

The Federal Reserve in the Payments Mechanism

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Section I: Introduction

In October 1996, Chairman Alan Greenspan appointed the Committee on the Federal Reserve in the Payments Mechanism to examine the payment services provided by the Federal Reserve to depository institutions. In light of the rapid changes occurring in the financial services and technology sectors, the Committee undertook a fundamental review of the role of the Federal Reserve in the payments system and considered how alternative roles for the Federal Reserve might enhance or undermine the integrity, efficiency and accessibility of the payments system.

The Committee decided to focus its attention on the Federal Reserve's role in the "retail" payments system used by consumers and businesses to transact payments. Retail payments instruments include cash, checks, credit and debit cards, and the electronic funds transfer system known as the automated clearing house (ACH). The Committee concentrated its attention on the role of the Federal Reserve in check collection and ACH services and excluded cash processing, a service normally expected of a central bank, as well as credit and debit cards where the Federal Reserve plays no direct operational role. Also excluded from the study were "wholesale" payment services of the Federal Reserve, such as large-value funds and securities transfers. These systems appear to operate effectively and are important to the Federal Reserve's mission of fostering the stability of the nation's financial system.

To focus the discussion and analysis of critical payments system issues, the Committee developed five hypothetical "scenarios" for the future role of the Federal Reserve in retail payment services that ranged from exiting check and ACH services altogether to playing a more active role, in collaboration with other providers, in moving more rapidly toward electronic payment services. These scenarios were not designed to be actual policy options, but were intended to serve as catalysts for debate both within the Federal Reserve and among payments system participants. In brief, the scenarios were:

Liquidation: The Federal Reserve would announce its intention to withdraw from the provision of check collection and ACH services as of some date. During the transition period, the Federal Reserve would take steps to provide for a smooth transition to commercial providers. In determining the length of the wind-down period, the Federal Reserve would balance concerns about providing customers adequate time to find

alternative suppliers with the difficulties in managing operations slated for liquidation (e.g., retention of trained personnel).

Privatization: The Federal Reserve would privatize its check collection and ACH operations by placing them under a newly chartered, special purpose “Clearing Bank.” The Clearing Bank would eventually become a commercial entity, with no privileged ties to the Federal Reserve. In the interim, the Federal Reserve would take actions to ensure a level playing field between the Clearing Bank and other commercial providers.

Continuity and Access: The Federal Reserve would continue to provide check collection and ACH services, with the limited goal of universal access for depository institutions. For the most part, the Federal Reserve would allow initiatives by commercial providers to determine the future course of the retail payments system, with competition among these providers of payment services the primary catalyst for innovation.

Promoting Efficiency: The Federal Reserve would use its operational presence and influence in the check collection and ACH markets to enhance the efficiency of the interbank retail payments system and would take steps to foster innovation by commercial providers.

Leading to Electronic Payments: The Federal Reserve would expedite the movement to an electronic-based retail payments system, replicating the universal acceptance and access that characterizes the current paper-based system. The Federal Reserve would accomplish this objective through an active operational presence and by creating incentives for commercial providers to enhance electronic payment methods.

The Committee drew on the expertise and input of a wide range of Federal Reserve System personnel, including economists, operations specialists and regulatory staff. The staff analyzed the likely impact of the five scenarios on the payments system of the future with emphasis on the efficiency of the system, access of depository institutions of various sizes to the system and whether different roles of the Federal Reserve would accelerate or retard the movement to electronic payments.

The Committee then turned to other payments system participants for their insights and expertise by holding a series of discussion forums around the country. The forums focused on three broad issues: (1) the impact on the price and availability of services under each scenario, (2) the impact on the evolution of the retail payments system and the use of available and emerging technologies, and (3) the impact on public confidence in the effectiveness and reliability of the

retail payments system. The feedback and information received during these forums were wide-ranging and were crucial in developing many of the Committee's specific recommendations.

The forums were held at different locations throughout the country and were attended by a broad group of retail payments system participants, including depository institutions of all sizes, third party providers, clearinghouses, consumer groups, academics and consultants. In particular, the Committee held 10 half-day "national forums" at four Reserve Banks (St. Louis, New York, Atlanta and San Francisco) and at the Board of Governors during May and June, 1997.

In addition, each Federal Reserve District held a series of "regional forums" with depository institutions and other retail payments system participants from that District. Altogether, 52 regional forums were held around the country during the months of May and June, attended by representatives from nearly 350 institutions and organizations. The Committee also received written comments from regional and national forum attendees as well as other interested parties. (See *Summary of Stakeholder Input*, September 1997) The information gathered at the forums, extensive staff analysis and insights gained from other interactions and discussions formed the basis for the Committee's findings and recommendations.

The Committee came to two general conclusions, discussed in greater detail in the rest of this report:

- C The Federal Reserve should remain a provider of both check collection and ACH services with the explicit goal of enhancing the efficiency, effectiveness and convenience of both systems, while ensuring access for all depository institutions.

- C The Federal Reserve should play a more active role, working closely and collaboratively with providers and users of the payments system, both to enhance the efficiency of check and ACH services and to help evolve strategies for moving to the next generation of payment instruments.

In reaching these conclusions, the Committee recognized that fostering private sector

competition is vital in improving the efficiency of the payments system and in developing new payment instruments. Section II of this report provides background information on the overall structure of the United States retail payments system and discusses the evolution of the Federal Reserve's role in the retail payments system. Sections III and IV present the findings and recommendations for the check collection market and the ACH market, respectively. Section V presents the findings and recommendations of the Committee with respect to emerging retail payment methods.

Section II: Background

The structure of the retail payments system

The retail payments system encompasses diverse payment instruments, including cash and a wide variety of noncash instruments.

Cash Payments

While cash accounts for only a tiny fraction--less than one percent--of the value of payments, most retail payments in the United States are still made with cash. The U.S. Department of the Treasury estimates that cash is used for roughly 75 percent of retail transactions in the United States. Cash is a frequent payment method in most other developed nations as well; in fact, the use of cash is even more prominent in those countries than in the United States. As Table 1 indicates, cash is a higher proportion of M1 and of GDP in Europe than in the United States and an even higher proportion in Japan.

Table 1
Indicators of Cash Use, 1993

	Cash/M1	Cash/GDP
United States	.11	.02
Europe	.14	.04
Japan	.27	.08

Source: Hancock and Humphrey (1998) "Payment Transactions, Instruments, and Systems: A Survey," *Journal of Banking and Finance*, forthcoming.

Note: U.S. cash holdings have been restated to exclude estimates of U.S. currency held abroad.

Noncash Payments

Hundreds of millions of noncash payments with a combined value of over \$2.4 trillion are made every day in the United States. Noncash payments can be broadly divided into two

categories: 1) wholesale or large-value transactions made primarily by financial institutions, businesses and governments; and 2) retail or small-value payments made by individuals, businesses and other participants in the economy.

Large-value payments, which are made over funds transfer and securities transfer systems, account for about 90 percent of the value of noncash transactions made every day. In terms of numbers of noncash transactions, however, large-value payments account for only 0.4 percent of the total. The most common form of noncash retail transaction is the paper check, which accounts for about 75 percent of all noncash transactions. Other forms of retail transactions include ACH transactions (e.g., direct deposit of salary and government benefits), credit and debit card transactions and emerging forms of payment, such as stored-value cards and electronic money.

