International Payment Systems Developments

by

Alan Greenspan

Chairman, Board of Governors of the Federal Reserve System

at the

International Symposium on

Banking and Payment Services

Washington, D C

June 9, 1989

I welcome the opportunity to address this international symposium on banking and payments services It is appropriate that, during this 75th anniversary of the Federal Reserve, a major theme of this conference has been the future direction of international clearing and settlement systems

In looking back, I am reminded that the architects of the Federal Reserve believed firmly that the creation of a central bank would lay the foundation for an efficient and stable payments mechanism for the U S economy However, some of the implications of that original work have become evident only recently Market and regulatory developments over the last few years have combined to call the attention of the international financial community to the topic of clearing and settlement for both payments and financial instruments The new challenge is to find pragmatic responses to significant technological developments that have been accompanied by the increasing internationalization of financial relationships, including clearing relationships

Vice Chairman Johnson has done an excellent job describing the new Federal Reserve proposals aimed at managing daylight credit

extensions, or overdrafts, in large-dollar payment systems This gives me an opportunity to discuss a few broad themes that have emerged so far at this conference Since this is the 75th anniversary of the Federal Reserve, I would like to begin by looking back on some of the history of payment clearing in the United States From this, I would like to draw upon the economic trends that may serve to orient our analysis of the future direction of different kinds of interbank clearing arrangements

One intriguing theme at this conference has been the call for new clearing-house arrangements for a variety of financial instruments traded among banks, including foreign exchange contracts The historical parallel to the 19th century clearing-house movement in the United States is striking In that movement, which began with the founding of the New York Clearing House in the 1850s, major banks in the United States dramatically altered their relationships with one another by creating new institutions for clearing and settlement

Prior to the advent of clearing-houses, checks and other paper were cleared and settled bilaterally between the largest banks The situation was described in the massive 1912 report of the National

Monetary Commission, which investigated banking and monetary arrangements in the United States and laid the groundwork for the creation of the Federal Reserve In the early 1800s, on each business day in New York City, for example, banks would sort checks that had been deposited, and send messengers with packages of checks to the banks on which they were drawn When five or six messengers would arrive at the same bank at the same time, chaos would reign Having at last presented his checks, a messenger would then move on to the next bank on his circuit, to repeat the process Settlements between pairs of banks for the gross value of presented checks occurred once a week This created an astounding period between settlements, during which "float" could accumulate Contemporary reports suggest that these bilateral methods came to be viewed as extremely inefficient, with the lengthy period of float -- free credit -- giving rise to significant abuses

The technological and organizational response to this inefficiency was the bankers' clearing house The first organized clearing in New York City, which took place at the first New York Clearing House, was conducted in October of 1853 In those days, clerks

from about 50 member banks would meet at the clearing-house in the morning The focus of the clearing operation was a room containing four rows of desks, with one desk for every member Each bank would have a receiving, or "settling," clerk stationed at its desk He would accept and give receipts for bundles of checks Each bank would also have a delivery clerk who would hand over bundles of sorted checks to the settling clerk from the proper bank

The ingenious idea that made the clearing-house such an efficient mechanism was the method of exchanging bundles Just before 10.00 AM, receiving clerks would take their stations behind their desks The delivery clerks would line up in four columns opposite the receiving desks At 10 00, the clearing-house manager would sound a gong, and the delivery clerks would present their first bundle in exchange for a receipt The columns would then move in unison, allowing the delivery clerks to repeat the process at the next desk, and so on

The entire physical exchange would be over in fifteen minutes The initial accounting would be completed in forty-five minutes Settlements, would then take place at about 1·30 In the now familiar

process, net debtors would pay amounts due into the clearing-house in one of the acceptable settlement media, usually legal-tender notes, gold certificates, or gold coin Net creditors would receive amounts due as soon as all debtors had paid

Not only the physical efficiencies but also the financial efficiencies of the clearing-house system were remarkable The period of float between the exchange of paper and settlement was reduced to a matter of hours Moreover, it is likely that for the new clearing-house members as a group, the value of balances needed for settlement, in relation to the value of checks cleared, declined significantly Over the first fifty years of the New York Clearing House, the annual average of balances needed for settlement in proportion to the clearings fluctuated within a range of 3 1/2 to 6 3/4 percent

