THE FEDERAL RESERVE BANK OF CLEVELAND

1997 ANNUAL REPORT

OUR PAYMENTS SYSTEM: challenges AND opportunities

Contents

The Federal Reserve System is responsible for formulating and implementing U.S. monetary policy. It also supervises banks and bank holding companies, and provides financial services to depository institutions and the federal government.

The Federal Reserve Bank of Cleveland is one of 12 regional Reserve Banks in the United States that, together with the Board of Governors in Washington, D.C., constitute the Federal Reserve System.

The Cleveland Bank, including its branch offices in Cincinnati and Pittsburgh and its check processing center in Columbus, serves the Fourth Federal Reserve District (Ohio, western Pennsylvania, the northern panhandle of West Virginia, and eastern Kentucky).

It is the policy of the Federal Reserve Bank of Cleveland to provide equal employment opportunities for qualified persons regardless of race, creed, color, national origin, age, gender, or disability.

They are overlooked and underappreciated, yet they are effective and efficient. They have endured and evolved, and yet are ripe for improvement and innovation. They form an invaluable infrastructure for our nation's economy, supporting countless users at any given time. Their innumerable entrances, routes, and off-ramps serve many voyagers embarked on vastly different journeys.

They are our nation's payments systems. And like our nation's transportation systems, their capabilities are constantly being upgraded, even as participants continue to rely on them every day. However, improving our payments systems will not be achieved without successfully confronting a myriad of challenges and obstacles along the way.

This year's *Annual Report* essay focuses on these challenges and opportunities from the perspectives of various payments systems participants. As discussed in the essay, the continuing evolution of our nation's payments vehicles is both desirable and inevitable. However, while the route taken by each transaction may be clear, the entire system's development path is not. The travelers, through their choices, will determine the itinerary.

When people think about the Federal Reserve Bank of Cleveland, most often they are considering our responsibilities for conducting monetary policy or supervising commercial banking organizations. Sometimes we are recognized for our community-based activities, such as the Cleveland Residential Mortgage Credit project, which we wrote about in last year's *Annual Report*.

Rarely does the public pay much attention to our role in the nation's payments system. This is ironic, since the largest number of our employees work in operations geared to processing checks, shipping cash, executing electronic payments, and servicing the U.S. Treasury's financial needs. In another sense, however, I am gratified that our payments-related activities go unnoticed, because the inattention signals a high level of confidence that the operations are functioning very well.

Though we are pleased with our progress in delivering reliable and efficient payments services, we recognize that the industry is changing. Payments in the United States are slowly evolving from paper-based to electronic-based transactions. But recent developments in technology, interstate banking and branching,bank consolidation,and the entry of new competitors in the payments industry provide a basis for thinking that the pace of change will quicken.

This year's essay explores the payments systems through the unique perspectives of its many participants,including the Federal Reserve. For some, these changes will be threatening; for others, the changes will provide exciting opportunities. At the Federal Reserve Bank of Cleveland, we believe that constructive participation in the payments system requires an understanding of both its current challenges and its prospects.

G. Watts Humphrey, chairman
Jerry L. Jordan, president
Sandra Pianalto, first vice president
David H. Hoag, deputy chairman

Last year, we achieved significant results throughout the Bank. We completed and occupied an operations center adjacent to our main building in downtown Cleveland. This state-of-the-art facility will enable the Bank's check, data processing, cash, electronic payments, and information technology functions to provide superior products and services to our customers. We were able to complete the move without any adverse consequences for our customers. Renovation of our historic main building began in earnest after the completion of the operations center, and we are on schedule to finish renovating and occupying the building in time for the Bank's seventy-fifth anniversary this August.

We also embarked on Transformation 2000, a multiyear initiative led by 150 employees to examine critically everything that we do, how we do it, and why we do it. Through the transformation process, we are identifying outmoded practices, replacing them with new activities, and learning how to work better with one another and with our customers. The skills and tools that our employees have gained will enable us to improve our operations in payments, banking supervision, and monetary policy continually. One of the key initiatives directly resulting from the effort was the consolidation of our Pittsburgh office's currency processing into Cleveland and the relocation of the Bank's noncash operations to the Jacksonville Branch of the Federal Reserve Bank of Atlanta.

Further demonstrating our interest in improving the payments system, Sandra Pianalto, first vice president and chief operating officer of our Bank, served as staff director of the Committee on the Federal Reserve in the Payments Mechanism, a group appointed by Federal Reserve Chairman Alan Greenspan to examine the Federal Reserve's role in the payments system. Sandy provided leadership in many aspects of the project; her guidance, influence, and expertise undoubtedly contributed to the Committee's success.

All of the past year's successes have been guided by the 23 directors of our Cincinnati, Cleveland, and Pittsburgh offices, as well as by the members of our Business and Community Bank Advisory Councils. I thank them for their valuable, dedicated service and expert counsel. I would particularly like to acknowledge Jerry A. Grundhofer, chairman, president, and CEO of Star Banc Corporation, who completed his term on the Cincinnati Board, and Christine J. Toretti, president of the S. W. Jack Drilling Company, who served on the Pittsburgh Board.

Finally, I would like to express my personal gratitude to the officers and staff of the Federal Reserve Bank of Cleveland, whose tireless efforts over the past year enabled us to accomplish so much. The entire Bank truly rose to the challenge of meeting demanding annual performance goals while the special building, transformation, and Rivlin Committee projects were under way. Their creativity, energy, and commitment have made 1997 a successful year and have positioned us well to meet the challenges of the future.

Jerry L. Jordan
President

IMPROVING THE EFFICIENCY OF PAYMENTS IN THE UNITED STATES: challenges AND opportunities

You take one last look in the store's three-way mirror. The jacket fits; you'll take it. Your salesperson nods approvingly and asks, "How will you be paying?"