Compared with other developed countries, the United States relies very heavily on paper checks. As shown in Table 2, however, the proportions of paper-based retail payments (cash and checks) and electronic-based retail payments appear fairly constant across the United States, Europe and Japan. The main difference is that in Europe and Japan, the paper instrument used is more likely to be cash, whereas in the United States, it is more likely to be a paper check. Nonetheless, the reliance on paper-based retail payment methods is striking in an electronic age.

Table 2
Retail Payments

	% of Retail Payments		% of Noncash Payments		% of Retail Payments	
	Cash	Noncash	Paper	Electronic	Paper*	Electronic
U. S.	75	25	78	22	94	6
Europe	76 - 86	14 - 24	37	63	85 - 91	9 - 15
Japan	90	10	22	78	92	8

Source: U.S. Treasury, Bank of International Settlements, correspondence with central banks and others.

* Includes transactions paid by cash, check and paper-based giro.

How the Federal Reserve became involved

Although most people now take a reliable payments system for granted, this was not always so. The severe financial crises that swept the United States periodically in the 19th and early 20th centuries were caused by disruptions in the payments system. During the financial panic of 1907, payments were largely suspended throughout the country because many banks and clearinghouses refused to clear checks drawn on certain banks. The refusals led to liquidity problems in the banking sector and the failure of otherwise solvent banks, thereby greatly exacerbating the impact of the crisis on businesses and individuals.

Under the Aldrich-Vreeland Act of 1908, Congress established the National Monetary Commission to suggest changes to the nation's monetary system that might prevent additional financial panics. The Commission identified the following problems in the system: 1) the lack of a means to ensure cooperation among banks outside clearinghouse cities, including the ability to "prevent the suspension of cash payments by financial institutions in their own localities in the case of emergency"; 2) the lack of "facilities for making domestic exchanges between different localities and sections, or which can prevent disastrous disruption of all such exchanges in times of serious trouble"; and 3) anecdotal evidence that the refusal to clear checks and collect drafts of the clearing system was a contributing factor to the panic of 1907.

The Congress' desire to address these problems and to avoid another 1907-type failure of the national payments system was one of the important reasons for creating the Federal Reserve System in 1913. The Federal Reserve Act directed the Federal Reserve to provide an elastic currency--that is, to supply currency in the quantities demanded by the public--and also gave it the authority to establish a national check clearing system. Congress was also concerned that some banks refused to pay the full amount of the check (nonpar collection) and that some charged certain collecting banks fees to pay checks (presentment fees). In 1917, Congress amended the Federal Reserve Act to prohibit banks from charging the Federal Reserve Banks presentment fees.

Congress modified the Federal Reserve's role in the payments system through the Monetary Control Act of 1980 (MCA). A primary purpose of the MCA was to promote an efficient nationwide payments system by encouraging competition between the Federal Reserve and private-sector providers of payment services. The MCA requires the Federal Reserve Banks

to charge fees for their payment services, which must, over the long run, be set to recover all direct and indirect costs of providing the services. In addition, the MCA requires the Federal Reserve Banks to recover a private sector adjustment factor (PSAF) to reflect imputed costs, such as taxes and the cost of capital, that would have been paid and imputed profits that would have been earned if the services were provided by a private firm. The MCA also subjected all depository institutions, not just member banks, to reserve requirements and granted them access to the Federal Reserve's payment services.

Congress further expanded the role of the Federal Reserve in the payments system in 1987 when it enacted the Expedited Funds Availability Act (EFAA). For the first time, the EFAA gave the Federal Reserve the authority to regulate check payments that were not processed by the Federal Reserve Banks. The EFAA limited the time that a depository institution may hold funds before making them available to customers for withdrawal and directed the Federal Reserve to improve the process of returning unpaid checks to banks of first deposit to reduce the risk that depository institutions face when making funds available to their depositors.

The Congress has given the Federal Reserve regulatory authority, as well as directed it to encourage efficiency by competing fairly with private sector suppliers of payment services. The Federal Reserve's payments system missions are a complex and challenging part of its responsibilities.

In carrying out its responsibilities under its legislative mandates, the Federal Reserve seeks to ensure:

- C the integrity of the payments system--its safety and reliability;
- C the accessibility of the payments system--that it is available to all depository institutions so that they can provide for the payments needs of their customers; and
- C the efficiency of the system--that the cost of making payments is reduced as much as possible.

Federal Reserve in the payments mechanism

Depository institutions provide payments services, such as checking accounts, debit cards and credit cards, to consumers, businesses and governments. Depository institutions in turn process and settle transactions among themselves in the “interbank market,” either directly between institutions or through an intermediary, such as the Federal Reserve, a clearinghouse or a correspondent bank.

The Federal Reserve offers a wide range of payment services to banks and other depository institutions in the interbank market. These services include cash services, net settlement services, wholesale payment services, such as Fedwire funds and book-entry securities transfers, and retail services, such as check collection and the ACH. In addition, the Federal Reserve serves as the fiscal agent and provides a range of payment services to the Treasury Department.

The *check collection services* offered by the Federal Reserve involve the processing and transportation of checks from depository institutions wishing to collect funds associated with checks deposited by their customers. The Reserve Banks process and sort checks deposited by these “collecting banks” and transport them to “paying banks” (the depository institutions on which the checks are drawn) to initiate presentment. The Reserve Banks are prepared to receive checks from and to present checks to all depository institutions throughout the United States. The Reserve Banks also handle checks that are dishonored by the paying bank for various reasons (so-called return items), and provide a range of services to paying banks (such as early notification of checks that will be presented for payment later in the day). In 1996, the Federal Reserve accounted for about one-third of the estimated 45 billion interbank checks collected in the United States.

The *automated clearing house service* provided by the Federal Reserve is an electronic interbank payments system intended to handle recurring small-dollar funds transfers for consumers, businesses and the government. Typical ACH transactions include direct deposit of salary, social security and dividend payments; and direct debits of mortgage payments, insurance premiums and other consumer bill payments. Businesses and consumers initiate ACH transactions through their depository institutions, which transmit payment information and exchange funds with the recipient’s depository institution via transactions processed by the Federal Reserve or

another ACH operator. During 1996, nearly 80 percent of all commercial ACH transactions and all government transactions were processed by the Federal Reserve.

Since its establishment, the Federal Reserve has taken a number of steps to improve the efficiency and reliability of the payments system. From its earliest days, the Federal Reserve, through maintenance of reserve accounts and the provision of the means to transfer funds between those reserve accounts (now called Fedwire), has provided the capability for depository institutions to clear and settle payments. These services were provided in part to reduce the possibility of disruptions caused by liquidity problems in the banking sector.

The Federal Reserve has supported the adoption of new technologies to improve payment system efficiency. For example, in the 1950s, the Federal Reserve made significant contributions to the adoption of magnetic ink character recognition (MICR), which led to the automation of check processing. In addition, over the years, the Federal Reserve has taken various steps to expedite the collection of checks. As a result, the Federal Reserve now collects over 90 percent of the checks deposited with it the day after the checks are received by the collecting bank.

