankers Association, May 1974, p. 36. Overall, there is every reason to believe that electronic transfer will cost far less than the current demand deposit operation. Mark J. Flannery and Dwight M. Jaffee, *The Economic Implications of an Electronic Monetary Transfer System*, (1973) pp. 60-63. The Atlanta Committee on Paperless Entries, relying on an earlier research study, estimated that a Bill Check payment will cost the banking system 25 percent less than a similar check transaction, and a paperless payroll deposit will save the banks over 60 percent of a check's cost. A 1960 study sponsored by the Bank Administration Institute (BAI) concluded that an electronic interbank system would reduce bank operating costs attributable to demand deposits by $500,000 a day. The BAI plan mechanizes only the communications aspect of payments; in other words, much of the inbank processing of payment information would still be done by hand. See Robert H. Long and Linda M. Fenner, *An Electronic Network for Interbank Payment Communications: A Design Study* (1969).

[2]The various Federal Reserve officials have stressed the need for restructuring the financial system to reflect the changes in circumstances wrought by technological developments. See Neil B. Murphy and Steven J. Weiss, "Restructuring Federal Regulation of Financial Institutions," *The Bankers Magazine*, Vol. 155, Winter 1972, 71-77; Statement by George W. Mitchell, before the Subcommittee on Financial Institutions of the Committee on Banking, Housing and Urban Affairs, United States Senate, March 21, 1973.

efficiency among competing organizations. The law should protect the organizations only where *necessary* to serve the consumer, not as an end in itself. And it should never be used simply to protect the inefficient, the incompetent, or the foolhardy from the bitter fruit of their own mistakes or inertia.

The Role of Competition

Competition forces engineers to design better systems. It forces businessmen to develop better services using new technology. It gives the consumer a voice in saying how he will be served, but without the penalty of regulatory lag. At the "wholesale" level, one electronic clearing system can compete against another, as the two bank credit card systems do, by cutting costs and improving equipment. At the retail level, different institutions can offer different services — credit cards *vs.* debit cards *vs.* check guarantee cards *vs.* cash-withdrawal cards *vs.* cards that do things we have not even thought of yet. In some instances, a distinctive product offered to the public will depend on the central clearance operation. In that event, the competitive pressures of the marketplace will reinforce the pressures of costs to make the central clearing systems more efficient.

Although we tend to think of competition in terms of present products and services, we must not lose sight of the longer view — that is, competition to meet demands which customers have not completely formulated. The free market effectively rewards those who take risks and succeed in new fields. Judge Wyzanski put the case elegantly in *the United States* v. *United Shoe Machinery:*

> . . . creativity in business as in other areas, is best nourished by multiple centers of activity, each following its unique pattern and developing its esprit de corps to respond to the challenge of competition. The dominance of any one enterprise inevitably unduly accentuates that enterprise's experience and views as to what is possible, practical, and desirable with respect to technological development, research, relations with producers, employees, and customers. And the preservation of any unregulated monopoly is hostile to the industrial and political ideals of an open society founded on the faith that tomorrow will produce a better than the best.[3]

Of course, there are cases where an enterprise enjoys such pervasive economies of scale that natural monopoly results. But this is in fact limited to a relatively few situations — including most notably local distribution of gas, electricity and telephone service.

[3] *United States* v. *United Shoe Machinery Corp.*, 110 F. Supp. 295,34 (D. Mass. 1953), *aff'd* 347 U.S. 521 (1954).

We should be careful not to *assume* natural monopoly in advance, particularly in an area of rapidly evolving technology. Relatively few types of genuine natural monopoly exist, and most of these involve local utility distribution. Regulators can do great damage if they assume that a newly evolving industry must inevitably turn out to be a monopoly, and then build a legal framework based on that assumption. All too often, rapidly developing technology has exploded that hypothesis when it seemed unshakeable. Thus, for example, the Communications Satellite Act of 1962[4] was based on the assumption that satellite communications would require a large system of revolving satellites, and many complicated earth stations to pick up each revolving satellite as it passed overhead. People said that it would be too expensive to duplicate such a system — it had to be a monopoly. But within a year, the so-called synchronous satellite was developed, which stayed in a single place in relation to the earth; this meant that a single satellite (with perhaps a spare in orbit) and much simpler ground stations could provide service on a single route. The "natural monopoly" element was thus eliminated by innovative engineering. The Canadians soon put up a synchronous satellite system; the United States, however, was left with all the legal complications of a statute which assumed a natural monopoly. This legal complexity was a factor which helped to delay domestic satellite development in the United States for many years.[5]

Trying to avoid laws that lock in a monopoly outlook is no mere theoretical problem. Businessmen are, in the the main, fairly cautious with their money. When they are faced with a new and untried system that requires a large capital outlay, they are very much given, as was Congress at the time of the 1962 Satellite Act, to assume that anything so large and new and difficult should be handled jointly by all competitors. In effect, they try to turn it into a monopoly in order to minimize their own competitive risks. If the new system works, they are guaranteed a piece of the reward; if it fails, they are not hurt very badly; but, above all, no one else will be able to take away their share of the business. A joint venture is a form of insurance against risk.

Minimizing competitive risk may be good for the competitors, but it is often bad for the public. Risk-taking — and the rewards that can flow from the taking of risk — lies at the heart of capitalism and the competitive process, and is altogether appropriate in the financial system. We have many regulatory tools to ensure that individual institutions do not take too many or too great risks. In view of these safeguards, public policy should encourage intelligent risk-taking in the financial sector: the alternative is less innovative products, delivery systems and merchandising methods.

[4]47 U.S.C. §§ 701 *et seq.* (1964).

[5]See *Domestic Satellite Services,* 35 F.C.C. 2d 844 (1972), which illustrates some of the issues.

A Conceptual Problem

There are two overlapping areas of EFTS development which raise clear competitive issues. One concerns automated clearing between financial institutions, both on a local and a national basis. The other concerns competitive development and offering to the public of new products based on electronic technology. I shall discuss each separately.

Running through both areas is a fundamental conceptual problem. It exists because of confusion as to what a "system" is or may be in the EFT context. In fact, there are two quite distinct types of "system" functions involved. Each can be regarded as a separate "system." One is what I shall call the "transportation" system — the means employed for hauling information between two different geographic points. This may involve physical transportation of checks or other instruments, or it may involve electronic transmission of computer bits or other data.

The second type of system is what one might call the "institutional" system — namely, a collection of rules, agreements, or operating procedures by which system members determine how they will handle the information sent across the "transportation" system. Many examples exist within the financial sector, with or without government involvement. An agreement among banks to accept each other's checks at par is a good example. Another would be the agreements between the Master Charge or BankAmericard banks as to how they will accept sales drafts drawn on cards issued by other members of the system. The "institutional" system may include computers and other devices for processing or switching data in accordance with the established procedures.

It is important to keep the "transportation" system and the "institutional" system separate for purposes of economic analysis. The "transportation" system is much more likely to involve natural monopoly characteristics than the "institutional" system.[6] However, an effective "transportation" system is often already provided by third parties — including most notably the telephone companies and the Post Office for electronic and paper communications respectively. This means that any scale economies in the "transportation" system may be achieved by traffic largely provided by non-financial users.

Conceptual confusion creeps into this area because the Fed-run "check clearing system" combines a "transportation" system and the "institutional" system into one. This occurred because the Post Office's physical "transportation" system turned out to be too slow for checks —

[6]This varies greatly depending on the transportation mode. Local telephone lines and nationwide switched telephone service are probably natural monopolies; long-haul data communications may or may not be a natural monopoly depending on scale economies in the current transmission system; and courier services and trucking services are clearly not natural monopolies.

where "float" is money — therefore the Federal Reserve has had to develop some of its own physical "transportation" system for checks. Clearly, this need not be the general rule as we move into the electronic age: a nationwide network of leased lines and dial up circuits is available from the telephone companies; and intercity leased line services are available from other carriers for EFT systems in some areas. This means that the "transportation" system in an electronic world is free to develop in a very different manner from the paper-based mode.

That the "transportation" and "institutional" elements need not be provided by the same party even in the paper-based mode is clear from looking at the bank credit card interchange arrangements for sales drafts. The "transportation" system is generally provided by the Post Office or common carriers; and the "institutional" system is provided jointly by BankAmericard and Interbank member banks for their respective systems. Similarly, the new electronic authorization systems for bank cards reveal the same type of division, and the "institutional" system consists heavily of computerized storage and switching at the end of those lines.

In some cases it may be desirable to combine the "transportation" and the "institutional" functions into a single organization. My point is simply that it need not be done in most instances — and that the monopoly characteristics of the "transportation" system need not dictate monopolies for the "institutional" system. Thus, several "institutional" systems may compete to turn out new products for the public (as with bank credit cards) or to carry out similar clearing functions, even though the "transportation" system is ultimately provided by the same carrier in both instances. This competition may be very important in a variety of different ways. At the retail level, it may result in differently tailored and priced products (e.g., cards, discounts, and terminals) and at the wholesale or clearing level it may cover prices and process modes. Moreover, at either level, "institutional" system competition may result in competitive efforts to seek out lower cost types of "transportation" systems — either by switching to other carriers or to other modes.

Competition and Clearing

Analysis must begin with the traditional clearing methods. As we all know, banks have historically cleared funds by sending pieces of paper from one institution to another. Such a piece of paper cannot conveniently be cut into pieces and sent to many institutions simultaneously; consequently the item has to be processed sequentially through the clearing system, with each institution handling the entire block of information and then transporting it on to the next institution. This process is slow and, because a single institution rarely needs to consider all the information transmitted, it is inherently inefficient.

The Federal Reserve System was created in part to help move and process the paper. It provides transportation for clearing at the national level; and it imposes a complicated but uniform set of rules for accepting

and transmitting funds. The Federal Reserve System is not always the most efficient way to clear paper; and banks have created a number of other outside clearing arrangements to meet particular needs. These include local clearing houses to serve local markets, direct clearing by correspondents, and direct sends to a particular bank by messenger or mail. Similar methods are used in the credit card field, where banks do not have the Fed; banks rely on the postal system and local clearing associations (in the case of Interbank) to effect the transfers of credit slips. Although the entire paper clearing structure, including the Federal Reserve System and the many by-pass channels, can be thought of as a single "system", it is not a monopoly. The various channels "compete" with one another for the bankers' business (although meaningful "competition" is reduced by the Fed's implicit system of pricing its clearing services[7]). The degree to which any given channel can attract traffic depends on its cost effectiveness. If the Federal Reserve were the only efficient clearing channel, then all traffic would flow through it, no matter how far apart the clearing banks stood.

Electronic clearing will also require national and local facilities. These facilities, however, need not involve sequential processing of irreducible items: instead, sending banks can transmit appropriate information to the various participants in the clearing process simultaneously over an electronic communications network. The number of intermediaries should thereby be reduced just as for direct sends by mail. Accordingly, the electronic clearing network may develop along quite different lines from the present paper-based network. No one can precisely predict what its structure and cost factors will be, just as no one could predict what the cost factors of satellite communications were in 1962. There is no reason to believe that the Federal Government will have to play so dominant a part in electronic clearing as it does in paper clearing. Furthermore, nothing suggests that competitive clearing systems are a logical absurdity — indeed, even the experience of paper clearing suggests that competing clearing channels can exist and many more would if government clearing services were priced on the basis of use.[8]

[7]The Department has already commented on this method of pricing, and pointed out its effects, in "Comments of the United States Department of Justice," *Proposed Amendment of Regulation J and Related Issues,* filed May 14, 1974. The Federal Reserve Bank of Boston filed similar comments on the long-range impact of this pricing system. Letter dated April 19, 1974 from Frank E. Morris to the Board of Governors regarding proposed amendment of Regulation J.

[8]Apparently, the Federal Reseve System does not see itself in a monopoly situation either. The Fed hoped initially to install and manage a nationwide communications network through which interregional settlements between financial institutions could be made. However, the Fed has recognized that a number of other networks might exist. In part, these would be local and regional funds transfer networks in which Federal Reserve involvement might be minimal. The Federal Reserve expected to monitor these regional and local networks to assure that a satisfactory degree of security was being maintained and that the capability for interfacing with the national network was obtained. See *Federal Reserve Bulletin,* December 1972, p. 1010.

Even at this early state of EFT development, however, some people argue that electronic clearing is a natural monopoly. They contend that for the Federal Reserve to leave these matters to private industry is to sentence us to private monopoly, and they point to the telephone company and the Post Office as economic models. I think it is still far too early to make such a claim[9], however, and as I have indicated, I believe it confuses the "transportation" and "institutional" elements. This being so, I am not willing to accept the "transportation" parallels without a great deal of further evidence. Moreover, even the "transportation" evidence is less than conclusive. The Post Office is busy trying to protect its legislative monopoly from the United Parcel Service and other private groups; the American Telephone and Telegraph Company has attracted a host of competitors, including microwave specialized carriers, satellite carriers, and a whole clutch of packet-switching companies. As I mentioned before, the Federal Reserve itself "competes" in a sense against private arrangements and even against the Post Office on the "transportation" function.

Furthermore, even if electronic clearing ultimately *proves* to be a natural monopoly either at the local or national level (notwithstanding the evidence against it), then it would still be a bad idea to *assume* the fact in advance. As competing clearing systems develop, and come to depend more and more on electronic equipment, their differences in hardware, programming and management will differentiate them more and more sharply, and competition between them will intensify. If one system inevitably must drive out the other, then the public is better served by a clearing system that has survived the strenuous test of an elimination bout than by a system that had never been forced to justify its techniques.

[9]Costing of even the *traditional* financial services has produced divergent results over a period of time. For example, George Benston has found highly "significant" economies of scale for most aspects of savings and loan association operations. Benston, "Costs of Operations and Economies of Scale in Savings and Loan Associations," in the Irwin Friend *Study of the Savings and Loan Industry,* Vol. II, Federal Home Loan Bank Board, Washington, D. C., July 1969, 677-762. On the other hand, Gilbert and Longbrake found that there was no concrete evidence that small banking institutions are at a competitive disadvantage relative to larger branch (banking) institutions with respect to operating costs. Gilbert and Longbrake, *The Effects of Branching by Financial Institutions on Competition, Productive Efficiency, and Stability: An Examination of the Evidence,* Federal Deposit Insurance Corporation, Working Paper No. 72-21, Washington, D. C., 1972. Bell and Murphy found significant economies for some banking functions, and not for others, especially in diffuse multi-office organizations. See Bell and Murphy, *Costs in Commercial Banking: A Quantitative Analysis of Bank Behavior and Its Relation to Bank Regulation,* Research Report No. 41 of the Federal Reserve Bank of Boston, 1968. Studies using aggregate measures of output have apparently not been controlled adequately for differences in product mix, while studies analyzing individual types of services separately have not been able to combine the results of the separate analyses adequately. These empirical problems of product mix are likely to carry over into analysis of EFT cost functions.

In fact, however, a number of factors strongly suggest that we will never have to face the prospect of a broad private monopoly operating at the Federal level. In the first place, there are already two private clearing organizations competing nationally in the credit-card field — Interbank and National BankAmericard, Inc. — and a chance that Citicorp will enter this field as a third force. There are also a number of other private credit systems, such as the American Express Company, which could provide the nucleus for even more national clearing systems.

It is the two bank-card systems that offer the most likely chance for competing clearing systems, however, and both systems have recently begun converting their operations toward on-line direct funds transfer capability. Interbank has reportedly authorized nearly half a million dollars to develop an EFTS nationally. Its EFTS could allow card holders to get cash, make purchases, guarantee checks and transfer funds from one account to another. Interbank is anxious to preserve the identity of the system, and is developing a national EFT mark for its new evolving services card. Interbank intends to develop the standards and the national system: local banks would install and care for the terminals, and set their own price structure. Interbank contemplates allowing card holders to gain access to cash dispensing machines.[10]

National BankAmericard, Inc. (NBI) has also taken steps toward developing a national EFTS. Last March it announced it had committed $250,000 to develop specifications for a prototype retail POS system. The system would provide credit authorization for retail BankAmericard purchases. The system would credit the merchant's account while simultaneously debiting the card holder's account. Ultimately, it would be able to give direct access to consumers' checking and savings accounts.[11] Last June, NBI introduced its hotline complaint service for its own BankAmericard customers.[12]

In the second place, the vast bulk of interbank transfers occurs within a single Federal Reserve district. Each one need not be served by the same private system. In each area a private system could perform interbank transfers and, by means of its own line to the local Reserve Bank, notify the Federal Reserve System of credit-shifts for purposes of settlement. A particular private local system could face potential competitive pressures from entry by geographic expansion of clearing systems in other areas, product expansion by other types of clearing systems (e.g., credit card clearing systems) and from entirely new entrants into the local clearing market. The new entrants might come from several industries: a pair of

[10] *American Banker,* August 23, 1974, p. 1, col. 4.

[11] *American Banker,* March 14, 1974, p. 1, col. 4.

[12] *American Banker,* June 18, 1974, p. 1, col. 1.

banks that clear a great deal of volume between themselves might establish a direct line; existing data processing companies that offer other financial services might expand their capability to offer electronic clearing; new companies with advanced technology might directly challenge the existing clearing systems. Any of these potential competitors could penetrate the market gradually by offering cheaper or more efficient transfers to financial institutions.

Third, electronic clearing does not have to be confined to the financial industry: indeed, when one thinks of electronic data communications as a relevant line of commerce, financial information shrinks to a small portion of the whole. A private data communications company might offer a number of services to the business community, including the financial community, only one of which is specifically geared to transferring funds. A company that offers many services may be able to achieve economies of scale so great that the cost of the clearing function, taken by itself, would fall far below the cost of a network dedicated exclusively to clearing funds.

As electronic clearing arrangements evolve, one of the most important practical questions may concern the development of appropriate standards to permit reasonable and safe interchange between different systems. This is analogous to the standardized railway gauge which permits railroads both to compete and to exchange traffic; and to the standardized voltages and parallel operations used to permit high voltage interconnections between different electric power systems. The standards-making process becomes very difficult where new and evolving technology is involved and standards necessarily limit that technology. In such circumstances, the adoption of an obsolete (or obsolescent) standard can impose significant penalties on innovation, and raise costs to the public. This is well illustrated by the current controversy in banking over the magnetic stripe for credit cards. This has been adopted as the industry standard by the American Bankers Association, but at least one leading member of the industry has strongly resisted it on what appear to be purely technical grounds.[13] Clearly, the goal of competitive policy is to permit the greatest flexibility consistent with efficient interchange. Antitrust cases have occasionally arisen where it was alleged that standards-making (or technical certification) was used to foreclose competitors from a market and was not justified on technical grounds.[14]

[13]"Citibank Mails Out Bank Cards Coded Through New Process," *Wall Street Journal,* October 25, 1973, p. 23, col. 2.

[14]See, *e.g., Radiant Burners, Inc.* v. *Peoples Gas Light & Coke Co.,* 364 U.S. 656 (1960); *Structural Laminates, Inc.* v. *Douglas Fir Plywood Ass'n.,* 261 F. Supp. 154 (D. Ore. 1966), *aff'd,* 399 F.2d 155 (9th Cir. 1968), *cert. den.,* 393 U.S. 1024 (1969); and *United States* v. *American Society of Mechanical Engineers, Inc.,* No. 70 civ. 3141 (S.D.N.Y., filed July 22, 1970).

The Federal Reserve System may turn out to have an important responsibility and role in the standards-making area. It is, as a public body, more likely to be able to take an objective view of competing considerations; and it should have the technical capability to make reasonable judgments. The interchange standards problem is immensely difficult. How successfully it is resolved may have a lot to do with how competitive, efficient and flexible our various clearing arrangements turn out to be over the long run.

Accordingly, the government must approach the problem cautiously and with great flexibility. We must encourage initiative in the private sector. We must foster the growth of the clearing systems now in place, and attract the interest of outsiders to develop newer, better clearing systems. We must set forth the government's policy in clear terms: when businessmen are not sure what rule and public policies the government may adopt, they may be reluctant to risk their capital, and both the banking community and the public would suffer. The government must also, however, see to it that the payments process does not degenerate into chaos. The Department has urged the Federal Reserve Board to announce a policy of being a clearer only in the last resort, and to price the clearing services that it offers in a fashion that explicitly reflects the costs of doing so.

The advent of electronic clearing arrangements also raises some important questions on the competitive relationship between thrift institutions and commercial banks. Where several competitors offer clearing services, they are likely to have strong economic incentives to extend their service to thrift institutions, even if those who provide the clearing services are controlled by banks. Alternatively, some thrift institutions may prefer to develop their own clearing arrangements, and sell the service to other thrifts or to commercial banks. Thus, in a competitive environment, thrift institutions are likely to pose no particular problem for clearing arrangements.

However, where clearing is controlled by a monopoly — especially one dominated by commercial banks — access may become a major problem. Banks may well have an interest in excluding thrift institutions from direct participation in the clearing process, because the exclusion can give the banks an edge in competing for consumers' deposits. So far, this issue has only been considered in the context of local automated clearing houses, but it also applies to a national electronic clearing monopoly. One purpose of the antitrust laws in this sort of situation is to dissipate whatever monopoly power a joint venture may confer on any group of competitors, and to limit the monopoly to the area where it is justified by the forces of economics. But from the standpoint of overall antitrust policy, a monopolistic joint venture, even one to which all competitors have access, is a second-best solution, because it kills the competitive incentive to develop new ideas, processes and systems.

Courts have set out a number of principles to deal with joint-venture monopolies. These principles are generally designed to make sure that no group of competitors can use its power over the monopoly to injure other competitors, or to protect those presently operating in the field against outside competition. The first principle is that a monopolistic group should not be able to force its members to use its system exclusively and thereby foreclose development of outside competitors.[15] A corollary to this theorem is that the monopolist should also be prevented from filing its charges in such a way that they tend to compel exclusive use.[16] In the present context, this means that commercial-bank-dominated clearing arrangements could not be used to prevent members from using clearing provided by other systems, including a system operated by thrift institutions.

The second principle concerns access to a joint monopoly facility itself. The basic rule is that those who jointly control an essential facility, and who reap a competitive advantage from it, must grant access to it on reasonable and nondiscriminatory terms to all in the trade. This rule grew up in connection with local transportation facilities[17] and local produce markets.[18] More recently, it has been extended to national institutions that engage in clearing various types of information, such as the Associated Press[19] (whose members exchange news stories) and the New York Stock Exchange.[20] It has been recently applied as well to require access to a regional electric power transmission system.[21]

The rationale for the so-called "bottleneck" rule is easy to find. A group of firms, or even a single firm, that controls an essential facility can use it as a means to shut off or seriously inhibit competition from those who require the use of it. In the electric power case, the finding was that the power company had used its control of wholesale transmission as a means of foreclosing new competition in local retail power supply. In *Associated Press* v. *the United States,* the restrictive membership rules

[15] *Cf., Lorain Journal Co.* v. *United States,* 342 U.S. 143 (1951).

[16] See, *e.g., Advance Business Systems & Supply Co.* v. *SCM Corp.,* 415 F. 2d 55 (4th Cir. 1969), *cert. den.* 397 U.S. 920 (1970).

[17] See, *e.g., United States* v. *Terminal RR Ass'n,* 224 U.S. 383 (1912).

[18] *See, e.g., United States* v. *New England Fish Exchange,* 258 Fed. 732 (D. Mass. 1919); and also *Gameo, Inc.* v. *Providence Fruit & Produce Bldg.,* 194 F.2d 484 (1st Cir. 1952), *cert. den.,* 344 U.S. 817.

[19] *Associated Press* v. *United States,* 325 U.S. 1 (1945).

[20] *Silver* v. *New York Stock Exchange,* 373 U.S. 341 (1963).

[21] *Otter Tail Power Co.* v. *United States,* 331 F. Supp. 54 (D. Minn. 1971), *aff'd,* 410 U.S. 366 (1973).

were designed to favor each local AP member over any other newspapers in their same local areas. Monopoly power over an essential facility applied in this fashion is extended into the derivative or underlying industry, with resulting loss to efficiency, to technical innovation, and to the development and marketing of new alternative services in that industry. In the end, the consumer is the one who suffers.

The question of compulsory access to any joint EFT clearing system will turn on specific facts — and the terms of any access will have to be tailored to those facts. As a rule, compulsory access would not be required unless the particular facility is found to be "essential" in the sense that exclusion would impose a significnt handicap. As noted above, the access question is usually raised with reference to thrift institutions or non-member commercial banks. Thrift institutions already are "fierce competitors" with commercial banks for certain types of deposits and services[22] and competition between them may increase in the future if current legal restrictions are relaxed. If *direct* access to an EFT system (including a system operated by the Federal Reserve System) provides a significant competitive advantage to a depository institution, then it should be granted to all competitors, as opposed to indirect access through a correspondent member bank.

Competition in Service Development and Delivery

Electronic technology and the consumer services will be closely related in the retail banking sector. Here competition is likely to be most intense, because the rewards that the public can offer, as well as the penalties that it can inflict, are greatest and most immediately evident. Here it is that differences in systems will become most obvious: the differences in systems design control the costs or form of different products that can be offered at the end of those systems. Accordingly, the electronic retail banking competitor will have to work long and hard to make his system better than the other systems, or face the risk of losing the consumer's business.

[22] *United States* v. *Connecticut National Bank,* U.S. (1974). *See also Fort Worth National Corp.* v. *FSLIC,* 469 F.2d 47 (5th Cir. 1972); *United States* v. *Phillipsburg National Bank,* 399 U.S. 350, 359-60 (1970). *See also,* Remarks of Robert E. Knight, *Changes in the Payments Mechanism: What It Will Mean to You?,* Bank Management Conference, Sponsored by Commerce Bank of Kansas City, April 18, 1974. As an example of this, the First Federal Savings and Loan of Nebraska installed remote terminals in two Hinky Dinky Supermarkets, a program first discontinued pending the outcome of two suits of litigation and then re-instituted. *American Banker,* Sept. 13, 1974, p. 1, col. 1. Thrift institutions in other sections of the country have already indicated a desire to institute similar plans. Minnesota's largest savings and loan association (the Twin City Federal Savings and Loan) announced in mid-September 1974 its intention to install a remote, off-premise teller machine in the Minneapolis-St. Paul International Airport. *American Banker,* September 23, 1974, p. 1, col. 1.

Competition at the systems level is healthy. It will produce a far greater variety in services than would otherwise be the case, and the consumer will be able to select those systems that best serve his needs. Some consumers and merchants may find that their customers prefer to use only credit-authorization or check-guarantee systems, because the relatively primitive system required to supply that service is also relatively cheap. Others may prefer to use a full-blown debit-transfer system that also provides credit authorization, inventory control, accounts receivable organization, and other services — indeed, the merchants may have their own computer systems that only incidentally communicate with bank systems. But in every case, the nature of the electronic infrastructure dictates the service that the consumer can use, and the cost at which it is provided. Only in a competitive environment can the various services find their proper economic level of use. A single monopoly system that provides all services necessarily inflicts excessive costs on those who use only the most primitive services, and who, but for the monopoly, would never pay for the cost of a large-scale computer system. Conversely, a monopoly may well limit the types of services available to those which only a large number of people want, and be incapable of providing more specialized services that cater to the needs of the few.

The most important form of competition in retail banking systems — and one of the most rapidly developing areas in EFT[23] is likely to be in point-of-sale card-activated systems. The national bank credit-card organizations are already preparing to offer electronic services within a year. They will no doubt be joined by the broadly based travel-and-entertainment cards. New card systems, such as the Citicard, are beginning to invade the national market.

In this area, the crucial competitive questions so far have concerned proposals by banks to run local electronic systems on a "public utility" basis, with all banks having access. As in the case of automated clearing houses, some people have raised the issue of access for thrift institutions. These proposals have not received great encouragement from the government — and rightly so. The Department has expressed its concern on antitrust grounds, and the Federal Reserve Board has declined to commit itself to funding a local point-of-sale utility in Atlanta.[24]

The Department's objections run to the very heart of the argument in favor of a local utility. There seems to be no evidence to support the notion that point-of-sale systems should be organized as monopolies — indeed, the case for "natural monopoly" here seems to proceed more from

[23] *Accord American Banker,* Sept. 23, 1974, p. 4, col. 1 (Editorial).

[24] See *American Banker,* Sept. 12, 1974, p. 1, col. 1.

the natural caution of bankers than it does from a close examination of economic structure. What evidence there is suggests that a series of competitive point-of-sale systems can survive so long as they can use the telephone network and can each accumulate an adequate customer base in the long run.[25]

There are certainly a number of systems now, each with its own customer base, and they are expanding and upgrading their services continuously, and others are emerging. For example, both the National BankAmericard, and the Interbank networks are developing independent electronic clearing facilities for their own members. In New York City, the First National City Bank has already begun deploying its own terminals in some stores and in its branches for check-verification and credit authorization. Its parent Citicorp also recently proposed to institute an electronic check-guarantee program that would guarantee the credit of a customer holding a Citicard, no matter what bank he kept his checking account in; and, while this was rejected by the Board,[26] other independent firms are proposing such systems. Meanwhile, in New York, a group of large banks are apparently on the verge of deploying a competing terminal system, using a technology that differs substantially from First National City's.[27] In addition, the American Express Company announced last year an automatic bill-paying service whereby cardholders would authorize American Express to debit their accounts automatically.[28]

In this new field of POS technology, it is especially important to see that as many competing systems as possible be given a chance for survival.[29] Accordingly, we will try to make sure that the joint ventures formed to offer local POS retail banking services are no larger than reasonably necessary. How large the ventures should be depends in large measure on how big the customer base needs to be to support a system over the long run. It seems reasonably likely, however, that a city the size of New York could support more than two competing systems.

The simple fact that all (or most of) the leading banks in a community have invested their own capital in a single system may retard product and technical innovation. Left to themselves, these banks are unlikely to switch to another system, even if it is somewhat better, because they have already invested both money and management pride in the first system.

[25]There are of course still stumbling blocks. See "Point-of-sale Systems: 'Still Testing,'" *Banking* (January 1974), 21-23, and 88-89, for discussion of the widely divergent POS pilot endeavors, and their economic feasibility, given the customer base.

[26]See *American Banker,* Aug. 28, 1974, p. 1, col. 1.

[27]*Business Week,* June 22, 1974, p. 102.

[28]*American Banker,* Nov. 16, 1973, p. 1, col. 1.

[29]This view is widely held. See Part Two, "Electronic Funds Transfer Systems: One, Two, or More? Bank-run or Fed-run?" *Banking,* May 1974, 29, 88 and 90.

One of the main problems with a single system, whether bank-run or run by anyone else, is that the central switch puts technical limits on what can be offered at the end of the line. Alternatively, the switch might not put any particular limits on what goes through it, but be excessively expensive and thereby impose high cost floors on any services using it.

The competitive problem is worse where the bank group that developed the system tries *collectively* to offer the terminals to the merchants; the merchants, and the public, would have to accept the entire system as a single package, on a take-it-or-leave-it basis. However, we understand that banks have generally backed away from this, and that even the local monopoly systems contemplate competition between members in offering terminals to merchants.

From the standpoint of competitive policy, we should differentiate clearly between (1) a system where the terminal was connected directly to the central switch, and (2) a system where the bank offering the service stood between the terminal and the central switch as a sort of interface device, or concentrator. In this latter case, the bank can offer a whole range of services over its terminal to its customer. Many such services would not require interbank transfers, however, and consequently the services (and the necessary equipment) could be tailored by the offering bank on a fully competitive basis, without any external constraints. With regard to those services that did require interbank communication, what would be required of the terminal is that it be able to speak the "least common denominator" language of the central switch. This may still impose extra costs or technical limitations, but it would be a lot better than a joint monopoly purveying only a homogeneous product. But of course, it is still only a second-best configuration.

It is still too early to tell just how point-of-sale systems will develop, and how they will interact with automated clearinghouses. To the extent that the offering of immediate electronic transfers of funds from one person's account to another's becomes a business in itself, and requires access to a central processing center such as an automated clearinghouse, then the antitrust access principles already discussed may require access to participants other than depository institutions in which the accounts are housed.

One should say something about smaller banks — who frequently argue for the "public utility" approach to POS development. Of course, the vast majority of banks in this country are quite small in absolute terms. Most would not be in a position to develop and run their own POS system alone, and a considerable number might not be able to run their own money machines alone. Yet this does not suggest that we should abandon competition in these areas in favor of an industry-wide monopoly claiming to protect small banks.

Efficient smaller banks should have a variety of competitive options open to them in this area. One will be to stress better live, human service for customers who hate haggling with a computer. Another will be to

form joint ventures to offer point-of-sale and money machine services. Some independent banks have been doing some of this for general data processing, and could expand their efforts. The third will be to buy access into one of the competing systems in their area (much as they buy correspondent services now).

As long as there are competing point-of-sale systems, each will have incentives to increase its coverage. This is what has happened in the credit card field, where card issuing banks have worked with and through smaller local banks in offering credit card services to local customers and merchants. The smaller banks have not themselves issued cards, but they have been an active and important element in the competitive credit card system which has developed.

