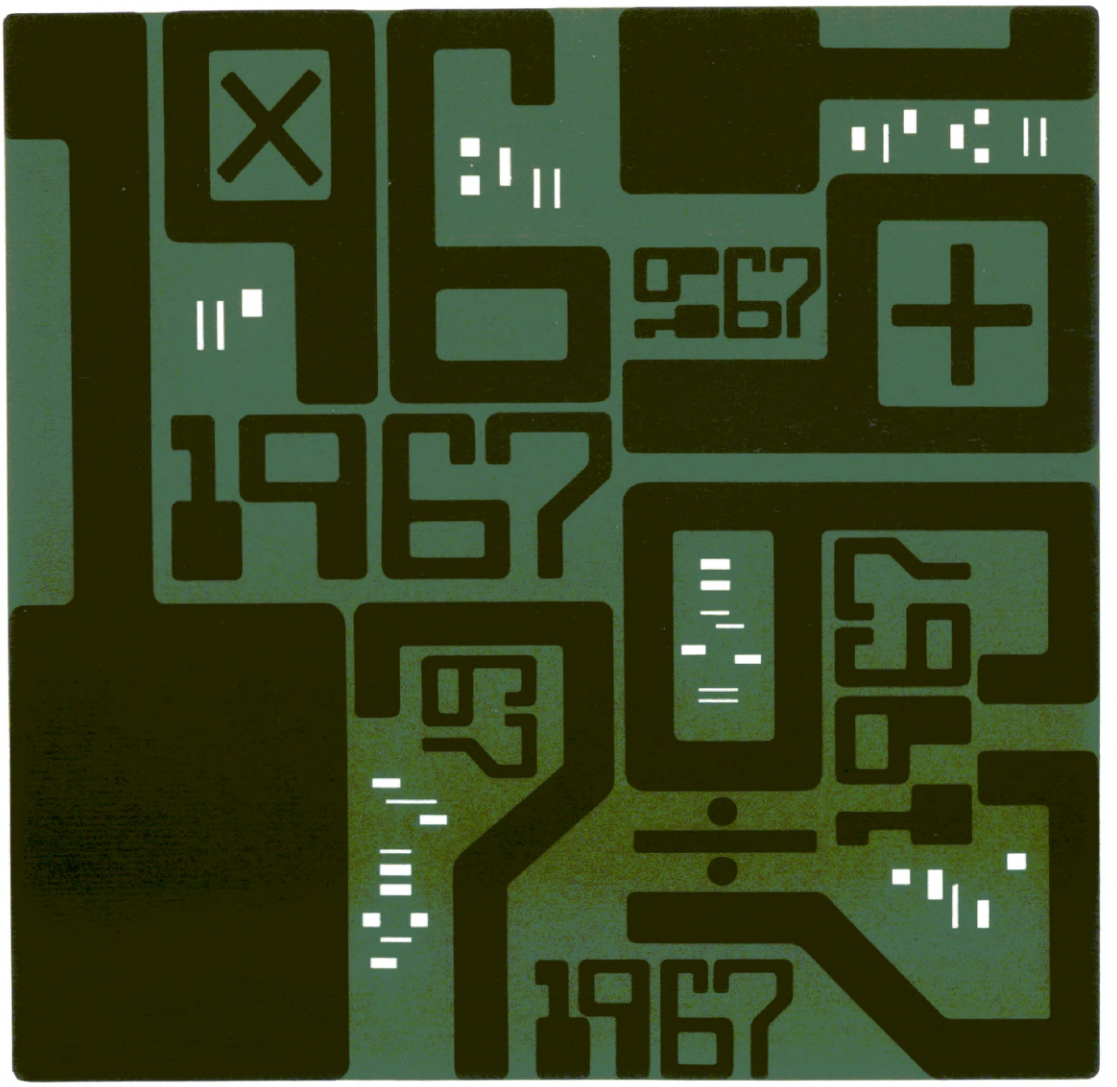
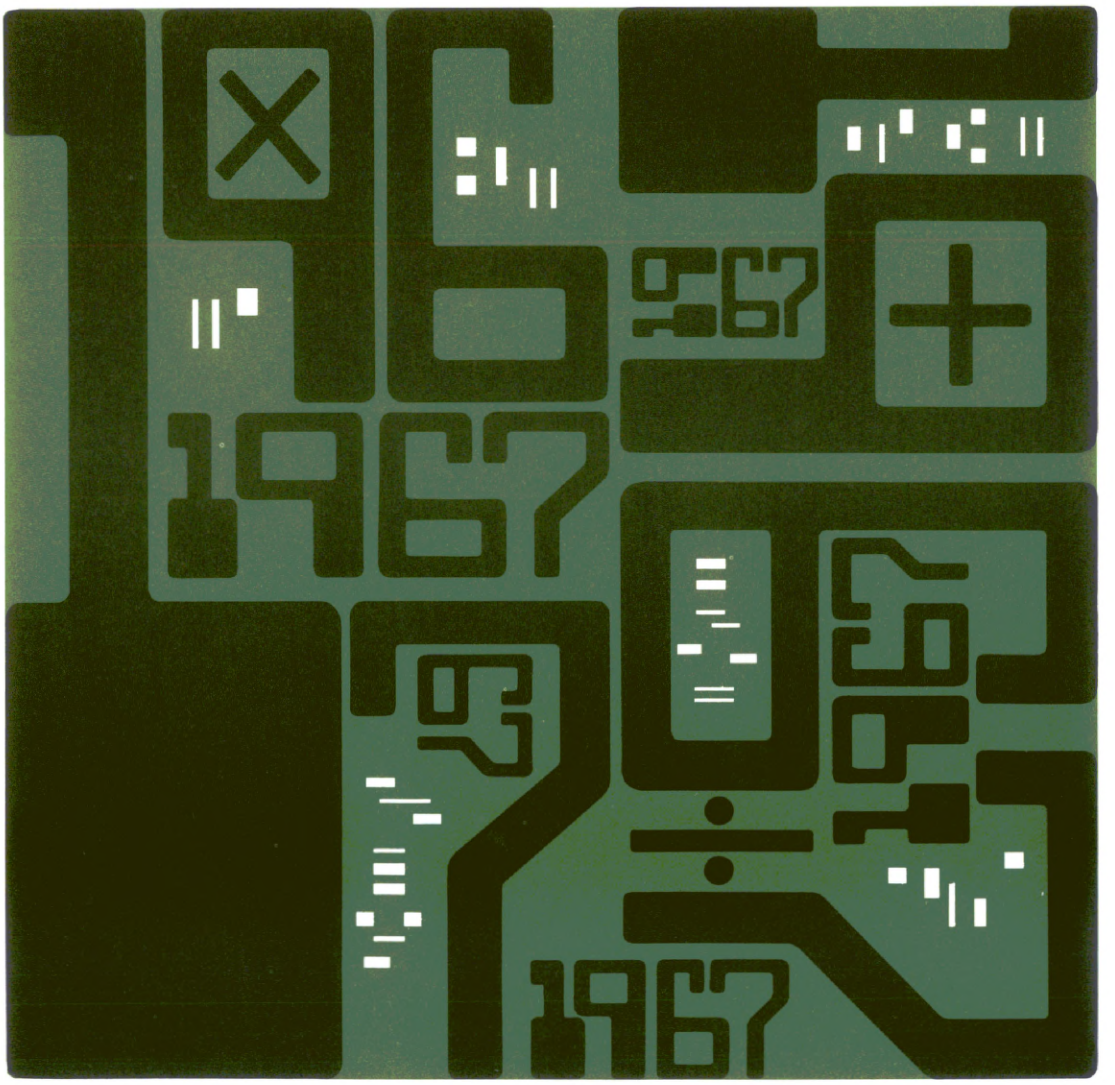
Federal Reserve Bank of Boston

Annual Report 1967

Electronic Money...and the Payments Mechanism





To The Member Banks

I am particularly pleased to provide you with this 1967 Annual Report of the Federal Reserve Bank of Boston.

As this is being written, our New England economy continues to expand — paralleling the nation's longest period of economic growth in its history.

It is not surprising — with economic growth of such long duration and broad scope — that dislocations of resources, complications of supply, and uneveness of demand should appear with increasing frequency. Many of the problems of economic growth are further aggravated by the nation's deepening commitment to insuring opportunity for self-determination for the people of South Viet Nam, and to the resolution of increasingly critical developments within our domestic social structure.

As a part of this report, we have included an appraisal of a vital, but seldom-recognized, adjunct to the development of our national economy — the payments mechanism. Subject to increasing pressures and evolving public needs, the system by which our other-than-cash transactions are completed is undergoing a number of far-reaching changes.

Electronic Money And The Payments Mechanism is an attempt to appraise some of the variety of problems, proposed solutions, and issues which are — or may be — involved in future improvements in the mechanics of the nation's payments system.

