

ECONOMIC COMMENTARY

In this issue:

Repricing Payments and Incentives
for the Development of Electronic Funds Transfer

Federal Reserve Bank of Cleveland
Research Department
P.O. Box 6387
Cleveland, OH 44101

Address correction requested

<p>BULK RATE U.S. Postage Paid Cleveland, OH Permit No. 385</p>
--

Address Change

- Correct as shown
- Remove from mailing list

Please send mailing label to the Research Department,
Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, OH 44101.

Repricing Payments and Incentives for the Development of Electronic Funds Transfer

by É.J. Stevens

Although technological change has permeated the payments industry of the United States, the dominant means of effecting payments has not changed appreciably since the turn of the century. Sophisticated electronic funds transfer systems have been developed and, in fact, dominate in large-value transactions where avoidance of lost earnings on delayed receipt of funds can justify the cost of rapid clearing and settlement. Most payments, however, are still made by cash and paper checks distributed through extensive networks of financial institution branch-teller units linked by surface and air transportation. The collapse of this payments system under a mountain of paper was being predicted long before rising energy prices increased the relative costs of branches and transportation. Electronic funds transfer (EFT) is widely regarded as the technology that could replace paper and assure a more efficient payments industry.

Implementation of EFT should be inevitable in a market economy if basic payments needs could be satisfied at lower prices. Market forces would assure the substitution of lower-cost EFT for other less-efficient forms of payment. The Depository Institutions Deregulation and Monetary Control Act of 1980 has made sweeping modifications in the regulatory structure that may finally allow this market test to proceed by removing barriers both to competition among depository institutions as well as to rational pricing of payment services. The extent to which that test is likely to take place is the subject of this *Economic Commentary*.

Competition and Regulation

An EFT cost advantage might have been demonstrated long ago if we could import domestic payment services as we import steel and automobiles. A recently published study of payment systems in 11 developed countries clearly shows a more advanced role for EFT in the payment systems of such countries as Belgium, France, West Germany, the Netherlands, and Sweden.¹ However, the

E.J. Stevens is an economic adviser, Federal Reserve Bank of Cleveland.

The opinions stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

1. Bank for International Settlements, *Payment Systems in Eleven Developed Countries* (Bank Administration Institute, 1980).

domestic payments mechanism in the United States, by definition, is protected from foreign competition.

Neither has domestic competition had free rein to test the cost advantage of EFT. Historically, commercial banks have produced payment services within a regulatory shelter.² Although this shelter has been significantly eroded by market forces in the past decade, commercial banks have had the exclusive right to offer checking accounts, and explicit interest payments on these balances have been prohibited. The Federal Reserve, in turn, has provided payment system services to member banks without explicit fees or charges. The Monetary Control Act will dismantle major portions of this regulatory shelter, by (1) allowing all commercial banks and thrift institutions to offer interest-bearing transactions (NOW) accounts to households, (2) scheduling the phase-out of Regulation Q interest-rate limits on NOW and time and savings accounts, and (3) enabling the Federal Reserve to offer payment system services with explicit prices to all financial institutions issuing transactions accounts.

Nationwide NOW account powers are likely to prompt large numbers of thrift institutions to enter the payments industry. Some thrift institutions, of course, have been at the forefront of EFT development. Exploitation of electronic loopholes in the paper-based regulatory structure has long been an important avenue for entry into the payments industry. Initially, NOW account authorization may dampen the incentive for EFT development by thrifts by permitting direct entry via the paper-based technology.

On the other hand, NOW accounts, if coupled with explicit prices for payment services, may encourage EFT development. At present, non-interest-bearing checking accounts carry an implicit return in the form of free or underpriced services. Replacing checking accounts with NOW accounts bearing market rates of interest would require increased prices roughly reflecting service costs in order to maintain profitability. Competition could provide a better test of the efficiency of EFT relative to paper in this new environment. If EFT services were indeed less costly than traditional paper and branch-teller services, then lower prices for EFT than for other services would encourage use of EFT.