Do you freeze, meticulously considering your payment options, weighing the relative economic and social costs involved in writing a check, paying cash, or using "plastic"?

Probably not. Most likely, you perform a few rapid-fire mental calculations ("How much money is in my wallet?" "What's the balance in my checking account?") and promptly relay your decision to the waiting salesperson.

Nowadays, consumers can use debit and credit cards, cash, checks, smart cards, traveler's checks, and money orders. Not to mention ATM transactions, direct payments via the automated clearing-house (ACH), and telephone- and PC-based home banking. What is often referred to as "the payments system" is actually a collection of many individual payments mechanisms, each operating to ensure the timely and orderly transfer of value.

Ubiquitous, yet nearly invisible to the end-user, our nation's payments infrastructure is a marvel of institutional collaboration and technological sophistication. Few even think of payments products and services as an industry, but over 1.5 billion transactions totaling more than $3.3 trillion are processed daily. Today, a transaction can be handled from across the country almost as easily as from across the street.

The vast majority of people know little about the complexity of the payments services they use every day. To nearly everyone, payments seem to "just work." But without reliable and accessible mechanisms, the most commonplace transactions of everyday life would become more time-consuming, cumbersome, expensive, and risky.

Each of the payments methods used by consumers, businesses, and governments is supported by a collection of institutions, laws, and technologies that combine to transfer value reliably from one party to another. Payments providers compete with one another and face strong incentives to innovate, just as in any other industry. A variety of mechanisms exist simultaneously in the marketplace because each fulfills certain needs. Their efficiency and reliability can be enhanced, but only if users are willing to bear the added cost or to embrace new, less costly technologies. Ultimately, payments methods reflect the interaction of providers and consumers.

For reasons discussed in this essay, many people think the payments industry will change dramatically over the next several decades, with replacement of existing payments methods by entirely new electronic systems. Others are skeptical, expecting only a continuing evolution of existing systems toward more substantial reliance on electronic components. Whatever the nature of the transformation, both producers and users of payments services will have had to surmount several obstacles. This essay will consider some of the challenges and opportunities facing payments systems participants, including the Federal Reserve. It will also show that by taking an active interest, consumers, businesses, bankers, emerging providers, and the Fed can each influence how payments will be made in the future. Finally, it will explain why — even as the Federal Reserve prepares to provide more direction on payments issues — the Fed must work with its competitors.

PAYMENTS SYSTEMS

Payments systems enable one party in an economic transaction to transfer purchasing power to another. Payments systems typically have three components: an issuer of the payment vehicle; financial accounts held by the transacting parties; and a process that moves funds between their accounts, including procedures for resolving problems that may arise in the transfer.

The check is the vehicle in one familiar paper-based system. It requires that the transacting parties maintain accounts at depository financial institutions ("banks"). Buyers pay for their purchases with pieces of paper that instruct the collecting banks to obtain funds from paying banks when checks are presented. The sooner a check is sent to the paying bank, the sooner the funds are released to the collecting bank. In servicing their customers, collecting banks therefore must incur costs to send the checks to paying banks. The greater the face value of the check, the larger the expenses they are generally willing to incur for faster collection. Last year, the banking industry spent roughly $4 billion to sort, bundle, truck, and fly 64 billion checks around the country.

Even cash, the most prevalent method in retail transactions, requires considerable resources to operate as an effective payments system. Cash exchanges transfer purchasing power directly and instantaneously, eliminating the expensive collection process required by checks. Nevertheless, cash is expensive to mint and print, and costly to keep in circulation. On behalf of the U.S. Treasury, the Federal Reserve issues cash, spending $650 million annually to make, store, and ship currency, as well as to detect and destroy unfit currency. Banks and businesses pay additional sums each year to collect, count, safeguard, and transport bills and coinage.

Electronic payments systems such as debit cards, smart cards, and ACH transfers, economize on resources by requiring neither the collection process of paper checks nor the expensive issuing and distribution system of cash. For example, the total cost of issuing a check — the cost to the payer, payee, and banking system — is roughly $3 per item. In contrast, the cost of making the same payment via automatic debit through the ACH network is about half as much. Considering that

Options abound. People often find themselves at transactional crossroads. Check, cash, debit card, credit card, or money order? What matters most — convenience, cost, float, or payment finality? People differ, and the same person may not even make the same choice twice.

64 billion checks were written in the United States last year, this difference is substantial, but it is the price participants are willing to pay to use checks rather than a less costly system.

Compared to paper-based methods, new electronic systems are not yet used extensively for retail payments,apparently due to costs or attributes that have been inhibiting their widespread adoption. How have "high-cost" paper systems held these "low-cost" systems at bay? To better understand the choices being made, we need to consider the needs and incentives of the various payments systems participants.

PERSPECTIVES

Consumers The most important point to grasp about the consumer's perspective is that the person initiating a retail transaction rarely pays an explicit price to use that payments service, let alone a price reflecting the true underlying cost of processing each transaction. With service seemingly "free," consumers focus on the convenience and other qualitative aspects of a vehicle as they assemble a set of payments methods for their use.

Despite decades-long predictions of a "cashless society," the overwhelming majority of consumer transactions are still initiated with cash. Cash (coin and paper currency unless otherwise noted) is a universally accepted transaction vehicle that affords virtually complete privacy — an attribute many consumers value highly. Moreover, cash typically is available for no fee from one's bank. To deter routine check writing for cash in bank branches — an expensive distribution method — banks market ATM use as a low-cost,convenient alternative.