It is our hope that our review may be a helpful aid to broader understanding — among the general public, and within the financial community — of the public policy implications to be met by any significant changes which may be contemplated in this basic public service.

At the conclusion of this presentation, we have expressed, editorially, eight convictions which we feel provide a sound basis for further discussion of the issues.

A summary and review of the Boston Reserve Bank's 1967 operations is included at the end of the report.

For the increasing efficiency of these operations, and for the assistance of our officers and staff in helping to improve the Bank's contribution to New England's economic progress, I extend my own thanks and those of our directors.

Our thanks go, also, to New England's bankers and business leaders, for their generous and helpful co-operation.

January 15, 1968

George H. Ellis

President

The Transaction

". . . 39 cents. $1.19. . . . are there three of — oops! — I'll only charge you 26 cents apiece for these two, Mrs. Struggling, I already rang that up as a single item . . . 26, 26 . . . that'll make it right on the tape . . . "

And simultaneously, the fingers on Sandy Frisbee's right hand recorded the vital statistics of Janet Struggling's weekly foraging expedition.

"Fifty-seven, eighty-eight, Mrs. Struggling . . . will that be cash, charge, or electronic money?" Sandy asked, smiling.

Almost hynotized by the register's flicking paper tongue, which now lolled limply on the shoulder of the quieted machine, Janet Struggling, hesitated briefly, and said, "Oh, make it electronic money, if you will, please, Sandy."

Then, suddenly aware that the pert cashier was waiting, she bent her roller-distended, kerchief-covered head over her out-sized handbag, which was balanced on the counter's edge, while she rummaged, two-handed, deep into the bag's amorphous clutter.

A look of minor triumph flashed in her eyes, as she drew a small plastic card from its hiding place in one of the lumpy leather pouch's inside pockets, and handed it to the checkout girl.

Sandy turned, and inserted the card into what appeared to be a telephone studded with push buttons, which was connected by a many-wired cable to the register. As she lifted the receiver — or what looked like the receiver — her nimble fingers did a quick two-step over the keyboard.

Then she peered absently, for a second or two, at a card headed, "Today's Vegetable Specials," taped to the top of her cash register-telephone, as though waiting for someone — or something? — on the other end of the line to say something . . . apparently heard what she was waiting for, and hung up.

"Thanks, Mrs. Struggling," she said, dextrously amputating the register's paper tongue, to hand it — and the small card — to the young housewife, who was still exploring the lower recesses of her handbag, "Come in again!"

"Thank you, Sandy," Mrs. Struggling murmured, somewhat distractedly, as she thrust register tape and card firmly into the handbag's innards, latched the flap, one-handedly, and leaned into the handle of the heaping shopping cart which the cashier's helper was easing away from the checkout counter, toward the door.

With a rush of air, the automatic door swung outward — like a fat man, drawing in his breath to make extra room for the loaded cart to pass.

Then — exhaling with a labored, asthmatic wheeze — the supermarket door swung shut . . .

The Transaction was completed.

And that's the way "Electronic Money" will work — some say — someday.

You might substitute an Oklahoma oil man, taking a modest flier on a million dollar land option at his broker's office — or a bearded, baggaged, holiday-bound college boy, fueling up his sports car at a turnpike service station — for our curler-coifed housewife, ransoming her way past the supermarket checkout counter. The actors and their acquisitions may be as varied as your imagination permits . . .

But, if we're to understand — really understand — our changing payments mechanism, it may be somewhat more helpful to think a bit about an idea suggested by that old cliché: it's not the money, but the principle of the thing!

Electronic Money — and the Payments Mechanism

Our little encounter on the preceding page is a parable, of sorts, for, if we truly "accept" its implications — all of them — perhaps we *can* adjust to "electronic money."

In some ways, money is unimportant . . . in *some* ways.

It would probably be a mistake to say, too loudly, that most people don't give much thought to money — of course they do. But — aside from the increasing awareness that, while money doesn't travel as far these days as it once did, it surely goes a lot faster — few of us have taken much time to think about how money — cash or credit — really "works."

The important thing about money is what it *does*.

The world has seen some pretty ridiculous kinds of money — from shells and little stones with holes cut in them, to scraps of paper of assorted colors and designs. But in their respective times and places, each has done a very important job; each has served as a more-or-less workable means of making payment for goods and services.

At the same time, as any economist worth his salt would be quick to point out, money has been a *measure* of value. It's also been a *storehouse* of value — which, in due course, has led to its use as a standard of deferred payment. But each of these other virtues is rooted in money's unique function in the payments mechanism, that of being the "common denominator" of goods and services.

Some say that you can judge the sophistication of a society's economic development by its payments mechanism . . . and, in a very general way, that observation seems a good one. Surely, things are at a pretty primitive level where one "good" is bartered directly for another. But, perhaps there's more sophistication than is immediately apparent in the culture which defines the worth of one wife as equal to three cows, although it would be difficult to argue that such a system of exchange lends itself to the frequent, and complex transactions — with infinitely graduated values — that are common in more commercial economies.

The difficulties involved in barter — e.g., the difficulty of allowing a half-a-cow discount, for "cash" — led to the development of "money" — especially to the use of precious metals, the weight and purity of which could be more closely tailored to match the values of transactions. It's at this point in money's evolution that man's imagination came to the rescue, for who'd ever have believed that a lump of gold or silver — which could not be eaten, worn (except for adornment), or lived in — would be given equal value by so many quite-different people? What, nowadays, is spoken of as "the intrinsic worth" of a monetary metal, at some point in time, was the result of practically universal agreement among large groups of people, not that the metal, but that the *concept* of its exchangeability for value, was acceptable.

Having made *that* quite sizable step — dissociating a thing's value from the thing itself — it now seems perfectly logical that a variety of "proxies" for things should develop . . . including such relative newcomers to the scene as paper money, notes, certificates of deposit, bonds, stock certificates, and, of key importance, checks.

Until a few years ago, scholars of money mechanics would have judged the check to represent about as sophisticated a payments mechanism as modern commerce and technology might devise. It was the ultimate key to the ultimate system of completing the transactions required by the ultimate in sophisticated economies.

Then came some new pieces of technology.

The electron entered banking.

As a consequence, the payments mechanism of the United States continues to evolve — as does that of many of the other more-advanced economies of the world. Computers, and their growing ability to communicate — both with each other and their masters — are suggesting that what was "the ultimate" is overdue for redefinition.

The possibilities that seem to be inherent in a somehow-computerized payments mechanism have been provocatively, but somewhat misleadingly, labeled "the Checkless Society."

Bankers, continuingly harried by the pressures of handling the flurry of paper checks which seems noticeably to intensify with each passing day, have been quick to accept the *idea* of "fewer checks" as a star in the East — if only as an article of faith and hope.

Their acceptance of the *idea* is tempered, however, by their even keener realization of the

checking account's importance to expanding banking markets.

Technicians, well aware of the almost limitless capacity and capabilities of their computers, have already set about drafting sweeping — even Utopian — solutions to problems . . . problems, in some cases, not yet encountered.

It may be helpful, here, to investigate some aspects of the payments mechanism that are surely a part of what may evolve into a "less-check" society. As the name suggests, the heart of the matter seems to lie in what might be described as a movement toward a payments mechanism in which money — whether it be "cash" money, or "credit" money — moves between buyers and sellers in some paperless way.

Because of the sheer size and complexity of today's total payments mechanism, it seems likely that any system that may evolve must be co-ordinated — integrated — with the existing system. And this fact, alone, provides some valuable clues as to the nature and scope of a number of problems of our payments mechanism's evolution.

To begin, let's look at some of the more recent developments.

The Mechanics Of Now

Today's money supply, by definition, consists of the near-$38 billion in currency and coin in circulation and about $140 billion in demand deposits in the nation's commercial banks.

It's estimated that around 40 percent of the American people still deal almost exclusively in cash — although, it's also estimated, over 90 percent of the total dollar volume of payments are made by check.

Over the past 100, or so, years, Americans' use of checks has expanded almost continuously — to the point where, today, there are about 67 million checking accounts in the country's 14,000 commercial banks. Each year, about 17 billion checks — worth an estimated $3 to $4 *trillion* — are written . . . and the number of checks written has been increasing at about a 7 percent annual rate.

It has been estimated that the cost of processing the billions of checks that are cleared through the banks each year amounts to over $3 billion. But, we ought to add to this the cost of the checks themselves — including paper, checkbooks, printing, and preparation — and the costs involved in the original mailing, plus other handlings, and even the storage, that occur outside the banking system . . . if we are to guess at the total expense of operating a payments mechanism based upon checks.

But *any* payments mechanism, as resilient, flexible, and adaptable as our present system, can be presumed to be fairly expensive, given only the magnitude of the job it does. Perhaps, at this stage, the "costs" — of this system, relative to some other — are less meaningful than the relative adaptability and usefulness of the possible alternatives?