The Federal Reserve also has supported the banking industry's efforts to develop an electronic payment service to replace the growing volume of paper checks. These efforts led to the creation of the ACH and the Federal Reserve's agreeing to provide the operating support requested by the members of the newly formed ACH associations. During the late 1960s, the Federal Reserve aided the efforts of the Treasury Department and securities dealers to convert government securities to book-entry form to reduce the losses that were occurring due to thefts of bearer government securities. Finally, in the 1980s, the Federal Reserve began to apply electronic technologies to check processing and has been a strong supporter of check truncation.

Changes in the structure of the banking industry--including the on-going consolidation among major institutions and interstate branching--could change the Federal Reserve's role in traditional retail payment services, especially check collection. From the Federal Reserve's perspective, retail services account for a significant portion of the resources devoted to priced services, so the Federal Reserve's actions in these markets can have large implications for its overall operations.

Section III: Check Collection Market

Findings

In an age when payments information can be transmitted electronically over long distances with lightening speed at low cost, the persistence of paper checks seems an anachronism: why transport billions of little pieces of paper when electronic messages would be faster, cheaper and more reliable? Nevertheless, while the checkless society has been predicted for several decades, checks remain the most widely used noncash payment instrument in the United States, representing about three-quarters of all noncash transactions. In 1996, approximately 64 billion checks were written, with a total value of \$75 trillion. Despite the development of alternative retail payment methods--credit cards, debit cards, and electronic transfers, such as the ACH--the volume of checks has continued to increase steadily over time, albeit at a somewhat slower rate in recent years. Rapid growth in the overall volume of retail payments has allowed for double-digit increases in the volume of electronic retail payments without diminishing check volume. Over the last five years, the number of checks written in the United States has grown at an annual average rate of approximately 2 percent. While the volume of checks written may plateau or even decline in the next several years, checks are likely to remain an important payment instrument for some years to come.

The continued popularity of checks stems from their convenience and familiarity to consumers and businesses. Checks are easy to originate and widely accepted. Further, check writers recognize and make use of the benefits of float. In their eagerness to attract deposits, depository institutions make checking accounts as attractive as possible. Few depository institutions charge explicit per check fees to customers--instead they use minimum balance requirements or lower interest rates on transaction balances to recoup costs. Hence, bank customers perceive the costs of using checks as low. Finally, the legal foundations of the paper check collection system are well-established and widely understood. Thus, there is little impetus from check writers or from check receivers to abandon this form of payment.

The process used to collect and settle checks depends on the relationship between the depository institution where the check is first deposited (the "collecting bank") and the depository institution on which the check is drawn (the "paying bank"). For about 30 to 35 percent of

checks written in the United States, the collecting and paying banks are the same institution (so-called “on-us” checks), so collection and settlement of these checks is largely internal to that depository institution. The remaining 65 to 70 percent (about 45 billion checks in 1996) form the interbank check collection market.

Presentment of checks to the paying bank by the collecting bank can take place either directly (“direct presentment”), through a clearinghouse in which several banks mutually exchange and settle checks, or through a check collection intermediary, such as a correspondent bank, bankers’ bank or a Federal Reserve Bank. Most checks are collected through physical presentment: the paper check is transported from the collecting bank to the paying bank over the road and/or by plane. A small, but rapidly growing, minority of checks is presented to the paying bank in electronic form (electronic check presentment, further discussed below).

The Federal Reserve plays a major role in the market for check collection services. As shown in Table 3, the Federal Reserve accounts for about 35 percent of the interbank check collection market, processing about 16 billion checks in 1996. The Federal Reserve is thus the single biggest provider in the market, though its market share has declined somewhat since the introduction of Regulation CC same-day-settlement rule in 1994. (The rule gave collecting banks the right to receive funds from paying banks on the same day that checks are presented, as long as that presentment occurs by 8 a.m. local time of the paying bank.) This change increased the convenience of direct presentment between collecting and paying banks, and reduced the volume of checks collected through the Federal Reserve.

Other significant providers are clearinghouses--which tend to serve depository institutions in local markets--and correspondent banks, each with about 25 percent of the overall market. In general, clearinghouses serve larger banks, since they tend to have membership fees and other requirements that make it costly for smaller institutions to join. In addition, small institutions usually lack the capacity to sort checks to the extent required for presentation through clearinghouses. The Federal Reserve Banks are currently the only check collection intermediaries that provide national check collection services available to depository institutions of all sizes and locations.

Table 3
1996 Interbank Check Collection Market

Check collection channel	Volume (billions of checks)	Market share (percent)
Clearinghouse	10 - 11	23 - 24
Direct Presentment	6	14
Correspondent Banks	10 - 11	24 - 25
Bankers' Banks	less than 1	1
Third-party Service Providers	less than 1	1
Federal Reserve Banks	16	35 - 37
Total	42 - 45	100

Note: The figures in the table are based on Federal Reserve estimates of checks collected through intermediaries and assume that 30 to 35 percent of all checks are on-us checks. The margin of error associated with the estimates is high, and, thus, the table provides only a general picture of the interbank check collection market.

The Federal Reserve's market share varies from under 20 percent of the interbank check market in some areas to more than 60 percent in others. The Federal Reserve's share tends to be low in densely populated areas where depository institutions located in close proximity to each other are likely to rely on direct presentment or clearinghouses; the Federal Reserve's market share tends to be high in more sparsely populated areas, especially those primarily served by smaller depository institutions (see attachment 1).

The Federal Reserve's check collection services are used disproportionately to present checks to smaller depository institutions. As Table 4 indicates, nearly half (46 percent) of the checks processed by the Federal Reserve during 1996 were deposited by subsidiaries of the 100 largest bank holding companies, while the remainder were deposited by smaller depository institutions. By contrast, less than a third of the checks collected by the Federal Reserve were presented to subsidiaries of the 100 largest bank holding companies, while over two-thirds of the checks were presented to smaller paying banks.

Table 4
Checks Processed by the Federal Reserve in 1996
Distribution by Collecting Bank and Paying Bank Asset Size

Subsidiary of:	Collecting Bank (Deposited by)	Paying Bank (Presented to)
10 Largest Bank Holding Companies	16 percent	11 percent
Next 90 Largest Bank Holding Companies	30 percent	20 percent
All Other Depository Institutions	54 percent	69 percent

Source: Federal Reserve Banks.

Pricing and cost recovery. As stated earlier, under the MCA, the Federal Reserve is required to recover all costs of providing its payment services plus the PSAF. Moreover, the Board's pricing principles require that fees for each major service, such as check collection, be set so that revenues match costs, including the PSAF. Over the period 1987 through 1996, the Federal Reserve recovered 99.5 percent of the total cost of commercial check service, including the PSAF, resulting in "profits" only slightly below those targeted.

Fee schedules, set locally by Federal Reserve offices, combine fixed and variable fees. The "cash letter" fee is intended to recover costs that do not vary with the number of items deposited, while per item fees are intended to recover at least the marginal cost of processing an additional check. Prices for various products are related to deposit deadlines, the amount of processing the Reserve Banks must perform before the checks are packaged for delivery, and the distance the checks must be transported to paying banks. In 1996, the Reserve Banks charged an average of \$.023 to collect a local check and \$.045 to collect a non-local check.