Remote tellers present many of the same competitive issues as POS systems. Remote teller units right now constitute the most rapidly growing area of electronic banking. Remote tellers cost roughly $35,000 to $50,000 to install,[30] and they are becoming increasingly popular as the pressures of competition spread them throughout the financial industry. As I see it, a remote teller is a logical — and often more efficient — extension of the individual bank's traditional network of offices and facilities. To allow them to be put up on a broad, joint basis by existing competitors in a market may eliminate an important part of an individual institution's service competition. They may be a particularly important tool where they are offered in a new location not already served, or served conveniently, by the bank putting them out. As such, they offer local customers not only longer hours, but a new choice. It is for this reason the Department of Justice has favored reasonable geographic diversity in the rules for these tellers — and specifically has supported a Home Loan Bank Board proposal to allow them to go some 50 miles, and even across state lines.[31] The Comptroller of the Currency, is, I understand, contemplating a similar approach for national banks.[32] We have, in general, urged that these new types of facilities not be treated as "branches" and subjected to restrictive state branch banking laws, but, instead, that they be allowed liberalized entry.

Several independent groups have been formed to offer remote teller systems to banks. For example, the Ohio Valley Data Control Co. has already begun offering its "Mr. Cash" service to banks in Ohio and West

[30]Some have suggested, however, that hidden costs may substantially raise the total costs of remote teller units. See B. Chamberlain, "Automated Tellers — To Not Install," in a panel discussion before the Banking Administration Institute Conference on Cash Dispensers and Automated Tellers Equipment, August 8-9, 1973, Chicago, Illinois.

[31]See "Comments of the United States Department of Justice," *Proposed Amendments Relating to Electronic Funds Transfer Through Remote Service Units,* filed June 24, 1974.

[32]*American Banker,* Sept. 17, 1974, p. 1, col. 2.

Virginia. Other groups in St. Louis and in Oregon have been contemplating the same sort of thing. In Bellevue, Washington, a group of thrift institutions have combined to set up a single free-standing teller as a pilot project. Here in New England, mutual savings banks have been developing a system called MINTS, whereby customers of participating savings banks up and down the East Coast could withdraw money from their savings accounts at remote teller units installed in shopping centers. The list goes on and on.

When competing banks pool their resources to set up a single remote teller unit or system of units, they raise a variety of fairly standard antitrust issues. The chief issue is whether the shared facilities tend to reduce competition among the participating banks generally or in developing services based on remote-teller systems. Competitive problems are more serious if two major competing banks share remote teller facilities than if two tiny banks do so. This is essentially the same sort of question that is raised by shared point-of-sale banking systems. Joint ventures are not illegal *per se*: it is only when they threaten the competitive vigor of an industry that they transgress the antitrust laws.

Conclusion

The electronic financial world is complex and changing. Technology promises to change the ways in which financial institutions deal with their customers and deal with each other. It promises to break down the barriers between banks and thrift institutions, and it promises us greater diversity in the ways that financial services are defined and offered. I have great confidence in the capability of the marketplace, spurred by customer demand, to produce new or better services. I have somewhat less confidence in the ability of government to let the process evolve on the basis of entrepreneurial skill, foresight and industry — especially when certain types of institutions may claim that they are being hurt by the electronic revolution. But we should foreswear regulatory protectionism, and modify old institutional arrangements to reduce the risks that regulatory arrangements will be used to suppress progress.

EFTS or EVE

Dee W. Hock

Introductory Comments

It has been most interesting to listen to the initial part of this conference, particularly references to the continuing viability of the check clearing system, and views as to the social cost, economic justification and impact on the public interest of electronic alternatives.

It has made me most grateful to have a job whereby I can meet with the rest of the gods here on Mount Olympus to discuss how we shall hurl electronic thunderbolts on the populace below and thereby insure their worship of our wisdom. It would be well to keep in mind, however, that they may have little faith in what we say, nor should they, for pronouncements about how others should live their economic lives is presumptuous, if not dangerous.

While much has been said and written here with which to agree, there is an essential point on which my views depart strongly from some. The proponents of several views seem to make an assumption that such matters as the public interest and social cost can best be judged by whatever entity they deem suited to the task ahead. The real question is, who is best suited to judge such matters? Congress? The executive branch of Government? The Federal Reserve? Commercial banks? Savings banks? Bank card organizations? The Consumers Union? The Justice Department? Or is it the public? And if the public, how can it have any opportunity to exercise its judgment except by the only effective method which has ever been found; that is, by choosing freely among a variety of competing services with complete information about the costs, practices, and benefits of each. My strong conviction is that the public should choose and my great fear is that they may never have the opportunity. If solutions are forced upon them it matters little which organization does so, for ultimate abuse of such power will be inevitable.

Dee Hock is the President of National BankAmericard.

The Substance of Banking

Discussed with much vigor and even more profundity under the great gray canopy of "Electronic Funds Transfer" have been magnetic encoding, embossing, plastic cards, paper cards, money, computers (minis and maxis), telephones, radio waves, satellites, modems, nodes, software, COBOL, mainframes, core storage, BPI's, currency, cash, consumers, checks, drafts, terminals (intelligent, on-line, off-line, attended, unattended), automated payroll, imprinters, thumbprints, voiceprints, merchants, inventory, retailers, wholesalers, banks, branches, savings associations, credit unions, Federal Reserve, SCOPE, COPE, NBI, Interbank, Justice, cash, credits, debits, preauthorized payment, deposits, withdrawals, balances, bills, billchecks, Culpepper, bank wire, Western Union, lasers, and so on ad infinitum. And if you try to make sense of the list, great power to you, for it is endless and I shall not attempt to do so.

Many of the misunderstandings in this world arise because the words in the mind of the speaker are conditioned by one set of experiences and thoughts, and in the mind of the listener by another. It is unfortunate that an agreed-upon vocabulary for EFTS does not exist. Therefore, the possibility of real communication is small, and while much may be known, little is understood and less agreed upon.

At the risk of being accused of imprecise response to the subject matter, I would like to avoid detail, share some concerns, and probe a few assumptions which seem prevalent.

Of considerable concern is the basic context in which electronic funds transfer is usually discussed. That it is strongly tied to the traditional structure of bank clearings, to reliance upon Federal Reserve assistance in automated clearing houses, and to the present function of checks, is considerable evidence that banking may be in danger of a course of conduct which has caused many industries to become anachronisms in the marketplace, that is, to forget the essence of their business and thus confuse form with substance and cause with effect. It is particularly dangerous for service industries.

In my view, the substance of banking is not lending, accumulation of deposits, safeguarding of valuables, establishment of branches, administration of trusts, or moving of checks through clearing houses or the Federal Reserve. They are the form, not the function, of banking.

A combination of three brief definitions from Webster states the matter well:

Bank: An establishment for the custody, loan, exchange or issue of *money.*

Money: Anything customarily used as a measure of *value* and a medium of exchange.

Value: The amount of a commodity, service or medium of exchange that is the equivalent of something else.

Substituting the meaning of money and value in the definition of bank, the substance of banking can be stated as:

The custody, loan, exchange or issue of anything customarily used as the measure of equivalent value.

If we really believe that the "anything customarily used as a measure" will be electronic data, the question ought to be, "Is banking capable of providing a complete electronic means by which commodities or services can be measured and exchanged?" Our most pressing concern should be how to best assure that merchants and consumers will customarily use and depend upon that system.

It suggests that discussions about how accumulations of electronic value (funds) are to be transferred are inextricably interwoven with who owns value, when they wish to transact, for what purpose, and how electronic technology can best serve their needs.

The real subject is electronic value exchange and, in discussing it, we should not forget that banking is a great manipulator but a small owner of value, and that manipulation of electronic value differs radically from that of paper value.

Clarity of thought may be improved if various means of value exchange are thought of in component parts rather than as totalities in order that differences, if any, may be distinguished. The following table may prove useful:

FORMS OR METHODS OF EXCHANGING VALUE

Element	Coin	Currency	Check	Bank Card	Electronic
(1) Value	Alpha/ Numeric Data	Alpha/ Numeric Data	Alpha/ Numeric Data	(4) Alpha/ Numeric Data	Alpha/ Numeric Data
Vehicle	Metal	Paper	Paper	Paper	(5) Electronic Impulse
(2) Guarantor	Government	Government	Depositor	Banks	Unknown
Manipulator	Virtually Anyone	Virtually Anyone	Commercial Banking System	Commercial Banking System	Unknown
(3) Transport	Mechanical (Road/rail and air)	Mechanical (Road/rail and air)	Mechanical (Road/rail and air)	Mechanical (Road/rail and air)	Present Utilities (Telephone Co., Western Union, etc.)

(1) Since all forms are based on reliance on value not intrinsic to the form but represented by the data, the expression can be in any standard (i.e., U.S. dollars).

(2) Guarantor is used in the sense of assurances to the recipient of the form (generally the seller of merchandise or service).

(3) In the most accurate sense, the Federal Reserve has never been the delivery mechanism for checks but rather a manipulator.

(4) The plastic card is not the vehicle. Rather it serves to identify the owner of value and create the alpha/numeric data on paper or on electronic impulse. It has more of the nature of the pen with which the check is written combined with the driver's license, etc., used for identification.

(5) There will always be some use of paper vehicles since even a descriptive billing system eventually presents the alpha/numeric value data to the customer on paper.

Recognition that the advent of electronic value does not change the essential element of alpha/numeric data expressed in dollars; that other elements may change drastically; that whatever organizations compete to serve the public with electronic value will utilize the same vehicle and the same means of transport; and that the principal element essential to success will be to make the owners of value customarily use and depend upon an electronic form is to realize that the manipulators and guarantors are of necessity unknown until it is determined who has the greatest expertise, the most effective national organizations, and the greatest will to create the necessary systems and persuade the public they can be safely used.

If our primary concern remains the transfer of accumulated value (funds), but the expertise and systems by which electronic value is transacted in the marketplace are provided by others, our future is grim, since the systems which transact can easily accumulate, sort, switch and transport. This capitulation to outside competition greatly limits opportunities for banking as the need of the owner of value for banking accumulation and transfer diminishes, and with it deposits.

If banking meets that competition by means of monopoly in any segment of the marketplace or banking system, the prospects are slim, since that virtually assures either regulation as a utility, or antitrust suits with treble damage liability, unless evidence proves no competitive alternative was available.

If we place undue reliance on the Federal Reserve or invite its extension into the marketplace, the future is dim, for that invites ownership or domination of banking services by government intervention.

Development of the Present System

If banking is to have a future in electronic value exchange which is other than grim, slim or dim, it must act swiftly in a much broader area, with competition in every segment, and without increased government intervention or control.

It is perhaps understandable that the massive, somewhat preemptory, check clearing activities of the Federal Reserve should have evolved. It is less understandable that they be electronically perpetuated. For if any industry uses radically new technology in a manner that perpetuates existing form rather than enhancing function, it may swiftly be hooting in the commercial graveyard where the ghosts of form, which did not follow function, are buried.

It makes no more sense for electronic value exchange to be patterned after the present Federal Reserve check clearing system, and managed, owned or subsidized by the Fed, than it would had the airlines put steel wheels on 747's and jetted them down the Penn Central tracks.

There is considerable evidence to support a conclusion that present levels and methods of competition between banks and other commercial

organizations, and between banks themselves, as well as Federal Reserve activity, will change substantially with electronic value exchange. There is even more evidence to support a conclusion that every segment can be competitive.

It may help to compare the nature and magnitude of problems which had to be solved in structuring the present paper system, and how they changed with the advent of electronics. Greatly oversimplified, they might be described as:

The periphery:

1. *The transaction:* that which takes place in the marketplace when value is exchanged between individuals and/or organizations.
2. *The entry:* the methods by which value requiring bank services enters the banking system.

The median:

3. *The primary handling:* the manipulation of value in the banking organization at which value enters.
4. *The primary exchange:* that which occurs when value passes between primary banking organizations.

The core:

5. *The secondary handling:* the manipulation of value by organizations such as the Federal Reserve which act between primary entities.
6. *The secondary exchange:* that which occurs when value passes between secondary entities.

In a paper system, the technology and expertise required in the transaction is so rudimentary as to permit unlimited competition. The individual or organization wishing commodities or services presents currency, or an order to pay on his account, generally a check, and receives value. The maximum requirement is a government bill, or a check any printer can produce, a pen, a customer who can write, a clerk who can read and count, and perhaps a cash register to accumulate and store the individual value items. The costs and requirements are so low as to make every transaction competitive.

To achieve entry, the merchant requires a deposit slip, a clerk who can do simple sums, a means of transportation to the nearest bank, and the arithmetical ability to confirm the bank's handling as reflected on the statement. At the bank, the original requirements were for clerks with enough simple reading, arithmetical and writing skills to post and balance a ledger, prepare a statement and sort checks.

The simple requirements, together with an immobile public having no great need to transact value outside the community, permitted an almost unlimited number of competitive entities and a minimal number of value items requiring exchange or secondary handling.

The explosive growth of goods and services and the change to a mobile society, leveraged against the number of banking entities, created immense concentrations of items beyond the capacity of the primary handling organizations. Private banking, lacking a suitable structure beyond the primary level, turned to the Federal Reserve, which stepped into the breach and largely preempted the function. The evolution is too well-known to need retelling, except to make a single significant point:

Under a system of value symbols which requires a paper vehicle, the magnitude of the problem to be solved and the degree of technology and organization required for its solution increase inexorably and geometrically from the periphery to the core of the system.

The first impact of electronics is long past. Computers, MICR reader sorters, and on-line terminal input are already beyond the capacity of small banks and, while not the most significant factor, have heavily influenced banks to purchase basic services from competitors, growth of bank holding companies, creation of bank service companies, formation of external service bureaus and a host of other actions, all of which have irrevocably altered the nature and structure of bank competition.

However, nearly all applications of electronic technology, other than bank wire and the Federal Reserve wire transfer system, have been directed toward the sorting, accounting and transporting of paper value vehicles, rather than creation of services which do not require such handling.

The magnitude of the problem to be solved and the effort required at each level change drastically when electronic value exchange is analyzed. The problem of receiving, sorting, transporting and settling vast numbers of items is not a complex matter nor is the cost excessive, assuming usuable electronic data are created near the periphery of the system. If it is created in the median, the problems there are greatly magnified. Median problems can be reduced if usable electronic data are created at point of sale. But therein lies the rub, for if most data originate on paper, electronic entry must be the first point of primary handling with reliable, cost effective methods of translating paper symbols into electronic symbols. That capacity exists today in considerable measure in larger banks, for automated checking accounts and bank cards require no less, whether input is achieved on-line, by keypunch, or MICR encoding; and whether or not the end-billing product is descriptive or involves return of paper. A notable banking exception is the Master Charge system wherein this capacity has largely been placed in the hands of huge processing associations. It exists in even greater measure in large commercial organizations outside banking.

However, if the problem of primary handling is simplified by creating usable electronic data at point of sale, the problems there are immensely magnified. For the customer must now possess a machine-readable device which requires highly sophisticated and specialized companies to produce, issue and encode; and the merchant must have expensive, sophisticated

equipment to read that device and originate, then transmit, an appropriate electronic message.

This iteration is to make a single essential point: that a complete system of electronic value exchange will initiate a reverse flow in the magnitude of problems to be solved which will require substantial alteration in the structure of banking if maximum competition is to prevail.

At the core of the system, it may now be practical to have a substantial increase in the number, types and functions of secondary handling and exchange systems. In the median, the situation will vary depending on the functions and expertise at the core and on the extent to which usable data are developed at point of transaction or in organizations external to banking. Present concentrations of combined processing effort by large banks (such as bank card processing associations) may not be competitively necessary or desirable. More combined effort by smaller banks, particularly in unit banking states, may be essential and pro-competitive. The need for joint venture and combined effort at transaction point will be immensely greater everywhere but does not justify monopoly.

The Need for Changes in Banking

It seems clear that the forms of banking and the degrees and levels of competition will be drastically realigned; will be caused to a great degree by competitive activities external to banking; and if maximum competition is to prevail, will require less centralization at the core and more at the periphery.

It was Dostoevski who said, "Taking a new step, uttering a new word is what people fear most."

From long, valuable experience, banking, like most industries with a long, stable tradition, has developed ways of thinking which I have heard Governor Mitchell of the Federal Reserve refer to as the "Theology" of banking, which economist Galbraith has labeled "Conventional Wisdom," and which Bob Long of the Bank Administration Institute has called, "The things bankers know which are no longer so."

It may be productive to challenge some Conventional Banking Wisdom.

> *Conventional Wisdom: Vast sums of money, much time and great volumes of transactions are required for development and cost effective operation of nationwide funds transfer systems.*

Reality: The first major nationwide electronic funds transfer segment of an electronic value exchange system is now in operation. On November 1, 1974, all 87 BankAmericard Centers interchanging items must accept electronic rather than paper items from any other member, and may transmit all outgoing items electronically. By March 1, 1975, all members will be required to send all items electronically. All BankAmericard drafts will then reside under NBI regulations at the sending bank. The entire system was developed from conception to implementation in 18 months. It

cost less than $7 million dollars, including central computers, 90 minicomputer tape transmission units used in member Centers, central software, edit software for member banks, audit procedures, training and operating manuals and customer educational materials. This does not include one-time internal preparation costs at each member bank.

The system, called BASE II, will handle over 200 million items, representing over $4 billion during its first full year of operation. Cost to members will be 2.5 cents for each item cleared through the system, which is sufficient to pay all operating costs and recoup the initial investment within four years. On a conservative basis, the savings will be over 6 cents per item, or $12 million in the first year of operation. In addition, the system will permit the direct exchange of electronic data between consenting members, at 1 cent per item, which represents a share of fixed costs. Should volume increase substantially, the cost to members could be reduced.

Among other things, this system will provide nonpar clearings, net settlement between members (less than 80 clearing drafts daily through the traditional banking system as opposed to the present 6,000), overseas clearance with Alaska and Hawaii, 24-hour turnaround on all items, administrative messages between members to request original documents, and transmission of charge-back items. The system is in negotiation with banks in other countries for similar international clearing. What it can be modified to do in the future, we cannot discuss for competitive reasons. It is interesting to note that the system can operate effectively on less than 1 percent of present U.S. check clearing volume.

If you want clearer evidence, you should know that our interim draft transfer test, which preceded the full system, involved seven scattered banks from Alaska to Colorado and South Carolina; was conceived July, 1973; specifications were completed in August; software was written in September; it was acceptance tested in October; and was in full operation November, 1973. The entire development and installation cost was less than $5,000. Those seven members have cleared all items between themselves through our BASE facility, using eight tape transmission units and telephone company lines. In 10 months, they have cleared an average of 40,000 items per month and over $8 million. Some bill descriptively and others return facsimile items. The total operating costs have been about $7,200 per month. That amounts to 18 cents per item, with the most ridiculously poor geographical configuration and equipment utilization which could be devised. It is interesting to note that the volume of items cleared was double that of the most active automated clearing house.

One could discuss for a long time the fine points of where comparisons may not be perfectly valid, but the significance is obvious and overwhelming. The magnitude of effort and systems required for secondary electronic handling and clearings is enormously lower than that of paper systems and, therefore, creates substantial opportunity for competitive ventures if the market is not preempted by government or Federal

Reserve actions, or by joint ventures which monopolize geographical or functional segments of the market.

Electronics should greatly reduce the need for, or justification of, preemptive joint ventures or Federal intervention in the areas of secondary handling and clearings.

Conventional Wisdom: It will take major changes in present laws to permit anyone other than banks to transfer electronic value.

Reality: The law, whether legislative, regulatory or judicial, rarely precedes change, social or commercial. It historically arises to regulate and interpret that which has already happened.

Commercial and criminal law did not anticipate, nor do they fit, electronic value exchange. While legal practitioners may prove helpful in applying certain tested principles to new facts, they cannot be expected to either authorize or forbid most change to electronic value exchange. They can be expected to incorporate new practices in the code, curb excesses that are punitive to society, and modify past laws which hinder beneficial new activity. In most cases, it would be foolish to expect the law to be an ally protecting banking's self-interest.

In the context of electronic value exchange, banking law may not be applicable since it primarily controls that which is deposited for use by and exchanged among banks. It may not cover the means by which it reaches the bank or the means by which it is extended from the bank to the marketplace. In the marketplace, subject only to the willingness of the parties to rely upon it, value data may be verbal or visual (remember — anything customarily used). Anyone familiar with the operation of produce markets would agree that huge value transactions are consummated by spoken word. Currency traders and investment brokers certainly extend that principle geographically by use of the telephone.

If that be true, then it follows that any electronic device, by which spoken value data are transmitted (telephone); any electronic device by which visual or verbal value data are translated into electronic impulse (cathode ray tube with keyboard); in fact, any instrument, device or means by which value symbols are recorded, transported, or recognized becomes part of an electronic value exchange system.

Let's assume one store of a major national merchant accepts various paper symbols representing value from its customers in exchange for goods or services. They are totaled by the store and put into the hands of a bank for collection and the total credited to the merchant. A thousand other branch stores do likewise. To make the most effective use of what it now owns, the merchant needs immediate centralized knowledge of that value. At various times, an employee in each store picks up an electronic instrument which connects over the telephone system to a similar instrument. The employee transmits verbal value data regarding the amount deposited, store and bank identification, and related information, to another person who immediately translates it via a keyboard to electronic

value impulses which are transmitted over wires or radio waves to a central national computer, where it is captured on tape or disk. The central computer daily combines data from the thousand branch stores, sorts it by bank, by store, or in any other way the organization desires; then reverses the electronic procedure, makes the value data available to the merchant headquarters in any form best suited to its use. The merchant, by manipulating bank clearings, is able to make use of the value it owns two to six days sooner than otherwise possible had it used only bank facilities. Is that electronic funds transfer? Certainly it caused funds to move faster. Certainly it changed the flow and use of value. Certainly it affected the movement of money. Certainly it used electronic means.

The description is, of course, nothing but one of the services of National Data Corporation in Atlanta, Georgia, a commercial enterprise begun by a single entrepreneur and a handful of investors. The service now claims to move electronic value data of more than $1-1/2 billion a day, and banking has nothing to do with it, except that many banks encourage their large national customers to use it since it puts the value owned by those customers into the banks' hands, hence their customers' hands, much quicker than would otherwise be possible.

The significance is all too apparent. An enterprising company provided a means whereby the *owner* can more effectively manage his value, and whereby the use of that value by various banking organizations can be altered. Profitable financial service business thus flows to the expert who can assist the owner, and away from banking, the traditional source of financial service. Such is competition. Another example is the Validata System, owned by TRW, which essentially uses NSF checking information provided by banks and sells it in organized fashion to prevent check losses.

Suppose a major retail organization should install nationwide electronic communications systems capable of handling value symbols connected with electronic cash registers at point of sale in every store (they have and are, of course); and should contract with a bank to encourage the merchant's customers who wish to do so to open an account by mail (banks now legally open accounts by mail, do they not?). And suppose the customer, the merchant and the bank jointly agreed that the bank could accept funds from the merchant for deposit to the customer's account, and pay from the account to the merchant upon recognition of a confirmation device (credit card?) under the customer's control, and utilized only when he has delivered to or received from the merchant value (service, merchandise, currency, paycheck) comparable to the deposit or withdrawal authorized (remember — money is anything customarily used).

Against the law? Certainly, in some instances. But is the law all that clear or that universal? Would it be changed in the face of strong public desire for the service? It can be argued that the examples contain many assumptions and a convergence of many independent actions must precede any major movement which could adversely impact banking. That is

true. It is equally true that it requires a convergence of many small streams to make a flood in the desert. If you look about, there is an electronic stream already running in every gully and the storm has barely begun. Many of the legal dams banking reaction has hastily thrown up have already been swept away. Wisdom suggests we devote all our efforts to building canals.

We could go on for days about ways in which electronic value could gradually bypass the banking system without change in banking law. It is increasingly apparent that it is more likely to take major change in banking law to prevent the entry of non-banking organizations into electronic funds transfer than to permit it.

Conventional Wisdom: It will require nationwide standardization of message content, format, transmission techniques and identity devices before electronic funds transfer is either cost effective or practical.

Reality: Excess standardization will be the least practical, most expensive method of approaching electronic value exchange systems. The need has been vastly overemphasized.

Let us assume for a moment that a substantial retailer develops an internal electronic system using certain data techniques and formats not consistent with our BASE II system, or perhaps the five major Canadian banks which are members of IBANCO, the new international corporation, develop an electronic clearing system not wholly compatible with BASE II. Provided that a reasonable amount of data is accumulated at a central point for manipulation (a given in almost any system which can be conceived), it is a relatively inexpensive and simple software procedure to sort and reformat the data for effective entry into our system.

In fact, that is the technique used to develop the BASE II system. Every clearing member is, in effect, a separate electronic value system, since there are few common methods of data entry or software processing. Each member either has the required data in some electronic form, or is modifying its procedures to obtain it; however, in each system it may be in entirely different format. It is read in each bank's format to tape or disc; edited by a relatively simple software program developed by NBI to conform the data to BASE II requirements; and then entered into the system through a BASE II tape transmission unit. The procedure is reversed for transforming value data received from BASE into processable format. In time, should it prove advantageous to each bank, internal processing can be brought into compatibility with the system. In most cases, it is unlikely to prove desirable and is certainly not necessary.

It will generally prove far more cost effective, and cause far better and more competitive services to develop, if electronic systems are designed to meet the unique needs of industry segments or to create unique new service for customers, reformatting the value data where necessary for interchange, than to incur the expense and rigidity of massive standardization.

Conventional Wisdom: The public is happy with the present checking account system and will resist any change.

Reality: One might ask, compared to what? Other than the use of currency, which is dangerous to carry and unsafe in the mails, what choice has the consumer been given as a modern means of value exchange? With respect to their function of exchanging value in the marketplace, what differentiates one check from another? Does the customer find merchants more willing to take a check drawn on X bank rather than Y? Do merchants even look at which bank issued the check, and do customers find it easier to get checks accepted now than a year ago? Five? Ten? Twenty? Have merchants any less risk in taking them now than a year ago? Five? Ten? Twenty? And, if so, how much has to do with their own systems and expertise or use of services developed external to banking, such as the Validata system, than with significant change in the banking system?

Even more important is the context in which most of this conventional wisdom has been confirmed. It often involves a study to determine the acceptability of preauthorized payments, wherein the customer is essentially asked how he would enjoy losing a considerable degree of control over his value without offsetting improvement in its acceptability in the marketplace, the general thrust of which is to permit greater bank use of the customer's value at lower operating costs. Should we be surprised that he expresses satisfaction with the service as it exists?

Suppose a customer could obtain a banking account, at reasonable cost, with assurance that merchants nationwide would transact value against that account 24 hours a day, 7 days a week, without hesitation; that the customer could elect at time of sale whether to use current, reserve or future value (another way of saying demand, savings or credit assets); and could manipulate those assets from his home for his own maximum financial aggrandizement? Does anyone really believe that present satisfaction with checking accounts might not disappear like snow in the desert?

Does anyone really doubt that merchants would pay a reasonable charge to be able to transact value with customers throughout the country if they were guaranteed that the value symbol received from the customer could be converted to their use within 24 hours without fear of loss? And if we doubt, what are we doing to find out?

It is entirely practical through the use of electronics to offer such services today. The great lesson to be learned from the bank card business is that no matter how poorly operated, a system which puts a customer's assets at his disposal, under his control, for his use, 24 hours a day, 7 days a week, and which guarantees acceptance to the customer and value to the merchant, will receive overwhelming public acceptance.

Conventional Wisdom: Funds transfer systems are just delivery mechanisms and do not affect the creation, nature, quality, cost and competitiveness of services rendered.

Reality: This is so obviously wrong and so inimical to competition that it is hard to know where to begin. It argues that Federal Reserve policy and activity in clearing checks does not affect the nature and extent of checking services provided. Without arguing the benefits of the system, which I believe to be very great indeed, it is patently absurd to argue that the constraints and requirements of clearing do not largely determine the nature and extent of service rendered. If not, then why are all checks so similar; and why do they clear at the same speed, the same cost?

When national bank card service developed, it required a nonpar clearing system with charge-back procedures, rights and obligations differing widely from those required by checks. Had the Federal Reserve agreed when asked (and they were) to clear bank card activity, would the service have evolved as it subsequently has? Through fortuitous circumstance, the check clearing system was so structured that it forced development of two completely different competitive nonpar clearing systems, which use different methodology, rates and expertise and are competing intensely for supremacy through use of electronic technology. It is clear there would be no BASE II and no INAS today had the Federal Reserve said yes, and clear that present bank card service would be radically different.

And were the Federal Reserve par clearing system the only alternative, I question whether present groups of banks, now deeply into studies and market research to assess the feasibility of nationwide asset cards, would have yet started their first discussions.

Whether it be reservation systems of hotels or car rental firms, airline ticketing procedures, the mail you receive, the water you drink, or the food you buy; the ultimate product or service is the net result of every element of how it is produced, sold, delivered and serviced.

Value exchange is a labor-intensive service industry faced with increasing customer demand for wider geographic access, greater control and better guarantees of acceptance. It can only meet those demands with increased applications of computer and communications technology. It is hard to imagine anything which can place greater restraints than the communications and software systems with which the various components of the market are connected and the services rendered.

> *Conventional Wisdom: Checks and similar value items will always enter the banking system through a bank near where the transaction took place for delivery to its ultimate destination.*

Reality: It is by no means clear where and how a value symbol should be converted to electronics or where, how, and even if it should enter the banking system.

The largest retailers have ample resources and volume to install nationwide electronic systems to capture, accumulate, sort and transport value data along with necessary merchandise data. Presuming Sears had such a system combined with internal automated payroll, there is no valid reason they should not sell merchandise and services to their employees with appropriate electronic value deducted from the value owed employees for services rendered. And if United Airlines were similarly equipped,

there is no reason why, by common agreement, employees of either could not purchase from the other, with value deducted from the respective payrolls and balances struck between the companies long before anything reached the bank. It is equally apparent that should both be willing to issue value devices to the general public and guarantee the goodness of such devices, one company to the other, electronic value data could flow between them in great amount, completely bypassing the banking system.

The possibility for reciprocal acceptance of value instruments is limited only by the willingness of the issuers to enter into such agreements and the compatibility of the technology involved. Should a major merchant owner of such a system elect to accept bank cards or other banking value instruments, the value data could enter the banking system at virtually any point. It could be routed from the store to the local bank, or from the merchant's regional computer center to a bank or a regional switch owned by participating banks; or more logically to the central computer of the retailer for analysis and control, thence to a bank or a central distribution computer owned by many banks.

The significant point is that with the advent of electronics, distance and routing of the value item are of much less significance than the ability to manipulate, sort, account for and manage the item.

The basic capacities of the National Data Corporation system or the TRW Validata system could swiftly be modified for that purpose.

The realities are inescapable. When electronic value is generally acceptable within any segment of banking for exchange within the system and billing to the customer, other commercial organizations will compete with banking in the sorting, handling and transporting of value. Anyone who read the comments of Gordon R. Worley, Vice President, Finance, Montgomery Ward, in the September 16 issue of *U.S. News and World Report,* with respect to Ward's ability to move electronic value nationwide and to accept deposits or make withdrawals through electronic cash registers, wherein he stated, "I think the banks should really cooperate with us on this because if they force us to go our own way, they could find themselves locked out," must realize that it is unlikely they were lightly spoken or unfounded. We should never forget that railroad control of the right of way by government fiat did not protect their highly lucrative monopolistic hold on transportation when technology made other options available to their customers.

Technology is about to make many options available to ours, and hundreds of organizations sense that banking is neither structured nor yet strongly inclined to seize the opportunities those options provide.

Conventional Wisdom: Customers are unwilling to pay for new financial services when they are offered.

Reality: Much that banks have offered as new services are not really new in the sense of enhancing exchange of value in the marketplace. Often, they are the same old forms bundled, repackaged, repriced and sailed into the market under a new banner such as the "Pink Account," the

"Red Ribbon" or "Everything everyone wants in one account" (names changed to protect the innocent).

Those which provide some element of new services such as debit cards, cash dispensing machines, and check guarantee cards are usually given away in the hope of getting more deposits, in the hope of making more loans, in the hope of gettting more income, etc.

Users have nearly always demonstrated willingness to pay for new financial services which materially improved their ability to exchange value, whether developed within or without banking. Travelers checks (American Express), revolving credit accounts (retailers), multiple merchant accounts (Diner's Club) and BankAmericard are all examples.

I suspect the reality may be that customers are more willing to accept and pay for new services than banks are willing to accept the risks of creating and charging for them.

Conventional Wisdom: It is necessary to provide more free services in order to attract more money, in order to make more loans, in order to obtain more income, in order to make adequate profits.

Reality: Providing more and more free service in an effort to obtain and warehouse sufficient value in the form of deposits for investment in loans contains two increasingly questionable assumptions.

First: That the options for use of that value by the owner are so limited as to permit initial attraction as a deposit.

Second: And far more important, that the mobility of those funds are so limited as to insure their retention for periods of time required for safe investment in loans.

The validity of both assumptions is determined by alternatives available to the owner of value and the ease with which he can select among them. The owner can always be expected to seek his self-interest, and competitors, if they are not foreclosed by monopoly and/or government intervention, will always be there to point it out.

It appears to me that the immensely valuable services banks have traditionally provided in accumulating, warehousing and managing surplus value have given rise to policies which may be on a direct collision course with the changing desires, abilities and needs of the owners of value.