This thought, too, suggests that we might, usefully, explore the working mechanism and its parts in some detail.

Yes, Virginia, There Are Checks . . . .

While most everyone knows what a check is, a real awareness of what a check does is somewhat less common — mostly because we seldom give it much thought.

A check is (1) a piece of paper (2) addressed to one's bank, (3) on which is written a (4) legal (5) authorization to (6) withdraw a (7) specified amount of money (8) from one's account, and (9) to pay that amount (10) to someone else.

Of these 10 items, only the last nine seem to be truly integral to the payments mechanism — and it's the first one — or the absence of it — that has been the basis for most pronouncements about "a check-less future."

In essence, then, a check is a piece of paper with necessary information on it. Most people accept a check as the equivalent of cash — and in many respects it may be. But, as anyone who has ever attempted to "cash a check" (the phrase, itself, attests to some difference) in a strange town knows, a check (under certain circumstances, to be sure) is *not* cash.

As a matter of practical reality, it *is* accurate to say that, at one's own bank, one's check is interchangeable with — equivalent to — cash. But a check, in other circumstances, takes time — time for delivery, for endorsement, for presentation

to the other person's bank, for presentation and clearing back through the Fed (or a correspondent bank), before its eventual payment from the account of the check writer. Simply because the check, sent (or handed) to a person to whom money is owed, requires time for such things, checks are, in legal terms, credit instruments.

Each person or institution to whom it is presented must examine the information written on the check, and each, having satisfied himself that the bits of information are valid, approves the credit, and passes the check on to the next in line between himself and the original issuer of the check.

One indication of the "credit" nature of the check, is the reservation by each handler in the clearing process of the right to reclaim payment from the person who presents the check for payment, in the event that insufficient funds exist in the account upon which the check was drawn. Each says, in effect, "I will credit this amount to your account, with the understanding that the deal is off if I can't collect from the next link in the payments mechanism."

This small, but vital, series of credit arrangements actually creates a series of circular links in the payments mechanism spiral. Because each link in the chain is, essentially, a separate two-party agreement for which each must extract the information from each check, analyze it, digest it, and act upon it — handling the piece of paper more or less frequently in the process — the paper-handling, alone, creates a mountainous chore. The elimination of this mountain is the target toward which many of the advocates of the abolition of checks are aiming.

In fairness, it should be pointed out that, while the elimination of checks — or a reduction in their number, or the extent of their travels — is frequently characterized as a *banking* solution to a *banking* problem, improvements in the payments mechanism must result in broad *public* benefits, if they are to be accepted, workable, and worthwhile. It is, in fact, doubtful that any of the innovations currently contemplated will, in themselves, add to bank profits. It is only as these expensive, costly-to-operate new devices permit banks to offer broader, more useful services to their customers, that banks may benefit.

From Houlton to Presque Isle From Memphis to St. Joe

The physical distance between points in the check-clearing mechanism is intimately related to this choreographic "stop-read-approve-pass along" process of check handling.

To anyone familiar with the region's geography — or even with the geometric axiom that "the shortest distance between two points is a straight line" — any process in which a check drawn on a bank in Houlton, Maine, and received by an individual in Presque Isle, some 39 miles away, may be return-routed, almost 700 miles out of the way, via a Boston, Massachusetts, bank for collection, leaves something to be desired.

It is just such circuitous transportation of a slip of paper as this that puts zeal in a communications technician's eye. Not, necessarily, that he's prepared to shorten the route, physically — but, with gadgetry capable of gathering information at something like a million characters a second, and transmitting it, electronically, at a speed approaching 186,000 miles per second, he's prepared to make the trip seem shorter . . . quite a bit shorter.

Odd Numbers

A considerable amount of progress has already been made in shortening-up — or, at least, speeding up — the processing of check-carried information. Capitalizing on the electron's already demonstrated wizardry at "reading" and "acting" (re-acting may be a more appropriate word?) on what it has "read," the banking system developed the MICR (Magnetic Ink Character Recognition) program, some 12 years ago.

MICR "code" is made up of those strange, fat-stemmed numbers on checks, that look as though they might have been printed with broken type, using ink that had lumps in it.

MICR is simply a method of putting some of the more-vital information which each check carries — the identification of the bank upon which it is drawn, the dollar amount involved, and perhaps the identification of the account to which it is to be charged — on the check, in a form which electronic equipment can "read." Properly instructed, electronic data processing equipment can "digest" these kinds of information, sorting

and tabulating it at speeds upwards of 1,500 checks per minute.

So far — although there's no technical reason why, having once "read" the information on a check, the information couldn't be transmitted thenceforth electronically — the use of computer's skills at reading and writing have been generally limited to facilitating check sorting and bookkeeping jobs within points along the check-clearing route. This has meant that — while each institution through which a check passes may have done its bookkeeping chores electronically — each, in turn, has duplicated a number of steps in the bookkeeping process, just as it had to before the electron joined the office staff. Worse yet, this has meant that checks, MICR encoding and all, continue to be the source document, the basic carrier of information, that must be handled and re-handled every step of the way.

Granting that the MICR-computer contribution has been substantial, in permitting the substitution of speedy and accurate reading, sorting, and tabulating by machine for a good share of what would otherwise be a tedious, hand operation, requiring a growing army of nimble-fingered girls at check-sorting machines, MICR has done nothing to stem the mounting flurry of paper, called checks.

It wasn't meant to.

As a matter of plain fact, MICR, perhaps more than any other single development, has made possible the banking system's accommodation of the public's burgeoning desire to write *more* checks. In that light, MICR stands as shining evidence of the banking system's ability to cope with paper checks — if not in one way, then in another — however high the mountain may grow.

Our discussions of the payments mechanism ought, therefore, to be premised on an understanding that more challenging problems exist than may be involved in handling 17 billion scraps of paper — or 117 billion.

The principal indictment of the check is that "we know how to do it better."

The availability of electronic devices for computing and communication suggests, with growing clarity, "transmit the information, but don't move the paper!"

Changes already made in the payments mechanism represent attempts to use available new technology in separating the flow of information from the physical movement of the check in the collection system — witness the manner in which the paper flow and the information flow have been separated during the internal processing of checks within points along the route of the present check-clearing process.

And there are other — perhaps even-more-intriguing — variations of the "old" payments mechanism that seem destined to be a part of whatever new system is yet to come. They will be improvements in the ease — or the efficiency, or the economy — of the system . . . and will appear on a variety of fronts.

Equipment — electronic and otherwise — will surely further expedite the handling of checks. Take that for granted. The Federal Reserve System, correspondent bankers, and individual bankers — *all* who handle checks in the payments stream — will innovate with new procedures and techniques toward the same end.

Expanded check clearing on a regional basis — a natural extension of the clearing house operations which have expedited the movement of checks, and the payments mechanism's operation, in most of our major banking areas on a city-wide basis — would seem to offer some very real advantages in a number of circumstances in which the volume of intra-regional checks is large and the problems of geography are minimal . . . where the volume of checks to be cleared is substantial enough to more than compensate for the establishment and operation of such an institutional exchange.

Some commercial banks have established themselves, already, as regional clearing centers for their correspondents, and the Fed is actively exploring the possibility of broadening the application of the technique to serve additional areas.

The Shortstop

Regional clearing centers — the extension of the city-wide clearing house benefits — are but one example of a whole family of developments aimed at expediting the operation of our payments mechanism. The generic name for this kind of

"new approach" to check handling might be "short-circuiting."

The short-circuiting is obvious in the case of the regional clearing center. Instead of moving all the way to-and-from the Boston Fed (or a Boston correspondent) on its journey from Houlton to Presque Isle, Maine, the check which we mentioned earlier as a prime example of present-day around-the-barn movement in the payments stream, might conceivably be short-stopped at a regional clearing center located in Maine. At a Maine center, representatives of both the bank presenting the check for payment, and the bank on which the check was drawn, could make the exchange — easily saving 300 miles, or more, compared with what might otherwise have been a via-Boston trip — not to mention the time that would have been required for the check to be transported over those additional miles.

That's one way that short-circuiting can work — just as the intra-city clearing centers save handling and time.

The Drop

Another variation of this same theme is the "lock box" technique. Here, a company, whose customers are spread over a wide area, establishes post office boxes — called "lock boxes" — at major mail distribution points throughout its marketing area. The company's customers are instructed to mail their payments to the company at the specified post office address nearest to them. The company opens an account with a bank in each of the cities in which it maintains a lock box address, giving the bank access to its local lock box. The local bank collects the checks from the lock box one or more times a day, deposits them immediately to the company's account, and notifies the company as to who has paid, and how much. This kind of short-circuiting shortens a check's journey through the payments mechanism at least by the amount of time that it might have taken for the check to reach the company's home office — rather than the regional center — via the mails.