While cost allocation is always subject to some uncertainty and controversy, the Committee could find no evidence to suggest that the Reserve Banks subsidize check collection services. Over the last decade, the check service met its cost recovery goals and earned profits that exceeded \$200 million after recovering its actual and imputed costs (see attachment 2). In addition, the Federal Reserve's cost accounting methodologies have been reviewed and were deemed reasonable and appropriate by outside auditors.

Moreover, the Committee did not find evidence that the Reserve Banks subsidize any particular class of depository institutions, such as small and remote institutions. The Reserve Banks set their fees to cover at least the marginal cost of serving such institutions. Since many collecting banks use the Reserve Banks to collect checks on relatively low volume, remotely located institutions, the Reserve Banks are often able to do so cost effectively simply because a large portion of the checks drawn on these banks are deposited with the Reserve Banks.

Should the check collection process be made more electronic? At present, the process of clearing and settling checks is based almost entirely on physical presentment of the paper check to the paying bank, which then usually mails the canceled checks to its depositors with their monthly bank statements. An alternative approach that is used for a small but growing minority of checks is electronic check presentment (ECP). With ECP, presentment is initiated when the collecting bank sends check payment information electronically to the paying bank (rather than sending the actual paper check). The paper checks may be sent to the paying bank at some later time (“paper to follow”), or the checks may be truncated at some point during the collection process (for instance, at the bank of first deposit or at a check collection intermediary, such as a correspondent bank or a Federal Reserve Bank). When checks are truncated, the check writer does not get the canceled check back. The Reserve Banks currently present 13 percent of their total check volume electronically. This constitutes over two billion checks a year, presented to more than 2,000 depository institutions.

The current paper-based check collection system is resource-intensive, and holds only limited promise of future cost savings. The paper-based check processing system relies on employees, mechanical processing equipment, buildings and a transportation network of cars, trucks and planes. The processing of checks involves receiving and preparing deposits for processing, sorting checks and capturing accounting data, reconciling the accounting data, and packaging and dispatching the checks for presentment to paying banks. If the checks cannot be processed by high-speed sorters, or if other processing problems occur, additional human intervention is required. Personnel costs represent about half of all direct and support costs involved in processing commercial checks at the Federal Reserve, while transportation expenditures account for about 10 percent.

Further, the paper-based check collection system is based on a mature technology that

seems unlikely to generate significant further resource cost savings. The technologies used for paper-based processing systems are moving paper through machines about as quickly as is feasible. While improvements in the technologies used to transport paper-based items are possible, over the last decade, econometric studies using Federal Reserve data have found no evidence that there has been significant technological change for paper-based processing operations. Consequently, from a technological perspective, the paper check collection process appears to be about as efficient as it is likely to get.

In contrast, ECP and truncation may hold the promise of a less costly check collection system, although definitive evidence is not yet available. The substitution of electronic information for the paper check during the collection process could significantly reduce check processing costs and allow paying banks to identify return items more quickly. ECP and truncation could virtually eliminate transportation costs and avoid weather related delays that plague truck and air carriers. Moreover, the technologies used in electronic processing and presentment are undergoing rapid evolution, in contrast to the mature technologies used in paper check presentment. Thus, any resource cost savings associated with electronic check presentment could be expected to grow over time.

These cost savings would be offset to some degree, however, by new costs associated with the creation, transmittal and processing of electronic files by collecting banks and check collection intermediaries, and the costs associated with the receipt and processing of these files by paying banks. In addition, many believe that digital imaging of checks and storage of these images is likely to be a necessary feature of a check collection system based on electronic presentment, at least initially. Such images could replace canceled checks as proof of payment and facilitate the return process of dishonored checks, but they would require additional investment and ongoing costs.

Some depository institutions have moved to ECP with truncation in order to reduce their costs. These institutions supply their depositors with a list of checks paid or with images, but do not return the actual canceled checks. Other depository institutions are reluctant to make the investment in ECP and/or imaging. Some would like to make the move but fear they would lose deposits to other institutions that offered to return depositors' canceled checks. Yet, benefits to all users would grow as more and more users adopt ECP and truncation.

It is currently unclear whether or not a shift in the whole check collection system to ECP and truncation would result in net benefits to society. The actual resource cost savings associated with electronic check presentment depend in part on technical aspects of the electronic collection process that are difficult to forecast: the precise costs of digital imaging and archiving, the extent of savings resulting from reduced handling of paper checks and the actual costs of creating and transmitting electronic files. More significantly, the timing and distribution of financial costs and benefits facing collecting and paying banks and check collection intermediaries may depend on how the transition from a paper-based to an electronic check collection system is accomplished. For instance, a coordinated effort among a broad range of check system participants could result in a significantly different outcome than a decentralized approach or an effort based on regulatory mandate. In addition, the costs and benefits facing various check collection system participants will depend on the precise set of features that emerge in the electronic-based system, including whether and at what point checks are truncated during the collection process, and the existence and structure of the image archives.

The overall benefit to society of a move to a check collection system based on electronic presentment depends on consumer and business acceptance of the new system, especially check collection market participants' willingness to pass on some of the savings to the public. Thus, a key issue in evaluating the benefits of an electronic check collection system is whether it can be designed and implemented in a way that replicates the reliability, safety and convenience of the current system.

A number of significant legal issues would also have to be addressed under a check collection system based on electronic presentment and truncation. For example, currently, the payor bank pays none of the cost of check collection, but has the legal right to insist on paper presentment. The Uniform Commercial Code permits collecting banks and paying banks to set up alternative presentment agreements on a voluntary basis. However, given the large number of depository institutions in the country, widespread voluntary agreements are difficult to achieve. Moreover, since the payor bank receives the float benefit, it has little incentive to speed up the presentment process.

Other issues include the legal status of images and electronic payment records (for instance, on bank statements) as proof of payment, both for commercial transactions and as

documentation for federal and state tax authorities; the legal status of images and electronic payment records to prove that payment did *not* take place, and that payment still has to be made; whether the responsibility of verifying signatures should remain with the paying bank, or be shifted to the collecting bank (currently, images are not perfect substitutes for paper checks for validating signatures or detecting fraudulent checks); and the numerous state laws and court decisions that present an impediment to truncation. These laws include state laws that guarantee consumers the right to receive canceled checks, either on an on-going basis or upon demand, and state laws and regulations requiring entities--such as trust attorneys or state treasurers--to retain actual canceled checks (as opposed to images) for auditing purposes. For a check collection system based on truncation to be successfully implemented, these laws would have to be changed.

Finally, there is some risk that changes in technology and the evolution of the retail payments system will overtake the cost and benefit issues discussed above. For instance, check imaging could become obsolete if, as consumers and businesses become comfortable with check truncation, they no longer demand images of canceled checks, or if alternative approaches arise for capturing and transferring check information. In addition, the rapid rise of alternative electronic payment methods could result in a sharp decrease in the number of checks written in the United States and, consequently, reduce the incentives to make substantial investments in improving the efficiency of the check collection process. At this point, however, there is little evidence to suggest that the volume of checks is likely to drop substantially over the next several years.

