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The Transformation of the Retail Payments Business
Remarks by
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before the
BAI Conference The National Payments System
Washington, D.C.
October 8, 1996

It is a pleasure to be here with you today to discuss the transformation of the payments business. This is indeed a timely topic because, in some respects, this transformation is taking place for the most basic of payment instruments, currency and coin. Most of you are already aware of the various efforts underway in the private sector to create an electronic analogue to paper currency.

But that is only part of the transformation. The potential to engage in commercial transactions over open computer networks, such as the Internet, could create demand for new ways of making secure, electronic payments over these networks using conventional instruments such as credit cards or checking accounts.

In addition, banks are actively providing and developing remote, electronic, retail-banking delivery systems by: (1) enhancing the capabilities of ATMs, (2) offering automated phone-center banking, and (3) providing software for banking from home through personal computers. Thus, retail banking is going through an "electronic transformation." The only questions are how far and how fast this transformation will take place.

All this should serve to remind us that a large part of what we call banking is basically communications and information processing, and a dynamic, innovative economy like ours will always be seeking new and better ways to handle these tasks. In the case of banking, this probably means that inefficient paper-based systems will gradually be replaced by electronics and many in-person banking transactions by electronic, remote, self-service access.

I would like to begin my remarks today with a discussion of electronic money, a topic of a recent research effort sponsored by the central bank governors of the G-10 countries. After the discussion of electronic money, I will spend a few minutes on commerce and payments over the Internet, and then turn to a discussion of the electronic delivery channels banks have been developing to improve customer service, while they also try to reduce the expense associated with "brick-and-mortar" branches. I will finish with a few remarks on the efficiency of retail payments, and then try to put all these developments into some broad perspective.

Electronic Money

As electronic information networks replace paper-based ones, a natural extension was the creation of an electronic analog of paper money. Energetic people, leading the charge, make our economy dynamic and innovative, features that government policies should encourage.

The development of privately issued, electronic money has received a lot of attention, not only in the payments industry, but also in the popular press. It is not hard to understand why. Government-issued money is often viewed as being very special, and creating an electronic analogue in the private sector raises a number of public policy issues largely because historically paper-based currency has been issued by central banks and deposit-based money either by central banks, in the form of bank reserve accounts; or by supervised, depository institutions in the form of demand deposits or NOW accounts. This arrangement developed for two, basic reasons: (1) to address the need for a safe medium of exchange, and (2) to provide a mechanism for the central bank to implement monetary policy.

Electronic money has become an important issue not only for the Federal Reserve, but for central banks around the world. From my perspective at the Federal Reserve Bank of New York and as chairman of the G-10 Committee on Payment and Settlement Systems, I have been able to observe that many, if not most, of the trends affecting banking and the financial community are global in nature. If anything, this is more true with respect to technological developments, such as the development of electronic money.

To fulfill our monetary policy responsibilities as well as our roles in operating and overseeing payment systems, central banks need to understand the effects of changes in the form of money and the way it is transmitted. It thus became increasingly apparent to the G-10 central banks that we should develop and pursue a research agenda covering the public policy issues raised by the potential development of electronic money in the private sector. Accordingly, over the past year, the Committee led an extensive research effort on electronic money, covering monetary policy implications, legal issues, law enforcement questions, regulatory policy, and technical security.

The results indicated that electronic money is not likely to create significant problems for public policy in the near future, but that continued monitoring of developments and the sharing of information internationally will be important. It appears that for now electronic money will be mostly chip-card based, and used for the small subset of transactions where lower denomination currency and coins are now the medium of exchange. But this could change over time as some firms attempt to develop electronic money applications for larger dollar payments.

As electronic money develops further, security will be a growing issue. In that regard, one of the notable successes of the Committee's work on electronic money, the recently published report, Security of Electronic Money, provides a much-needed framework for evaluating the potential security measures that support these new payment products. The high quality of this report can in large measure be attributed to the valuable expertise contributed by participants from several national jurisdictions, underscoring the potential benefits of cooperative international efforts to increase understanding of developments in the payments system.

For now, I believe that our focus on the need to fully understand, continuously monitor, and share information internationally on electronic money is the appropriate one. In my view, undertaking public policy actions in advance of a full understanding of how far and in what directions electronic money could develop creates substantial risk that government will stifle potentially important innovation in the high-technology private sector.