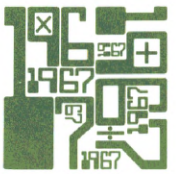
In many cases — where there may be a local clearinghouse, for example — the check may be collected on the same day that the deposit was made, since the necessity for moving the check from a bank in the company's home office city through the Fed (or clearing correspondent) in some other city has been obviated. The net effect? Fewer miles of traveling for the check — less time in transit — faster clearing — quicker payment to the company.

Originally, the bank servicing a company's local lock box would notify the company of its daily deposits by mail. Now the information is more frequently transmitted by wire — saving as much as two or three days, in some cases. The next step — and at least one example of this is already in operation — is to "computerize" the whole operation, so that, as rapidly as customers' checks can be read by the electronic gear of the bank in the lock box city, the remittance information can be transmitted directly to the company, or its bank, over telephone circuits. And, beyond that, the recent inauguration of an automated network for the transmission of remittance information — the information on lock box checks — between metropolitan areas in all sections of the country, presages a giant step toward "almost-instant money" for a substantial number of corporate accounts.

Speak To Me, Only . . .

A third variation on the short-circuit theme has been suggested — truncation. Mr. Webster, who presumably might not have recognized a "payments mechanism" had one seized him by the thigh, defines truncation as: "to shorten by — or as if by — cutting off" . . . which is exactly what these latest banking techniques are designed to do to check travel.

In the so-called, "bank of first deposit" approach, it is proposed that all checks be stopped, read, processed, and retained by the first bank to which they are presented for payment — only the *information* which they contain would be transmitted beyond that point. Given the capacity and capability of today's sophisticated computers to store and retrieve information — to say nothing of the potential for near-instantaneous communication, one computer with another — this possibility could very well go a long way toward making the brown manila envelope, bulging with



cancelled checks, a household curiosity in quite a different way than it may already be.

Considering that the person who writes a check almost invariably has a record of his payment — assuming that he has filled out the stub of each check as it's written — the only purpose served by the return of the cancelled check is to serve as verification that the check was "cashed" by the individual to whom the payment was made.

Operating on the presently-popular theory of "management-by-exception" — in which only those circumstances merit attention and concern which are exceptions to the "normal" course of events, it seems more than abundantly redundant to return millions of checks to the people who wrote them, "just in case" they might be needed to prove the few cases among thousands in which payments are questioned.

The practice would seem to be increasingly unnecessary if it were possible, as it well may be, in the not-too-distant future, to receive verification — even a print-out — of any transaction on record by the simple expedient of inquiring of one's local computer center.

This latter variant begins to approach electronic money — for it's but a quavering step from the truncation of check travel implied in the "bank of first deposit" approach, to the abyss that opens under our feet when the truncation takes place between the check stub and the check.

Let's look at some other developments taking place in the payments mechanism before we plunge into *that!*

We've seen how electronic wizardry seems to promise some measure of respite to those who must cope with a rising tide of checks — how "readers" and tabulators, provided with the right diet of MICR digits, can expedite the processing — while not erasing the problems — of increasing numbers of checks. We've seen, too, that there are some quite-real advantages that may be had, within the payments mechanism, via the short-circuiting and truncation routes — at least in those circumstances which lend themselves to these methods.

It's important to realize — as we've tried to suggest — that, from a marketing point of view, at least, it is likely that banks will continue to

Record Breaking

"Sure," say some, "using checks is doing it the hard way. If we can just transmit the information that checks carry, without moving the paper, think how grand that would be!"

Quite so, for everyone concerned.

But there's one thing about checks that's going to take some doing — not to eliminate, but to replace: the endorsed check has come to be accepted as legal evidence of the completion of a transaction.

A very small proportion of transactions, out of the millions which take place, later require evidence that the payment was made. But few people who have had occasion to rely upon their cancelled checks as proof that a payment was, in fact, made — by someone and to someone, on a certain date — would willingly subscribe to a payments mechanism which could not provide this "insurance" feature.

Any system which stops the check at the bank of first deposit, and holds it there, passing on only the information needed to complete the payment, poses problems such as these: how is the writer of the check to know where the check is stored? How long will the check be held as a permanent record? How long should it be held? What legally acceptable evidence can the paying bank provide to "prove" that the ordered payment was made? How, among accumulating millions of checks at many locations, can the original writer recover the original record, or a legally acceptable facsimile of it, in a reasonable period of time?

Some of these problems may grow even thornier when and if, as is proposed, there are no checks at all.

The technicians assure us that the computer's memory and recall can provide answers, almost faster than the questions can be asked.

But to a worried taxpayer, contemplating an impending "review" session with an interested group from the Internal Revenue Service, there's considerably more comfort in a sheaf of cancelled checks, than there is in a nearby computer terminal.

Time will tell . . . but the complete elimination of that little paper check as a permanent record may be a more difficult idea to sell than many folks figure.

Especially around tax time.

introduce an expanding array of services designed to make the check more useful to their customers. And, with this, will likely come wider check usage and an increasing volume of checks to be processed. Such things as guaranteed check plans, check credit, and overdraft programs, all increase the acceptability — the desirability — of using checks as a means of payment.

But each of these proposals for expediting check handling — quite the reverse of extolling "cash," or instant money — tends to link the customer's checking account to the customer's use of credit. And, since credit is banking's stock in trade, expanding bank business will almost surely mean more checks. In other service areas — payroll accounting, billing, and income and expense analysis being offered to small businesses and individuals — there's evidence that commercial banks recognize the check's versatility and potential for attracting new business.

It is because of this intimate tie between checks and banks and customers, that the most acceptable development of a new — or, at least, a different — payments mechanism would seem to lie in the direction of an innovation which could enhance the value of a checking account, while, at the same time, reducing the number of checks which have to be processed.

The name of this game is "pre-authorized payments."

The "Arrangement"

Strictly speaking, the ordinary, garden variety of check *is* a form of a pre-authorized payment. The payment of any check by the bank on which it is drawn is premised on an earlier agreement, between the check writer and the bank, that certain transactions will be completed by the bank when specific information — in the form of a check — is presented at the bank.

In the "less-check" lexicon, however, "pre-authorization" is used to describe a considerably broader assortment of arrangements. All of them, by altering the terms of the general agreement which is the basis for the normal checking account, are aimed toward enhancing the efficiency and usefulness of the checking account as a payment device, without increasing the number of checks entering the payments mechanism.

While pre-authorization, almost-by-definition, means fewer checks, the pudding is, to date, virtually "unproven" — largely, as you might guess, because it has only been nibbled at. Other forces — particularly the continuing expansion of those banking services which promote broader check use — have far overshadowed the reduction in check volume which relatively modest consumer participation in the relatively limited number of pre-authorized plans currently in operation has brought about.

Pre-authorization's potential for check-saving becomes dramatically apparent when one considers the effect which might be achieved if, for example, all of the 23 million-plus Social Security payments made each month were to be deposited, without checks, by a pre-authorized deposit arrangement between the Treasury Department and each individual's bank of account!

Pre-authorization is simply an automatic method of paying from or depositing funds to an individual bank account, under authority granted to the bank by the account holder.

How simple!

Pre-Pre-Authorization

It's reported that, as early as 1916, a Boston bank was offering to handle its customers' bills under what appears to have been "pre-authorization," of sorts. The customer simply sent all of the bills he wanted the bank to pay — together with one check for the total amount owed — to the bank. The bank would then transfer the funds from the customer's account, directing them appropriately to the accounts of the respective creditors.

Perhaps the mechanics of this early experiment in pre-authorization (which, incidentally, had only limited — and short-lived — success) can provide some clues as to why our present society is far from checkless? Aside from the natural aversion which early Bostonians might have held for exposing their financial affairs, in more than modest glimpses, to the eyes of their banker, there was the problem that, if any of the creditors concerned did not have checking accounts at the bank offering the service — to which the customer's payment might be transferred — the bank had to

issue its own checks to those creditors. Even in 1916 — and, even in Boston — not enough of the assorted trades-people and merchants with whom a Bostonian might do business had more than one bank of account . . . and so the bill-rendering merchant's bank was not frequently enough the bill-paying Bostonian's bank to make the scheme work. The problem, then, as now, was that, to avoid writing individual checks to each creditor — which the customer can do as well as the bank — the bank which completes the transaction must hold the accounts of both parties.

To many bankers, this problem may be viewed as an opportunity to acquire the account of that one, or the other, or both of the parties to a pre-authorized payment program, which it does not currently hold.

Bill Me
Bill My Bank

One of the more recent applications of this technique involves the automatic payment of customers' monthly insurance premiums — the regular payments of uniform dollar amounts — by banks which have been pre-authorized to honor payment orders on presentation by the insurance company. Instead of billing the customer each month, the insurance company, in effect, sends "the bill" to the customer's bank for payment — and the bank pays "the bill" by simply transferring the specified amount from the customer's account to the insurance company's account, providing verification of the payment on the customer's monthly statement.