Alternative future roles for the Federal Reserve. The Committee addressed the fundamental question of whether the Federal Reserve should remain a provider of check collection services or should exit the market in favor of private sector providers. It focussed on whether removal of the Federal Reserve from the market could be expected to make the provision of check processing services more or less efficient and on whether exit of the Federal Reserve would hasten or retard the evolution of electronic check processing. Since the Federal Reserve plays such an important role in processing checks for small and remote institutions, the possible impact of Federal Reserve withdrawal on the access and costs of those institutions is an important consideration.

Some assert that private sector providers are inherently more efficient than quasi public

ones and that the Federal Reserve's withdrawal would tend to enhance the efficiency of the system over time. But the Federal Reserve is now competing with those private sector providers and covering costs comparable to the ones they incur. Unless the Federal Reserve is benefitting from a hidden financial subsidy (and the Committee does not believe it is), it is not evident that removing a major competitor from the market place would enhance efficiency. In sparsely settled areas with few competitors in the check collection market, removing the Federal Reserve might reduce efficiency.

The Federal Reserve faces both competitive advantages and disadvantages relative to commercial providers. On the one hand, the Federal Reserve uses rigorous procedures for introducing new products and services that are not typical of the procedures used by commercial providers. Further, the Federal Reserve does not customize its products to specific customers, but rather offers them to any and all depository institutions on the same terms.

On the other hand, the Federal Reserve does benefit from certain advantages over commercial providers that may enhance its market share, although the same-day-settlement rule in 1994 narrowed the differences. The Federal Reserve has until 2 p.m. local time to present checks and obtain same-day settlement, whereas private-sector providers may demand payment in same-day funds only for checks presented before 8:00 a.m. local time for paying banks. Therefore, checks that cannot be presented to paying banks (especially those in remote locations) by 8:00 a.m. are often collected through the Federal Reserve.¹ Equalizing presentment times would eliminate the presentment advantage the Reserve Banks currently have as compared to commercial providers. Equalizing the deadlines, however, will not only have an impact on the competitiveness of the Federal Reserve vis a vis commercial providers, but will also affect the operations of banking organizations and corporate cash management services. Therefore, the merits of removing the disparity need to be balanced against any costs that might be incurred by other parties.

Many community banks and other small depository institutions are concerned that the Federal Reserve's withdrawal would require them to purchase correspondent services from

¹This presentment time structure was in large part instituted at the request of depository institutions.

commercial banks that in many cases are direct competitors for local deposit and lending business. In part, this concern arises from the possibility that these competitors could derive proprietary competitive information about community banks' customers from their correspondent activities. More generally, community banks are reluctant to be the source of profits for direct competitors.

On-going consolidation in the banking industry could lead to the creation of nationwide banking organizations. But it could also leave community banks with fewer choices of check service providers in the future. Indeed, this trend may be reinforced by the withdrawal of active correspondent banks, which has been reported in some local markets. In this regard, smaller depository institutions have also expressed concerns about continuity of check collection services provided by commercial providers, since these institutions can choose to withdraw services at any time. In contrast, the Federal Reserve provides services to all depository institutions.

Thus, small depository institutions feel strongly that the Federal Reserve should continue to be an active provider of check collection services. In fact, there is little support from depository institutions of any size category for the idea that the Federal Reserve would liquidate or privatize its check collection activities, at least in the short-run.

The physical capacity to absorb the Federal Reserve's volume exists in the commercial sector in many, although not all, parts of the country. However, the check collection business may no longer be attractive to many large financial institutions, given their other priorities and investment opportunities. With some exceptions, correspondent banks and clearinghouses are not eager to present checks to smaller paying banks ("low volume endpoints"), especially those in remote locations. Many commercial providers freely admit that they would charge more to clear these items than the Federal Reserve now does, citing the higher costs involved in serving these endpoints. These institutions believe the Federal Reserve subsidizes services to small and/or remote institutions, by shifting costs onto other Federal Reserve customers, by accepting a lower rate of return than would be required by commercial providers, or by not accurately accounting for the full costs of providing the service. Smaller depository institutions also believe that prices would rise if the Federal Reserve were to withdraw from the check collection market, but attribute these increases to the market power that the remaining check collection providers would have following the Federal Reserve's exit.

On balance, the Committee concluded that Federal Reserve withdrawal from the check

collection market would disrupt the check collection system in the short-run, with little promise of substantial benefit over the longer run. Aside from resulting in a potential increase in check collection prices to small and remote depository institutions, the Federal Reserve's withdrawal would divert resources away from depository institutions' other priorities, such as dealing with the impact of mergers and acquisitions, and investments in electronic payment products. While the Federal Reserve's withdrawal might stimulate the move to electronic-based transactions by creating a void in the check collection market, this acceleration could come at the cost of considerable short-term disruption. In fact, the Federal Reserve's withdrawal might actually slow the migration from check to electronic payments, since market participants' funds and energies would initially be focussed on filling the void left by the Federal Reserve.

Moreover, a withdrawal by the Federal Reserve could result in a more heavily regulated payments system. Concerns about equal access to the check collection system for all depository institutions, about the potential for market power by remaining check collection service providers, and about the safety and efficiency of the check collection system could lead to new regulations concerning pricing and service availability. Large banks and payment service providers view this prospect with concern, while small institutions regard such regulations as necessary to ensure their continued viability. Institutions of all sizes are concerned, however, that such regulation would place depository institutions at a disadvantage relative to non-depositories in the provision of payment services. In particular, depository institutions are concerned at the prospect that check and other payment services offered primarily by depository institutions would be subject to regulation not imposed on payment services offered by non-depositories.

Recommendations

! The Federal Reserve should remain a provider of check collection services, with the explicit goal of enhancing the efficiency, effectiveness and convenience of the check collection system, while ensuring the system's safety and reliability and access for all depository institutions.

! The Federal Reserve should evaluate the feasibility and the implications of removing the

difference in check collection presentment deadlines between itself and commercial providers. The Federal Reserve should also examine how various ways of equalizing the presentment times disparity would affect the competitiveness and efficiency of the check market and its participants.

! The Federal Reserve Banks should continue their current efforts to provide ECP and truncation services to meet the market demand. They should continue to use their operational presence as major check collection intermediaries to facilitate the growth of ECP and truncation where demand exists, including:

C pricing electronic check services to encourage the use of electronic check presentment and other electronic check services;

C providing enhanced imaging services, including image-based returns services that will accelerate the returns process;

C providing information services to paying banks (including sorting and listing of items) that will permit paying banks to process electronic information or images more efficiently; and

C experimenting with groups of large and small depository institutions on various “pilot projects” to evaluate the barriers and demonstrate the benefits associated with electronic check presentment.

! It is not yet clear whether the whole check system would benefit from moving toward ECP and truncation. The Federal Reserve, through the efforts of the ECP Advisory Group of the Retail Payments Product Office, has been working in collaboration with other check collection system participants to explore the possibilities and benefits for a more electronic check collection system. The Federal Reserve should accelerate these efforts by convening a working group of senior officials from depository institutions of all

sizes, the Federal Reserve, and other check collection system participants and users to determine the cost and feasibility of electronic check presentment and truncation.

- C The working group should assess whether a coordinated move toward ECP and truncation is feasible and cost effective, and, if so, to determine what steps could be collectively taken to foster the widespread adoption of a more electronic check collection system.