Does this mean that there are no policy risks associated with these new developments? Of course not, and one can imagine that government might face stiff resistance to any policy initiatives late in the development cycle after large amounts of money have been invested by the private sector. To me, this argument only emphasizes the need for appropriate educational and research efforts, both domestically and internationally.

Who will be the issuers of electronic money? A case can be made that electronic money will only be accepted in a wide range of transactions if merchants are convinced that their banks will accept it for deposit. And banks typically only accept for deposit claims on other banks that are members of their clearing and settlement systems. Hence, banks may well have the opportunity to be the primary issuers of electronic money even without any government intervention giving them that power. And as you already know, the major pilot programs for electronic money involve commercial banks, whether here in the United States or abroad. On the other hand, some nonbanks are also interested in this new payment medium. The true test of these products will take place, as it always does, in the marketplace. It is clear that for electronic money to be accepted for a broad range of transactions, consumers will need to place substantial trust in the issuers, regardless of their particular legal

status. In this regard, I note that consumers already feel quite comfortable making payments with deposit-based money issued by banks, and that the Federal Reserve is in the process of revising Regulation E to ensure adequate disclosure of risks involved with electronic money.

I am asked from time to time whether the Federal Reserve has any plans to issue electronic money. Federal Reserve involvement in the payments business is governed by three basic criteria: (1) full cost recovery in the long run, (2) a clear public benefit, and (3) clear indication that private sector suppliers alone cannot provide this service with the same effectiveness, scope, and equity as the Federal Reserve could.

As far as we can tell at this early stage of development, the private sector appears to be developing the technology and the networks that should eventually allow electronic money to circulate at par across the nation. The private sector also seems to be taking the necessary steps to provide this service with adequate effectiveness, scope and equity. Hence, there does not appear to be a case for the Federal Reserve to issue electronic money at this time.

Finally, I am sometimes asked how popular electronic money is likely to become, given consumer reluctance in the past to changes in the ways they make payments. It is true that payments innovations in the consumer sector often take a long time to gain wide-spread acceptance, but on the other hand, consumers seem to be adopting many electronic technologies quite rapidly, with many young people literally "growing up with computers."

In addition, chip cards can be used in a variety of applications -- electronic money is only one. The multi-functionality of chip cards may cause the use of electronic money to spread more rapidly than if electronic money were the only application this technology supported. As a result, even if electronic money grows slowly at first, it could at some point attain a critical mass that would trigger more rapid growth. For example, if most vending machines are converted to electronic money, and more products are sold through vending machines because electronic money is always exact change and there is no cash in the machine for vandals to steal, consumer demand for electronic money could grow quite rapidly. Thus, early indications of slow consumer use would not necessarily mean failure, because potential users will take time to adapt to the availability of electronic money.

Internet Commerce

Electronic money is not the only development affecting retail payments. Soon we may all have access through our computers to what I like to think of as "electronic catalog shopping" on the Internet. That is, products will be: (1) advertised electronically by merchants, (2) shopped for and ordered electronically by consumers, and (3) in the case of information-based products, perhaps even delivered electronically to the consumer. In some cases, this new form of commerce may prove to be very efficient: consumers will be able to purchase directly from producers, eliminating middlemen in the distribution process. What has been missing thus far in this electronic, catalog shopping is a secure, electronic means to pay for products at the time of purchase.

Some efforts are underway to adapt electronic money so that it could flow, not only from a chip card to a card reader, but also securely over an open computer network. A bank in St. Louis is testing such an application now. In addition, it may also be possible, through encryption technology, to pay for products with a credit card or by communicating with your bank to make a payment from your checking account. The industry appears to be moving toward an accepted standard for securing credit card transactions on the Internet. And others are working to develop a viable "electronic check" for making payments. These efforts would not, of course, result in new instruments, as is the case with electronic money, just new ways to access existing banking relationships for the purpose of making payments.

It remains to be seen what will work in practice and what will fall by the wayside. The security for making payments over an open network relies largely on dual-key encryption technology, not only to scramble the content and test the integrity of a payment message, but eventually to certify the identity of the parties involved in the transaction. An alternative model involves a trusted third party acting as an intermediary so that credit card numbers are not transmitted over the Internet and all transactions are confirmed by E-mail. In both cases, developers claim that electronic payments over open networks could become no more insecure than conventional retail payment instruments. Nonetheless, developers still have a high standard to meet in convincing others that this will be the case.

