

The Payments Mechanism System:  
Emerging Changes and Challenges

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My purpose here, as I understand it, is to shed some light on the emerging changes in our payments mechanism system from the vantage point of one senior Federal Reserve official who has had more than a casual interest in this area for many years.

I'll cover three broad areas. First, I'll comment briefly on the status of our payments mechanism system with emphasis on why the rapid advances in the use of electronics so widely forecast a decade or more ago have not occurred. Second, I'll summarize some of the major forces now at work which represent a new and probably irreversible impetus for the increased use of electronics in banking and finance. Finally, I will share with you some concerns that I have about our brave new world of electronic banking--concerns which may not be immediate but which should shape our thinking about this future environment.

In looking at the payments mechanism today, we must start with the obvious: the recognition that our current payments system is still a paper-based system. Indeed, if one were to look simply at numbers of transactions, the paper medium is dominant. For example, during 1980, we in the Federal Reserve processed 15.7 billion checks and we handled 6.7 billion pieces of currency. By contrast, the number of wire transfers processed was 43.3 million and the number of ACH entries handled was 227.4 million. Obviously, however, such a snapshot view of our payments system--which is based on a transaction rather than a value indicator--suffers the defect of all snapshots: the image is two-dimensional. If, however, we look at the value of payments made electronically, quite a

different picture is exposed. In 1980, for example, the value of payments processed via Fed-wire and ACH alone was \$78.9 trillion.

Impressive as that value-based number is, we are still nowhere near the checkless, cashless society that many futurists of the mid-sixties envisioned. We're still asking why electronics has not captured a larger piece of the action. In considering this question, we can, I think, lay to rest the argument that technology is the barrier. It seems clear to me today that the technology has arrived. Indeed, I am convinced that the technology for a virtual explosion of electronic payments exists and that in some instances it has existed for some time. The book-entry system for Treasury securities--which is, we all sometimes forget, more than a decade old--makes that case better than words can.

If not technology, what then has stood in the way of the more widespread use of electronic payments? Here, I think we can all tick off an impressive list of legal, structural, economic, and attitudinal factors which have worked to slow the momentum of electronic payments systems. For example, start-up costs are a significant factor. Right now, the estimated cost of a check payment is less than the cost of an ACH entry. In the past decade, there have been sizable advances made in the technology of paper processing equipment such as the latest generation of high-speed currency and check processing equipment. At the same time, while electronic systems are evolving rapidly, they suffer some of the diseconomies associated with low volume "infant" industries.

However, the ease with which we can all cite these impediments should not misdirect our attention from other equally

important factors. There are characteristics of our current payments systems--some real and some perhaps illusory--that have contributed and will continue to contribute to the longevity of paper-based payments.

A subtle advantage of a tangible paper-check-based system--one that is often overlooked--is that a check can be returned in the event the funds to cover the check are not in the account. That same quality of tangibility--however cumbersome in the aggregate--also seems to create a sense of confidence for users that audit trails, records management, and control are virtually fail-safe. With electronic impulses, many users aren't so sure. Some of this confidence is, of course, illusory, but these attitudes, in many segments of our society, are deeply entrenched.

Another, and more important, characteristic of the current payments mechanism which promotes its continued vitality is the perceived benefit associated with float. Here, I say perceived benefit, because for the society as a whole these benefits are illusory. The float game--like any game--cannot be one in which we are all winners. In most cases the costs associated with float--whether they take the form of uncertainty about the timing and finality of payments or the credit risk associated with float--are indirect and implicit. Even the legislative mandate that the Fed explicitly price or otherwise eliminate its float will have only a limited impact, since the Fed's balance sheet float is only a small part of the total amount of float associated with current payment procedures. In any event, as long as individuals perceive float as a "free good" working to their benefit, that belief will, in it-

self, remain a powerful element reinforcing the continued use of paper checks.

All of this may sound as if I were leading up to a judgment that we will again have to delay predictions that we are on the verge of a major acceleration in the use of electronics in banking and finance. To the contrary, my own current thinking is moving in precisely the opposite direction. I believe there are strong, if not irreversible, forces now at work which will produce the long-anticipated leap forward in the use of electronic payments. Let me briefly comment on some of the more important forces which, in my view, are serving as a catalyst for change.

-- First, we have a public that is more technically sophisticated and better educated than even a decade ago. Indeed, we are now at the point in time in which a generation of young people who have been exposed to computer terminals--sometimes as early as in grade schools--are about to begin to enter the labor force and/or take on the role of heads of households. For these people, purely attitudinal biases about "talking" to a computer will not present the obstacles encountered earlier. The now generalized acceptance of ATMs also represents a clear sign that if the benefits to the individual are there, these attitudinal barriers will give way.