It may be exaggerated, though not totally unfair, to characterize the past form of banking as one which accumulates excess value for interim use by the bank and eventual use by others, through persuasion of the owners that they have no immediate use for it and that it would be more secure in the hands of the bank. From that premise and from a purely selfish view, an ideal bank would be one that induces the maximum number of owners to place in the bank the maximum amount of value for the least return and with minimum access. If everyone could be induced to place his entire cash and credit assets, for no return, in a bank open between 1:30 and 2:00 P.M., costs would be minimal and the possibility of profits enhanced.

I indulge in this exaggeration only to illustrate that as long as the principal thrust of banking is conceived to be an accumulation of value owned by others, to be managed by the bank and provided to third parties for their use, banks generally cannot be expected to welcome any movement which tends to leave value in the hands of the owners, or provide maximum mobility at the owner's discretion.

This creates a natural conflict with sophistication of commercial organizations which increasingly manipulate the value they own with reduced bank involvement. Thus, banks turn increasingly to less sophisticated sources of business, generally consumers, only to find that they too are becoming more sophisticated and less willing to have their assets immobilized and used or managed by others.

It appears unlikely that banking can resist the desire of the owners of value for immediate and continual access to that value, for better options for its investment, for more mobility in moving it between options. If banking is to continue to be the primary intermediary between the owners of value, it may have to adopt a policy of developing, owning, and charging services which the owner can use at his discretion, at his convenience, for purposes of managing his own value, perhaps with the advice of the bank, but certainly without its custody, dominion or control.

There is great talk in banks about the importance of asset management. Most of it presumes the management of assets of others since the percentage actually owned by banks is small. I suspect that there should be less talk of how banks can manage the assets of others and more talk of how banks can develop services which permit the owners to manage their own assets.

For if banks do not, someone else will. Whoever does may not have control but they will have great influence. If banks insist on control and resist the creation of more options and greater flexibility, I suspect they will find themselves with little control and less influence.

Therein, to my mind, lies the real significance of the application of electronic technology to value exchange. For if value symbols can be sorted and transported worldwide within 24 hours, and they can; and if parties can be identified one to the other worldwide in order that both can receive guaranteed value, and they can; and if distance becomes relatively meaningless in selecting the financial service organization with which to do business, and that is rapidly happening; and if equivalent value can be exchanged with limited need for its warehousing in banks; what, then, is the role of banking if not that of a service organization which provides the facilities and services to permit those values to be exchanged and those balances to be struck?

And how ready is banking for that role? Does it have the research and development budgets, the expertise, and how well is its structure suited to the user's need for national and international service?

In his book, *The New Industrial State,* economist Galbraith defines technology as "the systematic application of organized knowledge to practical tasks," and points out that most consequences of technology derive

from the need to divide tasks, bring specialized knowledge to bear on each, and combine the finished components into a workable product or service.

The six "consequences" or "imperatives" which he believes most significant are:

1. An increase of time from beginning to end of any task.
2. An increase of capital required for knowledge and technical expertise, as opposed to that required for output.
3. A more inflexible commitment of time and money to precisely defined tasks, which has value only for the task as initially defined.
4. Specialized manpower.
5. The inevitable counterpart of the first four is organization.
6. The inevitable consequence of the first five is the necessity for planning.

While there is much in Mr. Galbraith's book with which to quarrel, his analysis does much to explain the quandary of private banking, for the simple truth is that the industry has almost no effective mechanism for the nationwide utilization of technology, yet services resulting from massive national applications of technology are exactly that with which it must compete. It also explains the growth and success of organizations such as NBI and IBANCO, the new international corporation recently formed to administer the Blue, White and Gold program worldwide. Nearly everything they do is responsive to these imperatives. National bank card service is impossible without a joint venture for extensive utilization of technology, and for effective means to implement and regulate the services that arise therefrom.

A year ago in a bank card address, I made the following points:

There is the issue of fear of NBI, Interbank, the Fed, or for that matter any organization to which autonomy must be surrendered, whose regulations must be observed and whose activities must be financially supported.

There are essentially four methods of serving the expanded geographic and access demands of consumers.

First, the majority of banks could be absorbed by five or six of the largest banking organizations and the market preempted as is the case in Canada, Britain and other countries.

Second, the market could be forfeited to the government so that, in effect, any nationwide facility is government owned or controlled and banks increasingly are converted to providing service and products which bear the imprint of a government assembly line. Postal problems and much other recent government performance do not argue strongly for that approach.

Third, regional concentrations for production of products and services can be created and jointly owned, linked by some type of association superstructure. This is typified by the regional Master Charge processing associations, joined under the Interbank umbrella.

Fourth, joint ventures can be created to commonly operate select elements which are essential to national operation, and to create basic resources beyond the capabilities of individual banks, such as software, to be used by each bank in its own way for its own competitive purposes. The latter is most closely identified with the NBI structure and philosophy.

Certainly there are many choices to be made in the drastic revisions in the pattern of competition now under way in banking. Great care should be taken to avoid a lemming-like rush to the sea of monopoly or government intervention."

There is little I would care to add except five points:

First: There is a broad current throughout banking running toward monopoly. It tends toward initial application of technology at the core through total joint venture of all banks, which then reaches the periphery, (the marketplace) in the form of services which the core can accommodate. It resists competitive ventures either by preemption or protective regulation. It offers maximum economic security with minimum risk, thus greatly reducing fear of change. It is most often justified with arguments of reduced costs and promises of protection of the public interest.

Second: There is an equally strong current running toward competition. It tends to favor the maximum number of organizations competing to determine the needs and desires of the owners of value and to accommodate them within the limits of technological feasibility. It reaches the core in the form of whatever structure suits the needs of whatever segment of value exchange business each can competitively capture.

Third: Banking is not structured to effectively meet external competition. The community in which most consumers transact value is increasingly the entire country and to some extent the world. The community of those merchants providing the bulk of our goods and services is either regional, national or worldwide.

The community which banks are structured to serve is often one town and at most a state. If the organization of value exchange is to remain the function of banking, that situation must change.

Fourth: It is possible to meet the imperatives of technology by organizing joint ventures to plan, utilize specialized manpower and coordinate implementation through a large number of participant banking organizations which retain most of their autonomy and yet provide competitive service. It has no advantage over government ownership or a small number of large nationwide banks unless there are several highly competitive joint ventures. It requires that the principle of multiple levels of competition within a totality be accepted by antitrust law. It is my strong view that this is the best method by which all banks can provide modern competitive service, yet avoid the evils of massive centralization or absorption by other organizations.

Fifth: The time within which decisions may have any major affect on the eventual outcome is a perishable commodity. Many of us at NBI believe it may be less than three years.

The choices seem to be:

(a) Seek increased government participation as an owner of new systems or a protector of the present structure:
(b) Accept nationwide banking as many countries have done through the absorption of small banks by the large;
(c) Form total joint ventures and assume the nature of a utility; or
(d) Structure competitive joint ventures where necessary;
(e) Equivocate between (a), (b), (c), and (d) and thus default to external competition.

The decision should be a policy matter for the chief executive officer of every bank, should be made at the earliest possible moment, and the maximum bank influence should be used to achieve whichever objective is judged preferable.

The needs of the owners of value, the imperatives of technology, and the threat of external competition demand change in the structure of banking to permit immediate, effective national action.

To equivocate between alternatives, or to become obsessed with the mechanics of technique while the basic policy question of effective organization from which planning and utilization of technology must emanate, is a conscious decision to drift to government ownership, or default to external competition.

There is no need for the Federal Reserve to use its regulatory power or its power of subsidization to preserve the present clearing structure unless private banking (or other private enterprise) clearly demonstrates it has neither the will nor the wisdom to alter its form to preserve and enhance its functions.

"The moving finger writes; and, having writ, moves on;
"Nor all your piety and wit shall lure it back to cancel half a line;
"Nor all your tears wash out a word of it."

The finger of electronic technology is writing furiously in the book of Banking. Which will it write?

Discussion

John F. Fisher

The master story teller, C.S. Forester, who is remembered by most of us for his Hornblower saga, described the development and maturing of an idea. He compared this creative process to the growth of barnacles on a submerged timber.

Forester said that a young idea when it first floats to the surface is generally free of barnacles. He observed that we carefully view the timber, decide that more maturing is necessary and allow it to sink back into subconsciousness. The idea, from time to time, resurfaces and each time as we examine it, more sea life has become attached. Finally, from the ebbs and flows and the pressures of unconscious creation, an idea arrives, fully born. Forester concluded that the creative process is magical and marvelous and can seldom be hurried.

He obviously could have been writing about the development of electronic funds systems, for certainly, as they have been outlined at this symposium they are not yet fully born, and while some day they may be marvelous, they probably also cannot be hurried.

It is in this area of EFTS immaturity expressed by both Mr. Baker and Mr. Hock that I agree. I find little else with which to agree.

The area most exposed to criticism is the cornerstone of their combined position — namely, the so-called "Competitive Position." This is the same siren song always sung to divert the listener from the real issues which are too distasteful or too complex to attack single-handedly.

Mr. Hock and Mr. Baker build their case on the mother and apple pie platform of "good guys always go it alone, therefore, be a good guy and don't talk to that other bank." They miss the most important point — banking does not compete nationally. In banking one bank competes against another in its local marketplace. Fourteen thousand banks have arrived at this point in history because they have developed the management skills to compete within a cooperative environment. We are not a nation of a half dozen national banks as in Canada or England regardless of what Mr. Hock and Mr. Baker would wish for us. To be realistic, we are an interrelated industry in which our destiny is more controlled than uncontrolled, more local than national, and more sensitive to the "non-bank" competitors than to our bank brethren.

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To turn briefly to Mr. Baker's comments, I think the Justice Department is confusing the banking businesses with other kinds of businesses and is not truly relating the practicalities of the banking world as it is lived. Mr. Baker urges competition for its own sake without regard of the consequences or the economics involved. This is a complete lack of display of concern for the efficient use of banking capital or resources.

To a major extent Mr. Hock echos a similar sound in that there is no genuine attempt to examine the arguments of alternative solution. Joint ventures and cooperative systems appear acceptable only after a single system begins to falter or has failed.

I believe most damaging of all criticism levied against the positions of both NBI and the Justice Department is that they will result in an imbalance, rather than the expected balance, weighted toward benefiting the big at the detriment of the small. In the name of competition, their positions favor the survival of the well-financed permitting a few to exploit the current condition of silent legislation, a complex legal environment, and high cost, high risk technology. Those with designs on national banking must view the opportunities of EFT similar to the secrets of perpetual energy.

As identified by Mr. Baker, we do recognize there is a potential restriction on innovation through joint venturing. In all probability, the merchant will control the all important point-of-sale terminal and this will produce the greatest leveling effect on delivery system uniquenesses rather than a jointly operated switch and processing center. We will need to resist sinking to the lowest denominators. I believe the proper controls and the profit motive will safeguard against that prospect.

This potential limit on innovation has economic practicality as a beneficial trade-off. It is true that each airline could innovate by building and flying its own exclusively designed airplanes. They could also, in the name of pure competition, use separate airports and fly any route they choose and charge what the traffic would bear. They would compete but they would introduce an economic quagmire — chaos in the market place.

TWA did, at one time, fly a plane built exclusively for that airline — Howard Hughes was the innovator. Maybe Mr. Hock and Mr. Baker are suggesting that each bank now build its own three-ruddered Constellation.

Don't misjudge the competitive vigor of our industry. We don't compete through delivery systems, although Mr. Hock believes we do, any more than Ford and General Motors compete by requiring different highways for their products. We compete through our individual product design. We gain credit-card customers because of our willingness to extend credit, by attracting the customer with a checking, instalment loan or savings account, by providing overdraft plans, major purchase plans, pictures on cards, and advanced software packages — all of which have little to do with national systems and nothing to do with delivery systems.

Mr. Hock believes that standardization has been over-emphasized as he explained in his "Conventional Wisdom" undressing. That probably is

why NBI has spent enormous sums to develop a common, standardized software package available to all card-issuing members. And it may be why about half of the NBI Class B merchant banks — about 2500 in all — are members of both credit-card plans. Is this the non-standard competitive difference I've heard so much about?

It is in the area of the credit card systems that we are making a costly mistake. Both Mr. Hock and Mr. Baker discuss the two franchising systems as if they truly represented banking — as if a credit card would be the only vehicle accessing EFT systems in the future. Mr. Baker particularly omits the development of bank cards accessing deposit accounts from his considerations. Rather blindly or naively, he sees POS systems as competitive developments of the credit card system when in actuality the approximately 5 million bank cards already issued — estimated to grow to 100 million in the next five years — will have more effect on the development than will Master Charge or BankAmericard. It is not at all clear that NBI or Interbank will, in fact, be able to cause their member banks to rally around their bank-card banner.

The problems of an electronic interchange network are immensely complex when debit cards are added to the system. A completely different focus is required when the system is designed to handle more than just a credit card. NBI and Interbank renege on their responsibility when they merely indicate on the switching and message flow diagram — how they would wire up the world — that all not-on-us items will be sent to "other card plans." That is the case in the design work of the two systems in which I have participated. We need more professional answers than that and a lot fewer new definitions. The other card plan will require formatted messages, reconciliation, paper flow procedures, and a whole host of accepted standard operating procedures. In the rush to make the *American Banker* headline, our two national franchising systems have glossed over the real problems of how it works. Cash out of the demand account through a POS System is a local problem, not national. NBI and Interbank are trying to solve it as a national problem.

I must also add here that Mr. Hock decoys from the central issues by an academic exercise in semantics challenging us to determine if it is EFT or EVE. It reminds me of a playmate on our street when I was growing up. After supper I'd go down to his house to play. For two whole summers I played "Seek and Hide" because he had not invented "Hide and Seek." Well, I think banking is going to work with funds, not Adam and Eve.

The glib words from the "preacher" on the Potomac and the "friar" from Frisco completely miss the real requirement of developing an electronic payment mechanism. Their words are a little like kissing your sister — it's kissing but it doesn't get you anywhere. We must have solutions to the complex-pragmatic problems of handling messages from multiple cards to mutiple data bases where the cardholder and the merchant bank are not within the same system. Problems like: How do you get a message from BankAmericard to Master Charge when today they can't talk to

each other? How do you handle the non-bank items that will likely go through this system, too? Where is the competition in technological advance to which Mr. Baker constantly referred if the merchant owns the terminal and communications link?

What happens when each bank introduces its own deposit card — that's 61 in Denver and 83 in Miami? How do you reconcile the merchant's account and how do you clear the items and handle the paper flow if data capture, not just authorization, took place from point-of-sale? If you answered that not all banks will issue debit cards but instead will issue the NBI or Interbank debit cards, then I ask — is that the wonderful competition I have been hearing so much about? If you are betting on two national debit cards with a common card face then I think you are betting wrong. You are betting wrong for a very fundamental reason. The profit generation within banking and therefore the desire to succeed is based in strong regional and local banks and holding companies around the country who compete within their licensed market. That's where the banking strength will be, not with a national banking system as urged — with half-held breath — by Mr. Hock.

Our bank, through *Project Post* in 1972, gained unique experiences in what is still the only broad-based data capture experiment using bank cards at point-of-sale. When we completed that project, we urged the Federal Reserve System to supply the common ground services for a switch and processing center. We are not naturally "Fed Lovers" but we did and do today believe that the Fed must be a party to the funds transfer and settlement of balances between principals at point-of-sale. We believe the Fed has the fundamental requirement of handling the nation's demand deposit settlement and is the only current agent that can settle between banks while instilling both competition and cooperation between its members.

After the Reg J responses, it became apparent that the Fed was sidestepping the issue and as a consequence it may have foreclosed its future as the principal agent for clearing and settling of items between banks. This negative response, specifically to the Atlanta requests, may have in one stroke caused the future formation of yet another regulator — a super-regulator — potentially called the Federal Payment Authority, similar to the Federal Aviation Authority. Side-stepping the issue today will merely escalate the problem, potentially moving the clearing and settling function out of the Fed orbit into that of a new and expanded regulator. Good or bad, we are hatching something that is likely to be bigger than the hen house.

We need to recognize one important fundamental. We can be competitive and cooperative if we separate banking — the attraction of deposits and granting of loans and the accounting services associated with that function — from the payment process and operate them under separate procedures as we do today. This would maintain the banking structures permitted by each state while providing the obvious convenience of a national payment system. This fundamental, to be tested once again, is

at the heart of the recent headline grabber from the Comptroller's office forewarning us of his position on the interchange between the ownership of Automatic Banking Systems. The forthcoming test of the McFadden Act and its properness in view of today's technology will focus on the competitive differences between a national payment system, wired through a point-of-sale system, and local banking systems utilizing automatic teller machines.

They are perceived to be distinctive by almost everyone except Mr. Hock and Mr. Baker. The consumer, the retailer, the banking industry, the regulators and the legislators all perceive the payment of a bill at the point-of-sale to be different from handling banking transactions through an automatic teller machine. They are as different as telegraph and telephone even though they both basically use black wire. Banks will likely approach point-of-sale as a joint venture and include non-bank competitors but will approach bank services through automatic banking machines on a single bank basis.

Some unit banks may seek slightly different solutions, but don't misread the smoke signals puffing up above the Nebraska Plains. The Hinky Dinky experiment, which is triggering so much of the current misdirection, has an obvious chaotic implication. It is simply this. The very fabric of banking is woven from the protection, security, and accountability of a customer's deposited funds. Virtually every banking law, including the insurance that protects funds on deposit and even the thickness of the steel in our vaults, has reflected the consistent intent of our lawmakers to protect the customer's deposits. But now because of two terminals with a total cost of $1,030, we are about to discard everything we have learned about handling the riches of the world. It is absolutely insane to plan a national Funds Transfer System with deposits made to a third party where the final liability for safety and accuracy of a depositor's funds rests with the bonding company of a supermarket.

The vision of deposits commingled with the funds in a cash register drawer is bleak enough in the clean-living, good guy town of Lincoln, Nebraska. Expand that vision into the national scene and we will need more than Evil Knievel to jump the confidence canyon between our customers and ourselves. This totally unacceptable deposit function handled through point-of-sale devices is compounded even further when we consider the national implications of organizing the deposit interchange and settlement of balances through third parties. And do we permit deposit interchange only through point-of-sale devices or expand it to include automatic banking machines? My bank is just now opening a bank facility in which we have 12 advanced automatic banking machines, located in the lobby. Do I handle deposit interchange through them? And if yes, why not then accept not-on-us deposit items through our live tellers? A national interchange of deposit items surely means national banking and virtually eliminates the ability of each individual state to establish what is a bank.

Let me make very clear a prediction about what is really happening in the prospective development of the NBI Asset Card and the Interbank

Services Card. We are likely designing at last two national check clearing systems that don't talk rather than the efficient and competitive systems that we have today.

Considering the basics, our problems of resolution deal with communication. EFTS is a communication problem, not a terminal problem. We need to be solving how to talk to each other and what to say electronically, not what it is and who owns it. When we finally deal with the very real world problems of communication among all principals, then the economic and political problems will be solved as a consequence. Resolving this dilemma will likely require that we leave this period of EFT development which I call a blaze on every tree. We have faced a different direction at every turn and enter a new phase which can be called the 97¢ jug of Muscatel. We clearly are entering a period to be marked by cheap binges from short-term heady exploits. This will in turn be followed by the "Hair of the Dog" period in which the litigation, legislation and regulation effects will sober us sufficiently to arrive finally at the X-rated adulthood so earnestly sought by all.

These are some of the pragmatic problems that need definition and direction if our public is to benefit from the electronic funds potential now edging upon us. Clearly, we need industry courage, regulator conviction, and legislative direction if we are to avoid the total disaster produced from unconnected systems being encouraged by those whose interests are primarily self-serving.

Mr. Hock's and Mr. Baker's positions, while firmly and professionally stated, are out of step with reality. As in so many other western sagas, when the dust finally settles and the question is asked, "Which way did they go?" the answer will echo back and forth across the country — "They went that-a-way." Rather than becoming the dead end of a box canyon — surely the direction pointed out by these two presentations — our industry, after some false starts, will move toward a cooperative but competitive interconnected system.

Discussion

Richard S. Bower

In my public debut as a discussant 16 years ago I opened with a song which began, "Didn't the Good Book say that Cain killed Abel? Yes, good Lord!" That revival hymn was appropriate then because the speaker I was discussing saw the light and had the faith. It is appropriate now because both speakers have the faith. For Donald Baker the faith is competition. For Dee Hock it is "electronic value exchange." My problem is that I share both faiths.

The two faiths are not in conflict and conversion to one or both of them is not the basic issue. The basic issue is the boundaries of the commercial banking industry and the increasing vulnerability of those boundaries to competition, a substantial part of which is associated with electronic signaling of exchanges involving financial claims. As Donald Baker puts it: "The financial world . . . is a world of compartments created by law . . . The barriers are falling . . . Some people . . . are trying to rejigger the old rules to protect themselves from the opportunities and risks of this new, fluid world." In this setting, Donald Baker maintains we should work against rejiggering and protection and for the unrestrained competition that will lead to the best mix of services for consumers. He is all in favor of competition that will leave "the inefficient, the incompetent, or the foolhardy . . . [to taste] . . . the bitter fruit of their own mistakes or inertia." Dee Hock agrees that the barriers are falling but his concern is primarily for the commercial bankers who might taste "the bitter fruit of their own mistakes or inertia." To protect them from themselves he prescribes a restrained competition that would include joint ventures into electronic value exchange and that would assure the commercial banking industry a healthy and profitable future whether their services to consumers justify it or not.

While I share Donald Baker's faith in competition, I worry a little bit about some of the doctrine on which that faith rests. The first piece of doctrine is that competition encourages more rapid technological advance.

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Competition is an ideal industrial structure as Baker describes it because it ". . . Forces engineers to design better systems . . . (and) . . . most lavishly rewards those who take risks in new fields." The evidence that supports this doctrine is much less than overwhelming. In fact, if that evidence does demonstrate anything clearly, then what it demonstrates is that the relationship between industry structure and the rate of technological advance depends to a great extent on the nature of the technology involved. With some technologies, regulation, either by the industry itself or by government, seems to do more to accelerate discovery, innovation and diffusion than would competition. Where electronics intersects value transfer, however, competition may do just what Donald Baker claims. In this case the technology has a low development cost, and the problem is not understanding nature but adapting what is known to the tastes and limitations of users. More rapid technological advance is not the doctrine to support an undiscriminating faith in competition but it is a very reasonable basis for encouraging competition in electronic value exchange.

The second doctrine supporting Baker's faith is the "only the market knows" doctrine. As he says, ". . . no one can yet foresee exactly what the public wants . . ." so only through trial and error in the market place can a best solution be found. That solution will sometimes involve natural monopoly but it is a ". . . bad idea to assume that fact in advance . . .". It is better to let the market place demonstrate what is wanted and whether a single firm can supply it more efficiently than many firms. This doctrine is another that falls short of general truth. Whether it is true in a particular case or not depends on the extent to which resource commitments are reversible and on the state of our ignorance about consumers. If the capital and labor committed to an industry can't be turned around and are without residual value when particular trials are unsatisfactory and individual firms fail, then the trial and error approach of competition may waste more economic value than it can create. Building three parallel railroad rights of way competitively to let two be abandoned when one proves to be a natural monopoly is a costly way to acquire knowledge. But, general doctrine or not, letting competition work in the area of electronic value exchange where resources are easily reversible and our knowledge of consumers' preferences is obviously inadequate makes very good sense.

Donald Baker's third piece of doctrine is that "competition . . . is healthy. It will produce a far greater variety of services than would otherwise be the case . . .". Again, as general doctrine, this one fails. You can have too much variety, too many outlets, too much product differentiation. And again, the failure of the general doctrine does not destroy the point as an argument for competition in electronic value exchange. Considering the sadly limited alternatives consumers have had and now have available for carrying forward financial transactions, and seeing only dimly the variety of exchange techniques that are possible, it seems unlikely that the variety encouraged by competition could be anything but a healthy development for financial services.

Donald Baker's chosen doctrines are not so general that they support competition over other structures in every industry situation but that is probably beside the point. Because in each piece of Baker doctrine there is quite a specific argument for putting faith in competition when it comes to the future of electronic value exchange.

Faith in competition is consistent with Dee Hock's faith in the future of electronic value exchange but it challenges his suggestion that joint bank ventures should be part of that future. The trial and error of competition is important for the future of electronic value exchange but that trial and error should involve firms outside of commercial banking and outside of the conventional group of financial intermediaries. These firms may be retailers, computer services firms or any others that find their associations or technological background offers profit opportunities from entry into the business of value exchange. Bank joint ventures add nothing to the potential for experimentation and are a substantial threat to competition. The joint ventures can limit alternatives, help to protect old values and serve as a source of discipline for limiting experiments to those more beneficial to banks than their customers. Competition has enough problems invading the value exchange border of a regulated banking industry without letting joint bank ventures erect additional barriers.

From all I have heard here on institutions, technology and the extent of our understanding of consumer preferences competition is the way to proceed. It can proceed most effectively if an enticing vacuum is created by keeping the Federal Reserve System and the banks completely out of the transmission or transportation system that moves information among the parties interested in a value exchange. The banks and the Federal Reserve System should be limited to a record keeping function in value exchange and kept completely out of the business of storing and forwarding exchange information. If the vacuum is to be effective as well as enticing, there will have to be minimum standards for the signals that banks and the Federal Reserve will receive and send in keeping their records. Setting these standards is the most important immediate challenge we face.

Donald Baker's competition and Dee Hock's world of electronic value exchange will depend on contracting the activities of banks and the Federal Reserve. This is the time to let third parties take over the role of moving information about, take over the point-of-sale devices and vending machines that interface with financial institutions, and take over the role of servant to individuals and firms who want to manage the assets and claims they keep with a great number of institutions. This is an ideal time to pull back the boundaries of regulation, open a greater area to unrestrained competition, and permit a graceful, appropriate contraction of regulatory authority. This kind of opportunity does not come along too often. It would be a pity if we failed to take advantage of it.

Discussion

J. C. Welman

It is always a pleasure for me to leave the interior to attend a meeting at which East Coast and West Coast representatives attempt to lead me out of the wilderness of my ignorance into the sunshine of reality. Because of my ignorance, I find difficulty in embracing the concepts proposed by Messrs. Hock and Baker. I also find it incomprehensible that all the erroneously perceived conventional wisdom as detailed by Mr. Hock can be cast aside in favor of reality — all of which surprisingly forces one to march on into the new society as a member of a national charge card association. Before the music starts and I get into step, may I point out just a few realities that seem to have slipped through the cracks?

Regardless of how many times some people may pronounce otherwise, the charge card is not now, nor has it ever been, nor will it ever be part of the payments system. It is an account receivable system for financing consumer purchases on credit. It does not consummate payment, but rather it delays it. It is discriminatory against those who pay cash and those who cannot pay off within the interest-free period. Because of this, I hope and believe that the U.S. Congress will ultimately outlaw the present operations and require interest from day one.

I believe that many charge-card people perceive this doom and are rushing into the so-called asset card as their salvation. Regretfully, they are taking their concept of appropriate structure and attempting to impose it on the banking industry without regard to the purpose of the payments system. I am afraid that, unless more appropriate consideration is given to the problem, we will allow minor technological developments to be utilized inappropriately to change the structure of the payments system from 14,000 competing banks to two or three major national systems with the consent and even encouragement of the Justice Department. If the structure of banking is to be changed by the payments system, it should be done only after a careful evaluation of all the factors and not based upon an acceptable way of utilizing new technology.

I believe that progress toward the proper evaluation of the payments system alternatives was being made until the untimely and inappropriate involvement of the Anti-Trust Division of the Department of Justice. The

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Senate and the House of Representatives of the United States apparently believe that the future payments system is so unclear as to demand a Presidential Commission to study the problem. Yet, despite this clear congressional intent and despite the McFadden Act and the resulting decisions by 50 state legislatures, Mr. Baker has presented the Justice Department's views that the 14,000 banks in the country will have to join together into a few small groups in order to compete properly. It appears that the entire Justice Department position is based upon the false premise that the charge-card industry is more competitive than commercial banking. I submit to you that there is more actual competition on the basis of pricing and services and more actual innovation by the 14,000 banks today than there is or ever will be in a world dominated by two major bank charge-card associations.

Consumers charge at many locations. This poses no significant difficulties for them, but consumers generally keep their demand deposit account only in one institution. As checking accounts have been utilized more fully by the consumer, the problem has not been to merge existing units into larger units. Rather, the problem has been to improve the acceptability of the check or its substitute when presented in a face-to-face retail environment. There are a number of technologically feasible and acceptable methods for taking the consumer's check substitute and improving its acceptability to the retailer electronically. These systems also can improve the efficiency of the entire system thereby allowing the new system to benefit the consumer through improved acceptability, the retailer through continued competition for his business at lower prices, and finally the banking industry through lower operating cost.

An electronic signal, denuded of all of its grandeur and exotic mystery, is nothing more than a technologically acceptable substitute for a check. For over 100 years the consumers of this nation have had the right to choose among thousands and thousands of banking institutions. All that is needed from the consumer's standpoint is to improve the acceptability of their withdrawal requests from their checking account, principally in the local area, and to some extent the national level.

It is beyond my comprehension that this small need by the consumer can be transformed by inappropriate comparisons into proposals whereby the only alternative for the 14,000 banks in the country is to join two, three, or four major national associations for a significant portion of their business thereby developing standardized national cost to some extent, and giving up to a great extent, the individual local bank distinction which has existed for so many years.

Today, there are more competition and more available alternatives for the retailer and the consumer in the payments system surrounding demand deposit accounts than in charge cards. This competition is possible only because there is a clearing and settlement mechanism for checks throughout the country which allows banks, regardless of size, to have checking accounts and to control the method of withdrawal from those accounts without association with any national organization. We are

offered an alternative which says we will have two, three, or four major systems which will be the alternative at a given local area thereby reducing the number of available alternatives from the retailers' standpoint. In order to obtain this degree of concentration, previously unknown in the banking industry, we are also asked to say to the consumer, "Your check substitute is no longer as acceptable as your checks were previously." We are asked to say to the consumer, "If the store in which you wish to shop happens to honor your particular card, representing your ability to withdraw from your checking account, you will be allowed to handle the transaction in that manner." "If not, your alternatives are to pay by cash, by check, if they would accept it, or to have two or more checking accounts."

A number of countries in the world are served by a very few nationwide banks. I am not here to debate the virtues of such an arrangement, but the U.S. Congress and the various state legislatures have consistently rejected this concept. The system which has permitted this Congressional intent to be viable is the system for clearing checks between banks. While there may be more than one alternative technique for clearing, the various techniques are *transparent* to the consumer and to the retailer. The very cornerstone of competition has now become the villain. The very technique which has allowed a vast number of competing banks, regardless of size, has now become the principal act which is supposed to be so anticompetitive.

Regretfully, the best opportunity to test the viability of an interchange system between aggressively competing banks has come and gone. It passed us by when the Federal Reserve Board of Governors made the decision not to run a switch in Atlanta. Years ago in the St. Louis Federal Reserve my boss used to tell me that sometimes it is much more dangerous for a regulator to say no than to say yes. I am afraid that the truth of this advice will become unmistakably clear in this current decision and we must now go through the agonizing reappraisal to find an effective alternative — which we will.

There are those who tell us that the only proper approach is to allow the charge-card industry time to experiment. We hear the now traditional responses that we sit in danger of being run out of business by nonfinancial competitors or that the prospect for innovation is so great that we must not injure it with standardization. While these are possible dangers, the real danger is that these threats will be utilized temporarily to distract the industry, regulators, legislators and the public just long enough for these major national systems to become so firmly imbedded that there is no longer any alternative. And we will find, much to our regret, that the new system has no place for small banks, small businesses, and unsophisticated consumers. There is a degree of standardization without which competition by firms of all sizes cannot exist. That degree of standardization does not exist today, but its development is the challenge of banking.

Pricing and the Role of the Federal Reserve in an Electronic Funds Transfer System

Robert W. Eisenmenger
Alicia H. Munnell and Steven J. Weiss

The Federal Reserve is dedicated to maintaining an efficient payments system which insures maximum competition among financial institutions. In the development of electronic funds transfer systems (EFTS) these guidelines imply that all financial institutions should have direct access to the payments mechanism and that services should be provided by the organization — be it public or private — which can perform the task at the lowest social cost. If the services are provided privately, the equal access criterion implies that the organization should either be a nonprofit consortium of financial institutions or a federally regulated utility.

Developments to date indicate that the banking community and the credit card companies are going to be active participants in any electronic system. The coexistence of both Federal Reserve and nongovernment EFTS developments should prove to be very beneficial to the financial community and society in general. Nongovernmental organizations will have the option of developing alternative means of transferring funds thereby preventing exclusive dependence on a government bureaucracy. At the same time, if private costs appear too high, the Federal Reserve has the option of setting up EFTS experiments either to accelerate development or simply to lower costs.

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The Federal Reserve must charge full cost for all services provided if private organizations are to have real options of developing lower cost alternatives. If the Federal Reserve provided services free of charge, it would undermine private initiative which is so vital for increased efficiency and innovation. At the same time, only careful allocation of costs will guide the Federal Reserve to those projects which can be provided more cheaply publicly than privately. Full cost pricing will insure that the financial community will always have the option of developing an alternative way of handling transfers. Preservation of public and private options should provide insurance against the almost inevitable sluggishness which tends to develop in large service organizations.