We have all been surprised by what computer hackers have been able to do from time to time, and I cannot help but be concerned about what might happen if significant sums of payments begin to flow over an open network and attract the attention of sophisticated hackers. After all, we should remember that the access device to the network often is going to be a powerful computer, not a telephone or an ATM machine; and the open network will make it difficult to trace the source of attacks.

Until recently, banks have not shown much enthusiasm for having payment information flow over open computer networks, probably for the same security concerns. In addition, it is the banks' fundamental responsibility to ensure that consumers' checking and credit card accounts are not tampered with through unauthorized access. These accounts, after all, are nothing more than electronic records on the banks' computers; having access to these records through an open computer network may create new, unanticipated, security risks.

Some have argued that the reluctance by banks to become involved with the Internet stems from a concern that consumers will begin to see the technology company, which provides the link into the electronic catalog and offers consumers the capability to search for the desired products across vendors, as the primary provider of financial services. In contrast to the current situation in which banks use their individual branch networks to deliver banking services, banks could lose control over the distribution network as we move toward virtual commerce. In this case, banking products might become like commodities.

It reminds me a little of the brokered CD market in the late 1980s and early 1990s. Consumers basically relied on investment bankers to find the best deals on insured thrift or bank deposits in standardized units of $100,000 (the insurance limit), and these consumers probably believed their primary relationship was with the investment banker; they had no intention of building a relationship with the issuing bank or purchasing other banking services beyond the standard CD offered by the broker. Banks still supplied the product, but a third party had taken over the distribution network and had established the direct relationship with the consumer.

Electronic Delivery Channels

Banks, of course, have been developing electronic distribution networks on their own for several years. Indeed, some banks report that as much as two-thirds of retail banking transactions are already completed outside of conventional bank branches. The efficiency gains seem considerable, with some estimates that electronic distribution of banking services costs only about one-fifth as much as delivery through a conventional branch. While it is probably too early to know if these potential cost savings will prove sustainable, they are a powerful incentive for the efforts we see banks making to create a variety of electronic products.

We now have nationwide ATM networks, through which consumers can get access to their bank accounts from almost anywhere. In addition, ATMs may soon display images on the screen of checks being deposited, which will reduce consumer reluctance to depositing checks at ATMs because the ATM will return to the consumer a two-sided copy of the check as a receipt. ATMs could also play a pivotal role in the dispensing of various government benefits electronically, even to those recipients without a true bank-account relationship. Finally, a new type of ATM (actually an ALM, automated loan machine) is being developed that will accept and process loan applications electronically, allowing the consumer to walk away with a check at the end of the session.

Another electronic delivery channel being developed further by banks is their telephone centers. Consumers can either call in and complete their banking business in an automated, menu-driven mode, or can choose to talk to a bank employee, who can immediately call up the entire relationship onto a computer screen and take care of any of the consumer's banking needs. Some bankers tell us phone centers are becoming so

popular that some consumers are beginning to "over-use" them, and some banks are charging fees for excessive use.

The third electronic delivery channel being developed by banks is home banking using software provided by the bank with access through the consumer's personal computer. In some cases, the home banking software is being developed and supported by a regional ATM/point-of-sale network, giving banks a low-cost way to offer this service to their customers, while maintaining control over the distribution network. And last month several large banks, working with a major computer company, announced plans to launch a home banking network in which the bank would continue to have the primary relationship with its consumers.

Banks are also establishing web-sites on the Internet, allowing them to advertise their products nationwide, or even globally in some cases, in an electronic format. I was told not all that long ago that between 150 and 200 banks have active, well-developed web-sites, but that number is probably much larger now given the way activity on the Internet is mushrooming. Indeed, one bank already operates exclusively on the Internet, and another company is creating an on-line data base to help consumers find the most attractive product offerings by banks on the Internet.

Clearly, electronic banking is becoming available to the consumer in several forms, from electronic money to virtual banking, and by now some of you are already probably asking yourselves: what does all this mean for conventional, "brick-and-mortar" branches. It all depends on how successful banks are in moving consumers to these new electronic delivery channels. Some banks are offering very attractive packages of banking services to those consumers willing to agree to never visit a human teller, that is, willing to do all their banking through these remote, electronic delivery channels. However, it is not clear that branches will necessarily disappear in the near future. Branches may take new forms for a while; for example, scaled-down branches are being opened in supermarket chains all over the United States, offering synergies for the bank and the supermarket chain in terms of increased customer traffic and co-branded advertising, not to mention, of course, greater convenience for the consumer. Or, conventional branch services may be delivered at one-stop financial service centers where a broad range of investment products would be available from qualified consultants.