Also, despite predictions of the check's demise, from the consumer's point of view it offers portability, control, and convenience, not to mention the benefits of float. Bank customers cite numerous reasons for clinging to checks as a favored payments instrument,including inertia ("My work offers direct deposit, but I just never bothered to sign up for it"),entrenched attitudes ("I like the feeling of personally depositing my paycheck"),and flexibility ("By using checks,I can vary the timing and amounts of my monthly bill payments").

While checks are often preferred by consumers,nearly half of all checking accounts would be unprofitable for depository institutions if considered in isolation from other aspects of the banking relationship. Their handling costs exceed the interest earned on lending out the deposits. Yet banks have traditionally made consumer checking accounts very attractive — in many cases offering low-cost or free checking. Banks recently have become bolder about instituting pricing policies that discourage check writing, but consumers strongly resist fees.

At the same time, consumers are well known for constantly demanding easier, faster access to products and services. We have become accustomed to the convenience of dial-up library collections, movies on demand, drive-through oil changes, and ATMs that allow banking anytime and anywhere. Consumers who appreciate the convenience of ATM cash appear more willing to accept charges for using the service, especially fees for using machines owned by banks other than their own.

General-purpose credit cards provide an example of a convenient transaction vehicle that consumers have eagerly embraced. Strictly speaking, credit cards do not fit our definition of a payments system because their use does not result in the transfer of value from one party to another; that occurs when the consumer settles the credit card obligation, usually by check.

Typically, consumers pay no fee to obtain and use a credit card. Merchants support the system by paying transaction fees to the credit card companies. Initially, some merchants resisted the use of credit cards for small-dollar purchases, and a few tried to establish a lower price schedule for consumers paying with cash or checks. These efforts proved to be very unpopular with consumers, and merchants' resistance declined when they saw that accepting credit cards actually expanded their customer base.

The credit card experience demonstrated that consumers like to have a variety of payments methods available to them, as long as they pay no transaction fee. They are willing to pay annual fees for credit cards, however, if the cards are bundled with other services they desire. Consumer interest in devices other than cash, checks, and credit cards is also growing, spurred by the time constraints of workplace and household responsibilities. Increasingly, payments service providers recognize that consumers are open to new methods, but marketing realities cause providers to expect that merchants will bear the direct costs of the systems' operations.

Consumers can influence decisions about new payments methods, switching their patronage to tell providers which product features they like, and which they don't. Consumers, of course, should be open to new ways of doing business and should recognize that providers might be willing to furnish additional services if consumers would switch to lower-cost payments alternatives, such as debit cards instead of checks.

Businesses Businesses are more likely than consumers to focus on the cost of using a payments vehicle, both because it is expensive to integrate payments into other internal accounting, information, and control systems and because they are more likely to face explicit transaction fees. While cash and checks offer consumers tremendous advantages, these instruments can cause headaches for businesses. To understand the inefficiency of handling currency, one need only examine a typical consumer-merchant transaction, where cash gets counted at least five times, and sometimes six: By the consumer; then by the store clerk who puts the money into the till; then by the store manager, who totals the receipts at the end of the day. Next, a bank teller counts the money in the merchant's daily deposit; then the bank's accounting department reconciles the cash receipts. Finally, if the bank sends the funds to a storage depot like a Federal Reserve Bank, the money is counted on arrival.

Understandably, merchants might become enthusiastic about smart cards that reduce the massive costs of handling checks and cash. Some visionaries foresee the day when consumers will use these stored-value cards to pay for nearly every transaction — buying a newspaper, booking an airline flight, renting a movie, and feeding parking meters and pay phones. About the size and shape of credit cards, smart cards contain an embedded microprocessor and memory chip. Monetary value is loaded,

reloaded,and transferred by slipping the cards into ATMs, PCs,special phones, point-of-sale card readers,and palm-size "electronic wallets." Simpler versions of stored-value cards are already being used as prepaid telephone cards and bus passes.

Unlike online credit and debit cards,smart cards require no connection between a bank and the point of sale, and there are no time-consuming PIN codes to bother with. Thus,customers can move faster through checkout lines and avoid processing fees.

According to one research firm, the use of smart cards is expected to grow rapidly. But mass acceptance of the cards will probably depend on consumers' tolerance of regular downloading fees — perhaps 50 cents to $1 — and merchants' willingness to replace or retrofit older point-of-sale terminals with smart-card-compatible equipment. While acknowledging the cost savings and greater efficiencies of paperless transactions, many retailers may not be keen on investing in new equipment or training personnel in an uncertain technology until forced by competition or lured by falling equipment prices.

Businesses increasingly turn to the Internet as a source of commerce, but even more will do so as service providers,developers, and other interested parties address and resolve fundamental issues. These include establishment of standard processes for buying and selling products and services, development of transport and privacy methods that will enable secure commercial exchanges, and formulation of user-friendly protocols for ordering, online payment, and service delivery. Making headway will undoubtedly take experimentation.

The prospect of paperless commerce also has substantial attraction in the business-to-business marketplace. While significant cost savings are currently being realized by the use of electronic funds transfer methods, businesses continue to depend on checks, and not simply because their customers use them. About 40 percent of the 64 billion checks written are drafted by businesses. Of these, half were for business-to-business transactions. A recent study estimated that if businesses could convert as little as 10 percent of all their current paper-based payments to electronic payments,annual cost savings would be $15 billion. Some of these savings would result from lower mailing expenses, while others would accrue from reduced processing error rates.

Businesses can benefit from electronic payments and receipts in ways other than saving money directly on transactions costs. Electronic payments methods, like the ACH network, accelerate cash inflows, improve earnings potential of operating capital, and precisely control cash disbursements. By using electronic payments mechanisms, businesses can avoid the vagaries of the postal system. Electronic payments would also reduce check fraud, which costs businesses and banks billions of dollars annually.