In addition to fostering a mix of public and private participation in EFTS, pricing will also serve its traditional role of insuring an efficient allocation of resources. A charge for each transaction will avoid wasteful utilization of the Federal Reserve's resources. In addition, as checks will likely remain the mainstay of the payments mechanism for several decades, proper pricing is required to insure that the truly least-cost method of payment (paper or electronic transfer) is used for each transaction. This means that an integral part of any Federal Reserve charge scheme must be full cost pricing of check clearing services. A zero price for checks would encourage uneconomical use of seemingly cheaper paper transactions, which might retard development towards an electronic system.

While the advantages of pricing services are numerous, it would be impossible in practice for the Federal Reserve to introduce a useful pricing system given the existing member-nonmember distinction. Member banks already pay for services from the Federal Reserve in foregone interest on their reserves and it would be unfair to charge them. However, if charges were imposed solely on nonmembers, the allocative efficiency argument for pricing disappears. An equitable and efficient pricing system can be discussed only in a setting of universal reserves.[1] Universal reserves are also more consistent with a policy of direct access for all financial institutions.

Part II of this paper will summarize our vision of the framework for public and private participation in EFTS to provide a background for the specific pricing proposals. Part III presents general pricing principles, while Part IV describes specific charging schemes for 1) check clearing 2) transfers through automated clearing houses 3) point-of-sale transactions and 4) use of an expanded Federal Reserve wire-transfer system. Pricing is discussed for all types of EFTS projects, even though the Federal Reserve has no present plans for developing any point-of-sale projects.

[1]In a setting of universal reserves, reserves would be reduced from their present levels to insure no increase in member bank burden and then charges would be imposed on all banks for the services provided by the Federal Reserve.

II. Framework for Public and Private Participation in EFTS

In the development of EFTS, the characteristics of low cost and direct access to all financial institutions are far more important than whether the project is run by the Federal Reserve or by the private sector. Furthermore, as argued in the introduction, a flexible environment that permits both public and private projects will yield the most benefits to the financial community and the general public.

The Federal Reserve Bank participates far more extensively in the check clearing and funds transfer process than any other central bank.[2] The origin of the Federal Reserve's extensive role lies in the large number of banks in this country and the need for a well-organized national clearing system. At the time the Federal Reserve began operations in 1914, checks were not cleared at par; rather, banks charged for remitting checks drawn on themselves and imposed a collection charge when they served as an agent.[3] Nonpar clearing encouraged circuitous routing of checks which restricted commerce and impeded the flow of money in the nation. In an attempt to increase the efficiency of the payments mechanism by a universal par clearance system, the Federal Reserve assumed a major role in the clearing process.

Historical analogies must be interpreted carefully when used as a precedent for defining the Federal Reserve's role in the developing electronic funds transfer system (EFTS). In 1914 the private sector showed little potential for developing adequate clearing systems. Today, on the other hand, several types of institutions are capable of receiving and transmitting funds electronically. For both automated clearing houses (ACHs) and point-of-sale (POS) systems, private alternatives to government participation have already emerged.

In the ACH area, automated clearing houses sponsored by cooperating banks are operating in California, in the Atlanta area, in New England, and in Minneapolis, and an Ohio regional clearing house, REPEX, is scheduled to open July 1975.[4] These ACHs however are heavily subsidized by the Federal Reserve which usually provides space and computer facilities.

Individual bank point-of-sale experiments are being operated successfully by the City National Bank and Trust Company in Columbus and by the Hempstead Bank in Long Island. New experiments are constantly appearing throughout the country. Whereas these are single bank projects,

[2]Benjamin H. Beckhart, *Banking Systems,* (New York: Columbia University Press, 1954.)

[3]W. E. Spahr, *The Clearing and Collection of Checks,* (New York: The Bankers Publishing Co., 1926.)

[4]Several other regional clearing houses have purchased the SCOPE software package recently and are negotiating with Federal Reserve Banks to operate ACHs.

regional and even national POS systems are possible as the result of credit card associations such as Interbank (Association of Master Charge members) which have set up national networks currently used for interregional verification, networks which could also be used for transfer of funds with the consent of participating members.

What role, then, is left to the Federal Reserve? In the field of ACHs, the Federal Reserve has assumed a peculiar role. It has heavily subsidized the clearing houses while relinquishing much of the management to groups of commercial banks. It really matters little whether the banks or the Federal Reserve operate the ACHs, but in either case they should be self-supporting in the long run. The Federal Reserve has served a useful role by participating in research and development of the software and is currently assuming virtually all the operating cost. To facilitate transfers between regional ACHs the Federal Reserve should also insure that formats are standardized.

The communication between ACHs is a natural role for the Federal Reserve to assume. This function might be one portion of a national network, perhaps an expansion of the current Federal Reserve communications system for wire transfer of funds and securities, which would also be used for the distribution of government payrolls and processing Treasury checks. By 1980, average volume from these two sources plus inter-ACH transfers should total about 44.5 million items per month.[5]

In POS systems, the Federal Reserve will want to insure that a national network is available to all financial institutions. Such a system would provide the technology to dramatically increase competition. It would permit small depository institutions to offer almost as much convenience for making deposits and withdrawing funds as large banks with hundreds of branches. A national network seems to be developing in the private sector through Interbank. Interbank offers direct access to all commercial banks and has recently extended access to some mutual savings banks. Membership for savings and loans is now under consideration. This organization may develop into a national network which will provide equal access to all depository institutions. In our judgment any such system should be federally regulated. If the private sector does not develop such a network, then the Federal Reserve might want to develop one of its own.

The emerging EFT system will thus include both Federal Reserve and private components. Although most of the system can be developed privately, the Federal Reserve must develop standards and perform an important regulatory role. This combined system should be flexible enough to allow the Federal Reserve to enter in the event that the private sector fails to provide essential services, while full cost pricing by the Federal

[5] *Communications System Development Study,* Report of the Communications System Expansion Task Force, June 1974, p. 9.

Reserve will encourage private projects. Preserving alternatives is the most important function that the Federal Reserve can perform and full cost pricing is the key to guaranteeing that alternatives will be maintained.

III. General Pricing Policies

The various types of services, check collection, transfers through automated clearing houses, point-of-sale transactions and interregional transfers, all present different pricing problems for the Federal Reserve. There are, however, three principles that can lend consistency to various pricing schemes. First, prices for all services should be set at long-run average cost, defined as the per-item cost of operation, assuming optimal utilization of existing equipment and technology. The cost should include allowances for overhead as well as all direct expenses including a return to capital comparable to the private sector. Pricing from the beginning on the assumption of optimal utilization will avoid frequent price changes as volume increases and will provide long-run planning information to potential users. Not only is this pricing concept operationally meaningful, but it will also eventually lead to efficient allocation of resources when operations are carried out in the realm of constant average costs.[6] Although EFTS operations generally involve declining initial unit costs, constant costs in the long run are a realistic assumption.

The second pricing principle is to charge the party or agent of the party that initiates the transaction. This policy will confront the initiator with the real social costs of alternative methods of transferring funds, and will thus provide an economic incentive for him to select the medium which involves the least social cost.

The third pricing policy applies to new Federal Reserve EFTS operations — not to the existing check collection system. Both automated clearing houses and retail point-of-sale systems require large initial capital investment and development costs, If services were priced at average cost, assuming optimal output, these systems would initially operate at a loss when volume is low. In order to encourage EFTS development, the Federal Reserve should finance these initial losses. Such subsidies have obvious dangers, however, and the Federal Reserve must guard against continued subsidization of unproductive projects. Unless there is reasonably steady progress towards optimal utilization, the Federal Reserve should reevaluate its commitment.

IV. Charges for Specific Services

As mentioned in the introduction, a useful pricing policy cannot be implemented given the existing member-nonmember distinction. Therefore, the following discussion is based on the assumption that the Board

[6]This pricing rule is consistent with the traditional "marginal cost" pricing dictated by economic theory in a constant cost situation. See Appendix A.

will be successful in its drive for universal reserves and that all financial institutions will pay the same rate for each type of service. Furthermore, to insure no increase in member bank burden it is assumed that reserves will be reduced from their present levels.

Specific pricing policies will be discussed for each type of service. As mentioned earlier, charging for check collection will be an essential part of EFTS development. If the Federal Reserve subsidizes paper transaction, while charging for electronic transfers, progress will be slowed and inefficient transfer mechanisms will be employed.

The discussion of POS charges is presented only as a contingency plan in the event that the Federal Reserve should end up running some regional POS systems. Although the Federal Reserve Board has recently denied the request from the Atlanta commercial banks for the Federal Reserve Bank of Atlanta to fund and operate an experimental point-of-sale system in that city, it is possible that the Federal Reserve may in the future participate in this type of project if appropriate private initiative is not forthcoming.

1. Check Collection

In the check clearing process, checks move from the bank at which the check is deposited, through a clearing facility, then to the payor bank. The Federal Reserve could introduce charges at two possible points. Banks could be charged as their checks are delivered to the Federal Reserve or they could be charged as checks are presented to the payor banks for collection. In keeping with the pricing policy outlined above, the charge should be levied on the payor bank as the agent of the initiator of the transaction. If the bank, in turn, passes the charge onto its customers, this may provide some incentive for the customers to curtail their use of checks.

Charging on presentation is the first feature of the check collection proposal. The second feature is differentiation of charges based on the location and volume characteristics of the route between the payor and depository banks. Instituting a single flat charge would have unfortunate implications, as banks with high volume might withdraw their low cost items and set up direct intercity clearings. If large high volume banks were to set up their own systems for direct clearing, this would result in duplication of facilities since the Federal Reserve already provides transport for clearings between cities. A proper pricing scheme should include charges reflecting economies of scale of high volume routes, thereby discouraging such socially wasteful duplication.

[7]Universal reserves should be interpreted as requiring the same reserves for deposits that fulfill the same economic role. This means that whereas the required ratio of reserves to deposits may differ for time deposits and demand deposits (including NOWs), the requirements for a particular type of account will be the same for every depository institution regardless of its legal form of organization.

On the other hand, for direct clearings within cities, pricing would provide banks with the incentive to compare the costs of collection through the Federal Reserve with the cost of clearing directly with nearby banks. A decision to clear directly would coincide with the least social cost solution.

Encouragement of direct clearings is only one advantage of charging for check collection. A second benefit is the contribution towards effecting an efficient allocation of resources between paper and electronic transfer systems. Finally, if the Federal Reserve charges are passed on to customers, there is a possibility of reducing the total volume of checks written and encouraging the use of currency for small amounts where it is a logical means of making payments.[8]

After all is said, some caveats are in order. The Federal Reserve is limited in its ability to force individuals to confront the full cost of check services. First, Federal Reserve check clearing costs are less than 10 percent of the total cost of a check to the banking community. Second, the bulk of checking services is currently financed by the foregone interest on demand deposits. If the System places a high priority on an efficient allocation of the resources used in the payments mechanism, the logical step would be to urge the elimination of the prohibition of interest on demand deposits. This would, in turn, encourage banks to reinstitute per-item charges for checks.

2. Automated Clearing Houses

Electronic transfers through Federal Reserve ACHs should be priced from the outset at average cost, assuming optimal utilization of existing equipment, so that depository institutions are provided with the correct long-run incentives for choosing between paper and electronic funds transactions. Charging average cost at the outset will result in an unprofitable system in the early stages when volume is small and average cost quite high. The resulting short-term deficits should be financed by the Federal Reserve, but great care should be taken to insure that these subsidies do not extend for a long period of time.

At the present time, the Federal Reserve is assuming almost the ful cost of operating the ACHs. Under this system, there is little incentive fo private organizations to set up independent clearing houses. Only by for cing the ACHs to be self-supporting can the Federal Reserve preserve th incentive for a private organization or a consortium of banks to move i and set up an alternative clearing house should the Federal Reserve ACI become inefficient. Naturally, any private clearing house would have to b regulated to insure equal access to all depository institutions.

[8]See Appendix B for a discussion of the impact of charges on checking accou activity.

In accordance with charging the initiator of transactions, fees for direct deposit of payrolls should be levied on the employer's bank, the initiator of the credit transaction. The bank can, in turn, charge the firm for the ACH's services. Firms now pay for paper transactions in the form of compensating balances based on the number of checks written. When the charge for electronic transfers becomes significantly less than the cost of paper, firms will be provided with incentive to switch.

In the case of preauthorized debits, the billing company will be the initiator of the move from paper to electronic billing and therefore the billing company's banks should bear the charges for ACH transactions. The bank will then charge the company for the services. The company, in turn, will have to offer its customers some sort of discount in order to encourage them to participate.

3. Point-of-Sale Systems

If the Federal Reserve should operate either a regional or national POS system, it is essential that all transfers be priced at full cost for reasons of allocational efficiency and to encourage private POS projects. Furthermore, retail POS systems currently under consideration provide additional arguments for pricing. Under systems such as the one proposed in Atlanta, the Federal Reserve Bank would enter the new field of transmitting credit authorization information. This service would be provided for bank credit cards as well as cash cards and checks. Clearly, if the Federal Reserve performs this service free of charge for bank credit cards, the banks would have an unfair competitive advantage over nonbank cards. For this reason, the banks should pay the full cost of their credit authorization.

These transactions should be priced at long-run average cost as defined above and the charge should be levied on the initiator of the transfer. In the case of check authorization, the merchant is the initiator and primary beneficiary of the transaction. Therefore, the merchant's bank should bear the full burden of switching services and the additional costs incurred by the responding bank. For cash card transactions, the customer's bank should be charged.

In line with present practice, credit card authorizations through a Federal Reserve POS system should be charged to the merchant's bank, which serves as agent for the merchants making the authorization inquiry. The merchant benefits from the authorization through reduced fraud losses and increased sales. Ultimately, of course, he reimburses the bank by taking a discount on his credit card sales.

4. An Expanded Federal Reserve Wire Transfer

As mentioned earlier, expansion of the current Federal Reserve communications system for wire transfers of funds and securities could result in the Federal Reserve's operation of a national network servicing the Federal government and the ACHs, as well as the present wire-transfer

customers. Institutions using this service should be encouraged to economize in the number of transfers, and this can be accomplished only by instituting a per-item charge. There is evidence that a charge would control the volume of transfers. The Federal Reserve currently charges $1.50 for tranfers of less then $1,000 and this charge has been very effective in eliminating small-dollar transactions.

In summary, pricing of all Federal Reserve transfer services is both essential and feasible. Unless the Federal Reserve charges full cost for services, private initiative will be stifled. Furthermore, charging for check clearing is essential to avoid subsidizing paper at the expense of electronic developments.

Summary

It is clear that the evolving EFT system will include both Federal Reserve and private components. Banks and credit card companies are already actively involved in EFTS experiments. The Federal Reserve role should be to insure that all financial institutions have equal access to EFT systems and to insure that the nation's payments mechanism functions efficiently.

There is much to be gained from preserving the possibility for private as well as public initiative. Each can act as a check on the other's potential inefficiencies. To encourage private participation, the Federal Reserve must price all services. Both the development of rational pricing schemes and the assurance of direct access are hindered by the current member-nonmember distinction. Universal reserves as well as pricing must be an integral part of the Federal Reserve's future in the payments mechanism.

Appendix A

The pricing policies discussed in the text were developed within a particular time and cost framework. The time period assumed and described as "long run" was approximately five years, which represents the average useful life of a given generation of computers. The idea was rejected of dealing with truly long-run costs, which would involve changing technologies and perhaps decreasing minimum average costs over several decades. It would be too difficult to construct a meaningful pricing scheme on the basis of forecasted technological innovations, and consequently the charges for services would be subject to arbitrary decisions and pressures.

With given technology and a five-year horizon, it was assumed that the cost curve declined sharply during the initial period when volume was limited, but that after the initial decline the costs of producing further units were constant. Operations people at the Federal Reserve Bank of Boston agreed with these assumptions.

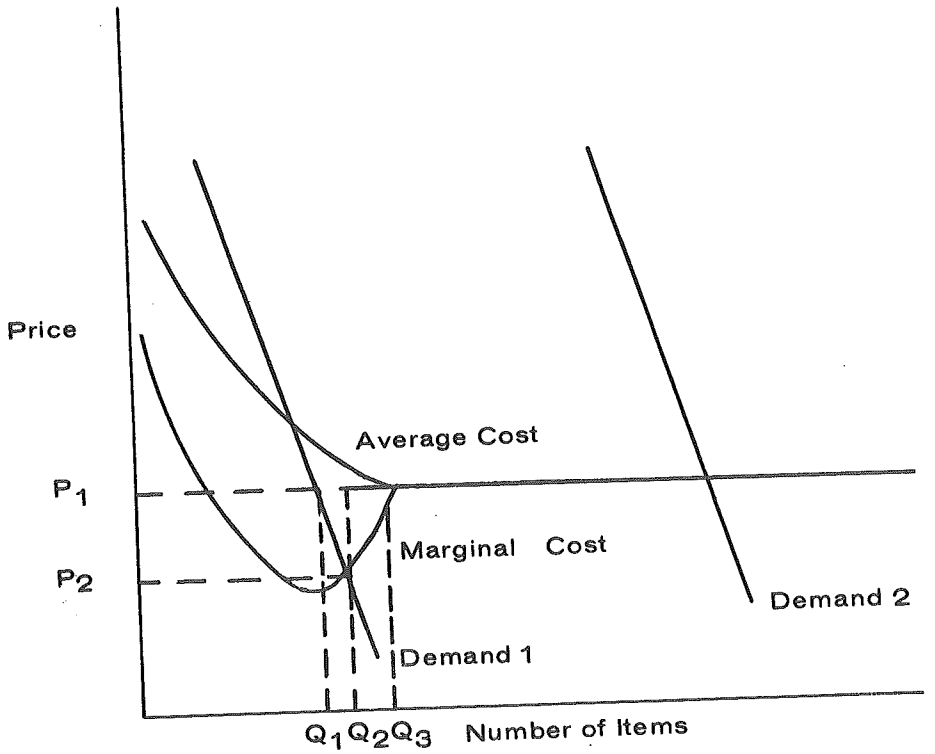
Given these assumptions, strict adherence to the "marginal cost" pricing rule would result in an initial charge of P_2, the incremental cost of processing an additional item when demand is D_1, was based on practical considerations. First, pricing at marginal cost during the initial period would require frequent price changes, downward and then upward as demand shifted gradually to the right. Second, marginal cost is an ambiguous concept and difficult to estimate, whereas minimum average cost with a given technology is a considerably easier figure to calculate. Finally, setting the price initially at the long-run level would provide longer-range information to the firms for planning and investment. In short, given the technology and a five-year time horizon, pricing at minimum average cost is a workable and efficient solution.

The major shortcoming of pricing initially at P_1 is that processing will be restricted below its optimal level. When demand is D_1, the quantity demanded would be Q_2 following the marginal cost pricing rule, whereas with the higher price P_1 the number of items demanded will be cut back to Q_1.

If in any given year the volume were less than Q_3, the project would run a deficit, inasmuch as average cost per unit would be greater than the price P_1. This deficit would be financed by the Federal Reserve under the schemes discussed in the text.

Figure A-1

COST CURVES FOR FIVE YEAR PERIOD



Appendix B

The Impact of Charges on Debit Activity

The early experience of NOW accounts in Massachusetts and New Hampshire and a survey undertaken in 1973 by a large Boston city bank suggest strongly that there is a relationship between the marginal cost to a consumer of writing a check and the volume of checks he is willing to write. These two pieces of evidence show that service charges do seem to lower checking account debit activity.

NOW Account Activity

The following discussion refers to the late 1973 and early 1974 NOW account experience in Massachusetts and New Hampshire. Although NOW accounts in these two states are becoming more similar, in the winter of 1973-74 the characteristics of Massachusetts and New Hampshire NOWs differed substantially. At that time Massachusetts savings banks paid 5 percent interest on NOW accounts, only slightly less than the rate on regular savings accounts, but there was a service charge of 10¢ or 15¢ on each draft. In New Hampshire, on the other hand, NOW accounts paid only 2-4 percent, but there was no per-item charge for a withdrawal order.

If consumers were sensitive to charges for checks, one would expect NOW accounts in Massachusetts to have been considerably less active than the free accounts offered in New Hampshire. This was true, as the average number of drafts per account during February of 1974 (the latest period for which data are available) was 6.6 in Massachusetts and 11.4 in New Hampshire. Only 17 percent of Massachusetts accounts showed more than 9 withdrawals that month, compared to over 45 percent in New Hampshire.

It is not legitimate to attribute the entire difference in activity levels between the two states to the existence of per-item charges, however, since other factors such as consumer attitudes towards the accounts may also influence the average number of drafts. Since New Hampshire customers forfeited substantial interest to hold a NOW account, it is possble that they viewed NOWs primarily as alternatives to checking accounts rather than savings accounts. In Massachusetts, though, only a very minimal sacrifice was required on the part of the NOW account holder; therefore Massachusetts customers may have regarded their accounts as savings account substitutes. While this difference in attitudes could explain some of the difference in account activity, the existence of per-item charges has probably also had a significant impact.

Checking Account Activity

Further evidence that charges have a dampening effect on check writing is offered by a large Boston city bank's examination of debit activity for its four types of accounts. The checking accounts offered are:

1) "Prepaid" accounts which carry a fixed charge of 12-1/2¢ per check;
2) "Analysis charge" accounts in which the amount of the service charge is inversely related to the size of the account balance;
3) "Minimum balance" accounts which offer free checking above a $100 balance but impose a high penalty charge for checks written below that amount;
4) "Analysis no-charge" accounts which are free at all balances for customers whose checks are deposited directly by their employers.

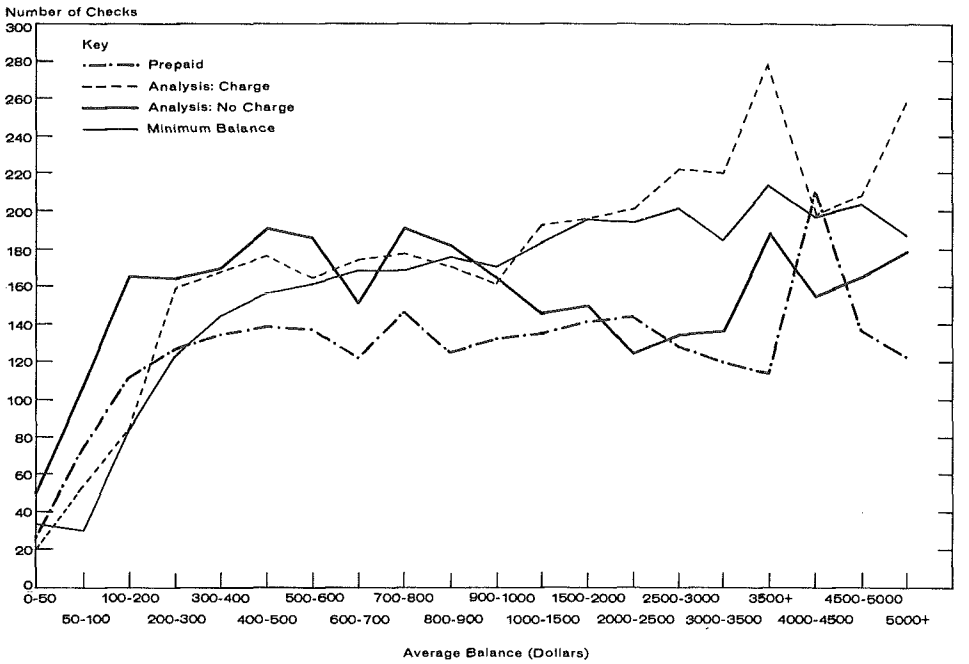
The data presented in Figure B-1 show the number of checks written in each type of account, grouped by average balance. The data were derived from a six-month base period and annualized. A quick look at the chart reveals that throughout the average balance spectrum, either analysis no-charge accounts (cost-free) or analysis charge accounts (cost-free at high balances) exhibited the most activity. Prepaid accounts (12-1/2¢ per check) were generally the least active, except at average balances of $0 - $300, where the minimum balance accounts were least active. In this range, the check-writer is in danger of having his balance fall below the $100 minimum and incurring either a significant service charge or the penalty fee for an overdraft. At a low balance, therefore, the *only* accounts which offer totally free checking are the analysis no-charge, and those accounts did exhibit the most activity.

While it could be argued that the account categories are self-selecting (for instance, that those customers who expect to write fewer checks choose pre-paid accounts), the breakdown by average balance does somewhat standardize the type of customer across account type. In addition, the data include analysis no-charge accounts, which are free accounts opened by employees' wages. This authorization category of free checking which is not self-selecting shows the highest activity at average balances of up to $900. At higher balances the type of customer enjoying an analysis no-charge account changes to individuals maintaining compensating balances for commercial loans; and, as might be expected, account activity falls.

The analysis charge accounts show an interesting pattern of activity. At low balances where charges are incurred for check-writing, these accounts are less active than both the prepaid and the analysis no-charge accounts. However, near the balance range of $500, these accounts become in practice charge-free, and activity moves closer to or rises above that of the free minimum balances and analysis no-charge accounts. In summary, the data imply that the number of checks written in an account is related to the presence or absence of service charges.

Figure B–1

RELATIONSHIP BETWEEN DEBIT ACTIVITY AND TYPE OF CHECKING ACCOUNT BY AVERAGE BALANCE



Discussion

Almarin Phillips

I like the idea proposed by the Eisenmenger-Munnell-Weiss paper of providing opportunities for entry by private enterprises into the EFT system. I like the idea of interest payments on demand deposits. I even toy with the idea of having interest paid on bank reserves that are held in the Federal Reserve System.

There are, however, some basic worries. One is about the cost configuration of the networks of EFTS. The truth of the matter is that we do not know very much about the economics of network costs and whether they operate with declining or increasing cost characteristics. If you want to have two-way communications between two people or two nodes, one wire will do it. If you want to have direct two-way communications among three people or nodes, it takes three. Among four, it takes six wires, and so on up. The switching gear gets very complex when there are large numbers of nodes in the system. The consequence — and we see it in the telephone industry — is that rather than trying to have direct two-way communications among all nodes, switching gear — exchanges — are set up. When that gets too complicated to handle easily, another tier of exchanges is set up and we have exchanges on top of exchanges. Whether such a system is a natural monopoly in the sense that it exhibits decreasing average costs is difficult to assess, but it is fairly clear that it is a natural monopoly in the sense that parallel systems would add to social cost. This aspect of communications and information exchange systems does raise the question of whether, despite how much we might all like to have large numbers of independent entrepreneurs being able to come into the system, they can in fact do so.

The authors do not insist that the Federal Reserve get into the EFTS. On the other hand, as I read the paper, there is an inclination to the view that the Federal Reserve should expand in that direction. This raises a fundamental question. Why does the Fed have to have anything to do with the system operations? I see no reason to deny them operating responsibility any more than I would deny that opportunity to private individuals. It is perfectly clear that the Fed has to tie into the system. It has

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to tie into it for transfers to and from the Federal Reserve, including open market operations, but so far as having exclusive responsibility for establishing prices or really operating the system, aside perhaps from setting some uniform quality standards and things of that sort, I see no reason to select the Fed for operating responsibility.

Beyond that, I have to raise questions about the need for universal reserves to make a system like this operate. With interest on demand deposits and interest on reserve accounts at the Fed, I see no reason why non-members cannot tie into the system, whether it is operated by a public authority or by private arrangements. Non-members would pay the same prices that others pay, with opportunities to work through an analogue of the correspondent banking system. If they wish to belong to the Fed for reasons of their own — clearing purposes, getting access to the window — let them join. If they do not, there is no obvious monetary policy reason to force them to do so. The same thing, I think, holds for the thrift institutions. The equal treatment/equal pay, interest on demand deposits and the universal issues, as presented in this paper, ignore the whole correspondent system that currently exists between smaller banks and their larger city neighbors. I would expect that as EFTS develops, a lot more corresponding will be done by wire data signals rather than by paper and verbal signals as in the current system. This is perfectly compatible with EFTS and with explicit pricing, with no mandatory membership requirements.

I do not understand what the authors mean by a regional or national POS system. EFTS, as I see it, is going to have large numbers of businesses of many kinds connected into the system and with their banks. There will be many kinds of terminal facilities. POS is one kind of terminal facility for one kind of business, but insurance companies are going to be tied into it, as are savings and loans, manufacturing organizations, and even perhaps members of the public. Once these are hooked into the system, when funds transfer messages from the terminals get into the transfer system, from there on there is nothing about POS as a national or regional system that is anything other than bank-to-bank kinds of information transfers. While the structure and operation of charge card systems cannot be ignored, we will not have a regional or national POS system, as I see it. It should be a particular kind of terminal operation.

The specific pricing proposals in the paper can be addressed at two levels: one, theory and the other, practicality. When we are all wired up in EFTS, with the various kinds of businesses, including the banks, using the system, it is bound to display — as the telephone system does, and that is a big part of what we will be working with — peak and off-peak demands. There are going to be hours when the system is under-utilized, and hours when the system is over-utilized. There are going to be Saturdays when banks will be off it and pro football will be on it, in effect. The suggestion of charging flat average costs to everybody, regardless of time, will not provide the incentives to use the system during the period when there is excess capacity. As a consequence, average cost pricing

tends to cause over-investment in the system. Whatever pricing is established should provide the possibility of charging different prices at different times, depending upon the degree of utilization of the system.

There is another problem in theory. There may be externalities. An externality is either a benefit or a cost that accrues to one person because of the actions of others. Again, let me use the telephone illustration. If I am the only one who has a telephone, it is worthless to me. The more people that the telephone connects with, the more valuable it is to me, regardless of the actual cost of my own telephone and my own use of it. The value that I get depends on whom it is hooked up to, what the range of services is, what the quality is, and so forth. If the social value of the system is different from the value as expressed by individuals, then the requirement of covering full cost is theoretically incorrect.

Let me use another illustration from my telephone. If I do not make a call at all for a month, there is a certain value to me of having the telephone there in case I wanted to. If we take accounting costs of use, direct cost, and so forth, the price on a full cost basis, the price fails to cover the benefits of just being connected to the system.

Much more practically, the paper suggests the use of average cost per item, or average cost per unit of output. Now I ask, what is the unit of output of an EFTS system? In what units do you measure output? In terms of the number of transactions? In terms of the number of bits of information that are transferred? Is it in terms of whether the communication is one-way versus two-way? Does the output have anything to do with service quality, including reliability and how often the system is down and things of that sort? I think it does. The output of an airline is not just a number of air miles from New York to Los Angeles. A whole lot of quality aspects have to enter into it. It is a multi-dimensional output unit. It makes a difference whether I get there in 14 hours or in 5 hours and a variety of things of that sort. Defining the unit of output — whether we do it on a marginal cost pricing basis or an average cost pricing basis — will be a very difficult thing to work out practically.

There is another practical problem. Suppose that I have a public body like the Fed operating some part of the system and charging — if somebody can measure it — average unit cost for the service. Other people connected with it are going to be selling bundles of services. The economic characteristics of the bundles will differ. Some service demands are going to be more elastic or less elastic than others. The incremental cost for some is going to be different from others. The tendency in the real world as this occurs is, rather than developing a specific pricing system, to bundle a whole lot of things together in ways that take account of the different economic characteristics of the items in the bundle, and sell it as a bundle. It is just possible that if the Fed were charging average total cost, some private users would come in and we would get to the old arguments of MCI versus AT&T. Some may tend to "skim the cream" of particular services. The use of the average cost pricing could be an inducement for bundling to occur.

Let me get back to accentuating the positive again. I do like the idea of specific charges for specific services, including specific charges on checking accounts. I think the possibility of having them in a world in which interest is paid on demand deposits is much greater than at present. The prohibition of interest on demand deposits, in fact, means that some attempt at bundling of services is made to collect the interest in other ways. Notice, though, some hidden problems. Suppose that the prohibition of interest on demand deposits is not removed. With EFTS, demand deposits can rapidly become an "inferior good." I can see the possibility of my instructing a broker, a commercial paper dealer, or a savings and loan association to transfer funds into my bank checking account so I can make some kind of a third-party payment, but transferring it just at the time that I require fund transfers. The EFTS moves what was an interest-bearing asset for me over into the account of a payee who, in turn, has a standing order to transfer his balance to some kind of an asset which is also interest-bearing. The velocity of turnover on demand deposits can rise precipitously. At the limit, the velocity of demand deposits may approach infinity. That raises some other problems that ought to make Milton Friedman very sad, because M-1 just disappeared as a meaningful monetary aggregate.

EFTS raises problems about Regulation Q. It will be easier to disintermediate. So, there has to be a rethinking at the Fed of deposit classifications, reserve requirements, and other regulations that goes further than anything we have heard of here. EFTS and interest on demand deposits mean that savings accounts, passbook-type savings accounts, day-of-deposit to day-of-withdrawal accounts and demand deposits are the same. There will be no need to distinguish between savings deposits and demand deposits in that kind of a world, and what are now savings deposits are going to become part of people's transaction balances.

I come away with a feeling that pricing is important, and resource allocation is important, but a stronger feeling that more does need to be done. If you want an illustration from a different industry, look at CATV. CATV started out as being a community antenna; it moved from that to cable television, and from that to the concept of a wired city. The regulation of wired cities has been just a hodgepodge. Different cities have different kinds of franchises; some of them divide them up into various regions and have one company doing it here and one company doing it there. They charge different ways. Because of a lack of forethought, public policy with respect to CATV has been very bad. In my practical mood, my guess is that we will blunder through with EFTS in the same way that we have blundered through with CATV. But I really do encourage people like Eisenmenger, Munnel and Weiss to keep working on the problem. Maybe some light can be shed on it.