- C Assessments of feasibility should include a thorough understanding of the attitudes of businesses and consumers toward ECP and truncation and, in particular, whether and how ECP and truncation would meet their needs.

- ! If the working group concludes that ECP and truncation have substantial potential to increase the efficiency of the check system and that the requisite investment can be justified, then the Federal Reserve should work with other check collection system participants--including both check collection service providers and organizations representing consumers and businesses--to determine what additional steps the Federal Reserve could take as a provider of check collection services and/or as a regulator of the retail payments system to foster the growth of ECP and truncation. These steps might include:
 - C The Federal Reserve could work with other check collection system participants to identify regulatory changes that would foster the growth of electronic check presentment. For instance, the Federal Reserve could amend Regulation CC:
 - < to permit banks to return dishonored items using images or electronics in place of the original check, which may accelerate the check return process and reduce risk to depository institutions.

 - < to extend presentment deadlines for collecting banks that send an electronic

file with warranties for its accuracy to paying banks; and/or

- < to require all depository institutions to accept presentment in either paper or electronic form at the discretion of the collecting bank.

Regulatory changes such as these could facilitate the transition to electronic presentment and truncation by providing incentives for both collecting and paying banks to develop the resources needed to send and receive electronic presentment files, to process those files, and to initiate the returns process electronically. However, since some of these potential changes could conflict with state laws concerning the return of canceled checks, the Federal Reserve could work with appropriate parties to ensure that the concerns of the states, particularly those surrounding consumer protection issues, are addressed.

- C The Federal Reserve could work with the industry to establish the necessary legal foundation for electronic payments processing. The Federal Reserve could provide legal resources and coordinate efforts among industry participants to research the legal issues--such as liability for signature verification, proof of payment and state laws requiring return of canceled checks--that could inhibit or significantly complicate the widespread use of electronic check presentment and truncation.
- C In coordination with other check collection system participants, the Federal Reserve could develop standards and specifications for an image archive, establish security procedures and protocols, and, perhaps, operate the archive on an on-going basis.
- C The Federal Reserve could take steps to promote public acceptance of ECP and truncation by addressing the concerns of various segments of the public about the way the new system would work in practice. In cooperation with other industry

participants, the Federal Reserve could sponsor a public education effort to address issues such as the ability of consumers and businesses to receive check images on demand, the reliability of images for payment verification and protections against fraud.

- C More generally, the Federal Reserve could make greater use of its existing authority to use pricing techniques (for instance, volume discounts) to enhance the efficiency of the check collection system and to support the Federal Reserve's broader policy objectives.

Section IV: ACH Market

Findings

The ACH is an electronic interbank payments system which is used primarily to handle small-dollar funds transfers for consumers, businesses and the government. The ACH system consists of an infrastructure of data processing and communications hardware and software designed to deliver and settle large volumes of electronic payment transactions and related information. It is an interbank payments system in which nearly every depository institution in the United States participates. A consumer or a business initiates an ACH transaction through its depository institution, which transmits payment information and exchanges funds with the recipient's depository institution via transactions processed by an ACH operator. The ACH is used primarily for recurring transactions. Corporations also use ACH to make payments to suppliers and for cash management activities.

During the last ten years, the overall volume of ACH transactions has increased at an average rate of over 15 percent per year, reaching approximately 4 billion payments with a value of \$12 trillion during 1996. Despite this rapid growth, ACH payments continue to represent only a small fraction--less than 5 percent--of noncash transactions in the United States.

Currently, there are four ACH operators that process and transmit ACH transactions between depository institutions--the Federal Reserve and three commercial providers. Of these, the Federal Reserve is by far the largest processor, accounting for nearly 80 percent of commercial interbank ACH transactions in 1996. The Federal Reserve also processes all government ACH transactions (about 20 percent of total interbank ACH transactions).

The origination of commercial ACH transactions is highly concentrated (see Table 5). In 1996, affiliates of the 100 largest bank holding companies originated 75 percent of the commercial ACH transactions processed by the Federal Reserve. In contrast, the receipt of ACH transactions is much more dispersed. In 1996, affiliates of the 100 largest bank holding companies received just 32 percent of the transactions.

These figures indicate that, as in the check collection market, depository institutions of all asset sizes use the Federal Reserve to transmit ACH transactions to smaller depository institutions around the country. The Federal Reserve delivers ACH transactions to nearly every depository

institution in the United States, often through third-party service providers and correspondent banks. In contrast, the three commercial ACH providers serve a much smaller set of institutions and rely on the Federal Reserve to deliver transactions to those depositories not served by their networks.

Unlike the check collection market, which is primarily local, the market for ACH transactions is primarily national. In 1996, two thirds of the ACH transactions processed by the Federal Reserve were interdistrict transactions.

Table 5
Commercial ACH Transactions Processed by the Federal Reserve in 1996
Origination and Receipt Volumes by Asset Size

Millions of Transactions

Subsidiary of:	Origination	Percent of Total	Receipt	Percent of Total
10 Largest Bank Holding Companies	723	30%	274	12%
Next 90 Largest Bank Holding Companies	1,070	45%	477	20%
All Other Depository Institutions	584	25%	1,622	68%
Total	2,377	100%	2,374	100%

Source: Federal Reserve Banks.

Note: The total volumes for originations and receipts differ slightly due to the treatment of rejected items, among other factors.

The ACH is characterized by high fixed costs, including the need for powerful computers to process high transaction volumes and the need for data communications facilities to exchange transactions among participants and operators. The marginal cost of sending an additional ACH transaction is low (less than \$.01), and there are evident economies of scale at current industry volume levels. Hence, with or without the Federal Reserve, the industry is likely to be dominated by one or two large players, much like the market for credit card processing. A single provider

might be the most efficient processing configuration because a single provider could take most advantage of the economies of scale and supply the market at the lowest cost. On the other hand, the existence of competitors encourages each to meet the needs of customers and may lead to greater innovation and greater emphasis on cost control over the long run. For example, the Federal Reserve began offering four deposit cycles for ACH transactions after another competitor entered the market.

The Federal Reserve's average cost of processing an ACH transaction is considerably less than that of processing a paper check and ACH unit costs have been falling (and are likely continue to do so), while paper check unit costs have stabilized. In addition, several studies show that the social cost of making a check payment is significantly higher than that of making an ACH payment. (The social cost includes the payor's cost to originate and send, the payee's cost to receive and process, and the cost incurred by third-party intermediaries). Hence, encouraging customers to substitute ACH for check payments in appropriate circumstances would increase the efficiency of the payments system.

Potential growth of ACH. There is considerable uncertainty surrounding the ultimate potential of the ACH. At one level, there is significant growth potential for ACH transactions, even for core ACH products such as direct deposit and recurring payments. For instance, only 45 percent of the roughly 2.8 billion annual payroll payments are made via direct deposit and an even smaller fraction of dividends and annuity payments are made via the ACH. Only 900 million of the 12 billion annual consumer bill payments are made through the ACH.