The Overdraft

The overdraft — a written order, directed to a bank, to pay a stated sum which is in excess of the funds available in the account from which the order is to be paid — has long been a source of consternation and frowns among New England bankers. The inadvertent overdraft has been equally discomfiting and disconcerting, no doubt, to many creditors — and nearly as many check writers — whose banks have returned word that a draft presented for payment has qualified for the special designation, "Not Sufficient Funds."

But the overdraft, more recently, has been found to be good business — just as the British have claimed for many years. Not the inadvertent overdraft, which delays payments and embarrasses all parties concerned, but the "planned" overdraft — the "pre-authorized overdraft," if you will.

Assuming that a customer of the bank is creditworthy — capable of handling credit within agreed-upon limits — many banks have found that an agreement to honor any check within those limits, which is presented over the customer's signature, regardless of the customer's checking account balance, can be good business.

Granting the line of credit, under a pre-authorized overdraft agreement, permits the bank to convert the payment of a check, which would otherwise have been dishonored because of insufficient funds in the account, to an automatic loan.

On receipt of the overdraft, the bank simply enters a loan, in the amount of the overdraft, to the customer's account on its books; transfers the proceeds to the customer's checking account; and honors the payment order.

The increasing acceptability and convenience of this arrangement among bank customers — and its business-building success for the banks — harbinges its broader use, alone, and in combination with a variety of other techniques which are developing in the payments mechanism.

One typical such "combination arrangement" might solve a problem involved in many pre-authorized payments plans — the problem imposed, for example, by customers whose checking account balances are small, or highly variable, in relation to the total dollar volume of checks written. For such accounts, the timing of a pre-authorized payment may be especially critical during periods of low balances.

The overdraft principle, by assuring that adequate funds would be available when needed to meet payment orders, would avoid the need to notify the customer in advance of the payment date, which would require a memorandum billing. It would obviate the need for the customer to verify his account balance at frequent intervals in order to avoid being inadvertently overdrawn. It

would avoid the complications within the payments mechanism which a dishonored item would otherwise create.

And it would provide the bank with an opportunity to perform an additional customer service — for which it might earn a profit.

What does this accomplish? Three significant things: since the customer received no bill, he did not have to write a check and mail it to the insurance company; since the insurance company maintained a checking account at the customer's bank, the transaction could be completed as a book entry — no check was required; since no check was required, the transaction could be completed almost instantly, once the bill had been presented to the bank. The customer's bill was paid, the insurance company had access to the funds practically as soon as payment was due, and no checks entered the payments mechanism.

This sort of transaction — in which payments are of a uniformly regular, recurring nature — would seem to offer a tremendous advance toward "electronic money."

Hop, Side-step, Side-step

Recent programs based upon pre-authorization — the insurance company scheme for example — leap-frog the earlier requirements that the customer write one check for the total of the bills to be paid. A continuing, written, pre-authorization to withdraw the necessary funds as required, obviated that step. The necessity for the customer to submit the bills was also side-stepped — by authorizing the insurance company to send — and the bank to honor — "bills" (orders to pay) issued directly to the customer's bank.

The Number One problem, however — the need for a common bank of account — still confronts us.

And several variations of the basic technique are currently being explored in a number of different sections of the country. Among the different ways of meeting the problem:

§ An agreement between an employer and his bank to have his employees' wages deposited, automatically, to each employee's checking account. While this ties in very nicely with the automated payroll accounting services being offered by a growing number of banks, Problem One is involved — the technique works only if each of the firm's employees maintains an account at the firm's bank. A widely-used alternative has been for the firm's bank to offer checking account privileges, with one free check each payday, to all of the firm's employees — so that they may withdraw the funds, or transfer them readily to the bank of their choice.

§ Another adaptation of the pre-authorization concept provides for intra-bank "intra-account" transfers — in which the bank may be authorized by its customer to make periodic automatic transfers from the customer's checking account to his savings account. This kind of pre-authorized transfer might be arranged in such a way as to become operative when a pre-determined maximum balance was attained. At some maximum balance in one's checking account, surplus funds could be transferred automatically to one's savings account, in order to minimize idle and unneeded balances. At the present time, the possibility for the reverse arrangement — an automatic transfer *from* one's savings account, *to* one's checking account (which would, effectively, make one's savings account an extension of one's checking account) — is forestalled by regulations which prohibit the payment of interest on demand deposits.

§ A further variation of this involves a pre-authorization for the bank to make automatic intra-bank transfers from a customer's checking account against regularly occurring loan payments.

The one feature of these latter pre-authorization programs, which warrants additional comment, is that most of the checks which each makes unnecessary are those which would only have required handling within the bank on which they were drawn. The checks eliminated – unfortunately – are those which currently pose the very

least strain on the present payments mechanism.

These examples *do* provide a certain measure of precedent for the mechanism of pre-authorization. They prove that the concept works. But experience with the intra-bank — the purely local — pre-authorization plans referred to above, would seem to indicate that, if it is to gain wide acceptance, a pre-authorization program must involve, and include, more than a single bank.

For example, if a utility — such as a regional power company — seeks to gain participation in a pre-authorized bill payment plan by a sizable proportion of its customers, the plan might well have to be set up in such a way that virtually all of its customers *could* participate without disturbing their existing banking relationships.

Taking a very direct approach to this problem, the Philadelphia Electric Company's "PECO" plan, for example, assures that a high percentage of the utility's customers will have accounts at the same bank as the company does, by the expedient of maintaining company accounts at all banks in its service area. For a company serving a limited area — which PECO is *not* — this arrangement may be a fine solution, but maintaining accounts in all of the banks in the Philadelphia area would obviously impose a substantial burden on any company, in both its billing procedures and in its management of funds in such a variety of locations.

Few corporations, serving customers throughout New England — for a somewhat larger, but still limited example — would relish the thought of maintaining a separate corporate account at each of New England's 385 commercial banks.

The recognition of Problem One, the multi-bank nature of any broad pre-authorization plan, has prompted the suggestion that it might be feasible to establish regional clearing centers, through which inter-bank exchanges of pre-authorized debit and credit information — perhaps recorded on magnetic tape, or in some other electronically-digestible form — could take place, in much the same manner as the city clearing house functions, except that there'd be no checks involved. Pre-authorized payments could be made by having the power company, for example, submit its customers' bills to the clearing center on magnetic tape. The tape would carry each customer's identification, the identification of the customer's bank, the amount of each customer's bill, and the identification of the power company's account at each bank. The clearing center would then prepare the needed information for each participating bank, listing the individual customer accounts to be charged, and the total amount to be deposited at that bank to the power company's account. The data could be presented in whatever form would best fit the data processing techniques in use at the individual banks — punched tape or cards, magnetic tape, or even direct computer-to-computer interchange.

The astute observer might well wonder why the power company could not as well prepare these magnetic tape "bills," or orders to pay, on its own electronic equipment, and then simply send the appropriate strips of tape, or whatever, to the respective customers' banks?

Words and Deeds

There are a number of reasons why the clearing center approach has been suggested as an alternative: if we can assume that pre-authorized payments provide a desirable system for a regional power company, we could well project that pre-authorization might also be a desirable system for a number of other creditors. Not all creditors who might participate are likely to have equipment capable of producing the variety of computer input forms required by individual banks. This suggests that a clearing center might serve to consolidate "billings" for presentation to the appropriate banks, in forms compatible with each bank's electronic equipment.

Going a small giant step beyond that, it's conceivable that the "clearing center" approach might offer a way around the "account-at-every-customer's-bank" problem for creditors. In addition to simply packaging and distributing the pre-authorized payments *information*, the center might serve as the vehicle for clearing the actual *payments*. If most all of the banks in an area were to be members of the clearing center, each creditor's own bank, if a member, could serve as his agent — presenting payment orders to, and accepting payments from, all other participating banks

with which the creditor's customers had accounts. Virtually all customers and creditors could participate in pre-authorized payment plans ***through*** their respective banks — with the banks, acting as their agents, clearing the payments through a common banking institution, the clearing center.

Still another hitch in the emerging pre-authorized payments systems, has been the necessity for the power companies — or other creditors — to maintain their direct billing routine, simply because the proportion of customers who view pre-authorization as a desirable development has, so far, been surprisingly low.

Some customers do not maintain checking accounts at any bank, others prefer to see each bill before it is paid, others prefer to determine the paying date themselves, and, presumably, still others have always paid their utility bill by check directly, and are unpersuaded that pre-authorization offers them any particular advantage.

No Deposit — No Return

For banks, pre-authorization plans permit the extension of additional customer services — services which may result in new checking accounts and a larger total of checking account balances. On the other hand, the system appears to result in only minimal savings in costs — largely because, like the utilities, who must still maintain and operate their billing departments, the banks must still process large numbers of checks for their other accounts.