Since the 1850s new technologies and organization have continued to reduce the marginal costs of clearing and settlement for checks and other paper At this symposium, I cannot fail to mention the qualitative change in clearing-house arrangements that took place in 1970 when the New York Clearing House began offering its CHIPS service Although the

Fedwire had been operating for some time, CHIPS was the first private clearing-house arrangement that permitted a real-time exchange of electronic payment information Net balances were settled the next morning In the now famous change-over in October of 1981, CHIPS began same-day settlement through a special account at the New York Reserve Bank Again, technology and organization reduced marginal costs of clearing and settlement As a consequence, overnight and weekend float were driven from the CHIPS system In a sense, only daylight float -- credit -- remains

This brings me to one of the main themes of this conference· the future effects of changes in clearing technology and organization in the interbank markets Still focusing on payments systems, one is struck by the economic question of whether the marginal costs of clearing and settlement could continue to decline Improvements in computer hardware_ and software continue to lead to lower costs and improved quality in communications, processing and accounting Could the universal adoption of payment, clearing, and settlement systems, which permit no clearing

float, be the ultimate end toward which these fundamental and irreversible technological developments are driving us?

It is easier to ask this question than to answer it I should note, however, that the economic analysis turns on more than issues of technology In the United States, the Federal Reserve has in the past provided substantial amounts of daylight credit to the economy at no charge Under the Board's new proposals for pricing this credit, it may turn out that the reduction, or removal, of this subsidy will increase the importance of the marginal costs of clearing and settlement in calculations about "daylight clearing " Ultimately we may see further reductions in daylight float that are caused by technological factors

Another consideration involves the use of central bank liabilities -- reserves -- as the ultimate settlement asset in an economy The problem is that instantaneous settlement would seem to require an unrealistically close connection between a central bank and a private clearing-house arrangement However, it is ironic that concepts of "settlement finality" in clearing-house arrangements, in which collateral is posted to ensure final settlements, are one step away from

a return to the concept of settlement using balances or assets deposited with a clearing-house, rather than with central bank liabilities.

We have also seen effects of technology beyond the area of payments Rapid changes have permitted the development of a broad spectrum of complex financial instruments that can be tailored to the hedging, funding, and investment needs of a wide range of institutions While the number of available financial instruments has grown rapidly in recent years, the number of trading opportunities across pairs and groups of instruments has grown even more rapidly The sophistication of financial management practices, including risk management, has also greatly increased, partly out of necessity in the face of volatile asset prices and partly due to the opportunities created by new technology These developments have contributed to the very rapid growth in the number and value of transactions in financial markets In turn, the increase in transactions has stimulated the demand for clearing services across a wide range of financial instruments

It is probable that rising volumes of clearings, in addition to advancing technology, are lowering the marginal clearing costs for

financial instruments that in the past would have been cleared and settled using bilateral means Add to these pressures the market concerns about counterparty risk and capital costs, and it is easy to see the economic forces that have produced new clearing-house proposals

The general trend of increased speed in transactions processing, which has also affected the processing of clearings, is not without drawbacks In some markets, and for some payment systems, there is little or no time between the settlements for one day's activity and the beginning of the next. In a world of 24-hour trading, a direction in which a number of markets are now headed, settlement times for one time zone's trading will inevitably fall within the trading day of another time-zone In this environment, a failure of settlements could prove very disruptive Yet the tighter and tighter settlement deadlines permitted by advancing technology may well be reducing the scope for market participants and public officials to react to and cope with settlement problems

New clearing proposals have stressed the principle of "netting by novation " The concept of interbank netting, as a mutual off-set of

debts, can be traced back at least to early Italian banking practices From a monetary standpoint, we would characterize this netting as a substitute for the monetary settlement of debts Hence it is very likely that the widespread use of netting will reduce direct reliance on the major systems of monetary exchange -- that is, on payments systems

Some argue that organized netting systems are in effect monetary, or quasi-monetary, institutions In this view, a shift away from the use of central payments systems, and toward specialized netting systems, amounts to the decentralization of the major monetary mechanisms While this development may have attendant economic efficiencies, it may also be a source of concern to central banks traditionally charged with the oversight of key monetary arrangements Concern would be increased if the scale of these quasi-monetary institutions is significant and the institutional and financial structures are weak