Further, the Debt Collection Improvement Act of 1996 requires that the federal government convert most of its payments to electronic payments by January 1, 1999. This requirement will raise the public profile of the role of electronic payments and could lead to increased ACH usage. In addition, the conversion to electronic payments will require virtually all depository institutions with accounts of businesses receiving payments from the federal government to have the capability to pass payment-related information to their corporate customers. Although, the implementation of this capability may take some time, it could lead to increased ACH usage for vendor payments among private corporations.

Nonetheless, shortcomings of the current ACH system may be limiting the scope and market for even core ACH products such as direct deposit and recurring payments. One factor

often cited is the lack of flexibility and accessibility in originating ACH transactions. The ACH is difficult to use for ad hoc or one-time transactions. Even when consumers and businesses choose to use the ACH for recurring transactions, they have to deal with a cumbersome sign-up process. When consumers change banking relationships, they bear the responsibility for contacting the originating corporation and changing the information related to their direct deposit and direct payment arrangements.

An additional factor that may have inhibited the growth of core ACH transactions is the lack of a nationally coordinated and properly funded education and marketing effort targeted at corporations and consumers. The Federal Reserve has increased its efforts and funding in this area in recent years. Also, the National Automated Clearing House Association (NACHA), local ACH associations, the U.S. Treasury and private ACH operators have developed a number of targeted promotion efforts recently. However, these efforts are small in comparison with the marketing and education provided for some other types of electronic retail payments systems (e.g., debit card, ATM).

The potential for the ACH to move beyond this core set of products may also be circumscribed by its limited ability to send transaction information along with payment instructions (financial EDI) all the way through to the end user. Although ACH transactions can carry remittance information in addenda records, most receiving depository institutions do not now have the capability to provide this information to their corporate customers in a readily usable form. The alternative for some corporations is to send the payment through the ACH and the remittance information through a value-added network. This process, however, creates a reconciliation problem for the receiving corporation and increases transaction costs. Even if more receiving depository institutions could deliver formatted remittance data, few companies have accounts receivable systems capable of accepting standard remittance formats. Given the enormous market potential for financial EDI, cost effective solutions for these problems could significantly increase the use of the ACH.

With the increasing globalization of economic activity, the lack of a robust cross-border payment infrastructure may also limit the potential growth of the ACH. The Federal Reserve handles international direct deposit for some government payments through the central banks and correspondent banks of a number of countries, and several financial institutions provide support

for some international payments. However, ACH is not currently well adapted to international payments.

Limitations in the Federal Reserve's net settlement services also are reported to have impeded the growth of ACH services by commercial providers. While the Federal Reserve provides net settlement services to all commercial ACH operators, the characteristics of the services have frequently been criticized by these operators as being logistically complex. A more streamlined Federal Reserve net settlement process, with more robust risk controls, would facilitate the further development of private sector arrangements to clear retail payments.

Finally, the body of rules governing commercial ACH transactions is complex, and procedures are not in place to enforce the rules. These rules are promulgated and administered by NACHA, a not-for-profit banking trade association. While the Federal Reserve does not vote on proposed NACHA rule changes, it provides comments to NACHA through the rulemaking process and through participation in NACHA work groups. NACHA recently modified the rulemaking process to try to shorten the length of time required to change rules and make the process more responsive to market needs. The number of different parties involved in the ACH (e.g., consumers, corporations, large and small depository institutions, software vendors) creates differences of opinion on the merits of certain rules, and makes substantive rule changes difficult to achieve. In addition, the rule-making process remains lengthy, and the same process is used for both major and minor changes. Taken together, these factors may have slowed the changes needed to make the ACH easier to use and a more attractive option as compared to the paper check.

Alternative future roles for the Federal Reserve. The Committee considered the question of whether the Federal Reserve should withdraw from the ACH market and concluded that the case for staying in the market was stronger than the case for getting out. While commercial ACH providers could develop sufficient capacity to absorb the Federal Reserve's volume over the long run, there would likely be considerable disruption in the short run and it is not clear that the resulting market would ultimately provide more efficient service. It is likely that one or at most two providers would come to dominate the market and could exercise considerable market power. Community banks and smaller depository institutions worry that they would be strongly disadvantaged by Federal Reserve withdrawal and that they would not have adequate access to

the ACH service. These concerns could lead to a more heavily regulated ACH system.

On balance, the Committee concluded that it would be more conducive to future efficiency and migration to electronic payments for the Federal Reserve to stay in the market and to engage in joint efforts with the industry to spur the innovation of products that interface with end-users and to increase ACH usage.

Recommendations

- ! The Federal Reserve should remain a provider of ACH services, with the explicit goal of enhancing the efficiency, effectiveness and convenience of the ACH system, while ensuring the system's safety and reliability and access for all depository institutions.

- ! The Federal Reserve should address the technical, ACH format related issues that limit the ability of depository institutions and corporations to receive and to process vendor payment information.

- C Working in coordination with the industry, the Federal Reserve should identify change to ACH record formats and rules to accommodate financial EDI.

- C The Federal Reserve should continue to work with the industry to develop low-cost, front-end applications that enable receiving depository institutions to process and transmit remittance information.

- C The Federal Reserve should increase educational efforts related to financial EDI.

- ! The Federal Reserve should examine making greater use of its existing authority to use pricing techniques intended to enhance the efficiency of the ACH system.

- ! The Federal Reserve should enhance its own infrastructure to support cross-border ACH transactions and work with the industry to develop robust ACH cross-border capability.

! The Federal Reserve should offer enhanced net settlement services to commercial ACH providers to help stimulate the growth of electronic payment services and promote competition in the ACH market. A proposal for enhanced net settlement services was released for public comment on June 13, 1997, and development of a uniform, nationwide service for pilot implementation in late 1998 is underway. In addition, the Federal Reserve will explore potential changes to ACH settlement, finality, processing and delivery schedules, and editing routines that could more effectively support the needs of existing and emerging retail payments methods.

! The Federal Reserve should focus on promoting the use of core ACH products such as direct deposit and recurring payments (e.g., mortgage or insurance payments), and make improvements to the ACH to encourage volume growth over the next several years. There are two main elements to this plan:

C The Federal Reserve should work with the appropriate parties to identify and implement changes in current processes, rules and other barriers to make the ACH easier to use for both consumers and businesses. This work should focus on factors that will increase the flexibility and accessibility and reduce the risk for consumers and businesses in originating and receiving ACH transactions. These efforts should include:

< Using market research and independent analysis to identify the processes, rules, and issues that represent true barriers to the use of the ACH, and working actively with NACHA and other key market participants to ensure appropriate changes.

< Researching the root causes for the lack of compliance with existing NACHA rules, and working with NACHA and other key participants to develop actions to address these factors, including education, process and

documentation improvements, and software enhancements.

- C The Federal Reserve should increase its efforts to market the ACH and educate consumers and businesses about ACH in order to help increase ACH usage for recurring payments. These efforts should be undertaken in coordination with other ACH system participants as much as possible. The Federal Reserve should also undertake consumer, corporate and financial institution market research to help determine the most effective education, public relations and marketing strategies and develop and fund campaigns to promote the use of the ACH.