Businesses already have invested considerable resources in software systems linking information about orders,shipments,inventory, tax obligations,and payroll. The ability to add information for payments made and payments received will bring greater efficiencies, control, and customer service. Systems that link these data together are called electronic data interchange (EDI), and a number of large

Challenges breed opportunity. Challenges are invitations for innovation. Roadblocks are made to be driven around; obstacles are opportunities to pave new paths. What at first looks like a detour may eventually become the preferred route.

businesses are using EDI to transmit order and invoice information as well as payments. Because businesses typically see a payback from incorporating electronic payments into their other financial practices,they are likely to adopt these products before consumers do.

The federal government may be more enlightened than the business sector in seeing the benefits of electronic payments. Starting January 1, 1999,the Treasury will require that nearly all of the approximately 1 billion federal payments — to individuals as well as businesses — must be made electronically. By reducing the number of checks it issues,the government estimates it will save about $420 million over the next five years.

As a general matter, businesses face stronger incentives than consumers to maintain records about both expenditures and receipts. Payments providers know that businesses are receptive to viewing their electronic services as information tools that lead to more efficient, secure business operations, or as a means through which merchandisers can broaden their customer base. If electronic payments are marketed creatively, businesses are likely to pay for them to a degree that consumers simply will not.

Banking Institutions The landscape of banking is changing. In years ahead, traditional retail banking — branch services, ATMs, and checkbooks — will inevitably shift toward electronic means such as ACH, online banking, and point-of-sale technology. This will bring banks face-to-face with issues related to networks and service providers.

Competition for transaction volume has resulted in commoditization of banking's financial service products,spurring nonbank players to enter the market. And now the payments business is heating up. Recognizing that the retail payments industry is ripe for electronics,software developers and third-party payments processors are targeting key segments of the payments cycle. In many instances,emerging participants — motivated by the profit potential of their high-margin products — are willing to sustain initial losses to capture market share.

Banks,while realizing that reliable payments products are a key element in providing excellent customer service, may be tempted to view their payments services as adjuncts — provided mainly to support and facilitate their core financial services and risk management products. Going forward, banks must decide how much capital to allocate to making their existing paper-based payments structure more efficient versus how much to invest in new technologies such as smart cards, or whether to outsource some of their payments services. And just as the payments race gains speed, banks find themselves preoccupied with other pressing concerns,including consolidation,interstate banking and branching,and the century date change.

The growth of check volume is expected to level off during the next several years, as banks divert customers to new technologies, but the reality is that checks will be here for some time to come. Providing check services may contribute to the profitability of banks, but the return on investment is low. Recent actions by a number of banks to curtail their correspondent banking check services would

seem to confirm this. With its electronic funds transfer mandate, the Treasury has signaled its view that paper checks are outmoded. Some banks are questioning the wisdom of selling check processing services to other financial institutions, preferring instead to service only their own depositors. Banks will simultaneously be promoting electronic payment mechanisms and pursuing strategies to improve the efficiency of check processing, most likely through electronic check presentment (ECP) and truncation.

Community banks share the same concerns as larger banks, but the size differentials pose an additional challenge for smaller institutions. Payments operations generally exhibit scale economies, resulting in lower unit costs for larger banks. Small banks may be constrained by lack of capital with which to implement new technologies,many of which have high fixed production costs. For example, community banks nearer to metropolitan areas are particularly susceptible to losing customers to large banks which have invested capital in proprietary systems that allow customers to bank from home.

The challenge for community banks is not only to keep abreast of changing technologies, but also to ensure their access to new payments networks. They have managed to do this in the check system with access to the universal collection service offered by the Federal Reserve Banks. Similarly, the major credit card brands have been open to community banks.

If any bank is to preserve its role in the payments industry, it must expect to ally itself with other depository institutions in networks, with third-party service providers that may offer network software and enlist members, and with the Federal Reserve for interbank settlement. Clearly, in the coming years, all banks must identify and exploit opportunities to achieve industry-wide efficiencies and economies of scale. To their credit, some banks have been experimenting with point-of-sale electronic debits and with home banking. The technology to support these initiatives exists; the challenge lies in better marketing and customer incentives. Banks that worry about retaining their retail deposit base are looking for ways to offer consumers and businesses the particular payments solutions that will satisfy their unique needs for privacy, information, and convenience.

Emer ging Pr oviders As the number of households with computers continues to grow (from the current level of about 40 million), a throng of telecommunications companies, retailers,software firms, and other emerging providers are scrambling to develop and market PC-based home banking services to banks and their customers. More than in the past, a special function of emerging nonbank providers will be the design and marketing of network services.

The payoff could be enormous: Nearly 16 billion credit card,utility, insurance, and mortgage bills are delivered to U.S. households each year. The average consumer receives 10 to 12 bills per month, spending about two hours to pay by check. For some consumers,paying bills by computer could cut that time substantially.

Nonbank firms see enticing opportunity in adapting their proprietary technologies to payments applications. Emboldened by their competitive cost structures and aggressive business attitudes,

entrepreneurial firms are muscling their way into the payments marketplace, providing "niche" services such as electronic bill presentment and remittance processing. Major growth in electronic commerce depends on the development of advanced systems that offer customers benefits at least equal to those they currently receive from paper-based payments instruments, at lower prices. This requires bank accounts, software, and hardware, as well as a telecommunications system to replace the postal service and the land and air couriers now transporting paper.

The Internet holds great promise as a transportation medium for electronic payments that would not require either paper checks or cash. Emerging providers are marketing convenient,easy access to a variety of products and services,to be coupled with a means of effecting payments. The basic idea is to view the Internet as a very large electronic communication and distribution system. The development of payments applications may be expensive, but the returns will be large if these applications can draw business to the Internet. What's required is that sets of participants come together with a need to pay one another and with the compatible software for doing so.