Pre-authorization plans may result in faster transfers of funds to corporate checking accounts — with a corresponding reduction in the average balances of individual accounts — and, if the corporate customer is maintaining an account solely in order to participate in the pre-authorization program, the chances are good that the corporate treasurer will be inclined to maintain the account at a minimal level, transferring any surplus quite promptly to the company's principal bank of account.

Where pre-authorization plans involve automatic intra-bank transfers from checking accounts to interest-bearing savings accounts, the result is apt to be reflected in an increase in the bank's cost of money.

Charlie Struggling's View of P-A

The bank customer's benefits from pre-authorization are essentially in convenience. He has fewer checks to write, perhaps makes fewer deposits, addresses fewer envelopes, and buys — and licks — fewer stamps. Automatic pre-authorized payments may help him to avoid penalty payments — or to gain cash discounts, if offered. At the same time, he loses some flexibility in determining when the bill is to be paid — and maintaining an accurate, day-to-day record of his account balance may present something of a problem. If thoroughly systematized, however, his records could conceivably be *more* accurate, since he should know, well in advance, that, on a given date, his $27.13 insurance premium will be paid.

Utility bills, or others that may vary, month-to-month, would be an indeterminate deduction (within an estimatable range) until the monthly statement was received — unless the creditor sent each customer an individual "memorandum bill" showing the amount which was to be paid, shortly before the payment order was transmitted to the bank. Such double billing reduces the benefit to the creditor, but this may be a necessary "start-up" expense, to encourage customer acceptance of the plan. For many customers, the opportunity to protest a possible billing error — exercised or not — would be a definite incentive to participate. Many companies might value the "customer's copy" as an opportunity to continue to reach each customer, on a regular basis, with direct mail advertising of additional services.

These two major consumer inconveniences, and the objection raised to pre-authorized payments by those individuals who mistrust the accuracy of their creditors' billings, might be successfully met by incorporating an overdraft privilege, coupled with a joint bank-creditor guarantee of free, retroactive adjustment.

The commercial creditor views the pre-authorized payments plan as a means for obtaining a faster collection of receivables, a reduction in check handling volume, automatic account reconcilement, and an enhanced ability to predict cash flow — with the attendant opportunity to more effectively minimize non-earning cash assets.

On balance, it would appear that most pre-

authorized payments plans, initiated thus far, have contained more elements related to a "pre-authorized collection" system than one of "payment" — looked at from the bank customer-consumer's point of view.

Perhaps this has been the product of necessity, since the system, as an additional payments system, superimposed on the existing system, is not without added cost. It is the collecting creditor whose immediate benefits have been more accurately measureable.

This thought begets the question, "If any payments mechanism — pre-authorized, or some other — simply does away with checks, what's in *that* for the consumer?"

The GIRO'S Scope

One of the paradoxical elements of our present check payments mechanism is that the payment information, which the check carries, actually proceeds in the opposite direction to that of the payment itself.

To the bank upon which a check is drawn, the instructions are concise and explicit, "Pay to Williams & Plenty Co., the sum of $29.88, (signed) Charles A. Struggling." To the check writer, Mr. Struggling, the words are the deed — having written the order (and presumably sent it on its way), he considers the payment made, the chore completed.

However, the check, carrying Struggling's order to pay Williams & Plenty Co., goes first — not to Struggling's bank, which will make the ultimate payment — but to Williams & Plenty Co. The company, in turn, deposits the check with its bank — thus "ordering" their bank to collect the money.

As Williams & Plenty's bank "forwards" the check through the check collection system, back to Struggling's bank, it is, in effect, requesting each institution — correspondent bank or Reserve Bank — along the route to confirm the actual payment of the amount of the check, before sending the check along to the next in line.

It is this "confirmation" of the check-carried information which spirals backward, even as the check moves forward — like the shadow of a moth approaching a candle.

When Mr. Struggling's check finally arrives at his bank, and is paid, it "extinguishes" the claim it has represented against the Struggling's checking account. When payment is made, and the claim is extinguished, the return flow of "confirmations" of the check's accounting information — like the shadow of the moth — stops.

In several European countries, alternative payments mechanisms, called "giro" systems, have been developed to simplify the payments process, by making it more direct.

An essential difference between our payments system and the giro approach is that, having made out his payment order — his "check" — Charlie Struggling would not send it to the Williams & Plenty Co., he'd send it directly to his local branch of a nationwide "paying institution" . . . in which he maintains (or now opens) an account.

The "paying institution" might be a commercial bank, or, in some countries, the post office system. Upon receipt of the order to pay, this institution transmits the information to its branch nearest to Williams & Plenty's home office, and the branch notifies Williams & Plenty that the Struggling payment has been credited to their account.

In some giro systems, the payment order — or a copy of it — is actually sent to the office at which the creditor finally receives payment . . . in others, only the information is transmitted, perhaps, by wire. In either case, however — since both accounts are held by the nationwide institution — the actual charges and payments to each account can be accomplished by bookkeeping entries at a central "clearing" location.

The giro system — because it enables payments to proceed directly from the Charlie Strugglings to the Williamses & Co. — eliminates the necessity for the duplication of efforts which our "tentative confirmation of anticipated payments" process requires.

But note that a single institution handles the entire transaction. It may not be necessary that both the payor and the payee (the Charlie Strugglings and the Williamses & Co.) maintain — or even have — "accounts" with the central institution. But the payor must "make the payment" into the system (either in cash, or as a charge to his account, if he has one) and the payee must take the payment out at his end, either in cash, or as a credit to his account. The single institution acts, in effect, as the agent for both parties to the transaction.

It would seem that such a question deserves a more substantial answer than just that "he'll have fewer stamps to lick!" The snail-like surge of consumers rushing to participate in the variety of "pre-authorized payments plans" currently in operation suggests that a great many consumers may already be asking the question.

Mr. Gregg's Instant Money

At Kaiser Aluminum and Chemical Corporation, an employee, Duncan Gregg, proposed an intriguing slant on pre-authorized payments. It's intriguing, because on first glance, it seems to be a foolhardy way to cut down on paperwork. It's even more intriguing because, on reflection, it obviously works — at least for Kaiser. The system doesn't cut down on checks — unfortunately — but it obviates a considerable amount of other paper work that's also associated with the payments mechanism.

Whenever the company sends out a purchase order, they enclose a signed, blank check, made out to the supplier.

That's right! A signed, blank check.

When the supplier ships the material ordered, he simply fills in the amount the company owes him, and cashes the check. Since the company already has a record of what it ordered, and the returned check is proof of what the materials cost, there is no need for the supplier to make out an invoice or mail it to the company, where it must be read, verified, and filed. The goods were ordered. The goods were shipped. And the amount due was paid.

Over a five-year period, Kaiser reports that it has sent out over 700,000 signed, blank checks — without a single instance of misuse!

Kaiser's experience with "instant money" sounds like a sparkling innovation . . . and it obviously is, in the circumstances.

Most bankers would deny any interest in doing such a thing — would even shudder at the thought. But it's noteworthy that Kaiser's blank checks carry the name of the firm to which the check may be paid, and an unobtrusive statement to the effect that the check is not valid in excess of a stated amount. Kaiser obviously knows its suppliers — and knows, too, that the supplier knows that his continuing business with Kaiser depends upon his honesty in handling the account. That package sounds very much like what thousands of bankers have offered over the years — first to businessmen, and more recently to card-carrying consumers.

Only bankers call it, "A line of credit."

We cite the example here, because it not only demonstrates the versatility of the pre-authorization concept, but also provides an interesting link between pre-authorization, ***per se,*** and the credit card. About the only real difference, between the two, is that the credit card provides for the *repetitive use* of what amounts to a signed blank check.

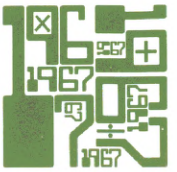
The Card Carriers

Perhaps the most dramatic development in the payments mechanism in recent years has been the proliferation of credit cards — particularly bank credit cards. Credit cards have been used for over half a century. The major oil companies and large department stores were among the first to find them a handy and useful device for handling consumer purchases on credit. After World War II, national travel and entertainment cards were developed by a number of non-bank institutions. Then a few commercial banks entered the field, pretty much as local contenders, in the 1950's. But it was not until late 1966 that the bank credit card business really began to blossom.

As of October, 1967, 258 commercial banks were carrying some $640 million in outstanding credit under their own card plans, another 700 banks were participating under agency arrangements in which a correspondent held the outstanding credit, and 136 additional banks held another $16 million extended through their participation in the non-bank card plans of American Express, Diners Club, and Carte Blanche.

Despite their rapid development and wide acceptance, the credit cards' role in the development of any new and improved payments mechanism is, at best, uncertain.