-- Second, as I have already suggested, it is apparent to me that current and tested "state-of-the-art" technology in both telecommunications and generalized data processing are more than adequate to foster a large expansion of

electronic payments--even into the arena of high volume, low value payments. The relative costs may not yet be favorable in all cases to electronics, but I think it is a reasonably safe bet to assume that economics will be working from both sides to further narrow and likely reverse future cost differences.

-- The third reason I expect to see the trend toward electronics accelerate is due to the intense competition we are now witnessing in the market for the provision of banking and financial services. The results of this new competitive energy abound; they manifest themselves in the almost daily proliferation of new instruments, new services, and new players in previously "protected" markets. The erosion of geographic restraints on banking and finance--both domestically and internationally--is a case in point. These forces are, in part, a natural response to regulation; they are also symptomatic of a healthy, vital, and innovative financial sector. But, whatever their source, they are not going to fade away quickly. Thus they can be expected to help foster the hard and soft dollar investment in more efficient financial service delivery systems--systems that will almost certainly rely on more electronics.

-- Fourth, the more widespread use of explicit pricing of financial services will, I believe, encourage use of electronics. In this connection, I have already mentioned the explicit pricing of Fed float but, as you know,

there is much more involved than just float. The Fed must price all its services. Similarly, NOW accounts, the phase out of Regulation Q, and the gradual lifting of state usury ceilings are other signs of the move to more explicit pricing. These symptoms are also evident in the private sector where we are now seeing many cases--ranging from credit card service charges, to return-item charges, to fees for small-balance savings accounts--in which explicit pricing at or nearer full cost is becoming more common. These examples are, in my view, symptomatic of an emerging trend toward generalized explicit pricing in banking--a trend that I welcome because explicit pricing should promote the best allocation of economic resources.

-- Finally, the inflationary periods and the related pattern of interest rate and exchange rate volatility experienced in recent years both in the United States and around the world also provides momentum for a shift to electronics. Traditional but heightened market risk considerations work in the direction of changing attitudes about the time-value of money. Indeed, while the standard unit for the valuation of cash balances remains a 24-hour day, it would not surprise me--particularly given the worldwide character of money markets--to see even that standard changed so that money on deposit in a particular location for a period of hours--not days--might receive interest for that time interval. In such an environment the abil-

ity to muster and disburse funds on short notice will carry an even larger premium than it already does. Once these pressures have begun to take hold, I doubt they will be eliminated even as we bring inflation under control.

While these trends may seem unambiguous, I cannot foresee how far or how fast they will move. The process probably will accelerate from what we have seen over the past decade, but even if it does, I do not foresee anything like the demise of the check. And, more importantly in the current context, I can foresee some major new challenges and potential problems that we may all have to confront in an era of generalized usage of electronics in banking and finance. While my present unease regarding these potential problems may prove to be unfounded, this is one instance when it will be to everyone's advantage to be over- rather than under-prepared.

Surely, for example, we can all conjure up a vision of a world in which the computer terminal--perhaps even the hand-held pocket-size computer terminal--is used for everything from trading stocks and bonds to purchasing our week's groceries. But, such a view of the world presupposes, among other things, that there is a mechanism or an institution, or both, that stands in the midst of this massive electronic blur to provide the equivalent of our contemporary clearing and settlement functions. Stated differently, we have to find a mechanism that insures that the funds transferred are "good funds," or I suspect the system will not satisfy our wishes and expectations.

Having made that observation, I will freely confess that I am not at all sure how we will come to grips with this problem. One possible answer is that all economic agents would have to hold larger--and perhaps significantly larger--average cash balances. Another possible answer is that financial intermediaries would have to assume larger credit risk and exposure. Still another possible answer would be a change in the very essence of the payments system from its current debit instrument orientation to a credit instrument orientation. On a large scale, any or all of these or other changes, however, entail real problems in their own right and will not come about quickly or cheaply.

To put this concern in a clearer perspective, let me comment briefly on a couple of the elements of the problem that I believe should remain in the forefront of our thinking about the future.

-- First, in any payments scheme, including our current one, there are certain risks; the risk of fraud, the risk of mechanical failures--including failures on a large scale such as the blackouts in New York--and there is always the risk of a sudden bankruptcy of a large participant. To date, all of these risks have proven manageable even though certain episodes including bank failures, natural disasters, and political turmoil have from time to time tested our resolve and our creativity. It would be nice to think problems or shocks of this type would not occur in the future, but they surely will. And, to me, it is clear that it will be more difficult to manage them and

contain them in a world dominated by electronic payments unless we are imaginative and farsighted in designing the future with these potential problems in mind.