One large software firm, in partnership with a payments processor, is readying a Web-based service for delivery and payment of bills that is designed to make bill-paying as convenient as possible. The partnership's innovations are generating interest for two reasons. Users will not have to access a particular Website to retrieve their bills, since the Internet will be used to push bills to consumers. In addition,technology has advanced from preauthorized bank drafts — automatic debits from checking accounts — to bill-paying services that enable consumers to transmit full or partial payments whenever they choose.

The costs of the service will be borne by billers, who would expect to save money by having their bills delivered electronically. Although the software firm has described its bill payments service as a boon to banks wishing to enlarge their online presence, some bankers perceive emerging providers as a threat to banks' traditional role as the primary financial conduit between customers and businesses. By serving as a pipeline for customer billing and payments activity, third-party firms will gain access to potentially valuable information about consumers' financial profiles and purchasing practices. Such information is coveted by banks because it is useful for determining market preferences and buying trends.

While technology firms are setting the pace for development of electronic payments systems, some banks are coming together to respond to the challenge of nonbank providers. One very large consortium of 18 major North American banks, an information technology company, and a credit card network is working to develop a secure mechanism for interactive banking and electronic commerce over the Internet. Using the technology company's operating platform, the consortium is expected to offer end-to-end service.

At first glance, it might appear that the turf battle over electronic payments would not matter much to banks, which would still retain the deposits used to make payments. Aren't these electronic systems

Efficiency is essential. Moving payments traffic efficiently is a crucial goal for service providers and a baseline expectation of their customers. Speedy, reliable payments mechanisms support the needs of our dynamic economy.

just going to alter the flow of bill presentment and payments instruction? Possibly. Consider, however, that participating banks will have to be parts of a network with interfacing software. If they are not, their depositors may migrate to other institutions that belong to the network. Ultimately, the account relationship itself becomes a commodity, with customer benefits coming from the services carried by the payments network provider. Nationwide branch banking, of course, makes a different scenario possible, with one or a few banks creating their own electronic payments systems.

A recent study predicts that by 2000, 13 million Americans will pay bills online. Right now, Internet payments systems are still in their infancy, and as with business-to-business Internet commerce, several barriers prevent widespread acceptance of Internet banking. Issues related to consumer protection, disclosure and assignment of participant liability, and privacy must be addressed by regulators and legislators. In addition, encryption standards are needed to ensure security. New payments systems require a solid institutional structure if they are to be trusted and widely used.

The process of adopting industry standards and protocols will undoubtedly be enhanced if banks collaborate actively with nonbank providers. By working together to ensure the interoperability of their respective systems,banks and third-party firms can best implement new payments technologies.

The Federal Reserve In its roles as a provider of payments network services and as the final settlement point of interbank payments,the Federal Reserve strives to bring integrity, accessibility, and efficiency to the nation's payments systems. Prior to 1981,the Federal Reserve provided ACH, check processing,and wire transfer services to member banks that held reserve balances, but did not explicitly charge for these services.

With the Reserve Banks playing such a key role in the payments system, yet escaping conventional market discipline in their use of resources,Congress wanted to be sure that appropriate incentives existed for innovation and efficiency. To that end, the Depository Institutions Deregulation and Monetary Control Act of 1980 (MCA) encouraged competition between the Federal Reserve and private-sector providers of payments services, dramatically reconfiguring the landscape of the payments system. The MCA requires Reserve Banks to charge fees for their payments services — fees that must, over the long run,be set to recover all direct and indirect costs. It also subjects every depository institution,not just member banks,to reserve requirements and equal access to the Federal Reserve's payments services.

Nearly 20 years have elapsed since passage of the MCA, and striking new developments are taking place in the U.S. financial services industry. Consolidation and interstate branching are altering the structure of the banking industry, blurring the line between banks and other financial service institutions. Nonbanking service providers are actively entering the payments processing arena,spurred by innovations in technology as well as the evolving payments needs and preferences of consumers and businesses.

Responding to these changes, Federal Reserve Chairman Alan Greenspan appointed a committee in October 1996 to conduct a fundamental review of the payments services that the Fed provides to depository institutions. Headed by Federal Reserve Vice Chair Alice Rivlin, the Committee studied the Fed's role in payments and considered how alternative stances might affect the integrity, efficiency, and accessibility of payments systems as we approach the twenty-first century.

The Rivlin Committee concentrated its attention on the Fed's role in the retail payments systems used by consumers and businesses, focusing particularly on check collection and ACH services. The Committee hosted a series of national and regional forums with participation from more than 450 institutions, including depository institutions, clearinghouses and other nonbank service providers, consumers, retailers, and academics. It also analyzed how different payments markets would be affected if the Federal Reserve were to adopt various competitive postures.

Most forum participants thought the Federal Reserve should continue to provide check collection and ACH services, while striving to enhance the efficiency of both systems. The majority concluded that the Federal Reserve should play a more active role in bringing together the players in retail payments services to identify and address barriers that might be preventing conversion to more efficient payments systems. In addition, many participants asked the Fed to assume a leadership role in moving the payments industry toward the advanced electronic systems of the future. The Committee concurred with these viewpoints.

In setting its direction, the Federal Reserve faces a number of challenges and opportunities. By now, some of the challenges should be clear. The "payments system" comprises several distinct networks serving a large number of participants with diverse needs. Moreover, despite the fact that electronic payments products may have some pure cost advantages over traditional paper-based methods,our nation nonetheless continues to rely heavily on cash and paper checks — vehicles that for the most part require a lot of handling and transportation.