This efficient result is not likely, however, if rates of interest on NOWs are held below market rates. The primary mode of pricing NOW accounts will be with minimum balances carrying a regulated, below-market interest rate. The resulting earnings margin on deposits enables deposit institutions to avoid pricing payment services at cost. Free or underpriced services will dampen incentives to shift toward EFT. As long as transaction costs are obscured by minimum-balance requirements and the offer of free services, customers cannot be expected to perceive the cost advantage of EFT. Only with the elimination of Regulation Q ceilings on deposit interest rates, permitted by the Monetary Control Act in six years, will these pricing practices be discouraged.

With banks and thrifts mired in traditional pricing practices for transactions, EFT will have difficulty driving out higher-cost, inefficient payment services. Moreover, even if traditional transaction pricing practices change, the efficiency of EFT may only be reflected in transaction prices if deposit institu-

2. For example, see E.J. Stevens, "Electronic Funds Transfer Systems," *Federal Reserve Bank of Cleveland Annual Report*, 1977.

tions realize a cost advantage in clearing and settling EFT payments. The distinction between retail and wholesale payment services must be understood before investigating costs of alternative technologies perceived by deposit institutions and their customers.

Retail and Wholesale Payment Services

Retail payment services are the transactions that enable account holders of a deposit institution to credit, debit, or inquire about the balances in their accounts. Services may be rendered by a branch-teller unit face-to-face, automated teller machine (ATM), point-of-sale terminal, mail, telephone, or presentment by a wholesaler.

Wholesale payment services are the clearing and settlement operations that relay credits, debits, and account-balance inquiries between payer and payee deposit institutions. These are crucial services that have been controversial since the First Bank of the United States originally performed the services for state banks almost 200 years ago. These services are critical because the United States has a tradition of many small, independent banks and thrift institutions. Indeed, as a result of the Monetary Control Act, more than 25,000 existing depository institutions soon will have the ability to issue payment accounts. The chances of any particular payer holding an account with the same institutions as any particular payee are normally quite low, even within a local market. On a nationwide basis, those chances are substantially lower. Wholesale services are just as crucial for EFT payment mechanisms as they are for paper checks.

Wholesale payment services are frequently controversial because purely private market operations have not always been ade-

quate to provide the timely clearing and settlement of all payments among all institutions and localities required for a truly uniform national payments system. Clearing and settlement of payments are as complex as switching telephone calls or sorting mail because of the large number of independent institutions holding payer and payee accounts. Although regulated public utilities assure nondiscriminatory access to wholesale services in other network-dependent industries, this has not been the solution in the payments industry. Private clearinghouses, correspondent banks, and other organizations provide wholesale services wherever they wish. Assuring uniform nationwide wholesale services is the job of the Federal Reserve System in the case of wire transfer, check, and automated clearinghouse (ACH) payments. Any deposit institution will soon be able to send items to a Federal Reserve Bank when private market wholesale services are not attractive or available.

Cost comparisons of EFT and traditional payment services can be made at both the wholesale and retail levels. At the wholesale level, recent estimates of cost functions at Federal Reserve offices suggest that ACH costs would be less than check costs at an ACH volume of about 200 million items per year per office—far in excess of current volume.³ This finding of a potential cost advantage for ACH, however, is consistent with the proposal of the Federal Reserve to price ACH service on the basis of long-run average cost at mature volume and thereby at a price

3. David Burras Humphrey, "Costs, Scale Economies, Competition, and Product Mix in the U.S. Payments Mechanism" (paper presented at American Finance Association meetings, Denver, Colorado, September 5, 1980; processed).

that is slightly lower than average Federal Reserve check prices. In this case, at least, a wholesale EFT cost advantage would be visible to deposit institutions.

Point-of-sale (POS) terminals allow paperless payment by electronic debit to a payer's account and credit to a payee's account with the payment message captured directly on a merchant's POS terminal. A choice is available between on-line POS technology, with every retail POS terminal on-line to a wholesale telecommunications switch, and off-line technology, with each retail POS merchant operating in a "store and forward" mode and sending (or transmitting the contents of) a magnetic tape of the day's receipts to a wholesale switch for routing of debits to customer accounts. These two technologies may have quite different costs.

The on-line technology has low credit-risk costs, but high hardware-software-line-charge costs so that wholesale services are currently available in only a few experimental local systems. On-line POS systems are difficult to organize because a large number of institutions must use the same wholesale system before the probability of both merchant and customer belonging to the same system is high enough to produce large volume and low cost.