-- Second, I think we must recognize that whatever else electronics does, it will create a financial landscape in which the financial interdependence of institutions--large and small, financial and non-financial--is increased. Because of this, the credit judgments--or even mechanical problems--of any one institution have larger implications for other institutions that make up that chain of electronic impulses that constitutes the payments mechanism. Recent experience with the CHIPS network in New York provides an example of how credit risks associated with an electronically based payment system can have major implications for the shape, design, and operation of the system. In this instance, participants--sensitive to credit risk considerations--have been willing to go through a time-consuming and expensive restructuring of an otherwise very successful electronic payments system primarily because of their collective desire to reduce and better manage credit risk.

As I suggested above, I am not altogether sure at this juncture how we will deal with these and other issues in a world of electronic finance and banking. Yet, it is clear that our payments system of the future will need to have the same (or a greater) measure of confidence associated with it as is the case with the current system. That will mean that all aspects of the network--from

the initial implicit and explicit credit judgments, to the security devices on the computer room door--will require our best and our most aggressive thinking and design. It will also mean, I suspect, that we will have to more fully come to grips with the whole subject of finality of payment. Indeed, as I ponder this future environment, I have to ask myself whether ambitious goals involving the widespread use of electronics in banking and finance are in fact attainable without some further evolution of the institutional infrastructure of the payment system. For example, unless the Fed (or any other entity with vast resources and "clout") is prepared to stipulate and unequivocally stand behind rules and time frames governing the finality of at least the core of these electronic payments, our goals may not be attainable.

From all of this, I think it should be obvious to you that I believe the Federal Reserve has a clear, natural, and continuing interest in the evolution of the payments mechanism. To me, at least, that is inherent in our role as a central bank. That interest can arise in several ways including the obvious--namely, that we are a provider of payments services. However, even if competitive forces were to fully push us out of these service areas--a result which I, for one, do not expect--that natural interest would remain intact. I say that for several reasons:

- First, under any reasonable scenario that I can foresee, I think it is virtually certain that reserve balances will remain the fulcrum for the payments mechanism. Indeed, the fact that reserve balances can and do play this role is one of the characteristics of the system that

permits it to work with the high degree of efficiency we have all grown so accustomed to. Having said that, we must also recognize that the absolute size of those reserve balances relative to the sheer volume and speed of transactions has already shrunk considerably and will probably shrink further with more electronics. This turn of events has already created a situation in which the intra-day turnover in some institutions' reserve accounts has grown sharply with all that implies for potential intra-day and even overnight overdrafts in reserve accounts. That is why the Federal Reserve Board has begun to impose some greater discipline on reserve management practices, including daylight overdrafts, on the part of individual banks. In a future of increased electronics that discipline will be even more important.

-- Another reason for a continued natural interest on the part of the Fed in our evolving payments mechanism relates to the safety and soundness of the banking system. I have already suggested several avenues in which the generalized use of electronics could--and I emphasize could--result in increased risk to banks and other financial intermediaries. To the extent this occurs, I think it is clear that the bank regulatory agencies must be prepared to exercise proper surveillance to insure that the principles of safety and soundness are met. We have seen a recent example of this in connection with the action of the Federal Financial Institutions Examination

Council in developing examination guidelines and procedures for CHIPS.

-- Finally, monetary policy considerations themselves are also at stake in the future evolution of the payments system. For now and, I suspect, for the foreseeable future, the objectives of monetary policy are stated in terms of growth rates in the supply of money and credit. Fulfilling these objectives requires, among other things, that one can define and measure money and credit. As you well know, those are not easy tasks even now, and I sense they will only become more difficult in the future. Perhaps events will ultimately force a fundamental change in the apparatus and intermediate objectives of monetary policy. In either case, it is apparent that our grand design for the future will have to leave ample room for the monetary authorities to be able to exercise some form of discipline and restraint on our monetary affairs or we could be left with a potentially explosive and unmanageable system.

The challenges for those of us in the Federal Reserve and those of you in the private sector are great--but so are the opportunities. As we seek to meet the challenges and seize the opportunities, we will need to muster the very best we have to offer in terms of innovation, intelligence, and a generous dosage of good old common sense. I am confident that we are up to that task, but I am also confident that we will meet some new and unexpected problems and challenges along the way. I hope the kind of thoughtful

consideration of these challenges that will take place at this conference will help us all to better anticipate and solve those problems.