Fortunately, another product of electronic technology has arisen which can help limit the risks of settlement failures in major clearing systems The real-time computation and monitoring of credit risk has now

become feasible for new systems The retro-fitting of older systems is something that deserves serious attention Large-value payment systems clearly must have this monitoring capability in order to operate prudently For most key clearing systems, structural features that permit the real-time control of credit exposures are also both feasible and highly desirable

Before moving on, I should also note that new clearing-house proposals raise a number of other old, but important, questions for public policy These center on issues of membership, financial arrangements, and technical structure Larger questions involve issues of access to central banks for the provision of settlement services, including credit, as well as issues of the impact on risk and efficiency in interbank markets more generally

The policy mechanism for resolving these issues is almost always a source of debate Some advocate self-regulation by clearing-house members in support of the common good, with self-interest the engine of optimal regulation Others urge the intervention of public authorities to bring the interests of the wider society to bear on payment and

clearing problems The resolution of this debate in the context of newly proposed interbank arrangements is far from clear in the United States I suspect other countries are in the same position While this debate will continue for some time, it is apparent that significant regulatory differences across countries can create conditions of uneven competition and contribute to instability

A second major theme of this conference is the internationalization of financial markets and, more specifically, of clearing arrangements A related issue is international cooperation

Looking back one last time on the history of 19th century clearing-houses, it is obvious that the financial solvency of the members became linked directly to one another through credit and debit positions in the clearings The deadlines for settlements imposed by clearing-house rules became major points in time when the solvency of banks was tested by the market Over time, the problem of disruptions in the supply of acceptable settlement media -- money or liquidity -- to clearing-house members during financial panics came sharply into focus,

and figured prominently in the debates over the creation of the Federal Reserve

Those debates were resolved in favor of creating a central bank that would be able to act in the public interest during emergency situations by accommodating unusual market demands for liquidity This central bank function along with the responsibility, partly shared with other federal agencies, to oversee general institutional developments in money and banking, has contributed in significant ways to stabilizing the financial infrastructure of the United States, including clearing arrangements However, growing out of the central bank function of liquidity support have come very real concerns about the structure of institutional arrangements that may depend too heavily on anticipated central bank assistance for survival A similar point can be made for the other components of the U S federal banking safety net These concerns have carried over into a variety of areas in banking, including the constructive search with the current members of the New York Clearing House for means to implement the principle of "settlement finality" on the CHIPS System

In today's international context, there is a key difference in the resolution of these liquidity and supervisory issues The creation of a supra-national central bank or supervisory authority is seldom put forward as a policy option The serious consideration being given to creating such new institutions within the European Community is an important but limited exception Instead, some form of international cooperation is usually needed to find solutions to common problems

Off-shore payment systems are already operating and more have been proposed New clearing-house proposals for interbank markets often envision multinational participation in arrangements that may have a very limited connection to the country whose currency or other financial liabilities are being cleared At present, international consensus is needed on the principles for structuring these arrangements and their supervision

The "Report on Netting Schemes" prepared by the G-10 Group of Experts on Payments Systems, under the chairmanship of Governor Angell, raised a number of important issues that deserve further attention by central banks, regulatory agencies, and the international financial

community As Vice Chairman Johnson mentioned, work along these lines is now being undertaken by the G-10 central banks under the auspices of the Bank for International Settlements In addition, as part of the changes in daylight overdraft policies proposed last week, the Board has adopted an interim policy statement on off-shore dollar clearing systems that use Fedwire or CHIPS for settlements That policy statement was adopted to give some guidance to market participants on general principles for structuring off-shore payment systems, pending further work by the G-10 central banks I will just mention two of the major principles One is the use of concepts of settlement finality in the design of off-shore systems Second is the need for the supervision of off-shore systems by responsible authorities, including the need for the supervision of payment systems as systems, not just as a collection of individual banks

In analyzing the problem of supervising these international clearing systems, I come back to the problem of technology and sovereignty. Technology has made these systems economically feasible Yet, political and other constraints may well prevent any single country from supervising fully the existing and proposed international systems

It is probably too late to fit clearing systems, let alone financial markets, back into the mold of neatly defined sets of national institutions The potential costs in terms of economic efficiency by themselves should caution against such a backward-looking approach to our problems The challenge for the future is to find a way to harness both technology and sovereignty in an effort to bring reasonable supervision to bear on these international arrangements Cooperation among central banks and other supervisory authorities on a number of fronts clearly seems to be the way to achieve this goal