Thrift Institutions and Small Commercial Banks in the EFTS

Mark J. Flannery

In the light of payment-system innovations that have occurred over the past few years, the eventual introduction of some form of electronic funds transfer system into the U.S. economy seems to be a near certainty. Yet heretofore there have been relatively few examinations of the implications of such a system for the economy in general or for individual sectors of the economy. Rather, EFTS studies have tended to focus on particular institutions, seeking means of coping with evolving trends or deriving new levels of private profit from this form of technological change.

However, it seems clear that an EFTS will also have widespread and important effects at the sectoral, as opposed to the institutional, level in the economy. Indeed, innovation on this scale almost cannot help but precipitate significant changes in competitive relationships that are closely related to the particular historical conditions under which they emerged. Although the EFTS will have some impact on all types of financial institutions, the effects will vary significantly among institutions of differing sizes and types. Most extensive and direct perhaps will be the implications felt by financial institutions and their customers.

This paper considers such differential effects of the EFTS as they apply to a subset of all financial institutions — the depository financial intermediaries (DFI). More particularly, the role of thrift institutions and the smaller commercial banks in the future EFTS will be examined. Such a focus reflects an underlying belief that depository intermediaries will face far more serious alterations in their competitive environments than their non-depository counterparts. Furthermore, it seems likely that the EFTS will be to a great extent fashioned by the large commercial banks' decisions to implement EFTS technological innovations. The larger banks should therefore be quite able to fend for themselves in the new regime. It is the thrifts and smaller banks that will be subjected to new pressures and transitional expenses as a result of decisions that are mostly beyond their own control.

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The paper will begin with a general discussion of the implications of the EFTS for competition in the financial sector — especially for the depository institutions. The principal developments and pressures delineated in this section will then be applied to thrift institutions and small commercial banks. Credit unions, which are also a type of thrift institution, will be discussed as a special case in the final section. For the purposes of this discussion, "thrift institutions" will be taken to include only the savings and loan associations and the mutual savings banks. These are the most important type of nonbanks in the economy, both in terms of their aggregate size, individual institutional size, and geographic dispersion. Moreover, economic discussions of financial intermediaries have in the past often been limited to these three — banks, savings and loans, and mutuals — because of the many similarities that exist in terms of their products, customers, and competitive devices.

I. "EFTS" DEFINED

It would be impossible to conduct any meaningful discussion of the economic implications of an EFTS without first specifying many particular features of the system. "EFTS" alone is a phrase so generic as to be effectively meaningless for purposes of economic analysis. The particular structure and ownership characteristics of the industry that provides EFT services — be it monopolistically provided by the government, competitively provided by large commercial banks, run cooperatively by AT&T and a myriad of private, small-scale participants, or whatever — will have strong effects on the availability, pricing, and quality of EFT services. Conversely, these latter features will be crucial determinants of the new system's profitability, and hence of the particular means by which innovation will be effected — that is, of the structure and ownership of the EFT industry. A detailed outline of "the" future EFTS thus requires the solution to a complicated series of simultaneous relationships that will only be understood as the system evolves.

In order to provide a sufficient foundation for the discussion that follows, therefore, it will be necessary to make several assumptions — relatively plausible ones, but assumptions nonetheless — with respect to the EFT system under consideration. First, it will include a number of automated clearinghouses (ACH) that are linked both within regions and (perhaps) nationally. These will be conceptual extensions of present-day ACHs such as those operating in California, Atlanta, and Boston. They will allow for routine and automatic payroll deposits directly into an individual's bank or thrift account, as well as the subsequent automatic transfer of funds to other deposit accounts, or for the purpose of settling debts, making instalment payments on one's mortgage, auto loan, etc. These represent financial transactions that are relatively routine and regular. They are the sort most susceptible to automation in an ACH, as well as being available in sufficient numbers to cover the ACH's operating costs.

The EFTS as envisioned in this paper will also include a point-of-sale (POS) system that allows individuals to transfer funds out of their accounts directly in payment for retail purchases. (The nature of the account from which such transfers are made will be crucially important for the effects of the EFTS on competition among intermediaries. This will be considered at length below.) Point-of-sale terminals (POSTs) will be employed to allow for credit verification and funds transfers between customer and merchant accounts. It will also be technically feasible to transmit certain non-financial information about the sale in the course of the funds transfers. This ancillary information would then be available for purposes of personal accounting, retailer inventory control, etc. and would afford intermediaries the ability to provide financial and record-keeping services for their customers in a highly efficient manner.

The ACHs, POSTs, and DFI processing computers will all be interconnected through a communications grid that utilizes a combination of narrow and broad band lines. This network is conceptually and functionally separable from the endpoints. Like the national telephone system, it will provide electronic connections between and among a multiplicity of mutually compatible devices. It is here that the public utility aspects of the EFTS stand out most clearly; here that the best arguments can be made for government control or the introduction of a regulated monopoly. For the ACH and POS systems, however, there need be no local monopolies. While economies of scale will be important factors up to a point (particularly for small institutions and smaller economic areas),[1] there should still be room for competitive processing systems, each of which ties into the same central communication grid.

The ability to make real-time funds transfers could, of course, also be extended to corporations and government bodies on a wide scale. However, it seems that their demand for this type of service would be quite limited relative to that in the household and retail sectors, and so this potential aspect of the system will not be considered in detail.[2]

Finally, it is necessary to make some assumptions about the *pricing* of services provided within the EFT system. Without hard data on system costs and industry structure these assumptions must be little more than guesses, but the following two features of EFTS pricing do not seem unreasonable.

1. The social costs of operating the funds transfers demanded by society will be quite low relative to today's system. Following a transition period, both the marginal costs of individual transactions and the

[1]These economies are the result primarily of the state of computer technology and indivisibilities in computer hardware.

[2]See Mark J. Flannery and Dwight M. Jaffee, *Economic Implications of an Electronic Monetary Transfer System* (Lexington: D.C. Heath and Co., 1973), pp. 68-69.

total costs of the EFT system will represent a distinct and significant saving to the society — savings that will be passed on to users of the system in some measure.[3]

2. The cost of making financial transactions through the EFTS will increase at a rate much less than in proportion to the distance over which the transaction is effected.

This elementary sketch of the future EFTS will be sufficient for a general consideration of the sort of competitive pressures that will emerge within the depository financial intermediary sector. However, it is important to emphasize again that the particular effects of EFTS innovation cannot be predicted without much more detailed knowledge of the physical and ownership attributes of the system than are currently available. The best that can be hoped for at this stage is a delineation of the general trends and pressures that are likely to evolve.

II. ECONOMIC EFFECTS ON DEPOSITORY FINANCIAL INTERMEDIARIES

At the most general level the EFTS as described in the preceding section will have four effects on the financial environment in which depository intermediaries operate.

1. The per-item costs of effecting financial transactions of all sorts will be reduced from their current levels. This will alter the nature of institutions' processing costs and open up the possibility of profiting from the introduction of the new technology.

2. The total cost to individuals of making financial transactions will be lowered by a significant margin. Not only will competition force at least part of institutions' processing cost savings to be passed along to consumers, but the automation of so many types of payments either through an ACH or POS will result in a drastic reduction in the level of non-pecuniary costs that are associated with making payments. These include the risk of cash being lost or stolen, the time and trouble required to deal with a bank (or thrift) teller, time spent filling out forms for routine deposits, postage required for mailing bill payments, and so forth. These results will apply to purely financial transactions (savings deposit flows, loan payments, inter-account transfer of funds) even more directly than to the transfer of funds for the purchase of real goods and services. In the latter case, the cost of funds transfer is

[3]The exact extent to which lower costs of production are passed on to the consumer is, of course, determined by industry structure and the strength of competitive forces.

a relatively minor portion of the total transaction costs involved. Especially important in this regard will be the differential costs of dealing with institutions and individuals that are full members of the EFTS versus those that are outside of it.

3. EFT technology will make geographic distance — another currently important component of DFI transaction costs — far less relevant.

4. The automation of routine financial payments will transform many multiple (recurring) financial decisions (for example, where to deposit one's paycheck or how much to save) into one-time decisions. Competition for savings funds is thus likely again to be directly affected.

The transaction cost reductions and new services that will accompany an EFTS are likely to affect the household sector of the economy much more extensively than the corporate or government sectors. In the latter cases, the relatively large size of economic units makes transaction costs (particularly the non-pecuniary aspects of those costs) much less important than they are for consumers.

Furthermore, it is clear that *depository* financial institutions will be more directly and importantly affected by the EFTS than, for example, life insurance companies, mutual and pension funds, etc. The DFI sector is characterized by a large number of recurring, relatively small transactions, the type of transaction that can be quite sensitive to small changes in the costs of effecting it.[4]

Non-pecuniary aspects of financial transactions are in general much more significant for the type of business conducted at DFI than at nondepository institutions. Convenient location and the nature of physical facilities will always weigh more heavily in choosing an institution with which one interacts on a weekly basis than for one with which one deals through the mails and only at infrequent intervals.

While nondepository intermediaries compete with DFI for household savings as their source of funds, they offer products that are more easily differentiable than simple savings accounts. Nondepository institutions' products are also characterized by longer-term relationships with a particular institution. The demand for a particular life insurance policy (for example) is therefore not likely to change sharply as a result of small changes in the cost of making quarterly or annual premium payments. Thus, again, the pressures of EFTS innovation are not likely to be nearly so great or so important for the nondepository institutions.

Depository intermediaries in the past few years have already encountered increasingly severe competitive pressures. In an effort to circumvent regulatory restrictions on their competitive devices, the DFI have

[4]Evidence on the possible impact of physical convenience and lower transaction costs for DFI can be drawn from the credit union sector. See section IV below.

initiated several types of new services to their customers. EFTS will accelerate and broaden this trend, since the new technology will reduce the costs of providing such services. In this respect, the EFTS can be seen to complement current and future trends in competitive developments and consumer preferences.

New or extended services provided through EFT facilities by DFI will include:

1. *Automatic (Preauthorized) Inter-account Transfers.* Following the direct deposit of his paycheck into a checking account, an individual will wish to transfer funds into other accounts — passbook savings, CD type accounts, and perhaps to other demand deposit accounts. This mechanism, which is essential to the concept of an ACH, will tend to blur the distinction between demand and saving accounts. Furthermore, the very low cost of transferring funds between accounts (particularly when nonpecuniary costs have been removed) will lead individuals to reduce their transaction balances stored in interest-less demand accounts. Such frequent fund transfers will also require the maintenence of excessive DFI computer facilities in order to effect such a large number of internal funds transfers. It seems, then, that the EFTS may well lead banks to rationalize their pricing of deposits and transfer services, thus adding further pressures to those that have long been working toward the explicit payment of interest on demand deposits.

2. *Lines of Credit Attached to Demand Deposit Accounts.* The recent experience of commercial banks with credit card lending and check credit plans has demonstrated the reductions in operating costs that can be achieved by lending to consumers through lines of credit. This development should be furthered under the EFTS, which will provide the capability to monitor individuals' credit drawings by means of real-time POS information flows. Such increased security will combine with lowered processing costs to lead DFI even more aggressively into the (currently highly imperfect) consumer loan market in search of new profits.[5] Most thrift institutions today are proscribed from making unsecured loans, and their overdrafts would therefore have to be extended in the form of pre-authorized passbook loans. (Commercial banks, of course, have no such restrictions.) This may result in a significant competitive disadvantage for the thrifts.

3. *Overdraft Privileges on Deposit Accounts.* It is not likely that all DFI customers will be eligible for large lines of credit. However, in order to induce entry to the preauthorized payments part of the EFTS (which reduces bank processing costs directly), individuals may be offered limited

[5]In fact, the stimulation of new entry to the consumer loan field will be one of the major benefits of the EFTS for consumers. See Flannery and Jaffee, *op. cit.*, pp. 161-168.

overdraft allowances in order to protect themselves against the embarrassment and inconvenience of insufficient funds. Again, banks will be in better regulatory position than the thrifts to offer such a service.

4. *Automatic (Preauthorized) Third-Party Payments.* Similar to preauthorized inter-account transfers, DFI will be able to provide certain types of bill paying services for their customers. Recurring payments of a fixed amount, such as mortgages, auto loans, and insurance premiums are probably most susceptible to preauthorization. Utility bills, which vary within a fairly predictable range, may also become automatically paid. In this area too the thrifts are at a competitive disadvantage, since their third-party payment powers are limited in scope by the Housing Act of 1968.

5. *New Financial and Record-Keeping Services.* The powerful potential of a complete POS system for gathering and processing information on an individual's spending and transaction patterns will be applicable in providing a number of new services that are economically infeasible under the current technology. If the EFTS software is properly designed, a DFI could receive information on customers' transactions in addition to that needed to effect funds transfer. Tax accounting, monthly unified financial profiles, inventory management for small retailers, etc. are but a few of many possible services that could be developed. Since the intermediary will need to handle some part of this financial information merely in order to make payments, it would seem difficult for any other economic agent to perform these same services in a more efficient (that is, lower-cost) manner.[6]

The provision of new services such as these are bound to improve the welfare of consumers in the economy. The competitive implications of these developments are thus likely to be of considerable importance for the various DFI.

III. THRIFT INSTITUTIONS AND SMALL BANKS IN THE EFTS

Under current legislative restrictions, mutual savings banks and savings and loan associations will be able to perform only a subset of the EFTS services available to commercial banks. Moreover, in an electronic environment that will be characterized by significant economies of scale, smaller institutions of all kinds will also find themselves in a different competitive position. Small thrift institutions will thus be twice handicapped — once by legislative restrictions and again by their small size. In this section the competitive effects of an EFTS are discussed as they relate to thrift institutions and smaller commercial banks.

[6]See Flannery and Jaffee, *op. cit.*, p. 149.

Differences Between the Two

At an operational level, there are two features of present day thrifts and small commercial banks that may have implications under the EFTS. First, thrift institutions are more frequently automated in their account maintainence than small banks. Ninety percent of all mutual savings banks currently utilize on-line accounting procedures for all their accounts, compared with 40 percent of savings and loans and only 20 percent of the nation's commercial banks.[7] This range of experience with automation should make the transition to EFTS easier in some respects for the thrifts.

Second, small banks already possess extensive and smooth-functioning relationships with their larger counterparts. Federal funds management, data processing, loan participations, funds transfers, and many other services are handled routinely within the current system of correspondent banking. The thrifts have less extensive experience with inter-institutional cooperation; yet small institutions of all types will find themselves increasingly in need of cooperative undertakings and correspondent services in an EFTS regime dominated by economies of scale. In this regard, then, small banks would seem to have an edge on the thrifts.

However, the most obvious and important differences between thrifts and commercial banks under the EFTS will lie in the range of their financial powers. On the liability side, the absence of full third-party payment powers for thrifts will, if it persists, present severe ostacles to their future viability.

While it may seem that the overall reduction of transaction costs in the EFT system will tend to reduce the importance of "one-stop banking", a transfer of funds between two different institutions is still bound to be more costly than a transfer between accounts at the same institution. Individuals will always need to make third-party payments, and, *ceteris paribus,* cost savings will accrue by maintaining all one's accounts at the same institution. The banks will therefore maintain a slight cost advantage so long as they are the sole providers of demand deposit accounts.

Moreover, the ability of commercial banks to offer a variety of new services will act to improve their full service competitive advantage. As has already been pointed out, these new services will be based in large measure on data generated through POS transactions. Without extensive third-party transfer powers, therefore, the thrifts will be handicapped in their ability to provide personal accounting services and the like.

Successful competition on the part of the thrifts is also likely to require that they be able to issue credit lines in the form of unsecured loans, rather than as passbook loans. A line of credit that can be used only by encumbering one's savings account is far from an optimal arrangement,

[7]Figures reported in a speech by Grover W. Ensley, Vice Chairman of the Mutual Institutions National Transfer System, Inc. (MINTS), June 8, 1973 (mimeograph).

and would tend to discourage consumer relationships with thrift institutions. More liberal consumer lending powers will thus be needed to complement the thrifts' extended third-party payment powers under the EFTS.

An important feature of DFI competition under the EFTS will be increased reliance on interest rates alone as a means of attracting funds. Physical convenience and the costs of financial transactions have in large measure sheltered many individual financial institutions from the full effects of rate competition in the past. This will not continue in the future. Moreover, this lowering of transaction costs is bound to increase the severity of cyclical disintermediations, reducing further the efficacy of Regulation Q ceilings as a means of stabilizing funds flows among DFI.

In a regime where savers are highly interest sensitive and Regulation Q is either nonexistent or ineffectual, the long-term nature of thrifts' portfolios will cause them severe cyclical problems. Their inability to adjust deposit rates upward in times of tight money will result in sizable deposit outflows to both the commercial banks and the open market. The implications of this sort of deposit instability for the mortgage market are obvious. EFTS technology will therefore make even more necessary the broadening of thrift institution asset powers that has been proposed by the Hunt Commission and (to a more limited extent) in the Financial Institutions Act of 1974.

Similarities

Operation of the EFTS will have two immediate effects on thrift and small bank operations. First, many institutions that have in the past benefited from partial monopolies due to geographic isolation (that is, the "one-bank town") will find the basis of their monopolies severely attenuated. EFT will expand all DFI's market areas, forcing recognition of competitors that had previously been irrelevant. Since many of these isolated institutions are small, some will be driven out of existence as a result of diseconomies of small scale and the increased level of competition. In other cases, the new competitive pressures will merely cause institutions to provide better, more efficient services — perhaps at the expense of inordinately high bank profits.

Second, the importance of branch banking will decline sharply. Presently, large branch banking networks and (in unit banking states) the formation of multi-bank holding companies have been used as competitive devices by the larger banks. But with an EFTS, not only will geographic convenience become less relevant, but the elimination of Regulation Q will allow competition to be concentrated on interest rates, which is a more efficient competitive device than the provision of multiple branches in an attempt to lower customers' transaction costs. Small institutions will thus no longer be at such a great disadvantage vis-à-vis their larger competitors due to the indivisible costs involved in maintaining branch offices

At a policy level, small banks and the thrifts will share problems with respect to their terms of access to the EFTS. Recent Justice Department white papers argue that EFTS hardware should be owned and operated largely by the private sector.[8] In many instances, it will be large commercial banks that are induced to invest in EFT hardware: They are able to participate fully in all EFTS services, and their size will make it possible to undertake the sizable fixed capital expenditures. The larger thrifts are currently lacking in the first regard (as has been discussed above), while small DFI of all sorts will be handicapped by the large capital requirements. It is thus quite possible that the thrifts and small banks will be effectively excluded from ownership in the EFTS.

The Justice Department has recognized the likelihood of such a development, and its reaction is clear:

> The fundamental antitrust rule is that those who jointly control an essential facility must grant access to it on reasonable and non-discriminatory terms to all in the trade. The rationale for this rule is that those who jointly control the essential facility should not be able to injure competitors in lines of business dependent on the facility.[9]

The above discussion of the present and future determinants of DFI competition indicates that at least some parts of the EFTS will clearly constitute "essential facilities." However, the exact extent to which, for example, a POS system must be shared on an equal basis will have to be determined by the magnitude of consumer response to the various new EFTS services that become available. Definitive antitrust policy statements are impossible to make at this time.

A less clear-cut issue concerns the precise *means* of access that will be granted to smaller DFI by large EFTS owners. In the California SCOPE program non-Federal Reserve member banks and thrift institutions have been excluded from direct participation in the ACH.[10] These institutions cannot receive their customers' debits and credits directly, but must have them transmitted through a correspondent bank that belongs to SCOPE. Such indirect access has several significant drawbacks:

[8]"In the Matter of Proposed Amendment to Regulation J and Related Issues," submitted by the Justice Department to the Federal Reserve Board on May 14, 1974.

"Statement" of Donald I. Baker (Antitrust Division of the Justice Department) before the House Subcommittee on Bank Supervision and Insurance concerning Competitive Issues Presented by Developing Electronic Funds Transfer Technology, November 6, 1973.

[9]Baker, *op. cit.*, pp. 7-8.

[10]Such exclusion is based largely on the allegation that equal access violates current legislative intent, which limits third-party payment powers to commercial banks. Thus, liability power reform and the access issue are closely interrelated.

1. Indirect members are constrained by the policies of their correspondents with respect to the types of special services and information processing they can offer customers.

2. There may be sizable costs (especially in terms of service disruptions and transition problems) associated with changing correspondent relationships, and indirect members will therefore be at least partially "locked in" to a single correspondent institution.

3. Extra processing steps between the ACH and indirect member institutions increase the chance of errors and delays.

4. Correspondents will (rightfully) extract some profit on the provision of their services, raising nonmembers' costs.

Both competitive and equity considerations thus indicate clearly that any DFI should have the option of becoming an EFT system endpoint, for whatever purposes the institution is legally empowered to undertake.[11] Many smaller institutions will, of course, find a correspondent relationship to be their best (that is, least-cost) means of interfacing with the EFTS. Diseconomies of small scale will preclude direct ownership or leasing of the necessary computers, data transmission lines, etc.; and many larger banks, which will be connected into the EFTS already, will surely find it profitable to sell EFT service packages to other DFI. Despite the likelihood of such developments, it would be unreasonable to *force* an institution to work through a correspondent when better and cheaper services could be provided to consumers by means of dircect access to the EFT system.

Another possible solution for small institutions will be the formation of jointly owned service bureaus — a trend that is already evident in the thrift industry. Such bureaus can operate as endpoints of the EFTS and could be designed to give individual member institutions a good deal of flexibility concerning product innovation. In this respect, service bureaus would probably be preferable to the correspondent system, although the costs of organizing such cooperative ventures may sometimes be prohibitive. (Of course, the existence of a sufficient degree of competition for the provision of correspondent services would tend to reduce the differences between these two approaches.)

In any case, it is clear that the particular terms of access to various components of the EFT system will have important competitive implications for the thrift institutions and small commercial banks. Yet only

[11]It is important to point out that the principle of equal access allows system owners to charge for their services — including a portion of initial capital costs. EFTS owners are therefore not compelled to place *themselves* at a disadvantage with respect to transaction costs. See Baker, *op. cit.*, p. 12.

the passage of time will allow the differential extent of the EFTS' influence on various institutions' competitive abilities to become evident. Regulators, jurists, and industry participants should all pay close attention to consumer preferences and competitive conditions as they evolve in conjunction with (and in response to) technological changes.

IV. CREDIT UNIONS — AN ADDENDUM

Credit unions, which have grown more rapidly over the past 15 years than any other type of DFI, are a highly specialized type of thrift institution.. Their assets are limited by law to consumer instalment credit — a market in which they are the nation's third largest lender with 15.2 percent of all outstandings. On the deposit side, their 25 billion dollars in share accounts represents only 3.8 percent of the total DFI market. Credit unions are thus quite small, both at the institutional level and in terms of the aggregate market for consumer saving. However, they do possess several important institutional characteristics that make them a useful source of information about future EFTS developments.

The market for small consumer loans is a notoriously difficult one to serve at reasonable cost. Yet despite their legislated 12 percent (APR) interest ceiling on all loans, credit unions have been able to profit and prosper in this area largely as a result of the following characteristics of their operation:[12]

1. Since all credit union institutions are organized around a common bond of association, the credit union office is generally quite accessible to members' place of work, church, or labor union. This *physical convenience* results in lower transaction costs and is an important factor in attracting savings deposits.

2. Because 84 percent of all credit unions are based on an occupational bond of association (that is, all members work for the same employer), payroll deduction plans both for saving and loan repayments are easy and inexpensive to arrange. These payroll plans induce regular saving inflows and, more notably, reduce loan delinquencies and the costs of consumer loan processing. *Payroll deduction* is thus at present a crucial competitive advantage for the credit union sector in the United States.

3. The credit union Loan Committee possesses a special *information advantage* (vis-à-vis commercial lenders) by virtue of the common bond of association that unites all members.

[12]For a more detailed and supportive evidence concerning these propositions see Mark J. Flannery, *An Economic Evaluation of Credit Unions in the United States,* Research Report No. 54, Federal Reserve Bank of Boston, Boston Massachusetts, February 1974.

The emergence of an EFTS will extend these same operating features to other depository intermediaries. The results for DFI in general should be similar to those that have been experienced by the credit union sector. First, it will be found that household savers will respond significantly to changes in the transaction costs associated with their financial operations. This tends to support the fear that "one-stop banking" may become a more potent competitive advantage in the future, although this is by no means a certainty. Second, DFI consumer lending costs and default rates will drop as a result of payroll deduction plans provided through ACHs and the increased availability of data on credit line usage that will be possible in a real-time POS environment. The consumer loan market should be better served as a result of new entrants and more intense competition.

Corresponding to these new developments for commercial banks and the thrifts, the credit union sector should find its relative position somewhat diminished. The EFTS will make available to all DFIs certain key economic features that have heretofore been unique to credit unions. Their recent extraordinary growth rate is likely to slacken as a result, at least relative to those of their competitors.

V. CONCLUSION

The introduction of EFT technology to the United States will alter the environment within which all DFI compete for funds. Changes induced by the EFTS will be of a small nature quantitatively, but their sum will be sufficient to have important cumulative effects on the operations and competitive viability of thrift institutions and small commercial banks. In many cases, competitive pressures engendered by the EFTS will complement recent trends in the financial sector: the elimination of Regulation Q, the payment of interest on demand deposits (NOW accounts), expansion of DFI into the consumer loan field, and so forth. The EFTS is not a separate or distinct event in the evolution of the economy's financial sector. Rather, it is most fruitfully viewed as one facet of a more general (and long-lasting) evolution that has seen transactions costs associated with exchange of value steadily fall while individual investors' access to capital markets has steadily improved. From this point of view it is clear that environmental change and institutional flexibility will continue to be central elements of the DFI sector long after the "EFTS" has become fully operational. They have only begun to adjust!

Discussion

Donald P. Jacobs

The implementation of an EFTS could result in substantial alterations in the structure of deposit institutions, with the strongest impact on small commercial banks and thrift institutions. In predicting the expected changes, however, one is faced with a number of problems; the ultimate shape of the system has not been determined, the regulatory environment within which the system will operate is uncertain, and consumer response to the new system is unclear. Nonetheless, the influence of some facets of an EFTS is predictable with a high degree of certainty. These facets are the changes implied by generic elements of electronic transmission. Others which are dependent on the particular configuration of the system, the regulatory response or consumer tastes are far more conjectural.

Mark Flannery has produced an interesting paper which analyzes the implications of an EFTS. I agree with all of his major conclusions: per item costs of effecting transactions will be reduced; geographic distance will become less important in determining transaction costs; automation of payments will bring pressure toward a single institution performing the full range of services for the consumer; and the range of services deposit intermediaries will technically be able to perform will be expanded.

From these implications Flannery concludes, and I agree, bank offices will become substantially less important and the movement to EFT is a crucial argument favoring broadening the range of services thrift institutions should be permitted to perform. Flannery's analysis of the efficiencies of credit unions and his conclusions that EFT will erode the advantages these institutions have enjoyed is both insightful and, I believe, correct.

Since I agree with Flannery's analysis and the thrust of this conclusion, my concern is with what is left unsaid. But I admit the concerns I discuss below are prompted more by the discussion in yesterday's session than by Flannery's paper.

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It is my belief that at the present time the fabric of the institutional arrangements around which the deposit intermediaries have developed is extremely fragile. A large number of banking and thrift institutions, with a very broad range of asset sizes, now operate profitably. This structure has developed as a result of two important forces. First, substantial economies of scale exist in the commercial banking and thrift industries only to a moderate asset level. Secondly, the system by which information is gathered and decisions made and the transaction costs imposed on small businesses and consumers by the check system have caused banking markets to be highly localized. Geographical isolation now permits a large number of small institutions to survive in the face of economies of scale. The lack of substantial economies after a moderate asset size is reached permits a number of banks in a wide range of sizes to survive in many large banking markets.

Both of these factors are rapidly being eroded by developments in EFT. An EFTS will contain substantial economies of scale and, as Flannery has suggested, geographic isolation is being eroded and will be further eroded as the EFTS is more fully implemented. This leads to the conclusion that the number of full service offices maintained by the deposit intermediary will decline in the future. Given this conclusion, however, a large degree of uncertainty still remains about what the industry structure will look like in the future.

What is needed is an analysis of how structure will be affected by different configurations of the EFTS, differences in how the components are owned or serviced, and differences caused by alternative regulatory responses. Such an analysis could be used to guide public policy to help shape the most desirable industry structure.

There are good reasons, both private and public, why it may be desirable to influence the developing structure of deposit intermediaries. It is possible that without interferences a very high degree of concentration could develop, which could have two potentially undesirable effects. First, the industry might be nationalized or it could be subjected to a substantial increase in the severity of constraints. There certainly is strong empirical evidence to suggest that large institutions are not looked upon with favor by political elements. The large number of small units which have local political support is one of the major protective colorations deposit intermediaries have enjoyed. Although banking is a highly regulated industry, I believe over-regulated, there is little doubt it would be plagued with even more regulation if the industry were more concentrated. Of course analysis may indicate that if market forces are left free to operate, the ultimate structure will not be sufficiently concentrated to cause the dire results suggested above. But, the risk should not be taken.

Little effort has been devoted to analysis of expected structural change in the deposit intermediary industries. A number of hypotheses have been suggested but it is difficult to choose among them. As examples it is possible to develop a number of potential scenarios which indicate widely divergent structures. It could be argued that the introduction of an

EFTS will permit groups of small institutions to cooperatively develop computer service centers or to purchase technology through correspondent systems. If this is done, it externalizes the economies that go with EFT. Small banks and thrift institutions are able to operate as efficiently as large institutions. Even more importantly the small institution will be able to provide the full range of services which the large institution will provide, which would enhance the competitive position of small institutions. With existing technology large correspondent banks cannot efficiently sell small institutions the full range of services that the large bank provides customers in its local market. This argument suggests EFT will improve the position of small banks since a large part of the new service packages which EFT will allow is oriented toward small- and medium-sized business and consumers, both of which are the major customers of the smaller bank. This hypothesis suggests a large number of small institutions will continue to survive.

A second scenario suggests the banking system will be comprised of only a few banks. EFT will permit banks to serve customers over a wide geographic area. This will allow large banks to compete effectively for customers regionally or nationwide. Moreover, there will be economies in dealing with large numbers of customers, or the correspondent network will not provide sufficient services to allow small banks to compete effectively with large banks, or the prices charged smaller banks by correspondents may not allow a large number of small banks to compete effectively.

A third scenario takes account of the activities of bank holding companies and non-bank financial service firms. In recent years a number of small loan companies with nationwide or regional branch systems have computerized their operations to the point where the local outlet communicates loan requests through a terminal to the home office computer. When credit is granted, all record keeping is centralized in the home office.

These enterprises are not constrained by geographic restrictions nor are they subject to rate maximums on their funds acquisition or required to maintain non-earning reserves. They can finance their operations through the sale of consumer saving certificates, which yield market rates, through the same outlets that grant credit.

Bank holding companies have aggressively entered this business. In the future these branch systems can be utilized to market the full range of credit services handled by banks. There is the possibility that this potentially efficient type of operation, with no costs imposed by regulatory constraint, will become the dominant provider of consumer financial services. This implies greatly intensified competition in the consumer markets with important ramifications on the structure of deposit intermediaries.

These scenarios predict greatly different industry structures. But more data and analysis are required to make informed judgments about the impact of the emerging EFTS on structure. This research is needed while it

is still possible to influence the structure which will develop. Moreover, faced with a potentially efficient but disruptive technology the need exists for research into how to regulate so as to keep adjustment costs — bank failures and similar inconveniences — to a reasonable level.

Implications of the Electronic Funds Transfer System for Non-Financial Corporations

Richard F. Dundore

This symposium has been assembled at what I think is a most opportune time. It is probably more necessary this year than in any previous year of the developing electronic funds transfer system. In previous meetings of this nature, participants have tended to concentrate on the character and dimensions of the transfer system that would be required. At this time, interested institutions and groups appear to have pretty much jelled their thinking and to have developed their particular thrusts for dealing with the funds transfer system; and, in fact, many have found their preferred approaches.

In the process I sense we have reached a point where emerging competition is dominating the thinking of participants more than the spirit of open inquiry and mutual assistance that one time seemed to characterize our discussions. We started out with an effort to smooth the flow of dollars and control the rising flood of paper before we are drowned in check processing. We have now gravitated into what looks like a race for who will capture the most consumer participants and their household accounts.

Under the circumstances, we want to thank the Federal Reserve Bank of Boston for inviting us to present our views on the Electronic Funds Transfer System and its implications for corporations — that is to say, for non-financial corporations. Although personally I am a banker by profession, it has been my pleasure to serve for the past several years as head of the research group within the Credit Research Foundation that has dealt with the emerging problems of automation of the payment system for the business community. The Research Foundation, whose membership is made up of representatives from 500 major corporations in the United States, serves as the principal education and research arm of the credit fraternity. I am pleased to have Dr. George Christie, Research Director of the Foundation, in attendance at this symposium with me.