Factors such as convenience, risk, and price bear on the choice of payments services. Vehicles seeking to supplant current payments methods will have to deliver even more value to consumers and businesses than today's marketplace can supply. Since all payments products compete against one another, price reductions or enhanced features in one system are likely to affect the fortunes of others. For example, to the extent that the Federal Reserve improves the paper-based check system or the ACH, it raises the bar for providers of debit cards and other electronic payments products.

Quite apart from reaching conclusions about *which* payments services it should provide directly or support indirectly, the Federal Reserve will be challenged to forge working relationships with the various participants. Although a number of nonbank providers engage in payments services, the vast majority of retail payments flow through the Federal Reserve and bank-maintained networks.

As payments systems evolve, nonbanks may become significantly more involved in payments systems operations than they are today. Should this happen, the Federal Reserve will need

to consider how these developments affect its own role as the central bank for settlement of interbank payments, as well as whether they compromise the efficiency, reliability, and accessibility of payments systems as a whole. To take but one example, suppose people become comfortable holding balances on account with trusted merchants,instructing them via the Internet to transfer those balances on their behalf to make a payment. Would account holders have any recourse if the merchant failed? Should merchants be permitted to hold accounts at the Fed?

More efficient,convenient methods of making payments need not involve totally new systems. A payments evolution could also offer great opportunities for the Federal Reserve as a service provider. As long as the public remains enthusiastic about initiating payments with paper checks, it makes sense to keep looking for ways to increase the efficiency of check processing past the point of sale. The Federal Reserve has considerable expertise in capturing information electronically from checks, then speeding it ahead of the paper item. Electronic check presentment (ECP) without truncation enables processing to eventually be completed more quickly, but does not really affect the amount of paper handling. Truncating checks early reduces handling substantially, but a suitable electronic substitute for the canceled check needs to be available if truncation is to gain wider acceptance in the market.

To meet this need, the Fed has begun capturing digital images of checks, which can be used for processing and then archived for future reference. With ECP, truncation, and imaging, the total costs of reading,sorting, and transporting checks are being significantly reduced. Many pilot projects are now under way, aimed at examining the feasibility of an operation that uses images for forward, return,and exception item processing.

Information technology and telecommunications trends also seem to favor image products. Fast transmission of clear images requires considerable bandwidth, while archiving demands a great deal of storage space. Fortunately, the prices of both services have been falling over time, and these trends are expected to continue for some period. If the cost of imaging equipment should drop far enough, it might even become profitable to scan most checks at capture sites closer to the banks of first deposit.

The Fed is already delivering some imaging products, but greater market penetration depends on high volumes and broad participation. Full realization of the benefits of ECP and imaging requires that any collecting bank be able to transmit presentment information to any paying bank, without having to transport the physical items. The Federal Reserve, which presents checks to more than 14,000 financial institutions nationwide today, is clearly the dominant provider on such a geographic scale. Thus, the Fed is in an excellent position to enhance the ultimate viability of this network, and could seek opportunities to build image volume through pricing incentives relative to its paper check products.

In its experience with retail electronic payments, the Fed has seen a steady increase in the volume of ACH transactions in the last 10 years, reaching approximately 4 billion payments in 1996. Despite this significant growth, ACH transactions represent only about 5 percent of all noncash payments.

Collaboration is key. Clashes and collisions only act to inhibit the progress of all participants. To reach their destinations quickly and safely, payments participants must interact in a coordinated, cooperative manner.

Increased usage can be stimulated through education, pricing, and marketing initiatives. The Federal Reserve has consistently maintained competitive pricing for its ACH products, and it has long-range plans to drive fees lower for items both received and originated.

Over the past several years, the Fed has participated in education and marketing efforts aimed at promoting public awareness of the advantages of electronic fund transfers. Nevertheless,surveys show that many consumers believe the process of originating ACH transactions is cumbersome and inflexible. If ACH is to realize its growth potential, the Federal Reserve must work together with banks and third-party providers to supply product improvements that increase customers'control over the timing of their payments and make it easier to initiate one-time transactions. As has already been shown,there are sufficient numbers of these payments to encourage emerging payments providers to want a part of that business.

GOING FORWARD

The Federal Reserve's presence in today's payments services marketplace carries both challenges and opportunities. Payments systems providers operate under the discipline of the marketplace, with its pressures to keep costs low, customer service high,and innovation rapid. These forces are especially strong in an environment of fast-paced technological change. Since payments systems provide alternative methods for transferring purchasing power, they compete against one another. Consequently, factors that lead people to favor certain products typically do so at the expense of others. No one's survival is guaranteed.

Despite the popularity of today's most prevalent retail payments vehicles, computer software and telecommunications clearly offer many dramatic new trajectories for the evolution of payments systems. Individual media (such as cash, checks, debit cards, and ACH) are really quite distinct from one another in form, circulation, and legal characteristics. These systems accomplish the same objective, but through different means and with different social costs. Going forward, even if more retail payments move to electronic forms, a variety of systems will probably still exist.

Choice is the cornerstone of our economic system. In this essay, we have explained how everyone involved in the payments industry will affect its development through their own choices. We hope that our explanation will help make these choices more informed ones.

The U.S. payments systems will evolve unpredictably, yet with some predictable consequences. We may not know which products will enjoy widespread acceptance 20 years from now, or who the dominant service providers will be. But consumers of those services will enjoy more convenience and get greater value if these systems remain accessible, safe, and efficient, a goal that the Federal Reserve Bank of Cleveland continually strives to achieve.