There are those who feel that, as we become accustomed to completing retail transactions without the use of coins, currency, or checks, we may be developing a healthy adaptability to



whatever payments mechanism may emerge.

While this may, in fact, be true, the continuing annual growth in the number of checks being written suggests that, while we may be acquiring a new technique — to which the burgeoning of outstanding card credit attests — we're scarcely allowing our check-writing facilities to atrophy, as a result.

It seems more likely that the credit card may serve as a useful guinea pig in the development of a means of individual identification — and perhaps a universal system — that will be necessary before payments can be instantaneously completed on a broad enough basis to form the keystone of an improved payments mechanism.

The Cash Card?

Improvements in the present payments mechanism — the design of an "electronic money" system, if you will — must be predicated upon an acceleration of those payments which are currently made by check. At least one recent speaker has expressed the notion that, after credit cards, and truncations, and pre-authorized payments, and all, some financial wizard is going to come up with a means of payment that *will* be instantaneous and universal — called "cash." While the idea was meant in jest, that *is* the basic goal of efforts to improve the payments mechanism — to develop systems and instruments, other than cash, which can perform as nearly like cash as possible.

The bank credit card quite obviously involves the consumer in writing but one check — to his bank, in payment of the aggregate amount of the charges which the bank has accumulated in his name. Even the one check might be eliminated, under these circumstances, by an appropriate pre-authorization for the bank to charge the customer's account automatically, say, once a month.

But to the extent that bank credit card holders use their cards — instead of paying cash — to make purchases, the credit card *defers,* rather than hastens, payment. The retailer who accepts the credit card in lieu of cash payment is accepting a delay in payment in the face amount of the bill, or accepting a discount from the face amount, or, perhaps both.

Re-shuffling

Despite the fact that credit card arrangements may largely do away with the checks required to pay each individual bill, by permitting book entry transfers between accounts at one bank, the credit card's use in this way introduces the retail sales slip, or credit card voucher, into the payments mechanism. The retailers' "bills" to the card holder's bank of account must be sorted, packaged, transported, exchanged, charged, paid, and reconciled within the clearing system — albeit limited to the local bank — just as the checks had to be. Having only recently obtained a degree of uniformity in the physical design, dimensions, and MICR encoding of checks, which facilitated their handling on electronic equipment, banks can scarcely view an incoming tide of individually prepared sales slips as a welcomed alternative to checks.

But, as with our example of intra-mural pre-authorization plans, these local bank credit card schemes affect only one bank and its customers. The billings and the credits do not enter into the regional or national workings of the payments mechanism.

One . . . Revisited

It is when the cards "go regional" — or wider — that we again encounter Problem One (as with pre-authorized payments): there must be a common institution through which the charges against, and credits to, both parties involved in the transactions may be cleared.

A significant bank credit card concept is that the card has demonstrated an increasing awareness among consumers as well as retailers, that there is such a thing as the "time value" of money — that "money-now" is worth more than "money-later". Homespun evidence of the growing awareness among customers that credit — a delay in payment — is a "cost" to the retailer, is provided by reports that some restaurant customers have demanded a discount for paying cash for their meals, instead of using their credit cards, which would require the restaurant to accept a similar discount from its bank.

As this basic notion is more clearly, and widely, understood, it would seem that any efforts aimed

toward accelerating everyone's "money-now" would receive more enthusiastic support.

The cards' most significant achievement, however, so far as an improved payments mechanism is concerned, is that use of the card has encouraged thousands of people to accept the idea, in effect, of telling all, or many of their creditors, ". . . and send the bill to my bank."

That, it would seem, is a distinct and helpful step along the road to whatever improvements lie ahead — and it parallels the developments occurring in other phases of the pre-authorized payments field.

Funds Without Paper

So far, our review of the payments mechanism has struggled with efforts to cut down the volume of checks or to eliminate related paper instruments. Despite the gladsome ring of "The Checkless Society," the name *is* misleading, for it tends to confuse means with ends. The goal, plainly, is to speed the completion of transactions. It just happens that the handling of the paper required by a large portion of today's payments mechanism has been chosen — partly because of the sheer size of the pile — as the symbol against which the overall effort is being directed. But the goal is *not* the elimination of checks — it is the improvement of the payments mechanism.

With that running start, we ought, perhaps, to look more closely at a part of the payments mechanism which already functions quickly, efficiently — and without paper.

There being very little new under the sun, it is not surprising to find that payments have been made electronically for many years. Assorted arrangements for transferring money-by-wire are in existence, and they are being used with increasing frequency.

Anyone, who has been stranded away from home and out of money, for example, must be aware that, for a fee, Western Union will transmit money, from most anywhere in the free world to most anywhere else in the free world, over its wire communication lines.

A number of commercial banks, located in various parts of the country, jointly operate a so-called "bank wire network," over which members of the group transfer funds for their own accounts, and those of their correspondents. Planning for the improvement and expansion of this system is under way.

Perhaps the largest dollar volume of "paperless" funds transfers is accomplished over the national tele-typewriter communication network, linking, and operated co-operatively by, the 12 Federal Reserve Banks and their 24 branches — the Fed's leased wire system. The dollar volume which this network transfers — last year, over five and one-half *trillion* dollars — amounts to over two and three-quarters times the dollar volume of checks processed by the Federal Reserve System . . . despite the fact that the Fed handles 1,200 times more checks than wire transfers!

The 12-Ought Wire

The largest share of messages over the Fed's wire system are transfers of funds from one member bank to another, operating either on their own accounts, or for the account of a third party. A member bank can request such a transfer simply by telephoning its Reserve Bank or branch. A typical transfer might be one involving Federal Funds — in effect, transferring unneeded funds in one member bank's Federal Reserve account to the Reserve account of another member bank, located in another Federal Reserve District, perhaps to clear an excess of charges, against the originating bank, which the second bank accumulated during the day's operations.

The wire system also carries internal communications between the Reserve Banks.

Transfers of funds in multiples of $1,000 are handled without charge for member banks, but a fee of $1.50 is charged for each transfer involving odd-dollar amounts, or transfers for the account of a party other than a member bank.

Growth in the volume of messages transmitted over the Federal Reserve System's 75-words-a-minute leased wire network has encouraged the System to expand and improve its capabilities. This past fall, the System began operating a pilot project, a separate "bypass network" — linking the Federal Reserve Banks in New York, Cleveland, Chicago, and San Francisco — which operates at speeds 16 times faster than the Reserve

Banks' original wire transfer system.

The "bypass network" has reduced the load on the original wire system by about 15 percent — releasing some capacity to handle additional volume, while the Fed plans how best to accommodate future wire transfer needs. It also is providing the System with a considerable amount of experience with new types of equipment, new systems, and new procedures — experience which will be helpful in designing a new nation-wide wire transfer operation.

A major capability of this latter system will be the automation of data transmission between banking centers in a way that will either minimize, or eliminate, the need for converting information in one form (as written on, say, a check) to another (as it might be stored on a magnetic tape, for example) — and back again (to, say, punch card form) — before it can be transmitted to, or digested by, an outside computer. Data accepted by the Fed's automatic equipment will be able to flow immediately to automatic equipment at any receiving office across the country.

It is planned that the Fed's new communication system will be "modular" — composed of small, complete, operating pieces — so that multiple units can be installed where, and as needed, to match each area's growing need for service.

The Fed's communication system, which already handles a very substantial dollar volume of "big ticket" funds transfers, is in the process of being re-designed, speeded up, and expanded. This, surely, will offer a sizable potential for speeding the completion of transactions — and may, just may, provide a basic capability through which the effectiveness of other emerging components of an improved payments mechanism can be enhanced.

The Wire's Ends

As is true of the giro systems discussed on page 14, wire transfers of funds accomplish the making of a payment "directly." The order to pay is transmitted to the institution which is to do the paying, rather than being first sent to the person who is to receive the payment, as is the case with checks. The payment and the information concerning the payment then proceed, together, to the payment's destination.

It is important to recognize, however, that wire transfer systems require that the institution controlling the payment mechanism be capable of serving as the agent of both parties to the transaction. It must have the means to accept payment at one end of the wire, and to make payment at the other. It, in effect, must hold accounts both for the person paying, and the person being paid.

If the transactions within a wire transfer system, designed to serve a wide portion of the public, are to be initiated by telephone or some other electronic communication, the transfer agent would appear to face two added problems: how to determine that his instructions from an individual are authentic; and how the instructions — and the payment — are to be recorded and confirmed.

The Credit-Card-Carrying, Short-Circuited, Truncated, Pre-Authorized, World of Electronic Money

Altogether, we've taken, here, an exceedingly cursory turn among, what seemed to us to be, some of the less-reflected-upon aspects of potential changes in our payments "machinery."

The interested reader may see, among these ideas, some pieces of an improved payments mechanism on the verge of being ready to begin to start falling into place.