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EFTS Planning Dominated by Consumer, Not Business, Payments

Our concern with the present stage of development of electronic funds mechanisms is primarily with their impact on the administration of business-to-business payments. But corporate financial policy must occupy itself also with problems of other parts of the emerging electronic system and must deal with the individual or non-business environment. Therefore, we are more than a little interested in the emphasis of most of this symposium on consumer payment procedures.

All too often it has been assumed from the magnitude of payments made by consumers for retail purchases and bill paying, that business firms will interface easily with the electronic mechanism once established. There should be little problem in extending its use to deal with business payments as well. However, the economic factors involved in controlling payments of individuals are multiplied many times over when dealing with corporate business payments. Therefore, let me spend the next few minutes as advocate for the interests of potential corporate participants in what we see as the inevitable emergence of a fully automated payment system.

First of all, we have been told that the volume of checks has been rising at a rate that could bring about a collapse in the collection system. The number of checks written in the United States has increased from 12 billion in 1960 to an estimated 27 billion in 1973. If this growth continues, there may be as many as 54 billion items by 1985. Yet, the handling techniques have improved steadily and the business community has been largely isolated from any ill-effects of temporary congestion. This is partly true, I think, because the hand labor of checks has tended to be spread out among countless banking units and corporate accounting centers.

Secondly, machine-handling of checks has improved remarkably during the same period and has offset rising clerical or administrative costs of processing. Needless to say, the value of deposit balances has also risen, so banks have not significantly changed their charges to business for such service. Again, by spreading activity among multiple banks, business has enjoyed an incremental cost situation. A $10,000 check has never really cost more to process than a $10 check. On the other hand, if we have reached the peak of this technology cycle, a change in this cost situation may be imminent; but it is not yet evident. Meanwhile, a considerable amount of effort is going into the reduction in transit rejects, and screening checks in bookkeeping.

One of the greatest insulators of cost has been the money value factor represented by the growth in Federal Reserve float, which has gone from an average $1 billion in the 1950s to about $3 billion currently. So far as I can understand, the change in Regulation J in late 1972 succeeded mainly in stabilizing this average float experience, and the Regional Check Processing Centers have helped hold the level under control despite rising check values. Fortunately for business, holiday delays, and transportation

or weather crisis problems have been largely filtered out by Fed payment schedules.

Therefore, the check has remained as a very well-established mechanism for business. It has most of the best attributes of a payment instrument: it is a well-documented evidence of payment; it can be converted to usable funds by recipients with a minimum of effort or delay. On the surface there appears little cause for urgency in espousing electronic funds transfer precepts.

Competition for Business Payments

Nevertheless, business administration is driven into the emerging electronic banking scene by the same problems as banks and similar prospects for more easily manageable operations. The real impetus, however, is coming from an area other than strictly cost savings. There is now a growing sense of competitive self-interest among financial service institutions, and we are only just beginning to see the tip of this iceberg.

Infighting has already developed between savings banks and commercial banks for free access to automated clearing houses; and between independent banks and the Federal Reserve for control of the message switching system; and between regional clearing houses and savings banks and their associations over separate or common national switches. Corporations, I think, are disposed now to sit back until the flack has cleared, before deciding where or how to direct their automation business.

Banks, for instance, may see the quantity and dollar volume of payments passing within their institutions, but they are ultimately more concerned with the useful deposit base and earnings potential of business payments. How important are business payments? According to the Bank Administration Institute's projections reflecting research data collected in 1967, about 18.7 percent of all checks written represented payments by business to other businesses. A study by Arthur D. Little, Inc. published in 1970 for the ABA Monetary and Payments System also estimated checks written on demand deposit accounts at 52 large banks in April 1970. This study suggests that business-to-business checks represent about 39 percent of total check volume. For checks over $500 this category accounts for about 61 percent of checks processed. From our studies in the Credit Research Foundation, each business-to-business check written represents payment on average of three transactions, and may represent thousands of invoiced transactions, so the payment problem becomes magnified.

The relationship between businesses and individuals is equally impressive in numbers, if not in average dollar value. Thirty-seven percent of all checks written were sent by individuals to businesses; and 26 percent from businesses to individuals. This is a basis for substantial business participation in EFTS, but the question is how and by what EFTS mechanisms.

Let us look at these numbers another way. BAI has estimated a third of all checks are drawn on the bank within which they are deposited, one-third travel less than 200 miles, and another third travel long distances. They tend to spend three business days on average within the banking system, i.e., from time of deposit to time of final presentation. I understand also that checks over $10,000 are not generally sent through the Fed system, which means big checks have moved through the correspondent system. With the institution of Regional Clearing Centers, however, this is changing, both to reduce the number of days fractionally, and to fine sort and clear more checks by the RCPCs.

Viewed from a standpoint of deposit value, business checking activity normally generates substantial demand deposit balances. We estimate the deposit value is much greater in business-to-business payments than in any other business-related transactions. Payrolls clear locally and promptly; bill payments are mostly local and also clear promptly. But, we must add two days or more on average to reflect the mail experience of business payments. Hence, commercial accounts have a deposit structure with a built-in mail float and check presentation float equal to four or five business days on average. This represents a significant factor in the bank deposit structure, as we can readily surmise.

As an example, if we judge by the figures reported in the *Survey of Current Business* this year, manufacturing and trade sales totalled $1,734 billion in 1973, or about $6.9 billion per business day. Estimating five days of deposit float in the business payment system, this level of activity may well have accounted for upwards of $35 billion of commercial deposits. This is almost equal to the average daily required reserves of all member banks. This pays for a substantial amount of check processing, if not actually supporting the check processing system. Moreover, this level of deposit generation furnishes the most substantial base for credit support enjoyed by corporations.

Different Objectives for Corporations, Institutions and Consumers

Now let us come back again to the problem of competitive self-interest in the emergence of the EFTS. For non-financial corporations four principal areas are affected. The first and most important in terms of dollar value, as we have just seen, and in terms of internal cost, is the processing of vendor payments by accounts payable groups. The corollary of this and of closest interest to the Credit Research Foundation is the processing of accounts receivable remittances arising out of trade sales. The third is the generation of payrolls and other individual payments such as dividends; government payments likewise cover payroll, as well as social security remittances. Finally, there is the vast area of individual payments to corporations for retail purchases, for insurance premiums and for household services such as utility bills.

Taking these in reverse order, it would appear that the emergence of NOW accounts in savings institutions presents the newest and most dramatic competitive element. These have now been joined by point-of-sale terminals sponsored by savings associations in cooperation with chain stores. Commercial banks will need to join this competitive struggle.

The consumer's interest lies first in obtaining cash when he needs it, wherever he needs it; hence, he is a willing user of cash terminals. Thereafter, he is interested in protecting his money as long as possible in some interest-earning institution, hence, his interest in savings banks with their NOW account convenience. He is also intent on spreading payment for his seasonal purchases or for big-ticket items, hence, his interest in department store charge cards. He is equally interested in spreading payments for any number of local stores, and grouping such obligations just as with a department store, hence, his interest in the bank charge card. Above all, he wants to retain control over how and when he makes his payments. He is not at all interested in becoming exclusively bound by any one of these institutional devices.

Nor do these institutions have the same consumer objectives. The savings banks want an average long-run share in the savings dollar in order to conduct their primary business of long-term mortgage loans — and they may extend to other intermediate-term loans as well. The retail commercial banks appear to be looking for a device to generate instalment loan credit. The bank credit card provides its liquidity convenience for consumer purchases to independent merchants and carries a built-in potential for interest income. The department stores are trying to build customer loyalty through credit card services, but also gain the card's use as a customer identification device; and it becomes a means for promoting point-of-sale accounting control in a widespread clerical organization.

Each institution has its interest in EFTS grounded irrevocably in its primary corporate earning objective and the disciplines of its respective accounting system. This is probably why EFTS finds itself right now locked on dead center. It is liable to remain so for an indefinite period, or at least until we have completed the satisfactory automation of consumer accounting systems, and have implemented more point-of-sale terminals in stores and more teller terminals in banks or near banks.

While this may make EFTS seem hopelessly fragmented, and costly because of duplication of effort or under-utilization of local computer switching systems, perhaps this is not all bad, if the consumer is able to get just what he wants and to have access to all the various mechanisms.

Payroll Automation in the Forefront

We are not at all on dead center if we have raised the level of demand of the consumer for more instant or automatic credit of his incoming payments, such as payroll, annuity, and social security payments. The most widespread agents for cashing such checks now have been local food

stores or in some cases, bars. The majority of employees have been reluctant to let their employers make automatic bank deposits for them, and yet there are successful one-check payroll plans around. But, many such deposits have not been truly automatic and people are afraid of mail delay even with local delivery. It is also true they have not had the facility of savings account use for routine payments.

If the campaign has now begun in earnest for automated payroll deposits, this opens the door wide for corporate use of EFTS at an opportune time. Corporate payroll processing has advanced to the stages of general use of automated programs. Many of these have become service bureau generated, or are being consolidated in central corporate payroll centers. Payroll payment systems are dominated by the requirements for maintaining employee accounting records and the generation of withholding records or retirement system records. Data communications facilities have improved and have led to consolidation of payroll recordkeeping. More large payrolls are now part of multi-plant or multi-office operations. Now we are confronted with the limitations of issuing and mailing individual checks in a timely manner and EFTS should be the answer. The clerical and computer savings are there to be had, but employee demand for and acceptance of automated payroll depositing has yet to be conclusively demonstrated.

How can he know his pay was deposited, and in the right amount? When he can inquire of his account easily and confidentially by card terminal, perhaps his confidence will grow. But, this is a development that will surely have to be proven. Only when it is widespread, can proposed bill payment services be expected to move aggressively in the electronic funds system. Meanwhile, many forms of payment devices will have a chance to be tried and tested, and we may even have time to work out integrated clearing house switches.

When this does take place, however, corporate deposit float will be the loser. So will corporate payroll accounts at many of the 14,000 commercial banks of the American banking system.

The Biggest Impact from Business-to-Business Payments

Now we come to the primary concern of the Credit Research Foundation, and the concern generally of corporate financial administration with the direction and impact of an electronic payment system. For the past several years, the potential for automating the accounts receivable process has occupied an increasing amount of research time. Within corporate systems development, it is one of the primary areas for computerization and consolidation.

Some useful work has been done to adopt paperless entry methods to cash application of accounts receivable remittances. Lock-box banks have been induced to key remittance data to tape and transmit such trade payment data to corporate computer centers. Certain types of consumer payments, and mortgage payments, have been dealt with successfully in the

same manner, and the BAI has adopted standards for converting and transmitting such payments. However, high volume operations have been too costly in compensating balances, so by now most of these low dollar payments have, in fact, gravitated out of the banks and back to corporate processing centers. The banks have been left with their traditional check clearance role only. This has been propelled by investment requirements in equipment for volume accounting, as with credit cards.

A parallel effort has taken place in accounts payable but, in typical fashion, with little or no reference to the requirements of an electronic funds transfer system.

So we need to come back to the question of who is interested in corporate participation in EFTS for business-to-business payments. Given the substantial deposit generation of the present checking system, who is interested in bringing about a change? Competitively, does anyone have anything significant to gain, or to lose? Who is liable to take the initiative, and at what cost? Is this to be another area where EFTS is fought to a standstill?

How should we distinguish business-to-business payments? For the most part, these are the result of shipments that have gone out from remote warehouses and plants and have been received in the buyer's warehouse or in his plant and must be paid for within a reasonable period of time, usually determined at the time of sale and usually representing an extension of credit by the seller. The permutations and combinations of all the buyer-seller relationships involved in this process, and the geographical remoteness of their respective operations are what give rise to the problems inherent in the business trade payment process. Consumer billing and payment may be accounted for on a balance-forward basis, but trade credit accounting relies on precise identification of all transactions. This is understandably due to their possible complexities with sales adjustments, allowances, or terms, and therefore must be settled on an open-item basis.

The Credit Research Foundation has examined this process in great depth, and has been forced to the conclusion that balance-forward accounting is not a satisfactory alternative. Corporate accounts receivable can only be kept under control by linking the data essential for settlement to the payment itself. In recognition of this fact, it is our conclusion that an EFTS for the American business payment system should be a modified GIRO system, but be geared to many times the volumes characteristic of foreign GIROs, and with much higher levels of automation. It should also be bank-oriented, so transaction settlement will have integrated all money value debits and credits. This would also meet the needs of computerized accounts payable operations.

There is no need here to go into the detailed operations of accounts receivable systems, nor of accounts payable systems. It is sufficient, I think, to indicate that major corporations are actively engaged in applying third-generation computer systems to both areas, and attempting to consolidate each. The developmental cost appears to approximate about $1

million in each case. In many companies, each major division may have its own accounts receivable system, although this is becoming less and less the case. However, accounts payable operations still tend to locate with production accounting. Receivables control is combined with marketing, order entry and distribution accounting. These are all complex areas and dictate in many instances the limits of adaptation to outside systems.

Six billion yearly payment transactions that consist of paying an average of three invoices each must be managed within the EFTS if we are to take care of the business-to-business segment of the economy. These are represented by $3.5 billion average sales per business day in the manufacturing segment, $2.0 billion average per day by retail suppliers, and $1.5 billion on average for merchant wholesalers. There are over 250,000 vendors supplying 3 million retail establishments. Presently, manufacturers have nearly $100 billion invested in domestic-trade receivables.

What does this suggest? One concept of the business funds transfer system would have local banks organizing account payable operations for their retail business accounts as an extension of point-of-sale terminal installations. This would appear to be a natural field for commercial banks; but would they care to undertake such a degree of store accounting? If so, will local banks also undertake to extend credit to those retailers as a part of this service? Or, shall we accept the fact that point-of-sale systems will for a long time be geared to customer identification and consumer accounting?

An interesting transformation could be the outcome if credit service were combined with payables accounting. Suppliers ship merchandise under a variety of terms, of which one of the most popular is a 2 percent discount if payment is mailed by the 10th day after date of billing, or net payment is to be made in 30 days. There are many other terms in practice, of course, including the 10th day after the end of the month. There is a rate trade-off implicit in this service area, so it is possible that local banks will supply credit under EFTS payment services that are not now supplied and shift a portion away from suppliers. Under normal circumstances this might be a very favorable influence on retail financial management. In periods of tight money, would it be equally favorable? Surely a dependency could easily develop on the part of store owners that could boomerang under periods of stress.

If local banks do not organize themselves for such service, will retail credit card companies extend their facilities to this field? Or, perhaps, regional factoring companies may expand their scope of practice.

In any event, there is a strong prospect that EFTS services will shift a portion of accounts receivable financing away from trade suppliers. They may even be induced to do so by term incentives. An example of what this would mean is found in the record of June 1970 to June 1971 when there was an easing of the discount rate and the prime rate, and credit became more competitive. Manufacturers' sales increased 3 percent in one quarter, from $153.3 billion to $157.6 billion; but receivables investment actually decreased 3 percent, from $76.7 billion to $74.4 billion. Because

the length of time receivables were outstanding in relation to average sales had been brought down 2.5 days to 42.5 days, more than $4 billion of manufacturers's assets were freed for other corporate use.

On the other hand, if local and regional banks or credit service organizations do not take on the initiative of invoice payment, the mere institution of a credit payment system — GIRO style — would have much the same effect. Mail delay and check collection time would be released from the receivables settlement process. It is not necessary for any competitive credit agency to step into this process to gain this effect.

Local merchants and small producers are steadily replacing their manual bookkeeping systems with service bureau accounting. Given the proper controls, this segment of the market may easily participate at a low volume level per bank with bank payments through automated clearing houses. Until nationwide switches are perfected or, perhaps, links are formed through regional banks, this could hardly have a wide effect. Furthermore, it is most unlikely that American business will allow the trapping of GIRO-float within the banking system which would occur if banks did not make prompt electronic payments — another competitive reality to be faced.

Impact of Periodic Corporate Liquidity Problems

This leads us now to the matter of EFTS and its impact on corporate liquidity. This aspect of the problem bothers me far more than all the rest. Through trade credit, major corporations have become a supplier of credit in the economy almost as important as the banking industry. Commercial and industrial loans have been running at the level of over $118 billion. Manufacturers' receivables are at a level of $98.8 billion. In a period of tightening money, we might expect a sharp trade-off of credit terms against borrowing rates. Check payments now tend to cushion these adjustments, and receivables accounting is not so quick to detect offenders. Under EFTS and its extension to electronic payments control and receivables accounting, these adjustments could trigger immediate reaction. If corporate collection pressure did not take place, corporate suppliers themselves would be vulnerable to a new angularity in cash flow. If a 2 percent discount is not attractive for prompt payment, an abrupt rescheduling would be called for to net 30-day payment. This would surely be encouraged by more sophisticated payments management. Under the circumstances, we may need to rethink the whole area of the funds value transfer in business term disciplines.

Angularity and peaking in cash flows will take place in any event if EFTS comes into existence under the present pattern of billing terms. When the rate trade-off becomes pronounced, non-financial corporations will be greatly dependent on the availability of demand credit, and will force any credit expansion pressure back into the banking industry. Time deposits and CDs in banks would feel the rate trade-off effect. Will banking be as able to accommodate this expansion on a demand basis if EFTS

practices have dropped deposit float support out of the balance structure? Would the Federal Reserve System support such expansion of credit? Or is the Fed presented with a sharper instrument of credit control? Beyond the banks, this liquidity pressure would have its effect as well on the magnitude and timing of corporate short-term investments, the only alternative for immediate liquidity.

We see a very perplexing period ahead for business corporations in attempting to adjust to an Electronic Funds Transfer System. It goes well beyond the implication of fewer checks to process.

In summary, there are interesting prospects under EFTS for the development of new competing services to replace check processing, and new competing institutions. Overall, that is undoubtedly a healthy sign. On the other hand, warning flags are in the air that adjustments in basic working capital management will need to be made by corporate financial administrators. These may be more significant hurdles to overcome than the problems of bare automation design. There are, of course, problems of systems controls for all participants as documents disappear. But there are also important problems to be resolved in re-adjusting traditional credit markets, and the constraints to be imposed on EFTS-related credit practices.

Finally, I don't think there is any way to prevent this EFTS from developing as an open system. Competition and strong self-interest will assure that it is. It is a pleasure to participate in this examination of some of the foreseeable consequences.

Discussion

Richard F. Kerr

Good morning! It is traditional to say that it is a pleasure to be here — and indeed it *is* — the setting is magnificent, the fellowship great and the conversations and discussions stimulating.

I am flattered and honored to be asked to discuss Dick Dundore's paper and to present my own views on the Electronic Funds Transfer System and its implications for non-financial corporations, particularly retailing, even though I realize that the invitation was tendered only because of a "Tell-It-Like-It-Is" presentation which I made at the annual meeting of the Bank Card Division of The American Bankers Association in September, 1973. The views expressed in that presentation, as well as those expressed today, are mine, alone, and do not necessarily represent either the policies or philosophies of Federated Department Stores or other members of the National Retail Merchants Association.

Much has happened in the field of Electronic Funds Transfers since September, 1973:

1. The Federal Reserve Board asked for comments from a broad spectrum of financial and non-financial institutions concerning proposed changes in Regulation J — and I suspect that the Fed was overwhelmed with the 243 responses.

2. The myth that the rising volume of checks would bring about a collapse in the collection system has been exploded.

3. Retailers have installed, or ordered, about 80,000 point-of-sale devices.

4. Legislation concerning EFTS has been introduced in the Congress.

5. Arthur D. Little, Inc. held a Technology Assessment Conference on June 13, 1974, at which all groups interested in EFTS, except the Department of Justice, were represented.

6. Almost every conference of financial and non-financial institutions has had at least one speaker, along with discussions, on EFTS.

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With the exception of the Technology Assessment Conference and this one, at which "the spirit of open inquiry and mutual assistance" was, and is, quite evident, the other conferences have all dealt with emerging competition and the actions which must be taken by the interested parties to assure who, as Dick Dundore says, "will best capture the most consumer participants and their household accounts."

Why this sudden change in EFTS attitude and effort? It seems to me that there are three reasons, all of which involve self-interest:

1. It represents another example of the continuance of the traditional free enterprise system.

2. No one wishes to be excluded from direct participation in this, the payment system of the future.

3. There seems to be a newfound realization that commercial banks have no God-given right to control the payment system.

In effect, what I have said so far leads me to believe that Dick and I have very few differences in our views towards the implications of EFTS for non-financial corporations and those that we do have are probably just a matter of degree.

As a matter of fact, I found his paper to be interesting, informative and extremely well-organized. Unfortunately, from a retailer's consumer-credit point-of-view, the paper is concerned, primarily, with the impact of EFTS on the administration of business-to-business payments. However, the possibilities and problems associated with any implementation of this important part of EFTS certainly needed the expert presentation made of the in-depth examinations conducted by the Credit Research Foundation.

As an ex-manager of an accounts payable operation, processing invoices from 40,000 vendors for a large department store, I'd like to draw your attention to, and emphasize, just one of the problems of this business-to-business (merchant-to-vendor) payment mechanism:

As Dick Dundore said:

> The permutations and combinations of all of the buyer-seller relationships involved in this process, and the geographical remoteness of their respective operations are what give rise to the problem inherent in the business trade payment process.

For example, retailers have always had problems with coordinating shipments from a vendor's remote warehouses or manufacturing facilities with invoices which were forwarded separately from the vendor's central accounting office. The introduction of electronics into vendor invoicing and data line communications between the vendor's remote warehouse, or manufacturing facilities, and invoicing office has only compounded the problems. We now receive invoices days and weeks before receipt of the

shipment and, even though the invoices may be post-dated, the cash discount payment terms may have expired before we receive the merchandise. Frankly, our experiences with shipment shortages, overages, substitutions and damages have indicated that it is not prudent to pay until the shipment has been received and checked.

This kind of problem is the reason why "credit trade accounting must rely on precise identification of all transactions." In other words, both corporate accounts payable *and* accounts receivable can be kept under control only by linking the data essential to the payment made and received, and, because of this, I doubt that either an EFTS, or a modified Giro, are satisfactory substitutes for the present cumbersome system, unless, of course, they could be modified to include the precise identification needed for control.

Therefore, I believe that the business-to-business payment mechanism will be the last to use a point-of-sale electronic funds transfer system.

Even though that sounds very final, I cannot leave the subject of business-to-business payments without noting that I became extremely interested in some of the concepts of the use of EFTS for the business payment system, particularly those involving bank organization of retail accounts payable systems and the bank financing of retailers and the huge amount of domestic trade receivables. I think that, at the very least, these concepts are certainly worth exploration and investigation by the managements of banks, retailers and vendors.

And now to my favorite subject, my chosen profession, my life's work, retailing and people, real live people, not pieces of plastic or cardholders, for retailing relates better to people, in an attempt to satisfy their wants and needs, than any other major industry.

I have been fortunate to be employed by Federated Department Stores, the nation's largest and most profitable group of department stores, for the past 25 years. Right now, I am involved not only in the entire customer credit operations function at Federated, for which I get paid, but also in the other end of the customer credit function, through the National Foundation for Consumer Credit — which is a labor of love, that of consumer credit education and the credit counselling of those unfortunates who have become overburdened with debt. For therein lies the dilemma of all of us who are credit grantors — on the one hand we are accused of overburdening people with debt and on the other hand we are accused of restricting the availability of credit — particularly to those of low income or those who are inner-city residents, but in either case, those who need consumer credit the most.

With your permission, I am going to take this fundamental dilemma, add to it what we believe our customers think about payment services, what retailers are doing with point-of-sale devices and why, throw in a little philosophy, mix them all together and try and relate the resulting stew to the implications of EFTS for retailers, particularly large department stores.

During the last two years, retailers have become increasingly aware of the possibility of a bank-operated EFTS and increasingly concerned over the related possibility of bank control, through EFTS, over the credit information and credit granting industry. Their position is best described by the Report of The National Commission on Consumer Finance, page 213:

> Finally, the emergence of the electronic funds transfer system means that whoever controls and operates that system will also have a record of credit extensions and payments. Consequently, if commercial banks continue to enlarge their share of the consumer credit market and if the bank card-EFTS becomes a reality, commercial banks will not only control the funds transfer system but they will own the major portion of the available credit information. Moreover, banks will be under no obligation to share credit information with competing firms whose own credit information will become progressively less reliable as banks enlarge their share of the market. In short, if the banks' current dominant role in credit cards is coupled with control of the EFTS and, by extension, ownership of the credit information system, those banks dominating these systems will be in a position to exercise significant control over the market for consumer credit. If only two credit card plans emerge as part of EFTS, a large and growing portion of consumer credit in the United States will be controlled by a two-system oligopoly with a potential for restraint of competition in the market for consumer credit.

The Commission characterized this possibility as "an intolerable result in consumer credit" (Report, page 208).

Of course, that may be an overstatement and retailers may very well be over-concerned about the possibility but, as a matter of self-interest and competitive survival, they should have some concern. As NRMA stated in its comments concerning Regulation J, "If commercial banks, in time, control the electronic mechanisms for pre-authorization payment, DDP, POS and credit information systems retrieval, what would be left as an inducement for the consumer desiring credit to apply for and utilize the facilities of the general merchandising retailer? The commercial banks would be the repositories, non-competitively, of data on the personal and financial lives of the consumer."

Now even though I cannot envision this as even a possibility, it does represent a good illustrative implication of the great dilemma — too much credit for some and too little credit for others — for, on the one hand, the substantial lines of credit offered by bank credit card plans may encourage some customers to become overburdened with debt but, on the other hand, bank-credit-granting standards appear to be much more conservative than those of retailers and other credit grantors.

As a matter of fact, retailers have known for years that most consumers have established their first credit accounts at their local department stores. With bank-card control over EFTS and the credit information system, where would the young or marginal customer be able to obtain credit? If the answer continues to be the local retailer, would he be able to continue to offer consumer credit, or even stay in business, realizing that, ultimately, his credit customers would be only those unable to obtain, and become a part of, the bank credit-card part of EFTS?

Should this happen, the retailer has three choices:

1. He can raise prices, become less competitive and lose those customers who are able to obtain credit from other sources.

2. He can accept bank cards and sell for cash and lose those customers who are unable to qualify for a bank card.

3. He can operate a "cash only" business and really lose customers.

From a sociological viewpoint, the first choice might be the best in the long run, for it is the only one which does not prevent the entry of millions of customers into the credit part of the payment-services system.

What do consumers think about EFTS? Not much! Their understanding of it is miniscule. All they know is that it involves computers and, in the beginning, all of us made certain, in our own inimitable ways, that customers would not like computers. We made errors, and didn't correct them promptly, we didn't change addresses fast enough, we updated our files periodically instead of daily, we dunned them for payments when we should not have, we did not process credits promptly and we dehumanized them by treating them as numbers.

More recently, we have learned to manage our electronic systems better. We do not make as many mistakes, and when we do, we correct them promptly, and, at least in retailing, we are processing fewer bill complaints and inquiries than ever before and our customers have accepted, perhaps reluctantly, our systems.

However, people continue to believe that computers are inhuman — too big, uncontrollable and too knowledgeable — and they do have long memories. So, when asked about EFTS, most of them say, in the New York vernacular, "Who needs it?" And the more sophisticated say, "What's in it for me?"

And why shouldn't they answer this way? They are perfectly happy with their present payment systems, they don't understand EFTS, with its viable alternatives and added convenience, because it has not been sold to them.

Consumers want access to, as Dee Hock says, "value exchange," 24 hours a day, 7 days a week. To retailers, that means access to merchandise and services, and retailers have attempted to react to the demand. In most locations, except where there are Blue Laws, our stores

have been open 7 days and 6 nights each week for several years, and in most metropolitan areas, merchandise can be ordered by telephone, 24 hours a day.

With the advent of automated tellers and cash dispensing machines, commercial banks have also reacted to this demand. In fact, some banks are now open on Saturdays, and that is almost heresy.

The thrift institutions have reacted, too, and have answered the "What's in it for me" question with their *NOW* accounts and *PLAN* accounts, and the success of the Hinky Dinky experiment proves to me, at least, that customers want to be able to make *deposits* during non-banking hours.

Thus, through the imaginative, competitive use of electronics, it appears that financial institutions are finally reacting to customer demands for almost continuous access to their "value exchange."

What are large retailers doing about electronic cash registers or point-of-sale devices? They are ordering them in huge quantities and installing them as rapidly as they are produced and delivered. Why? To better satisfy their needs for merchandise information, to simplify the calculations made for total merchandise price and taxes and to better identify and approve any credit purchases made. They are not designed to just handle a cash sale, a cigar box could do that. In addition, they are less expensive than the large mechanical registers ordered in recent years.

Retailers are not ordering the type of black box POS device, envisioned by some bankers, into which a piece of magnetically encoded plastic is inserted, the transaction data and a secret code are entered and the desired results achieved electronically.

Retailing's major problem is *not* with a technology for reading our credit cards, but *is* with the technology required for reading our merchandise tickets. Basically, we need a device with a hand-held reading capability — and our merchandise tickets must be machine and optically readable by a customer and the salesclerk. In addition, the merchandise tag must vary considerably in size. We need tags that stick to merchandise, can be pinned or clipped to goods or can be hung from merchandise. Above all, our tickets must be inexpensive. This last is the real rub at the present time, as it appears that magnetic technology is too expensive.

Thus, while banks appear to be going down the magnetic path, retailers are tending toward an optical font, bar code or punched hole — in fact, we are headed in almost every direction *but* magnetics.

This is what I said a year ago and I still believe it, but *Women's Wear Daily* on September 30, 1974, stated:

> The universal sales ticket scheduled to be introduced by the NRMA next month is expected to raise questions about whether retail and apparel manufacturers can afford the project.

> Some retailers say that the standard ticket — which took five years in planning — is expected to take another five years in implementation.

Quoting Donald Hurlbert, Director of Information Systems for Belk Brothers Stores, *Women's Wear* reported:

> Originally the cost of OCR-A wands were listed as $600, and then it went to $1,000, and the last time I heard about it the price was over $1,500. There are not that many stores that can afford to have an additional $1,500 expense at every cash register.

Where does this latest development leave retailers? Right where they are today, using the capabilities of the ECRs by continuing to require sales personnel to enter the information manually so that it can be controlled and reported electronically, for increased sales and profits.

What is retailing's interest and involvement in EFTS? We have had lots of interest, but very little involvement, so far.

Frankly, we have developed no thrust for dealing with an EFTS. We have been, and remain, interested observers:

- We have noted the concept of an EFTS evolves from a bank-card-oriented system to a total payments mechanism.
- We have noted that financial institutions appear to be jockeying for position in what they refer to as an "emerging" EFTS.
- We observe financial institutions more willing to discuss EFTS implications for the consumer and, hence, our business, and we find this encouraging.

Up to now, we have viewed an EFTS as commercial banking's solution to a commercial banking problem:

- As "partners", we know that "your" system will have its effects upon our customers and our business, and
- When research and fact override fear and emotion, we are confident that "your" EFTS will give due consideration to our needs as your "partners" . . . the customers we share and our business.

We recognize that an EFTS must address itself to many complex problems in dealing with our business:

- Up to now, the retail industry has been relatively free from regulation. Consequently, no two department store chains operate in the same manner. Our businesses can differ greatly in accounting,

auditing, budgeting, costs, credit plans, equipment, merchandise assortments, personnel requirements, policy, reporting, security, space, standards, supplies used and systems and procedures.

- Our use of computer technology has been addressed primarily to handling our business "as usual" . . . but faster. In this area we have not been innovative. We remain relatively unsophisticated. Interfacing with a complex system will not be easy.

- In numbers, most stores, are not automated. Manually interfacing with computers poses some very real cost problems.

As processing payroll and customer payments are a minor problem for stores, we cannot devote major effort to, or suffer major upset because of, changes in these areas . . . unless duly compensated.

Should an EFTS impair our relationship with our customers . . . credit and/or cash . . . we would take a close, hard look at what could be a major problem.

If the effect of an EFTS were negative in this regard, we would be forced to fight for survival.

Frankly, we have serious doubt that an EFTS . . . from what we have observed . . . will be accepted by our customers.

Consumers do *not* handle their affairs in a disciplined manner. We are not sure they now spend even the time required to participate in a disciplined handling of their finances. If this is so, advantages to the consumer of a total POS-EFTS, with its automatic elimination of float, will be extremely difficult to sell, particularly if you persist in using such acronyms as *COPE* and *SCOPE* and now, *GACHA*, (Georgia Automated Clearing House Association) the worst of all. The connotation will not be misunderstood by consumers.

In summary, therefore, retailers look to banks to do the research, develop the systems and conduct the experiments. We are quite willing to fill out questionnaires, explain our business and otherwise assist . . . if our cost is low. If our customers like your system, we'll buy it at a cost dictated by our customers. If customers don't like your system and/or its cost, we will be forced to look for alternatives.

Electronic Funds Transfer: A Technology in Search of a Market

Peter H. Schuck

Many of the nation's bankers, businessmen, and banking regulators have a grand vision of the consumer's future. Just over the horizon, they fervently hope, is the cashless, paperless society made possibly by a massive electronic web linking retail establishments, employer payroll departments, government agencies, financial institutions, and other instrumentalities of payment and receipt. Fund transfers will move throughout this web more or less instantaneously and invisibly. Plastic will replace cash, electronic impulses will supplant paper, and all parties involved — consumers, merchants, bankers, regulators and employers — will reap the advantages of this efficient, streamlined system. EFTS will be the classic case of a Pareto optimal solution to a problem — everyone can be made better off without anyone being made worse off.