Officers and Consultants

As of December 31,1997

Jerry L. Jordan
President & Chief Executive Officer

Sandra Pianalto
First Vice President &
Chief Operating Officer

Charles A.Cerino
Senior Vice President
Cincinnati and Columbus Offices
Check,Marketing

Lawrence Cuy
Senior Vice President
Information Technology,
Financial Management

R.Chris Moore
Senior Vice President
Banking Supervision and Regulation,
Credit Risk Management, Data Services

Samuel D. Smith
Senior Vice President
Facilities,Protection,
Business Continuity Planning,
Information Security

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Senior Vice President &
Director of Research
Corporate Communications &
Community Affairs,Research

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Unisys IPS development, EEO Officer

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Senior Vice President
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ACH, Funds Transfer, Electronic
Delivery, Cash Services functions

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Research

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Senior Consultant
Information Technology Services

Terry N. Bennett
Vice President
Information Technology Services

Jake D. Breland
Vice President
Banking Supervision and Regulation

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Vice President
Banking Supervision and Regulation

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Vice President
Cash,Securities/Fiscal, Custody Control

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Credit Risk Management, Data Services

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Electronic Delivery Services

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Information Technology Services

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Marketing

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Quality

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Vice President
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Securities/Fiscal

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Vice President & General Auditor

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Financial Services Research Group

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Financial Services Research Group

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Human Resources

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Vice President & General Counsel

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Vice President
Cincinnati and Columbus Offices
Check Collection, Accounting,
Support Services,Ordinary Mail

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Consultant
Information Technology Services

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Pittsburgh Office
Building,Cash,Protection,Securities/Fiscal

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Research

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Assistant General Counsel

Joseph G. Haubrich
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Research

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Facility/Information Technology Services,
Cash/Fiscal,Protection,
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Banking Supervision and Regulation

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Laura K.McGowan
Assistant Vice President
Corporate Secretary &
Community Affairs Officer
Corporate Communications &
Community Affairs

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Banking Supervision and Regulation

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Assistant Vice President
Facilities, Business Continuity Planning,
Building Transition

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Pittsburgh Office
Check Collection, Marketing,Automation,
General Services,EEO

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Human Resources

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Banking Supervision and Regulation

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Information Technology Services,
Deputy EEO Officer

Darell R. Wittrup
Assistant Vice President
Accounting,Billing

Consultants are highly skilled employees who contribute to attaining the Bank's goals through their specialized professional or technical skills.

Directors: Cleveland

As of December 31,1997

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Chairman & Federal Reserve Agent
President
GWH Holdings, Inc.
Pittsburgh, Pennsylvania

David H.Hoag
Deputy Chairman
Chairman & CEO
The LTV Corporation
Cleveland,Ohio

David A.Daberko
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National City Corporation
Cleveland,Ohio

David S. Dahlmann
President & CEO
Southwest National Corporation
Greensburg, Pennsylvania

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Former Executive Secretary–Treasurer
Ohio State Building and
Construction Trades Council
Columbus,Ohio

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American Micrographics Co.,Inc.
Monroeville, Pennsylvania

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Heartland BancCorp
Gahanna,Ohio

Michele Tolela Myers
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Denison University
Granville, Ohio

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Mercantile Stores,Inc.
Fairfield,Ohio

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As of December 31,1997

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KeyCorp
Cleveland,Ohio

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As of December 31,1997

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President & CEO
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Scripps Howard Foundation
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Community Trust Bank, N.A.
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Paris, Kentucky

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Wayne Shumate, Judith G. Clabes,and George C. Juilfs

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As of December 31,1997

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Chairman,President & CEO
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PNC Bank Foundation
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Trigon Incorporated
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Charles E.Bunch, John T. Ryan III, Gretchen R.Haggerty,
Thomas J. O'Shane, and Peter N. Stephans

Statement of Condition

(in millions)

	For the year ended: December 31,1997	December 31,1996
Assets		
Gold certificates	$ 669	$ 624
Special drawing rights certificates	574	543
Coin	27	25
Items in process of collection	352	688
U.S. government and federal agency securities,net	30,020	23,173
Investments denominated in foreign currencies	1,083	1,257
Accrued interest receivable	284	209
Interdistrict settlement account	0	5,007
Bank premises and equipment,net	162	131
Other assets	22	23
Total assets	$33,193	$31,680
Liabilities and Capital		
Liabilities		
Federal Reserve notes outstanding,net	$28,441	$29,861
Deposits:		
Depository institutions	1,815	856
Other deposits	11	15
Deferred credit items	235	280
Statutory surplus transfer due U.S. Treasury	52	37
Interdistrict settlement account	1,888	0
Accrued benefit cost	46	43
Other liabilities	21	10
Total liabilities	32,509	31,102
Capital		
Capital paid in	349	292
Surplus	335	286
Total capital	684	578
Total liabilities and capital	$33,193	$31,680

These statements are prepared by Bank management.Copies of full and final financial statements,complete with footnotes,are available by writing to the Corporate Communications & Community Affairs Department of the Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland,OH 44101,or by calling (216) 579-2001 (key in 1-5-3).

Statement of Income

(in millions)

	For the year ended: December 31,1997	December 31,1996
Interest income:		
Interest on U.S. government securities	$1,668	$1,382
Interest on foreign currencies	24	29
Total interest income	1,692	1,411
Other operating income (loss):		
Income from services	50	50
Reimbursable services to government agencies	24	23
Foreign currency losses,net	(165)	(109)
Government securities gains,net	1	2
Other income	1	1
Total other operating loss	(89)	(33)
Operating expenses:		
Salaries and other benefits	69	68
Occupancy expense	11	8
Equipment expense	10	9
Cost of unreimbursed Treasury services	1	2
Assessments by Board of Governors	36	34
Other expenses	56	43
Total operating expenses	183	164
Net income prior to distribution	$1,420	$1,214
Distribution of net income:		
Dividends paid to member banks	$ 19	$ 16
Transferred to surplus	57	33
Payments to U.S. Treasury as interest on Federal Reserve notes	0	854
Payments to U.S. Treasury as required by statute	1,344	311
Total distribution	$1,420	$1,214