Section V: Retail Payments System of the Future

Findings

Innovations in retail payments ranging from home banking to electronic money to the expanding use of the Internet for retail transactions illustrate the ever-growing variety of payment methods available to consumers and businesses. The retail payments system of the future is likely to include many of these new and emerging payment methods, giving consumers and businesses a wider range of options for making payments. At the same time, traditional payment methods such as checks are likely to continue to evolve as the use of electronic processing intensifies. Although the Committee's work focused primarily on the check and ACH markets, the mandate of the Committee inevitably led to examination of the potential roles of the Federal Reserve in emerging electronic retail payment services and in the future evolution of the retail payments sector more generally. This section provides a brief analysis of these issues and the Committee's recommendations in this area.

The variety of emerging retail payments methods reflects the competitive environment in which retail payment service providers operate, where these providers strive to meet the diverse needs of consumers and businesses throughout the country. Private sector innovation has been the key driving force behind the evolution of the U.S. retail payment system and will almost certainly continue to be so in the future. These commercial providers have the creativity and financial resources to envision and design a wide variety of retail payment methods, and the methods that eventually gain widespread acceptance will surface through market competition. In many cases, new retail payment methods are being developed by coalitions of retail payments system participants, often including both financial institutions and nonfinancial companies. Thus, innovation in the retail payments market is coming not only from traditional service providers, but also from new entrants to the market.

Despite this dynamic environment, commercial providers of retail payment services face several significant challenges in gaining widespread acceptance for emerging payment methods. Uncertainty about the future direction of technology, multiple and competing ventures to introduce new electronic payment methods, and inter-operability problems have made many depository institutions reluctant to invest in and consumers reluctant to adopt these new payment

methods. The benefits to consumers and businesses of new payments methods often depend on having easy access to the same technology in many locations, which requires coordination across many payment sites controlled by different producers. The diverse and decentralized nature of the U.S. financial system may also be hindering the transition to these methods, since it can be difficult to achieve the necessary degree of coordination and standardization among such a large number of diverse institutions.

Payment methods introduced to date have failed to replicate the ease, convenience and widespread acceptance of the current paper-based check system in the view of most consumers and businesses. The check offers a significant degree of customer control over the timing and amount of payments, including the ability to skip recurring payments or to make partial payments; the ability to include transaction information along with payment instructions; and a high degree of security and privacy.

Emerging electronic retail payment methods have also not yet been developed that--alone or in combination--can be used for the full range of payment transactions for which checks can now be easily and reliably used. These payment transactions include debit transactions in stores, on-line bill paying and sales, financial EDI transactions, and person-to-person transactions. While no single electronic payment method may be useful in all these situations, an electronic retail payments system will likely have to incorporate methods for the full range of such transactions if the current paper-based check system is to be replaced.

Further, consumer and business acceptance of these methods will likely require clear delineation of the risks and liabilities associated with these transactions. The risks of the check collection system and other more traditional payment methods such as credit cards are fairly well-understood, and the legal foundation establishing liability in the event of disputed or dishonored transactions is well-established. Consumer education concerning the risks and liabilities associated with emerging payments methods could be a key aspect of the growth of electronic payments methods.

In this regard, there has been considerable industry and media activity and attention to retail payments, both traditional and emerging. On the traditional front, the ACH, ATMs, credit and debit cards are all enjoying healthy growth. New forms of emerging electronic payment mechanisms are being designed and tested, and many of these rely on the existing payments

systems, such as the ACH system, for clearing and settlement of the payments. In fact, access to a secure and reliable “core” system for clearing and settling retail transactions may be a key element in the growth of emerging payments methods. Furthermore, given the economies of scale which exist in electronic processing generally, such systems might tend to consolidate and become quite large over time. Accordingly, effective management and control of operational risk in these systems could become increasingly important to payment system stability, even in the absence of systemic risk (i.e., where the failure of one participant in a clearing and settlement system could trigger the failure of others).

Private sector innovation and competition are the primary means for developing and implementing new electronic payment instruments and technologies. To complement this effort, the Federal Reserve could play a role in establishing the basic conditions that will help spur market innovation and that will facilitate more widespread adoption of electronic payment instruments. In particular, many retail payments system participants have suggested that the Federal Reserve make greater efforts to collaborate with the industry to assess the need for standards for electronic payments and processing, such as standards for the privacy and security of transaction information, standards addressing liability and risk in emerging electronic payments, and specifications concerning authorization of transactions. In addition, there is scope for collaboration to foster a legal and regulatory environment that supports these more efficient payment methods.

Recommendations

- ! The Federal Reserve should work with retail payments system participants and end users to share information and ideas about the retail payments system of the future. This collaboration would focus on examining the challenges and impediments to the transition to a more efficient, electronic-based retail payments system and identifying possible solutions. The primary goal of this collaboration would be to encourage and facilitate on-going communication among retail payments system participants and end users.

- ! The Federal Reserve’s role in these efforts should be to foster cooperation and

information-sharing among retail payments system participants, including commercial providers of retail payment services, the Reserve Banks and other parties. The goal of these efforts should be to analyze and encourage adoption of the legal, regulatory and market underpinnings that are necessary to foster the development of new and emerging retail payment methods, rather than to promote any particular payment method or approach. Some of the key issues that should be addressed are:

- C *The legal infrastructure for an electronic retail payments system:* The Federal Reserve should work with industry experts to identify any legal impediments that may be hindering the growth of new and emerging retail payment methods and, when appropriate, to propose solutions to those impediments.

- C *Standards for electronic retail payments:* The Federal Reserve should work with other retail payments system participants to identify areas where new or amended standards would support the growth of an electronic payments system that replicates the ease, convenience and widespread acceptance of the paper-based check system. The Federal Reserve should cooperate in efforts to develop standards and protocols that address these needs.

- C *Education:* The Federal Reserve should work actively with other retail payments system participants to educate consumers, businesses and financial institutions about electronic payment methodologies. Consumer education concerning the benefits, as well as the risks and liabilities, associated with emerging payments methods could be a key aspect of the growth of electronic payments methods.

- ! The Federal Reserve should work with other retail payments participants to assess the potential use of its electronic payments infrastructure for clearing and/or settling new forms of electronic retail payments. Access to a secure and reliable “core” system for clearing and settling retail transactions--whether provided by the Federal Reserve or by the commercial sector--could be a key element of the growth of emerging payments methods.

The Federal Reserve should work with the retail payments industry to assess the existing retail payments infrastructure and to determine what role, if any, the Federal Reserve's infrastructure can play in the retail payments system of the future.

Attachment 2

Check Service Pro Forma Income Statement (millions of dollars)

	<u>1996</u>	<u>1987 - 1996</u>
Total Revenue	610.6	5,665.2
<u>Total Expense</u> ¹	584.6	5,456.7
Net Income ²	26.0	208.5
Targeted Net Income ³	28.0	237.8
Cost Recovery	99.7%	99.5%

¹ Total Expense includes all operating and imputed costs. Operating costs include direct, support and overhead costs while imputed costs include costs such as interest on float, interest on debt, sales taxes, the FDIC assessment, and imputed taxes.

² Net Income is the year's actual profit.

³ Targeted net income, which is also referred to as the targeted return on equity, is derived from a model comprised of the nation's fifty largest bank holding companies and is the budgeted after-tax profit that the Federal Reserve would have to earn if it were a private business firm. The targeted net income is used to set the check service's fees in compliance with the Monetary Control Act of 1980.