This, at any rate, is the vision. But like most visions, the enthusiasm of the visionary conspires with the pristine purity of the abstract goals to produce a rather limited image of the world to come. This image tends to neglect those portions of reality which mar the vision. And when the vision is ultimately reified and made flesh, the persistent realities doggedly assert themselves often in unpleasant and anti-social ways.

Consider, for example, the seat belt buzzer and interlock systems mandated by Federal law at considerable expense to consumers. The vision that launched that technology, of course, was a vast reduction in the number of deaths and serious injuries from automobile accidents. The zeal of the visionaries was fueled by the demonstrable ability of seat belts to prevent casualties and the very real social benefits that such prevention would produce. What they evidently failed to take into account, however.

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was that many drivers would not perceive the new technology as a benefit (despite mountains of data to the contrary) or would regard the benefit as outweighed by the cost, and would simply refuse to use the seat belts. And, despite truly imaginative efforts on the part of the government to render non-use extremely difficult, that is precisely what has happened. Indeed a recent study conducted by the Insurance Institute for Highway Safety indicates that 72 percent of the drivers of 1973 model cars equipped with buzzer-light reminder systems used their belts and 41 percent of the 1974 models equipped with ignition interlock devices had managed to avoid using the belts at all.[1]

The point of the seat belt example, of course, is not that it was a mistake to mandate these systems (though a cost-benefit analysis of this reform might well indicate that), but that an important piece of reality information, bearing directly on the issue of the social cost effectiveness of the technology, was lost somewhere between the vision and the fact. And that stubborn bit of reality haunts the technology today, showing no signs of receding before the tide of well-intentioned reform. The wasted expense to those consumers who were obliged to purchase the systems, only to ignore or disconnect them, is a price of ignoring that reality.

Every technology creates social costs just as surely as it generates efficiencies and other economic benefits. The automobile, for all of its virtues, has permanently disfigured the physical structure of our communities and distorted the social structure of our society. It has caused massive air pollution, taken millions of lives, and has probably contributed substantially to the degraded physical vigor of the population. These and other costs associated with automobile technology are, in the aggregate, very great indeed, and few of them were foreseen either by the promoters of the automobile or by its consumers. Had they been foreseen, the technology might have taken a radically different form, or alternatives to the automobile might have been preserved and developed or both. In their roles as taxpayers, consumers, and voters a more clairvoyant American people might well have insisted upon controlling and humanizing the automobile before the technology had become economically, politically, and socially institutionalized — in short, before it became too late.

EFT is not the automobile, of course, and an analogy between them cannot be pressed too far. In many ways, however, the case for asking the hard questions about EFT now rather than later, and for imposing such restrictions upon EFT as are necessary to make it acceptable to consumers, is far more compelling than with respect to the automobile at the comparable stage of its development.

[1]Leon S. Robertson and William Haddon, Jr., "The Buzzer-Light Reminder System and Safety Belt Use". *American Journal of Public Health* (in press, August 1974). It appears from other studies that even this low utilization will further decline as time goes on.

Perhaps the most important single factor distinguishing EFT from the automobile and from other inevitable technologies is one that is rarely mentioned: significant consumer demand for any extensive EFT system or, indeed, for any change in the present paper transfer system simply does not exist. Indeed, consumers appear to be actively hostile to the institution of such systems.

The evidence for this proposition is, in a word, overwhelming. In 1970, a study conducted for the American Bankers Association to measure consumer, business, and banker attitudes toward EFT concluded:

> The fact that consumers do not regard checks as inconvenient leads to the finding that a revised payment system holds no benefits from the consumer's point of view.
>
> However, our findings go further. They show not only that the consumer sees nothing to be gained from a switch to electronic funds transfer. They show that the consumer will feel a definite loss.[2]

Consumer attitudes do not appear to have changed materially since 1970. Just one year ago, another study sponsored by the American Bankers Association yielded similar findings. Significantly, this study excluded from its ambit all EFT systems except "direct pay deposit" (i.e., automatic payroll deposit) and "prearranged transfers" (i.e., transfers between a consumer's accounts in a single bank). Thus, the study not only excluded retail point-of-sale transfers but also excluded preauthorized payments between consumers and businesses, even payments which were fixed, periodic, and substantial, such as insurance premiums.[3] In short, the EFT systems under consideration were exceedingly limited; they did not include any of those systems which would dramatically transfer consumer styles of payment and which are thought to constitute the core of a mature EFTS.

Nevertheless, consumer opposition to even these limited EFT systems was evident. In the case of "direct pay deposit," the employees who favored this system apparently did so not because it reduced their utilization of checks, but primarily because it increased checking. The study notes:

> Where provided, free checking is clearly perceived as the major advantage by respondents. This is particularly true for those workers who may have been considering a checking account but have delayed the decision because of cost factors.

[2]"Attitudes Towards the Payments System: A Depth Study for the American Bankers Association," (August, 1970), p. 15.

[3]"Marketing Update: Insights Into Two Payments Systems Products," a study conducted for the American Bankers Association by Booz-Allen Hamilton and National Analysts (October 1973), pp. 12, 44.

> For some employees, particularly blue collar and lower echelon workers, direct pay deposits provide an initiation into the use of a checking account. *For these workers, the system comes to be desired because of the advantages inherent in the use of a checking account. Convenience in paying bills is quickly discerned.* (Emphasis supplied)[4]

It is ironic, to say the least, that a technology justified chiefly on the ground that it will end or reduce the necessity for checks, turns out to be valued by consumers precisely because, and to the extent that, it actually increases checking.[5]

Consumer hostility to prearranged transfers, even the very limited ones involved in the study, was also evident. The study noted that consumer acceptance of this system declined as one moved from automatic saving plans to prearranged payment of large, fixed payment bills for major expenditures (such as mortgages and auto loans) to prearranged payment of revolving credit and other bills which vary in amount.[6] Although the study does not indicate just how favorable or unfavorable consumer attitudes toward these systems were (the rankings were only comparative), it did characterize consumer views toward transfers of variable payments:

> Payments of revolving credit and other bills which vary monthly in amount is seen as neither particularly convenient nor in the consumer's self-interest. Indeed, it is generally viewed by consumers as limiting their ability to manipulate their own finances, to make discretionary expenditures, or to exert leverage in cases where they wish better service from a creditor. Restriction of these options is viewed as limiting the customer's ability to "control his money."[7]

Again, it is important to stress that these attitudes were elicited in a study that did not even include those payments the electronic transfers of which are generally believed to arouse the most hostility on the part of consumers — point-of-sale payments to non-bank sellers of goods or services.

A third, very recent study of consumer attitudes toward EFTS has produced similar findings. Commissioned by the Special Committee on Paperless Entries (SCOPE committee) of the Virginia Bankers Association and published only four months ago, the study concluded:

[4] *Ibid,* p. 37.

[5] Other advantages, as well as many disadvantages, of the "direct pay deposit" system were perceived by users, of course, but those who favored the system on balance apparently did so because it enhanced their access to checking.

[6] *Ibid,* p. 50.

[7] *Ibid,* pp. 50-51.

> The most important attitudinal aspect of the present bill paying system is that customers are very satisfied with it. Eighty two percent of customers strongly agree that they like the all-around convenience of a checking account. This strong favorability toward checking accounts increases among those customers who are heaviest users of checks — the better educated and higher income families. Nearly eight customers in ten disagree with the statement, "it is difficult to keep my balance correct in my checking account." This contrasts with attitudes toward the statement "using a credit card makes paying bills much easier." Only a slim majority (53%) agree with this statement, compared with the 94% who agree (either "strongly" or "somewhat") on the all-around convenience of a checking account.[8]

Consumers, it would appear, are not alone in harboring grave doubts concerning EFTS. The 1970 ABA study discussed above indicated that neither the bankers nor the businessmen surveyed perceived EFTS to be of particular benefit to them. Bankers, the study concluded, believed that implementation of EFTS would entail substantial outlays without corresponding economic benefits. Checking accounts were seen as profitable banking services and the resulting paperwork, while worrisome, remained well within the banks' processing capacity. More rapid payment systems might be more "efficient," but they would also reduce, and perhaps wholly eliminate, much of the "float" which is so profitable to the banker. Unless the bank's depositors were predominantly corporate payees, whose accounts would receive more rapid in-flows than before, this feature might prove to be exceedingly costly. The 1973 ABA study noted that banks had not even vigorously promoted *in-bank* prearranged transfers.[9] Their enthusiasm for prearranged transfers to third parties, one can safely assume, would be considerably less robust due to the negative float implications to the banks in many or most such cases.

Business attitudes were rather similar. The costly changes in corporate payment processing and computer systems which EFT would entail were perceived as the principal disadvantage of the technology.[10] Elimination of float would be financially attractive to many businesses, to be sure,[11] but EFT would not necessarily accomplish that. The study found:

[8]"Virginia Consumer Attitudes Toward Payment Systems", a study conducted by Opinion Research Corporation for the Virginia Bankers Association (June 1974), p. 6.

[9]*Ibid,* p. 48.

[10]This objection was also noted in the 1973 ABA study, *Ibid,* pp. 34-35.

[11]Direct pay deposit, of course, reduces the employer's float, a factor which inclines many, though not all, companies to reject DPD. See 1973 ABA study, pp. 33-34.

> As businessmen see it, the obstacle to quick payment is not the banking system. It is the amount of time the payer takes before he decides to send the money. Compared to this "decision time," the day or two of float is insignificant.

And while pre-authorized debiting would eliminate the payer's decision time, businessmen felt that neither consumers nor business customers would acquiesce in pre-authorized debiting.[12] A period of payment, like a tax deduction, is an advantage not lightly relinquished once it is enjoyed.

Lest it appear that consumer disquiet concerning EFT simply reflects a Luddite mentality hostile to change and innovative technology — a phenomenon that credit card companies and manufacturers of microwave ovens and fast foods have not discerned — it is well to touch upon the various benefits and costs to consumers of EFTS. For obvious reasons no effort is made to quantify these benefits and costs. The data required to do so not only does not exist, but in the nature of things can never exist. Moreover, the intensity of feeling about particular features of EFTS will vary considerably from consumer to consumer. Indeed, what some will consider a benefit (for example, the convenience of not having to write checks) others will regard as a cost (loss of the pleasure derived from the act of check-writing), and vice-versa. Finally, one's evaluation of EFTS will depend critically upon what kind of system one is considering, for the range of possibilities is broad and the difference between direct pay deposit, on the one hand, and point-of-sale EFTS, on the other, is very great.

Nevertheless, when one canvasses the features of EFTS from the "average" consumer's point of view, the opposition to it no longer seems very mysterious; rather, it appears to be rooted in the most hard-headed rational considerations of homo economicus.

Benefits of EFTS

1. Postage and Mailing Costs

To the extent that EFTS obviated the necessity for purchases of stamps and envelopes, an out-of-pocket cost to the consumer would be eliminated. Many banks, however, already provide pre-addressed, postage-free envelopes for deposits, withdrawals, and loan repayments by mail. Many commercial creditors do likewise. The costs of doing so, of course, are probably passed on to the consumer indirectly through increased prices for the product or service for which payment is made.

2. Convenience

With the advent of credit cards, banking-by-mail and card-actuated cash terminals, this virtue of EFTS assumes somewhat diminished significance, but it remains a clear benefit. The magnitude of the benefit

[12] *Ibid*, pp. 18-19.

will depend to a considerable extent upon the value that the consumer places on his or her time. For example, the Virginia Bankers Association study found that higher income consumers, being particularly mindful of the time consumed in paying bills, tended to stress this advantage.[13] Similarly, the aged and the infirm will tend to value the physical energy consumed in going to and from the bank or to cash facilities.

Verification of the consumer's identity and authenticity is apparently simpler under EFTS than when a check is written. On the other hand, consumers who use EFTS through point-of-sale terminals may find that the transaction requires somewhat more time than simply cashing a check.[14] On balance, Governor Mitchell of the Federal Reserve Board has concluded, "convenience . . . has generated little spontaneous enthusiasm thus far."[15]

3. Personal Security

It is likely that a widespread EFTS would, by reducing the necessity to carry cash, lower the incidence of robbery and therefore, of violence to the person. Similarly, forgery of checks would become a historical curiosity. However, the incentives for crimes against the system as a whole through unauthorized access to the computer program or unauthorized use of a consumer's card, are enormously enhanced. This is discussed below.

4. Interest on "Demand Accounts"

While existing law prohibits financial institutions from paying interest on demand deposits,[16] the thrift institutions have managed to provide the near-equivalent of an interest-bearing demand account on a limited scale. In addition to the negotiated order of withdrawal (NOW) account operative in Massachusetts and New Hampshire, the First Federal Savings and Loan of Lincoln, Nebraska has installed an EFTS with point-of-sale terminals in certain supermarkets and the mutual savings banks have created a Mutual Institutions National Transfer System to promote their participation in EFTS development. The reason is clear: linking EFTS to their interest-bearing time depository accounts would confer an enormous competitive advantage on the thrifts over the commercial banks, for it would permit the thrifts to pay a premium interest rate (now 5-1/4 percent) on an account that would possess the transferability characteristics

[13] *Ibid*, p. 12.

[14] See "An S and L Puts the Teller in the Supermarket", *Business Week*, April 20, 1974, p. 91, describing the operational EFTS in Lincoln, Nebraska.

[15] "Recent Developments in Money Transfers", speech delivered February 26, 1973, p. 6.

[16] The argument is often made of course, that by providing funds transfer services, often at little or no cost, commercial banks are in fact paying depositors interest on their balances.

of a checking account. The legality of this innovation is presently before the courts on precisely this ground, among others.[17] If upheld, Congress will be under considerable pressure to restore competitive equilibrium either by limiting the power of the thrifts or by permitting the commercial banks to pay interest on demand deposits.[18] If the latter, consumers will benefit greatly.

Costs of EFTS

1. Control over Personal Finances

A major disadvantage associated with EFTS is the consumer's loss of control over certain financial decisions. The ability to manipulate one's finances within broad limits, to determine which bills to pay when, and to exploit the benefits of float during the check-clearing process, are not only incidents of personal autonomy but can be of great economic value to the consumer.

Which of us has not practiced the art of "playing the float"? Of overdrawing on our account secure in the knowledge that the check that we deposit will clear before our own checks are presented for payment? Of holding off our creditors until our paycheck can be deposited? Of obtaining additional time for payment by post-dating our check? Indeed, it is probably no exaggeration to state that a substantial portion of the population manages to make ends meet only by resort to such fancy financial footwork. An EFTS based upon prearranged transfers completely deprives consumers of this kind of control; any EFTS, however, even one not involving prearranged transfers, will greatly diminish it.

To those who argue that such stratagems by consumers simply exploit an inefficient clearing process and impose unnecessary costs on the system as a whole, consumers can respond that while this may be true, they will not willingly, and could not rationally, relinquish such an advantage in the interests of the system as a whole, at least not unless they receive equivalent benefits in return.

2. Proof of Payment

The cancelled check is a convenient and universally recognized proof of payment. It is widely used in the preparation of tax returns, the informal resolution of disputes, in formal legal proceedings, and in triggering a depositor's legal duty to detect forgeries or alterations and report them to the bank so that the bank's duty not to pay unauthorized items can be ascertained.[19]

[17]See *Bloomfield Federal Savings and Loan Association v. American Community Stores Corp.*, Civil Action No. 74 0-146 (D. Neb.)

[18]Both of these changes would be contrary to current legislative trends. The proposed Financial Institutions Act, an outgrowth of the recommendations of the Hunt Commission Report, would retain the existing prohibition against the payment of interest on demand deposits, but would expand the powers of the thrifts.

[19]See UCC 4-406 and 4-401.

Indeed, so essential to consumer remedies is the cancelled check as proof of payment that any EFTS that hopes to gain consumer acceptance will have to invent some substitute for it. In a recent study, fully 94 percent of the consumers surveyed agreed that a cancelled check was the most reliable proof of payment.[20] Computer data certainly is no adequate substitute. Considerable doubts concerning its admissibility into evidence remain[21] and such data is not easily accessible to consumers.

3. Stopping Payment

The right of consumers to direct a stop-payment order to a bank[22] constitutes enormous leverage in their dealings with merchants, landlords, and others with whom they do business — leverage that is often necessary to ensure that the consumer's legal rights are in fact protected. Abrogation of this right would fundamentally transform the economic bargaining power of consumers. If anything, the trend in consumer protection is in the opposite direction, as evidenced by the Federal Trade Commission's Trade Regulation Rule requiring a "cooling-off period" for certain types of door-to-door sales transactions, within which the consumer may rescind the transaction.[23]

Any acceptable EFTS will have to accomodate this well-established safeguard for consumers. The California SCOPE guidelines have confirmed it by requiring a depositor's bank to recredit a previous debit entry upon notification by the depositor that the debit was in error, so long as certain time limitations are observed.[24] These protections would have to be greatly strengthened in an EFTS which, unlike the California SCOPE project, was not limited to prearranged transfers (which are far less likely to give rise to errors than on-line transfers effected at the point-of-sale).

4. Security against Theft or Error

We are only beginning to recognize the vastly increased potential for theft of depositors' funds through misuse of an EFTS. Computer crime is facilitated by a number of unique features: the anonymity and remoteness of the thief; the reduction of numerous processing operations into an instantaneous transfer; the fact that the controls against theft are themselves susceptible to re-programming at the behest of the thief; the weakness of psychological and social inhibitions against computer rape; the inadequacy of typical computer security measures; and the delays in discovery of computer thefts.[25]

[20]Virginia Bankers Association study, *supra,* p. 8.

[21]Note "Toward a Check-Less Society", *47 Notre Dame Lawyer 1163 (1972).*

[22]UCC 4-403.

[23]16 C.F.R. No. 429 (1974).

[24]SCOPE Procedural Guide, October 18, 1972, Section VIII.

[25]For a recent discussion of computer theft, see W. Thomas Porter, Jr., "Computer Raped by Telephone", *New York Times Magazine,* September 8, 1974, p. 33.

Existing safeguards against computer thefts are clearly ineffective. One student of computer crime notes:

> Donn Parker, after looking into the recorded cases of computer crime, concluded that hardly any were discovered through normal security precautions or accounting controls and that nearly all of them were uncovered by happenstance. Some experts estimate that the ratio of undiscovered crimes may be on the order of 100 to 1.[26]

He goes on to note the conclusion of RAND and other students of computer crime that "no major defense system has withstood a dedicated attack.[27] The Equity Funding imbroglio stands as eloquent witness to this proposition. In the halcyon day when the nation's banks are finally linked together in an integrated EFT network, the computer crimes of the past may well be recalled with nostalgia as quaint petty larcenies.

But criminal intent is not the only source of concern to consumers in a world of EFTS. Human incompetence or error, once computerized may be as difficult to detect and correct as computer crime is to solve. And errors there will surely be. One need only reflect on the Apollo tragedy to appreciate the vulnerability of complex interdependent systems to error, even under the best of conditions. By the same token, one need only reflect upon one's own experience with computerized billing to appreciate how incorrigible such systems can become.[28] Consumers confronted with a choice between having to persuade a banker that an error has been made and having to get a computer re-programmed may well prefer the former.

5. Privacy

The data on the susceptibility of computerized systems to criminal intrusions suggests another risk that seems to inhere in EFTS "breaches of privacy." As the American Civil Liberties Union has pointed out, EFTS will render a person's entire financial history, including the most intimate details, available "at the touch of a button."[29] The Association of Data Processing Service Organizations, Inc. agrees that this capability now exists.[30] The findings of a recent GAO study showing the extent to which

[26] *Ibid,* p. 34.

[27] *Ibid,* p. 43.

[28] In the recent Virginia Bankers Association study, "77% of the consumers surveyed agreed that the more complicated a billing system is, the harder it is to get mistakes fixed. 59% disagreed with the statement that billing systems handled by computer are usually free from error." *Ibid,* p. 8.

[29] Comments of Robert E. Smith on Regulation J on file at the Federal Reserve Board.

[30] Comments on Regulation J on file at the Federal Reserve Board.

government agencies have disseminated personal information in their files to credit bureaus and other third parties, indicates that such concerns are well-founded.[31] And as the Watergate disclosures remind us, political incentives are as capable as economic ones of generating such intrusions. In contrast, the existing transfer system, though arguably inefficient in the narrow economic sense, is more difficult to abuse; the valued information is dispersed rather than being stored in one central location.

6. Reduced Competition

EFTS raises a number of troublesome issues revolving around the question of competition in the banking industry. Governor Mitchell has identified one such issue — "whether paperless technology can make competing clearing systems economically feasible."[32] If we put the question another way — are the initial costs of EFTS so great that the system can only be established if all or nearly all banks participate — the implications of this question for consumers become clearer. The comments on Regulation J submitted to the Federal Reserve Board by numerous banks, savings and loans, and credit unions indicate a widespread conviction that only the relatively large institutions can afford the equipment and software costs of an EFTS going beyond prearranged in-bank transfers and perhaps direct pay deposit. On the other hand, it appears that EFTS is economically viable only if a substantial proportion of the banking industry participates. In view of the lack of consumer demand for EFTS, the "critical mass of institutions required in order to make EFTS profitable may be unattainable in the absence of public subsidies or governmental coercion in the form of regulatory standards." If history is any guide, either of these strategies will tend to reduce competition in the industry by forcing the smaller firms out of business and/or by immunizing firms from the discipline of market forces.[33]

In addition, an advanced EFTS will require joint cooperative arrangements on a long-term basis between large numbers of banking institutions. Governor Mitchell has observed that competition probably cannot be counted on "to play much of a disciplining role when transfer arrangements involve associations of banks," concluding from this that continued Federal Reserve regulation of check clearing will therefore be required.[34]

[31]General Accounting Office, Letter Report to the Secretary of the Army on Possible Improvements in Army Practices of Protecting Information Personnel Files from Unauthorized Disclosure and Problems in Correcting Personnel Information, August 5, 1974, (P-74-PPCD-101).

[32]"Money Payments in Perspective," speech delivered September 25, 1973, p. 8.

[33]This has apparently been the experience of government regulation under the Wholesome Meat Act, the Occupational Safety and Health Act, and other standards-setting laws. If this is true, it does not necessarily mean that such regulation is not, on balance, socially desirable.

[34]*Ibid,* p. 8.

Even in the absence of public subsidies, however, an advanced EFTS is likely to involve significant "cross subsidies among consumers." The recent suit filed by Consumers Union against the American Express Company involved the question of whether cash customers should be required to pay for credit card services which they do not enjoy. Similarly, a mature EFTS will mesh together into one system a number of banking services (credit, third party transfers, savings, cash) which are now purchased separately by, and provided separately to, the consumer. This "building" of services may be exceedingly difficult or expensive to "unbundle" for purposes of pricing; if so, many consumers will end up paying for more services than they want or use, while others will use more than they pay for.

If consumer sovereignty is to be a reality in EFTS, it is imperative that any EFTS network ensure that consumers, merchants, and businesses retain the freedom, as both a legal and practical matter, to hold accounts in whatever institutions they wish, and that those who wish to avoid use of EFTS altogether be free to do so, so long as they are willing to pay the costs.

These principles have several corollaries. First, public policies which have the effect of coercing institutions to participate in EFTS must be resisted, even if the result is that EFTS cannot achieve the critical mass for its viability.[35]

Second, the commercial banks cannot be permitted to exclude savings and loans and other thrift institutions from full participation in EFTS.[36]

Thomas R. Bomar, Chairman of the Federal Home Loan Bank Board, has noted one dramatic anti-competitive consequence of such an exclusion:

> It is well known that thrift institutes compete with commercial banks for savings. This competitive environment in the past has been enhanced by the fact that the employee, with paycheck in hand, can make the choice of where he will deposit his funds. Many presently choose to deposit all or a portion of their pay in savings and loan associations. Current information indicates that between 5 and 15% of savings deposits in savings

[35]It is entirely possible that the market, if left undisturbed, will yield both an EFTS that is too limited to be economically feasible and a conventional paper transfer system whose unit costs will increase due to a loss in volume resulting from exploitation of EFTS by large institutions.

[36]The arguments in favor of such exclusion, relating to the differing regulatory requirements applicable to commercial banks and the thrifts, are themselves only plausible in the context of the over-regulated anti-competitive system now in place. If the recommendations of the Hunt Commission are adopted and extended, any rationale for exclusion of thrifts from EFTS will vanish.

> and loans come from payroll checks carried or mailed by employees to savings and loan associations. Because only commercial banks are presently allowed to be designated as depositories in these new electronic systems and since employers who decide to use the system can be expected to encourage their employees to participate, the opportunity for an employee to choose a savings and loan as his depository is effectively eliminated . . . savings and loan associations have thus far been systematically excluded from membership for the purpose of receiving [Automated Clearing House] deposits directly.[37]

And how one wonders, will the 40 percent of the population who do not now have checking accounts fare in a world of EFTS?[38] Will more businesses refuse to accept cash, as some car rental agencies now do, insisting that customers participate in EFTS in order to do business with them? Will participants in EFTS motivated by a desire to reduce their costs and/or maximize their cash flow, be able to use economic leverage to force non-participants into the system? These issues must be resolved before consumers can be certain that EFTS will function in their economic interests.

Conclusion

Recalling once again that each consumer will balance these benefits and costs associated with EFTS differently, and that EFTS covers a wide variety of system types, it is nevertheless difficult to escape the following conclusion: on balance and given the existing set of incentives confronting them, most consumers will not willingly opt for EFTS. That being so, it seems likely that EFTS will either have to be forced upon them or will remain a marginal development, at least until the costs of the existing transfer system press heavily upon consumers and until ways are found to overcome some of the more undesirable features of EFTS.

Incentives to consumers could be rationalized considerably if the full costs of checking services were imposed on consumers, instead of being hidden in other bank charges. "Free" checking accounts, like "free" lunches, are a figment of the bank marketing executive's imagination. The process of "unbundling" banking services and pricing them at full cost would be vastly accelerated if banks could pay interest on demand deposits, thus encouraging them to impose service charges on check usage. This would undoubtedly reduce the flow of paper through the system.

[37]Hearings before the Subcommittee on Bank Supervision and Insurance of the House Banking and Currency Committee, 93rd Cong., 1st Sess., on H.R. 11221, November 5, 1973, p. 18. See also, comments of Donald I. Baker of the Antitrust Division on the FHLBB's proposed regulation to extend EFT.

[38]The Virginia Bankers Association study found that such persons, usually in lower economic brackets, gain "the emotional satisfaction of actually feeling and handling cash . . . and [are] unlikely to respond favorably to" an EFTS. *Ibid*, p. 10.

As noted above, some of the deficiencies of EFTS can probably be cured without great difficulty. For example, providing a stop-payment period, as the California SCOPE project has done, and furnishing proof of payment should be well within the capabilities of EFTS. Other obstacles, however, will remain formidable and perhaps insurmountable. The risks of computer crime and the problem of diminished control over finances, for example, seem to be firmly associated with EFTS. These problems will simply have to be confronted and solved if consumers are to reap the benefits which EFTS promises.

Some Impacts of Electronic Funds Transfers on Consumer Transactions

Blair C. Shick

The American consumer — the average depositor/borrower — is probably the most essential person to effective implementation of an electronic funds system. Yet, of the amazing quantity of literature published on EFTS in the last few years, virtually no attention has been paid to the consumer except as an abstract target of marketing studies. There are, however, serious problems in EFTS for the consumer which will have to be dealt with very soon. Some of these problems (which are to be addressed in another paper) are already being articulated in broad forms. The concern expressed is in a vocabulary of fear — fear of loss of control over personal finances, fear of lack of choice in the marketplace, and fear of increased invasion of privacy.

There is an entirely different level of problems in EFTS for consumers which will be the subject of this paper. For lack of a better term, I call them transactional problems since they arise from a search for a definition of rights and responsibilities under specific transactions, *i.e.*, direct payment orders (checking) and credit. They are considerably easier to describe than the concern for privacy but nonetheless problems which affect consumers in the context of credit transactions today without the aggravation of electronic systems. Since many people view the present bank credit card as the embryonic form of the electronic checkbook, it seems more than a bit wise to cure these problems now, in favor of the consumer, if only to create a healthy transactional climate in which an electronic system can develop on its economic merits. To that extent the

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problems discussed herein, although in a legal context, are the real marketing problems or, more properly, possible barriers to effective marketing of electronic funds.

Finally at this introductory stage, I should note that when I refer to EFTS, I am referring to a fully integrated system — the system of 1984 (or 1994) in which POS terminals have replaced merchant cash registers and plastic cards or similar terminal activating devices have replaced checkbooks, not just the existing experiments with automated tellers and pre-authorized debits and credits.

I. TWO BASIC THEMES

Throughout this paper I will attempt to identify transactional problems and offer solutions. Two basic themes are so common to these solutions as to justify their identification at the outset.

A. THE CONSUMER SHOULD BEAR NO RISK FOR MISHAPS IN AN ELECTRONIC SYSTEM

B. ALL COST SAVINGS SHOULD BE SHARED WITH THE CONSUMER

Who wants EFTS? A central fact underlying both of these themes is that there is virtually no demand in the consumer sector for an electronic system. To the contrary, the literature suggests that the impetus for the system lies exclusively with business interests, not all of which are financial institutions. The momentum seems to emerge primarily from a strongly felt need to eliminate what is perceived as a huge and ever increasing cost of processing paper. In addition, there seem to be legitimate drives for increasing efficiency and maximizing competition postures. Further, I see more than a little red-blooded American fascination for the production and acquisition of the latest technological gadgetry for its own sake.

The point is, however, that none of these and many other reasons for electronic funds, be they ever so legitimate and keenly felt by business, relate to any known pressing consumer need. For a potential supply force to beat the bushes to create a demand is not new to our economy. What may be unique to EFTS is that the demand generated may well prove to be little more than passive acquiescence, not acceptance, as a result of a system foisted upon the public by a series of direct government interventions — from automating clearinghouses on up through the issuance of all government payments (social security, welfare, etc.) in electronic form. If that is to be the case, then it is sheer folly to suggest, under a *caveat emptor* theory predicated on non-existent marketplace conditions, that consumers share risks inherent in the system, give up rights or benefits formerly enjoyed or be denied the opportunity to share any resulting cost savings.

II. THE DISAPPEARING CHECKBOOK

A. *Article 4 of the Uniform Commercial Code.* There is, in legal circles, a growing debate as to the applicability of Article 4 of the UCC — the basic law of checking — to electronic transfer systems.[1] Whatever the academic merits of the debate, it seems clear that none of the participants in the system are willing to make large investments on the assumption either that Article 4 will or will not apply. Thus far, the two major experiments, the Atlanta COPE and the California SCOPE, seem to have found a workable compromise out of the dilemma. If I read their supporting legal studies correctly, both projects contractually mandate that Article 4 applies, then proceed to depart from its standards only when technology demands either non-applicability or deviation.

Neither project involves a fully integrated electronic system, however, in that direct transfers from POS terminals or cash/credit capabilities are not involved. Thus, the true test of the applicability of Article 4 is yet to come.

In this regard I should point out that the Permanent Editorial Board of the UCC has recently constituted a committee to redraft Article 4 in light of emerging electronic capabilities. The most important question, however, may well be procedural rather than substantive. Why should an electronic system which will eventually be dependent on nationwide linkages for maximum effectiveness be governed by the uncertain actions of over 50 different legislatures? One prominent writer on EFTS, Mr. Gerald T. Dunne of the St. Louis Federal Reserve Bank, offers convincing arguments that any void in Article 4 be filled by regulations or operating letters of the Federal Reserve Board.[2] The broader question which I will address later is whether the problem is not better solved by comprehensive Federal legislation.

[1]Atlanta Payments Project, Georgia Institute of Technology, Research on Improvements of the Payments Mechanism: *Phase III General Systems Design and Analysis of an Electronic Funds Transfer System,* Volume 6 of 6, Legal Considerations (1972). Baxendale, *Commercial Banking and the Checkless Society,* 1 RUTG J. Comp. Law 88 (1970); Clarke, *An Item Is An Item Is An Item: Article 4 of the UCC and The Electronic Age,* 25 Bus. Law 109 (1969); Clarke, *Bank-Customer Relationships in an Electronic Credit Transfer System,* 2 RUTG. J. Comp. Law 1 (1971); Dunne, *Variations on a Theme by Parkinson or Some Prospects for the UCC and the Checkless Society,* 75 YALE L. J. 788 (1966); Dunne, *The Checkless Society and Articles 3 and 4,* 24 Bus. Law 177 (1968); Homrighausen, *One Large Step Toward Less-Check; The California Automated Clearinghouse System,* 28 Bus. Law 1143 (1973); Odom, *Alternatives to the Present Check Collection System,* 70 Stan. L. Rev. 571 (1968); Penney, *Articles 4 and 8 of The UCC,* 26 La. L. Rev. 259 (1966); Penney, *Bank Statements, Cancelled Checks and Article Four in the Electronic Age,* 65 Mich. L. Rev. 1341 (1967), 85 Bank. L. J. 659 (1968); Cousins, Kelley, Imparato & Reinthaler, *Toward a Less-Check Society,* 47 Notre Dame Law. 1163 (1972).

[2]*See* Dunne *supra* note 1.

B. *Specific Problems Under Article 4.* The reader is referred to the articles cited above for a far more exhaustive coverage of problems with Article 4 than is available here. From the vantage point of the consumer/depositor, I wish to highlight four specifics which seem worth considering.