Statement of Changes in Capital

(in millions)

	Capital Paid In	Surplus	Total Capital
Balance at January 1,1996 (5,175,336 shares)	$259	$259	$518
Net income transferred to surplus		33	33
Statutory surplus transfer to the U.S. Treasury		(6)	(6)
Net change in capital stock issued (674,545 shares)	33		33
Balance at December 31,1996 (5,849,881 shares)	$292	$286	$578
Net income transferred to surplus		57	57
Statutory surplus transfer to the U.S. Treasury		(7)	(7)
Net change in capital stock issued (1,132,457 shares)	57		57
Balance at December 31,1997 (6,982,338 shares)	$349	$336	$685

Cleveland Building Project

■ The Bank's new Operations Center was completed on time, with occupancy occurring in the February-March time frame. The move, which involved our major operations areas, was made with no disruption in service to customers. Renovation of the main office building was also begun, with completion scheduled for summer 1998.

Payments Services

■ The check function — the Cleveland Fed's largest operation — succeeded in matching its costs and revenue, achieved the lowest unit cost in the Federal Reserve System, and met all of the System's key quality measures (only one other Reserve Bank accomplished the last of these goals). The Bank also led the System in electronic check penetration, with 41 percent of all items processed.

■ The Cleveland Fed's Pittsburgh office — one of five regional processing sites for savings bonds — continued to serve the U.S. Treasury. The efficiency and effectiveness of the savings bond operation were enhanced in several ways, including the introduction of a high-speed image capture platform that streamlined the EZ Clear work flow and reconcilement process, and a scanning pilot for automating data input from savings bond applications. Pittsburgh also served as the test site and first implementation site for software developed to support the anticipated rollout of an inflation-indexed savings bond.

■ The Bank implemented a number of new automated systems and strategic initiatives, including a new national book-entry system, a new statistics and reserves system, an expanded funds transfer format, expanded funds transfer hours, and a single-account structure for the interstate banking environment.

■ The Bank contributed to the System's effort to achieve operational efficiencies through consolidation by moving its government check and noncash operations to other Reserve Banks. Within the District, the Pittsburgh office's currency processing operation was consolidated into the Cleveland unit, while funds transfer, ACH, and book-entry securities functions were merged into one unit in Cleveland.

■ As the System's project office for Unisys support, the Cleveland Fed continued to coordinate activities between Unisys Corporation and other Reserve Banks, using the Unisys platform to set the strategic direction and develop the requirements for the next-generation check processing system.

■ The Bank developed and began implementing a plan which ensures that we are adequately addressing the ramifications of the century date change for our automated systems.

■ First Vice President Sandra Pianalto served as staff director for the Committee on the Federal Reserve in the Payments Mechanism, which undertook a fundamental review of the Fed's role in the payments system. Alternative roles for the Federal Reserve were developed and discussed with payments system participants. The final report concluded that for the foreseeable future, the Fed should continue its role in check processing and ACH services, while striving to enhance the efficiency of both.

Supervision and Regulation

■ The Bank successfully carried out its supervisory objectives and responsibilities using a risk-based examination approach. The function remained the most cost-efficient in the System, based on assets supervised. In addition, department staff developed new off-site analysis and reporting procedures for small shell bank holding companies that both enhanced our supervision and reduced the burden on Fourth District financial institutions.

■ Banking Supervision and Regulation staff, in collaboration with employees from other areas of the Bank, were substantially involved in efforts to ensure a smooth, effective transition to interstate banking and branching. Using valuable input from District financial institutions affected by the legislation,staff members developed standards to guide future consolidation/merger activities throughout the Federal Reserve System.

■ In conjunction with other regulatory agencies, the Cleveland Fed participated heavily in the formulation of interagency Year 2000 supervisory programs. Initiatives included the development of Year 2000 examination guidelines and a Systemwide training class for examination staff. In addition, the Bank sponsored several interagency conferences throughout the District to raise overall awareness about the century date change issue.

■ The discount function improved its oversight of account management practices, strengthened initial information systems, and enhanced its communications with Fourth District financial institutions,especially late in the day. These initiatives helped District depositories reduce their use of interday credit by more than 50 percent.

Monetary Policy / Research

■ Our staff of Research economists had 17 articles accepted in outside scholarly journals,conference volumes, and books.

■ Bank publications included multiple articles on key issues in the areas of monetary policy, fiscal policy, labor markets, financial markets, and banking.

■ The Research Department sponsored high-level conferences on comparative financial systems, microeconomic and macroeconomic perspectives on the aggregate labor market, and asset pricing and the term structure of interest rates. In addition, proceedings of the 1996 conference on the dynamic effects of monetary policy were published in the *Journal of Money, Credit and Banking*.

Quality Improvements

■ The Cleveland Fed began a Bankwide transformation effort to ensure readiness for the next century. Our focus on customers,quality, continuous improvement,and teamwork across functions will be maintained, while greater emphasis will be placed on the use of business process analysis and innovation. This ongoing effort will enable the Bank to be more responsive to change and opportunities in the future.

■ Customers once again participated in an annual Quality Assessment Survey. Results showed that, as in past years, the Bank maintained its ability to meet or exceed customer expectations across all services. The survey process provided information that will be invaluable in our continuing effort to achieve even higher levels of customer satisfaction.

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This annual report was prepared by the Corporate Communications & Community Affairs Department of the Federal Reserve Bank of Cleveland.

For additional copies of this annual report, contact the Corporate Communications & Community Affairs Department, Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, OH 44101, or call 1-800-543-3489 or (216) 579-2001.

The annual report essay is also available electronically through the Cleveland Fed's home page on the World Wide Web: *http://www.clev.frb.org.*

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