The off-line technology has high credit-risk costs, because there is no way to know whether the payer has sufficient funds to accept a debit. However, an ACH or VISA or MasterCard or any other nationwide network already in existence can provide a wholesale facility with immediate potential for relatively high volume.

Automated teller machines (ATMs) require no wholesale facility if ATM transactions are all "on us" and, therefore, pure

retail items.⁴ Rapid growth of the number of ATMs in the nation apparently reflects the ability of many depository institutions to provide this retail service without having to use a common wholesaler.

In summary, wholesale EFT services—ACH and off-line POS—are available. Currently, they carry a price equal to wholesale check service, namely zero, at least when provided by the Federal Reserve wholesale house. Next year, these wholesale EFT prices will be positive but slightly lower than prices of Federal Reserve check services.

What about retail EFT? Does the relative efficiency of EFT show through in the price tags that businesses and consumers see dangling from the various floor models of retail payment services? The answer up until now has been, of course, "no." Payment services are not consistently and explicitly priced, and frequently their prices are uniformly zero. What we need to see on these price tags are something like the following:

- A deposit via ACH cheaper than by check.
- A deposit by check cheaper via ATM than a branch-teller unit.
- A cash withdrawal via ATM cheaper than by check.
- A check cashed via a wholesale house cheaper than one cashed at a branch-teller unit.
- A bill paid via ACH cheaper than a bill paid by check.
- A bill paid by check via a wholesale house cheaper than a bill paid via a branch-teller unit.

The advent of Federal Reserve pricing is sometimes seen as providing a cost justifica-

4. Some shared ATM networks exist, and others are planned, for which wholesale services are required.

tion for such retail payment service pricing. Not only will Federal Reserve ACH prices be lower than check prices, but also the industry-wide wholesale price increase might stimulate an industry-wide adjustment in relative retail prices of check and ACH. However, it is hard to see how the recently released Federal Reserve cost-based prices can be much of an inducement to rational retail payment service pricing, because wholesale prices per item of check and ACH are trivial compared with various estimates of retail costs—on the order of 3 percent to 10 percent for check and perhaps 10 percent for ACH. Banks will need much more than Fed prices to justify their prices to consumers.

There is more, however. The Monetary Control Act directs the Fed both to institute cost-based prices and to price float in its payment services. Most of Fed float arises in check collection because of the guarantee to depositing banks of a maximum two-day delay in receiving credit for checks. When credit is passed prior to actual presentment to the paying bank, the Fed finances the resulting credit creation, called *float*. The current Federal Reserve plan is to eliminate most float either by speeding up presentment to the payer or by delaying availability of credit to the payee. Especially for large-value checks, loss of free float will represent a substantial increase in the effective cost of check payments relative to wire transfer with immediate availability or ACH transfer with only a short delay in availability. This change in the relative costs of alternative means of payment may produce widespread re-evaluation of many corporate systems for optimal management of check receipts and disbursements.

A second aspect of the pricing problem not reflected in cost-based wholesale prices

involves the non-price "convenience" characteristic of retail payment service. Branch-teller technology is undoubtedly quite costly and would be scaled down to some necessary and efficient residual in an EFT-based payments industry. This could happen in two ways. Explicit prices of branch-teller transactions might be raised high enough to offset their convenience to customers, thereby inducing more intensive use of ACH and ATMs with lower price tags and making branch-teller units superfluous. Or, branch-teller units might simply be closed down. Somehow, one or both of these methods of repricing payment services must happen for deposit institutions to realize a substantial cost advantage from EFT.

Concluding Comments

What no one can quite believe, but many hope will be the result of NOW accounts and other features of the Monetary Control Act, is that depository-institution payment services will be repriced. Rational pricing that accurately reflects all relative costs of production might then move the payments industry rapidly toward a market test of electronic technology. Prices of Federal Reserve wholesale services, even including float pricing and elimination, are only one step in that direction, however. Continued reliance by competing deposit institutions on "free" services and convenient full-service branch-teller units may prevent retail users from recognizing an EFT cost advantage. Inroads by non-deposit institution suppliers of payment services may then be the vehicle for free market competition to test the efficiency of the existing technology of the payments industry.

NOTE: No *Economic Commentary* was published on September 22, 1980.