Efficiency of Retail Payments

Does this electronic transformation of retail banking mean that retail payments are quickly becoming as efficient as possible? All of us with our check books in our pockets or purses know the answer to that question is "no." In the United States we still process too many checks, and the inefficiency goes well beyond the number of checks involved. Let me give you a fairly well-known example, and I would like you to think of it from the perspective of a technology company that would like to compete with banks for the retail-payments processing business.

The example involves the multiple steps involved in a utility company billing and receiving a payment from a consumer. The billing information is maintained electronically on the utility's computer, but is converted to a paper-based format and mailed to the consumer. The consumer mails a paper check back to the utility, and the utility's computer records are updated manually. Likewise, the banks accounts of both parties are maintained electronically, but are updated based on information coming from the paper check collection process.

To someone with a vision of the world in which computers not only store electronic records but are all linked in a network, this process appears highly inefficient, moving large amounts of paper needlessly between electronic end-points. Why can't this entire process be carried out electronically, that is, directly on a computer-to-computer basis over a network? Potential, nonbank competitors for the payments processing business are asking this very question.

Well, we all know that banks already have parts of the answer in place for retail payments. Banks have preauthorized electronic debits, direct electronic deposit and other electronic payment options for the consumer sector (such as debit cards and initiating electronic payments at home with personal computers). And the Federal Reserve, of course, is working with banks to promote electronic check clearing as well as the greater use of ACH.

Still, consumers seem to rely quite heavily on paper for retail payments, and it may not be only the lack of appropriate technology that is creating the problem; it might just be that the basic incentives are all wrong. Part of the reason may be that for the most part collecting banks, not paying banks, incur the cost of check collection. Hence, the consumers writing the checks may not be charged an explicit fee for choosing this costly payment option. Another part of the reason is float, receiving interest on funds for a few days while the check is in the mail and then clears. And some of the problem may be that our ACH system is not designed to offer consumers enough flexibility in making payments in terms of potential payees, location, timing and amounts. So while it is easy enough to say there must be a better way, it is not always simple to get there without some fundamental changes in behavior, incentives, and system design.

No matter how difficult change is, I believe banks need to be careful about maintaining the status quo. Nonbank competitors will not enter the payments business with paper-based systems, only high-tech electronics, and banks could end up saddled permanently with the high, fixed cost of a check collection system that is operating well below capacity. Therefore, as banks begin to encourage their customers to rely less on brick-and-mortar branches and more on electronic access channels, it might also be worthwhile for them to encourage electronic payment instruments and discourage paper-based instruments. And some banks are beginning to do exactly this, by offering the best terms on checking accounts to those consumers who arrange to have their paychecks directly deposited each pay period over ACH, thereby helping to eliminate one of the primary, routine reasons consumers line up at teller windows to deposit paper.

Conclusions

While I have spent some time this morning discussing the "hot topic" of electronic money, it also seems clear that electronic money is only a small part of the electronic transformation taking place in retail banking. Banks will need to define and fight for their share of the electronic marketplace if they hope to compete effectively in the future. As they have seen already, nonbank competitors, such as mutual funds, can offer consumers substantially better yields because they have no expensive branch structure to support.

This transformation is not unique to banking. Any information based, service industry currently relying on person-to-person contact at predetermined locations, such as travel agencies, insurance agencies or even real estate agencies and auto dealerships, is likely to see the way its business is conducted to be fundamentally changed by electronics.

While this process of moving to electronic delivery is likely to help some industries increase productivity and reduce costs, it might also increase price competition and transform more products into "commodities", as consumers gain the ability to quickly compare product offerings across competing firms electronically.

Hence, as retail banking enters the remote, self-service, electronic age, we should expect the nature of competition in banking markets to change as well. For example, we have grown accustomed to thinking of geographic location and franchise value of bank branches as key factors affecting competition in retail banking markets. But in the future, the movement to electronics, and the resulting increase in remote banking over nationwide networks, may cause us to think quite differently about these issues. Geographic location and the name of the producer of "the commodity" might not matter nearly as much. Banks, as well as bank supervisors, will need to think carefully about all the potential implications of this new paradigm for retail banking.

Thank you.