1. Contract Formation. The contract which underlies today's demand deposit account is, for all practical purposes, a non-contract in the sense of a written agreement. The only written memorandum is the depositor's card, a document more related to the purpose of signature verification than that of recording the terms of agreement. Typically, this card contains a single statement incorporating rules and regulations of the bank as the governing terms and conditions. Section 4-103 allows such an arrangement and, in addition, provides that Federal Reserve regulations and operating letters as well as clearinghouse rules have the effect of becoming part of the depositor "agreement."

This peculiar form of "contract" has not been particularly problematic in the past. Checking services are sufficiently standardized as to be understood by the general population without written documentation. Nevertheless there has been in recent years an increased demand among consumers to know more about their bank accounts. I refer you to the recent publication in San Francisco of a pamphlet entitled "How to Break the Banks."

In contrast to checking, consumer credit transactions are considerably detailed by virtue of the requirements of state statutes and Federal Truth in Lending. As a result all essential terms and conditions are presented the borrower, even if in technical terms, in the contract itself, or in supporting documents. In fact, Truth in Lending has sufficiently standardized credit transactions to lead some consumer advocates to suggest government preparation or approval of master forms for all commonly recurring transactions as a means of achieving increased consumer understanding and protection.

The sheer complexity of EFTS may lead bank depositor relationships in the same direction. At the present time, experiments with pre-authorized debits and credits create a situation where a typical depositor may have four or more separate contracts with respect to a demand deposit: (1) the basic checking relationship evidenced by the depositor's card; (2) a separate authorization form for pre-authorized credit of a "paycheck," legally a contractual modification of the checking contract; (3) a separate authorization or authorizations for pre-authorized debits; and (4) an "overdraft" loan account which is a credit transaction subject to Truth in Lending. In addition some banks offer a credit card plan which can be integrated with both the checking account and the overdraft plan.

It is not difficult to imagine continued proliferation of still further "satellite" contracts evolving from the demand deposit core as increased electronic capabilities become operational. Automated tellers give rise to a further contractual modification of the checking relationship as will the

capability of telephone authorization and the use of point-of-sale terminals. As savings and other investment relationships are integrated, still further contracts will become involved. At some point banks will begin experimenting with master contracts which combine many of the separate relationships suggested here.

Truth in Lending offers a suitable model for EFTS relationships. In this regard it is worth noting that contractual content involves considerations far broader than legal enforceability. The reduction of terms and conditions to written form can serve a valuable communication role in fostering consumer awareness and understanding and minimizing unnecessary and time-consuming disputes. Such factors were a major force in giving rise to Truth in Lending and other disclosure-oriented legislation and are not likely to be absent with EFTS.

EFTS will benefit from a similar approach. In that credit capability promises to be a major component in an electronic system, Truth in Lending will continue to require precise contractual disclosure as to all credit features. As activity of government agencies such as the Federal Reserve Board begins to play an increasing role in the development of governing standards on behalf of the public interest, it seems logical if not imperative that methods be utilized to make knowledge of those standards readily available to the public in a meaningful fashion.

2. Stop Payment Orders. Section 4-403 confers a right on depositors to stop payment on an item any time before that item is paid. With a fully implemented electronic system, however, payment of an order against a balance may be virtually instantaneous thus rendering Section 4-403 inoperative by its own terms. But public acceptance of the existence of the right to stop payment may be sufficiently strong to demand the continued maintenance of an equivalent right, perhaps one based on a fixed period of time. Depositor acceptance seems to have loomed large in the decision of the SCOPE project to provide a right of unqualified "adjustment" with respect to preauthorized debits within the earlier of either 45 days from the debit entry or 15 days from the sending of a statement covering the item.[3] The SCOPE rules require a written order, however, while Section 4-403(2) allows an oral order to be binding for up to 14 days.

It is not difficult to visualize the creation of a "stop payment" equivalent for direct transfer orders based on the SCOPE model. Admittedly the SCOPE rules apply only to pre-authorized debits. In the case of direct transfers, however, a fixed period of time, e.g., three business days, could be recognized in which the depositor could unequivocally revoke the transfer order. Revoked items would then be returned against the account of the person to whom the order was payable. Consumers, therefore, would retain capabilities presently enjoyed with checking accounts. And

[3]Homrighausen *supra* note 1.

depository institutions would be free and clear of any disputes between depositors and merchants, much like the situation where the holder in due course and other defense insulating devices are denied in bank-card transactions.

3. Verification of Paid Items. Section 4-406 of the UCC confers a duty on depositors to examine periodic statements and retained items for unauthorized signatures and alterations. The duty is essentially an obligation to act timely to preserve bank liability for improper payment of an unauthorized or altered item under Section 4-401. Implicit in this provision is a duty on the bank's part to provide both a statement and the paid items. In addition, there is support in the common law for the depositor's right to possession of paid items.

Direct electronic transfer will not give rise to a cancelled or paid item which could be returned. It would seem, however, that the spirit of this provision is easily complied with although not the letter. If banks are to remain strictly accountable for unauthorized charges, a need will continue to exist for the provision of sufficient information for depositors to verify charges. Integration of checking, saving and credit accounts will tend to strengthen this need. In addition, there will be a continued demand for documentation for the general purposes of evidence of payment and general record keeping. Properly designed, a computer printout or similar form of communication could provide information equivalent to that of a cancelled check — date, amount, payee, and perhaps, mode of authentication — which together with the standard periodic statement would fulfill the purposes of both 4-406 and the common law.

The major issue here may not be that of the mechanics of payment verification. Of more far-reaching significance, in my opinion, is the underlying problem of security against unauthorized use, i.e., a viable alternative to personal signatures which will be discussed below.

4. Unauthorized Use. A simple but major problem with a fully electronic system lies with uncertainty over the adequacy of security measures available to prevent unauthorized use. As indicated, Section 4-401 of the UCC allows a bank to charge an account only to the extent an item is "properly payable," i.e., authorized and in the exact amount authorized. Under this section, payment of a virtually undetectable forgery or alteration is still an improper payment which until discovered by the depositor could lead to wrongful dishonor of properly payable items. As already discussed, the basic mechanism provided for detection or improper items is the bank's duty under Section 4-406 to provide both a statement and the paid items and the depositor's corresponding duty to report inaccuracies/discrepancies reasonably soon.

Perpetuation of these existing rights and responsibilities will not alone resolve the public concern for better controls over unauthorized use of devices such as a plastic card which may become the activating mechanism for automated tellers and point-of-sale terminals. Central to the Article 4

scheme is the notion of a unique signature as reliable authentication. Signatures cannot be stolen, however, nor mislaid by the depositor's negligence as can occur with a plastic card or other physical device. Thus, it is entirely possible that the existing provisions of Article 4 would not be construed to be available to protect a hapless depositor against unauthorized items which arose because of his own negligence in losing his wallet.

Here again an adequate analogy can be drawn from the law which has developed in credit transactions. As the use of credit coins, cards and other devices grew, creditors began inserting clauses in their contracts holding the consumer accountable for unauthorized use of the device. Courts honored these provisions despite the presence of an unauthorized signature on the paper evidencing the indebtedness. In addition, theories of negligence were accepted which served as a bar to a consumer complaining of unauthorized use.[4] The problem continued to grow along with the expansion of the use of credit until Congress in 1970 amended the Truth in Lending Act to provide a maximum of $50 liability for unauthorized use of credit cards. But even this limited liability exists only if the card issuer provides a means for identification and (1) gives adequate notice of the potential liability, (2) provides the consumer with a self addressed, prestamped notification for mailing in the event of loss or theft, and (3) the unauthorized use occurs before notification is provided by the cardholder.[5]

The potential $50 liability provides an incentive to the consumer to safeguard the credit card. And the prescribed conditions provide adequate notice and the opportunity for the diligent to prevent any liability whatsoever. At the same time creditor exposure to all potential risks in excess of $50 provides an incentive to develop more secure techniques surrounding honoring of the card.

A similar approach might be feasible for an electronic system by a device such as a plastic card, to cover situations of depositor negligence not protected by Article 4 until a technology can be identified which can further minimize if not eliminate the risks of unauthorized use. To the extent that the same device also serves as a credit vehicle it could easily be held subject to the Federal provisions for all purposes.

III. ELECTRONIC CREDIT

The combined cash/credit capability of EFTS invites close scrutiny of our present system for problems which will plague consumers in the future. The rapid development of bank credit cards offers a prototype for

[4]Cousins, Kelley, Imparato & Reinthaler, *supra* note 1 at 1178-1186.

[5]15 U.S.C. § 1633 (Supp. 1974).

an electronic system which is well worth studying. To a large extent electronic capabilities appear more likely to aggravate existing problems than to produce new ones. Some of these problems, however, are already the subject of legislative proposals.

A. Periodic Billing. There is considerable concern at the present time about problems encountered in the billing of "open-end" credit accounts. This concern is often expressed in terms of problems with "computer errors." The more specific claims assert the debiting of unknown or unfulfilled transactions, late crediting of payments and other credits, and erroneous computation of periodic balances and related finance charges. Also expressed are frustrations experienced in identifying transactions attributed to the account and in attempting to communicate with creditors about these and other problems.

Concern of this nature has given rise to corrective legislation recently in at least New York and Massachusetts. In addition, a Federal bill, named the Fair Credit Billing Act, incorporates similar but more far reaching standards. The bill was passed by the United States Senate in 1973 and again in 1974, S. 2101[6] being the more recent version.

Legislation of this kind is relevant to EFTS in two respects: (1) in its applicability to the kind of credit arrangement most likely to be integrated with an electronic payments system; and, (2) in the precedent which may be established for similar concerns which may arise from the payments aspects of an electronic system. And while S. 2101 has yet to be passed by the House of Representatives, its provisions are sufficiently comprehensive to be considered a realistic measure of the kind of legislation which may be expected in the near future.

The concepts embodied in S. 2101 are fairly simple. At the heart of the bill is the creation of what may fairly be described as a communication flow between the parties. Under Section 161 creditors must, in response to a writing claiming a billing error, (1) acknowledge receipt of the writing within 30 days, and (2) within a specified subsequent period of time, either make appropriate corrections or forward an explanation of the creditor's belief in the accuracy of the matter in question. In either case the creditor must provide documentary support of the indebtedness in question if requested. During the time involved in this exchange, creditors are prohibited from attempting to collect the amount in question and, under Section 162, from reporting that amount as a delinquent indebtedness to a third party (e.g., a credit bureau). These prohibitions do not apply to indebtedness which is not subject to the inquiry or dispute.

[6]S. 2101 was incorporated into H.R. 11,221 (Depository Institutions Act of 1974) as a result of a House-Senate Conference Report accepted by voice vote in the House on October 9, 1974 and the Senate on October 10, 1974.

Section 104 of S. 2101 requires notice of these conditions to be provided consumers twice annually at appropriate intervals, in a form to be prescribed by the Federal Reserve Board. The chief enforcement mechanism provided is a denial to non-complying creditors of the right to collect disputed amounts. Other sections in the bill require prompt posting of credits to the account (payments, returns and other debt forgiveness) and, in the event of overpayment, either prompt credit or refund, as requested.

A recurring billing complaint not directly cured by S. 2101 is the inability to identify transactions specified in periodic statements. In recent years many creditors have abandoned their practice of accompanying the billing with supporting copies of sales slips and resorted to descriptive billing by computer printout. Section 226.7(b)(2) of the Federal Reserve Board's Truth in Lending Regulation Z [12 C.F.R. § 226.7(b)(2) (1974)] sanctions this practice by requiring statements to reflect only the amount and date of credit extension and "unless previously furnished, a brief identification of any goods or services purchased in other extensions of credit." A notation of this provision specifies that the "[i]dentification may be made on an accompanying slip or by symbol relating to an identification list printed on the statement." And subsequent official interpretations by the Board's staff have clarified that the provision of a sales slip at the point of sale is sufficient to meet this requirement where the periodic statement reflects only the date, amount and store or department name or code number and, of interest to EFTS, that an otherwise adequate periodic credit statement can be combined with another statement such as that associated with a regular checking account.

The problem articulated by consumers, however, is that the identification provided is too brief, if not altogether cryptic, considering the elapsed time between transactions and billing, a period which frequently exceeds normal monthly billing cycles where the creditor is an entity other than the merchant. Under EFTS the elapsed time should rarely exceed a monthly cycle. It may be, however, that any system which separates transactions from the actual billing procedure by even a few days will continue to generate confusion among a significant portion of the public, particularly as electronic capabilities assume increasing numbers of transactions. Creditor experience in conforming to standards such as those described in S. 2101 may provide some answers. The lesson, if any, for EFTS appears to lie with the development of improved descriptive techniques.

Significant here are the divergent patterns assumed by checking and credit systems. As noted earlier, the law and custom with respect to checking have been to provide the customer with receipts (i.e., the cancelled checks) subsequent to the transaction at the time of the accounting statement, an impossibility with electronic payments. Credit practices, however, sanctioned by law, rely on receipts being provided at the point of transaction. Since EFTS promises both credit and direct payment capabilities, a necessary accommodation will have to be reached in emerging

legal standards. Preserving the benefits of both systems would be most desirable with adequate documentation being provided at the point of transaction and again by printout at the time of the statement.

B. Record Keeping. A related point arises in connection with the need for institutions to maintain and preserve internal records of transactions. The requirement in S. 2101 that creditors provide complaining consumers with necessary documentation of questioned transactions is grounded upon an existing Truth in Lending requirement that all such records be kept for a minimum of two years. Evidentiary considerations further dictate that documents evidencing obligations be preserved at least until the indebtedness is satisfied. No such comparable requirement exists under UCC Article 4 with respect to checks although banking custom has long observed the practice of microfilming checks and preserving copies for extended periods.

Under regulations promulgated by the Secretary of the Treasury pursuant to the Federal 1970 Bank Secrecy Act, all checks in excess of $100.00 must be microfilmed and preserved for at least six years.[7] This obligation is created for purposes of official government access. The issue raised here is customer access to reliable documentation for purposes such as proof of payment. The need is for alternative documentation in lieu of sales slips, cancelled checks and other original memoranda which become lost or mislaid. As EFTS evolves and paper documentation decreases, dependence on an alternative preservation system could well increase. Current legal evidentiary standards are already flexible enough to accommodate computer printouts and facsimile reproductions.[8] What remains for EFTS is the establishment of (1) a minimally acceptable period of time in which tapes should be stored (perhaps the generally accepted six year limitations period for commercial transactions), and (2) the conditions under which access to such tapes should be granted.

C. Access to Credit. As a general rule, our law does not recognize a right to credit. Thus, no duty exists on the part of creditors to extend credit to a customer deemed unsatisfactory. Traditionally, our system has relied on independent business judgments and the interplay of the free market to allocate payment services to the deserving. Concern for civil rights in the last decade has given rise to legislation which slightly alters this picture. Broadly based public accommodations acts have been interpreted to include credit granting services within their anti-discrimination

[7]12 U.S.C. §§ 1892b, 1892g, 1730d, 1953, and 1955. (Supp. 1974). The relevant regulations, 12 C.F.R. § 103.34(b)(3) (1973), were upheld by the U.S. Supreme Court in California Banker's Association v. Shultz, U.S., 42 U.S.L.W. 4481 (U.S. April 1, 1974)

[8]Atlanta Payments Project, Georgia Institute of Technology, *supra* note 1 at 35-37, 42-44; See also *Toward a Less-Check Society,* 47 Notre Dame Law. 1163 at 1265-1283 (1972).

provisions.[9] In the last two years credit has been a particular object of state legislation designed to prevent discrimination by reason of sex or marital status. S. 2101, described above in the context of credit billing, contains a separate Title (section 301 and 302) prohibing sex or marital status discrimination in open-end credit. In addition, numerous other bills to the same effect are pending in the U.S. House and the Senate, most notably H.R. 14,856.

The thrust of all such legislation is to prohibit discrimination. Thus, the individual right created is not one of unqualified broad-based access. Rather, it is a right not to be discriminated against on the basis of sexual or racial or other credit-neutral status. Credit grantors complain, however, that the correlation between credit-worthiness and socio-economic status is sufficiently high as to cause serious problems in the honoring of anti-discrimination standards. In addition, sex or marital status prohibitions raise administrative problems with complex state property laws which attempt to allocate interests in family property among spouses.

This problem appears to be confined to credit. I am not aware of complaints or legislation directed against discrimination in access to checking or related-payment services.

Ideally, no business institution has an interest in discriminating against potential credit-worthy customers. The problem in credit granting arises with uncertainty of adequate criteria which measure credit-worthiness, particularly for low-income persons who complain of being trapped in the stereotype of socio-economic classifications. For this reason the National Commission on Consumer Finance recommended government-sponsored experimental credit programs which will develop data not presently available. In this connection the computer capability of an electronic system to more sharply define and manage criteria of credit-worthiness may prove the means to effectively administer non-discriminating policies.

D. Preservation of Claims and Defenses. A key issue in credit regulation involves the ability of the consumer to preserve claims and defenses arising out of a sale transaction against both the seller and the financing agency which holds the credit obligation, the so-called holder in due course problem.

Historically, a financing institution which purchased seller paper was able to insulate itself from underlying claims and defenses by one of two foolproof methods. If the obligation involved was a negotiable instrument, typically a promissory note, the financial institution which accepted the paper without knowledge of any underlying defects took it as a "holder in due course." Under the law of negotiable instruments (UCC Sections 3-301 to 3-305) a holder in due course is legally insulated from any claims or defenses arising from the transaction underlying the indebtedness.

[9]See *e.g.*, Local Finance Co. v. Mass. Comm. Against Discrimination, 355 Mass. 10, 242 N.E. 2d 536 (1968) (interpreting Mass. Gen. Laws Ch. 272, § 92A).

If the obligation was contained in a contract (instead of a negotiable instrument), the same effect could be achieved by inserting a "waiver of defense" clause wherein the buyer acknowledged that the contract would be assigned and agreed to waive any claims or defenses against the subsequent holder. By either approach, financing institutions could legally demand full payment from the buyer even though the underlying transaction resulted in a complete failure.

Neither legal doctrine affects the consumer's right to hold the seller accountable for failures in the transaction. If the seller is available and economically healthy, the issue is primarily one of negotiation leverage. If the consumer has the right to withhold payments because of failed goods or services, the financial institution involved will either bring its pressure upon an otherwise uncooperative seller to make good on the deal or return the obligation to the seller thereby restoring the disputants to their original positions. If the seller is bankrupt, has skipped town, or is otherwise economically unable to perform, however, the holder in due course or waiver of defense clauses leaves the consumer to bear the entire loss. Viewed in this light, the issue is one of allocating risk of loss between the consumer and the financial institution holding the obligation.

In the last 20 years, both legal doctrines have been subject to considerable erosion. By a combination of court decisions and statutory reform, neither is available in most consumer credit transactions in a slight majority of the states today. Currently, the Federal Trade Commission is considering a proposal which would prohibit sellers from using forms evidencing consumer credit obligations which give rise to either doctrine.

Bank credit-card plans present an analogous situation which falls outside most reform legislation designed to restrict the insulating effect of holder in due course and waiver of defense clauses, notwithstanding the fact that banks end up holding seller-initiated obligations. Consequently, a few states have enacted corrective legislation which attempts to preserve consumer claims and defenses in open-end credit plans and other sales finance arrangements where a close connection exists between a seller and a lender.[10] And Section 170 of Senate Bill S.2101 would achieve similar results for open-end credit plans as a matter of Federal law.

The corrective legislation described, particularly those statutes which are specifically directed towards open-end credit transactions, leave significant questions unanswered. The most critical problem arises from uncertainty as to the maximum exposure of liability for financial institutions holding seller-generated credit obligations. Possible alternatives are: (1) total liability, as where the financial institution assumes full responsibility

[10]Calif. Civ. Code § 1747.90; Maryland Ann. Code art. 58A, § 24 (Small Loan Act only); Mass. Gen. Laws Ch. 255, § 12F; N.Y. Gen. Bus. Law art. 15, § § 252-254; Ore. Laws, 1973 ch. 626, § § 1-2 (credit cards excluded); Vt. Stat. Ann. Tit. 9, § 1305 (applicable to in state bank credit cards only); Wisc. Stats. § 422.408.

for the seller, up to and including claims beyond the total value of the transaction, as in the case of personal injuries sustained from defective goods; (2) liability up to the full amount of the transaction, including sums such as down payments which were retained by the seller before transfer; (3) liability up to the amount owing at the time the financial institution acquired the paper; or (4) liability up to the amount owing at the time there is notice of the consumer's problem.

I am inclined to view the first alternative as unrealistic in the sense that it would make financing institutions into insurers responsible for product liability usually restricted to sellers, manufacturers, and others who have direct control over design, maintenance, and distribution. The choice between the remaining three alternatives is largely dependent on one's orientation. I tend to prefer the second on the premise that the goal, in the event of total failure of the transaction, is to make the consumer whole. On the other hand, financial institutions feel strongly that they should bear no more responsibility than that which they can control after receiving notice of the existence of the dispute. The solution, if one can rationally be reached, may well turn on the ability of banks to recoup any losses from merchants participating in EFTS.

The issue of preserving consumer claims and defenses has arisen only in credit transactions. Checks and other drafts drawn against a deposit account are negotiable instruments and, as such, give rise to the doctrine of holder in due course. However, instruments such as these represent a single-payment obligation only and do not involve the future commitments to further payments as arise with credit obligations. Consequently, corrective legislation of the kind described does not apply to checks and other demand drafts either by definition or specific exclusion.

A practical reason why checks are not involved in the holder in due course issue lies with the capability of stopping payment on the check in the event of an immediate failure or other dissatisfaction with the transaction. In fact, an argument frequently advanced in favor of remedial legislation preserving claims and defenses is to give the consumer who buys on credit a payment withholding capacity similar to that of the check issuer.

This parallel is obviously limited by the time factor involved in stopping payment. The analogy is of interest, however, due to the possibility that similar consumer concern might develop under EFTS because of the existence of mixed cash-credit capabilities and the possible loss under an electronic system of the opportunity to stop payment on an electronic payment order. Preserving the right to stop payment by substituting a fixed period of time for cancellation of orders — a possibility suggested above — would maintain the status quo. The capability of directing payments orders to be posted against either an existing deposit balance or a pre-arranged line of credit will preserve the consumer's existing options to pay by check or credit thereby selecting the benefits accorded by protective legislation.

E. Maximum Finance Charges. The basic issue in credit regulation is that of maximum charges. As you know, the general rule around the country for open-end credit has been a maximum of 18 percent or 1.5 percent monthly. There are, of course, significant exceptions to this rule, notably 15 percent in Pennsylvania, 12 percent in Connecticut, Minnesota and Washington, and 10 percent in Arkansas. And there are still a few states without statutory rates which invite the risk of a usury decision requiring even lower rates.

Not surprisingly the question of which maximum rates should apply is the subject of much controversy. Consumer advocates urge reductions below the common 18 percent based on the experience of the lower rates in the states mentioned. On the other hand, major bank card organizations claim insufficient or non-existent profit opportunities at 18 percent. Banks in particular point to lower market penetrations for their cards in the below 18 percent states as proof of the non-profitability of the lower rates. Significantly, increased computerization of open-end credit systems has not yet produced the cost savings which justify a competitive lowering of finance-charge rates.

Much has been written on the rate question and its interdependence on credit availability. Suffice it to say that much misunderstanding remains and that little progress is likely to be achieved until more hard data are available for public consumption. One solution being currently debated involves adoption of the public utility model through creation of a rate-setting body. In that EFTS is already permeated with questions of susceptibility to public utility treatment, it seems logical to raise the credit finance charge question to that same level as a possibly rational solution to a highly emotional problem. The broader issue is whether these questions should be raised at the Federal level or remain the province of 50 state legislatures.

IV. FEDERAL REGULATION OF EFTS?

Thus far in this paper I have pinpointed some but hardly all of the transactional problems which an electronic funds system might raise for the consuming public. Traditionally, despite the proliferation of Federal regulatory agencies in the last two generations, the responsibility for developing substantive standards for checking and credit has lain with the states. The enactment by Congress in 1968 of Truth in Lending was the first major exception to this general rule. Subsequently, Congress has enacted provisions on unsolicited credit cards and liability for unauthorized use of credit cards and the Fair Credit Reporting Act and is now considering legislation on credit billing errors and sex discrimination. In addition, Senator Proxmire who chairs the Consumer Credit Subcommittee of the Senate Banking Committee, and Congresswoman Sullivan, who chairs the Consumer Affairs Subcommittee of the House Banking Committee, have both made public speeches this year announcing their respective intentions to introduce more comprehensive Federal legislation on credit problems.

Thus far, neither bill has been filed. It does seem, however, that the drive for more comprehensive Federal regulation of consumer credit is remarkably coincident with electronic developments which are highly credit-related. The role of credit in our current battle with inflation is also under serious Federal scrutiny as well as proposals for implementation of the Hunt Commission's recommendations to restructure financial institutions. Thus, several major but divergent forces are converging in Washington with a coincidence of timing which suggests a role for Federal involvement in the regulation of day-to-day transactions which is unparalleled in our nation's history.

I do not mean to suggest that substantive Federal controls over electronic checking and credit are the only solution to the consumer problems discussed. It does appear, however, that the highly intricate national and international computer hookups and switching mechanisms inherent in a fully implemented electronic payments system require a degree of capital investment which could be easily frustrated by the enactment of varying standards by 50 different legislatures and court systems. Our payments system has always been characterized by a matrix of legal standards which offer the precision, clarity, and certainty needed for faith and confidence in the system. Neither the introduction of computer technology nor the demand for greater consumer protection alters that need. It is entirely possible, therefore, that EFTS raises far broader questions for our Federal system than the narrow issue raised by the Federal Reserve Board's current proposal to amend Regulation J.

Discussion

Laurence H. Stone

The payments mechanism is the method or procedure, together with necessary supporting mechanics, that is employed to consummate simple economic transactions between creditors and debtors. Put the payments mechanism on a continuum. The method varies from time to time; the continuum can begin with whatever historical method we choose. To start it with the payments system that made use of large, smooth stones would be fanciful, but it makes the point that the methods used were characterized by and have depended upon the mechanics existing at the time. The methods have evolved by responding to the need for improved and faster methods, taking advantage of supporting mechanics available at the time.

The payments mechanisms set out on the continuum, started at whatever point in time congenial to the reader, will show that the barter system, coins and currency, and checks have each been used as a method of consummating business transactions. The continuum will end, in 1974, by a reference to something that is called EFTS. This acronym is used as shorthand to describe the method of consummating the debtor-creditor transactions by making use of a communication system that uses a technology based on electronics.

Whatever the range, whatever the complexity of the payments continuum, it should be clear that the method used at any one time is nothing more than a method, a tool, a means to an end. Its purpose, its *raison d'etre,* is to enable me, and the society in which I operate, to accomplish an economic purpose. If, either upon initial inspection or after a period of use, the method is perceived by the society as not as "good" or not as "efficient" as one or more alternative methods, then the society will not use the method in question.

Because the payment system employed at any time is a method, a means to an end, it is necessarily and quite properly on trial every day of its life. Consider it from two points of view. Is it still the most efficient, the fastest way to get the job done? The stage coach flunked that test.

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Likewise, the barter system. The private automobile for some time now has been generally regarded as the best answer to the task of moving me from point A to point B. Likewise, the check on the payments system continuum. But the times, they are achanging. Consider another point of view. Is the automobile quite as "good" as first perceived? Does its unfettered use in its current mode begin to raise questions about where it fits into the society's value system? Not monetary values, but such things as clean air, open space, and quiet. Such questions have been raised, and such questions will perforce be answered. The struggle to find the best answers is proving to be difficult, and brings into question our table of values.

Is this new payments system, this method called EFTS, as good as advertised? From the first point of view, there is little doubt that it does the job faster, more efficiently than the method using paper checks. Taking that as given, what about the other point of view? Where does EFTS fit into the table of values of the society? Is it an unmixed blessing? Can we in good conscience and with confidence in a benign result leave this new method and its final configuration and ultimate impact in the hands of the technicians? It is most likely that the people possessed of the requisite skills are capable of providing us with a very, very efficient method, a system that will be guaranteed to get the economic job done most efficiently.

It is the thesis of this paper that we cannot in good conscience leave the matter entirely to the technicians. This thesis is inescapable if we adopt the second point of view. Remember — we are talking about a method, a tool, a means to an end. As such, it is incumbent upon society to measure the method by a means-end rationale. Is the method, the means, likely to impinge upon any of society's ends, upon its value system? If an impact is foreseen, is that impact likely to be entirely favorable and benign, or perhaps tinged with unfavorable and undesirable results?

It is beyond dispute that the new method is going to have an impact upon the society, and it is submitted that the impact will be felt at different levels and to the point where our table of values will be affected.

Witness the consumer transactional questions and concerns raised and explored by Messrs. Shick and Schuck, and the other issues raised during this conference. How, for example, to allocate the risks and share the burdens when dealing with the range of questions sometimes called transactional in nature. Questions dealing with recision of the underlying sales contract, the holder in due course doctrine, to name only a couple. What, for example, will be the effect on the postal service if a large proportion of the paper checks now being sent via the mail system are converted to the electronic mode?

These are important questions. Their clear enunciation and their resolution congenial to a large majority of consumers will involve the traditional process of negotiation, debate and compromise, with the reasonable expectation that the interested parties, including the consumer, will be able to agree that the new method provides benefits that outweigh the

perceived disadvantages. The consensus reached will not, on the one hand, produce such dysfunctions in the new method as to seriously diminish its efficiency, and it will not, on the other hand, leave the consumer so disaffected that he will not use the new method. It can be expected that, at this level, the consumer will be left with a general feeling of satisfaction regarding the new method.

The next level, for the purpose of measuring the impact of the new method, is expressed in terms of choice. The consumer is comfortable with coin and currency, as well as with checks. He likes each of them, and has become so familiar with them that he has learned how to obtain the maximum benefits from them. (It may be pointed out to the consumer that any free or subsidized method such as checks will be over-used and that such excessive use may have an adverse effect upon the check method. It is most likely that the consumer will grant the point made by the economist — and continue to make profligate use of the method.) Does EFTS give the consumer greater benefits? Perhaps. Who says so? Let us put all the cards on the table so we can make an informed choice. No hidden costs, no slick advertising campaigns. Do not remove coin and currency and checks as on-going alternatives to the new method. The consumer may well decide to use each of the three methods, moving among coin and currency, checks, and the electronic mode, as the need or even the mood of the moment dictates. Whatever blend he is comfortable with, whatever mixture fits into his life style; the consumers will insist upon their ability to make such choices.

As with the class of questions described above as transactional in nature, resolution of the considerations involved in making a choice among methods will not present the architects and the builders of EFTS with insurmountable problems. They may find it necessary or politic to make changes in what appears to them to be the ideal model, but an efficient and viable model will be made available to the consumer for his potential use.

The third and last level upon which the new method will be measured is concerned with privacy, one of a class of values that the society holds most dear. This class of values is the foundation that supports the society in its present form. It is submitted that if a society has such a class of values, and as long as it has them, then everything else must be made to conform to them. Certainly, the devices, tools, methods, procedures that may well bring many benefits to the society in the form of a new payment are subservient to that class of values. Subservient to the point that if the new method was generally seen as having an undesirable effect upon any one of the values in that class, the society would be moved to dismantle the new method. Efficiency and ease of economic transactions — nice to have, but not if such acknowledged benefits lead us down the path where members of the society can be seen and can be dealt with as objects.

Privacy has been defined as that aspect of the social order by which people control access to information about themselves.

Presently available technology has great capacity for gathering information, storing it, retrieving it, publishing it. Information about almost any subject. Information about individuals. That technical capacity is so great and is so pervasive that it threatens the value of privacy. It is not easy to control information about oneself under such a circumstance. The battle to preserve that value has been joined in other arenas, with different factors and perspectives at play. Must privacy be held as an absolute, and as an indivisible absolute? Or can it be bargained away in bits and pieces? Those are very old questions. The answers are not all in. It is submitted, however, that if discussion is limited to a new method of making payments, the consumer will not permit such a means to a lesser end to impinge adversely upon his value of privacy. The consumer will want to control the gathering of information about himself and the access to that information. He will want to know how such information is being stored, how long, who has access to it. He will insist upon his right to review it and to challenge and correct any errors. He will want to know just what use that information is going to serve.

If the consumer is not content with the answers he obtains to such questions, he will tell the architects and builders of the new method that it is unacceptable. The cost is too high. And that reaction will be forthcoming even in the face of protestations that such an attitude from the consumer will dismantle, eviscerate and otherwise ruin the new system. The consumer, probably unsure of which payment system he prefers, will move to a new one only if the trade-off leaves him feeling comfortable, only if his life style is not changed very much. The consumer has recently become increasingly aware of his right of privacy. He realizes that it is not an absolute. He is willing to sell certain information, sometimes very sensitive information about himself, to gain a benefit. Witness the parents that submit confidential financial statements in support of a college scholarship application. It is submitted that the consumer will be less willing to reveal such information, less willing to lose control over such information, for the sake of moving to the next set of tools being designed to do a job now being done by methods that do not threaten any of his values. Whatever the final configuration of EFTS, it will have to be perceived by the consumer as compatible with the value of privacy.

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