Only alluded to, but of singular importance, despite the lack of attention focused on it — here, and by others — is the *ultimate* goal of the efforts being, and to be, expended on the improvements to be made.

Critical to the design, to the implementation, to the acceptance, and to the results of these efforts, we submit, must be housewives, supermarket cashiers, tycoons, everyday *people* — for theirs *is* the last word in: "The Electronic Money *Society*."

Strategy For Improving the Payments Mechanism — An Editorial

It is clear that the environment in which banks and their customers operate is conducive to basic and far-reaching changes in the methods by which payments can be made. Advances in computer and communications technology are paving the way for major changes in banking practices — many of them based upon the premise that "money is information."

The preceding review has touched upon a number of areas within the payments mechanism in which change is already under way.

Still unanswered, however, is the major question of how these parts — or other developments, some, perhaps, still to be proposed — may be assorted, combined, synthesized, amalgamated, or blended into an improved payments mechanism.

What is lacking is a strategy for achieving an improved mechanism.

Quite-different viewpoints will be taken by people and institutions variously affected by changes in the payments mechanism.

This is an attempt to present our convictions, in the hope that these views will contribute toward developing a strategy for change.

§ CONVICTION NO. 1: The payments mechanism should be an integral part of the banking system. There is an underlying danger in developments that tend to move part of the payments mechanism outside the sphere of commercial banking. The public welfare is not advanced by the fragmentation of the payments mechanism that could result as private interest groups tend to siphon off the more profitable portions of the payments process. To contend that the payments mechanism should continue to be centered in the banking system, however, is not to suggest that changes in the mechanism should be made only for the convenience of commercial banks. The structure of banking within the United States suggests that a variety of "pieces," adapted to meet the varying local and regional needs of banks and their customers, will comprise whatever improvements in the existing mechanism may be made. The Federal Reserve System is responsible for integrating — federating, if you will — the nation's thousands of privately owned, profit-oriented banks, into a viable banking system. In addition, it is charged with the responsibility for formulating and implementing monetary policy. In meeting these responsibilities, the Federal Reserve System is committed to fostering and encouraging the development of versatile and compatible components of the payments mechanism. Regulation of specific "pieces" of the whole, however, is less important than the Fed's positive role in actively participating with commercial banks in the development of a payments mechanism capable of meeting the needs of the public at large, banks, and their customers. Individual bank-business innovations will not necessarily create the optimum payments mechanism to serve the public's interest.

§ CONVICTION NO. 2: Checks will continue to play a major role in the payments process for the foreseeable future. The check, because of its advantages of simplicity, convenience, and the record of transactions which it provides, is widely accepted as a means of payment. It is highly unlikely that any development in the payments sphere, achievable within the next decade, will lead to a drastic reduction in the number of checks being written. Such changes as do occur are more likely only to reduce the *growth* in check volume.

§ CONVICTION NO. 3: Indictments directed toward the check, are invariably aimed at the paper upon which it is written — not at the information it carries. The check will be replaced by a system which will transmit this information faster, more accurately, more directly, and more versatilely than is possible with the check. "We know how to do it better!"

§ CONVICTION NO. 4: The development of bank credit cards contributes to the development of the payments mechanism by familiarizing the public with the completion of retail transactions without the use of coin, currency, or checks. It also encourages the development and use of standardized identification devices and procedures. On the other hand, instant credit should not be confused with instant money. Credit cards *defer* rather than hasten payments. By converting what are, essentially, cash transactions into credit transactions, credit cards introduce an additional cost to the payments system.

§ CONVICTION NO. 5: The expanding capabilities of a Federal Reserve communications system will encourage an increasing volume of the larger pay-

ments transfers to move over that system — without the use of written payment orders. While this will have only a limited effect upon the number of payments made by check, it will achieve a marked reduction in the dollar volume of checks passing through the check clearing process.

§ CONVICTION NO. 6: The most likely changes in the payments system are those which involve the introduction of a *minimum* of institutional changes. Change, in short, will come via the paths of least resistance and most identifiable gains. For this reason, the area of pre-authorization appears to offer the greatest immediate potential for a reduction in the rate of increase in the volume of checks. Pre-authorization has demonstrated its feasibility in the European giro systems. It would require only minimal equipment changes on the part of commercial banks and their customers. The major problems involved are those of organization and public acceptance — both of which are basic problems involved in most other solutions. Failing resolution of these two problems of pre-authorization, there would seem to be little likelihood of the adoption of more radical changes in the payments mechanism.

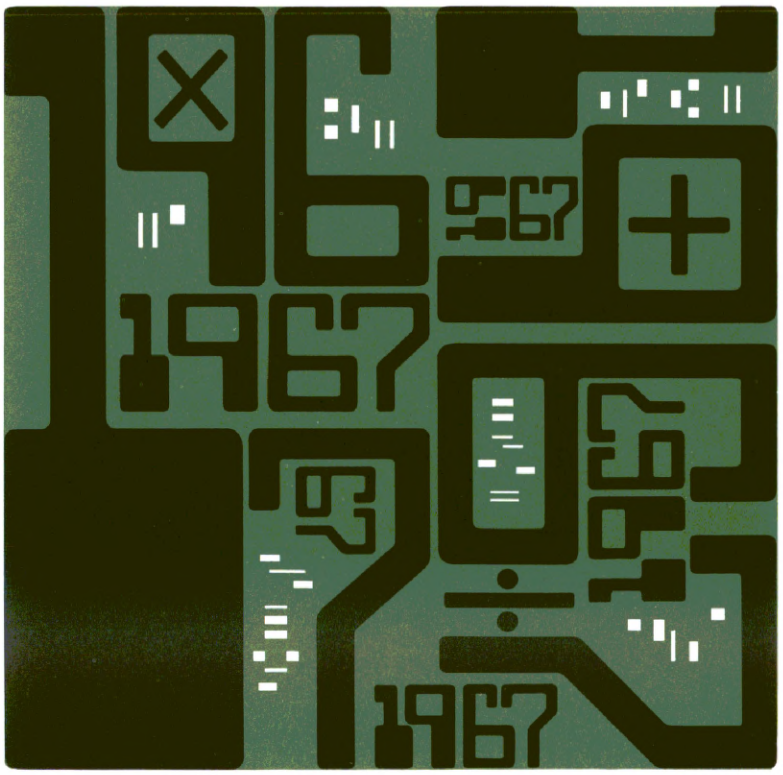
§ CONVICTION NO. 7: As computers, and communications between them, are more frequently making use of the same stream of electrons, there is increasing difficulty in drawing a line between banking *information* and its *transmission*. As a result, the public agencies charged with regulating what were distinctive areas and endeavors are finding that the boundaries of their responsibilities grow blurred — and, on occasion, conflicting. This suggests that continuing improvement of the payments mechanism will ultimately require institutional changes which may extend beyond the banking community.

§ CONVICTION NO. 8: It is unlikely that private enterprise, alone, will be able to develop and implement a payments mechanism which will satisfy the entire range of the public's banking needs. Private planning is guided by the profit motive, and rightly so. But not all portions of a nation-wide payments mechanism can necessarily operate both profitably *and* in the public interest. Thus, the achievement of an improved payments mechanism will require continuing cooperation between private enterprise and public institutions, acting in the interests of both the public and the banking community. The interests of banks, both large and small, must be merged with those of the banking public, including individuals, firms, and the government. A crucial issue will be the determination of the most desirable mix of public and private equities in the payments mechanism.

The success of the present check payments system has been the result of a singular blend of public and private interests — an achievement in cooperation between the American banking industry and the Federal Reserve System. The Federal Reserve System is committed to serving as an active participant in developments, working toward an improved payments system, and it is accepting a position of leadership where its unique organizational structure and capabilities indicate that it can best serve to fuse public and private interests.

Federal Reserve Bank of Boston

Annual Report 1967



Comparative Statement of Condition

	December 31, 1967	December 31, 1966
ASSETS		
Gold Certificate Reserves	$ 697,998,312.35	$ 775,433,679.75
Federal Reserve Notes of Other Federal Reserve Banks	71,070,814.00	58,371,719.00
Other Cash	23,113,133.93	9,133,494.05
Discounts and Advances	2,450,000.00	500,000.00
U.S. Government Securities — System Account	2,512,146,000.00	2,325,959,000.00
Cash Items in Process of Collection	695,001,550.73	630,085,289.47
Bank Premises	2,672,523.73	2,756,130.85
Foreign Currencies	76,992,000.00	41,961,851.06
All Other	18,050,029.39	17,730,777.60
Total Assets	$4,099,494,364.13	$3,861,931,941.78
LIABILITIES		
Federal Reserve Notes (net)	$2,495,863,437.00	$2,387,404,007.00
Deposits:		
Member Bank Reserve Accounts	870,185,989.84	859,163,298.98
U.S. Treasurer — Collected Funds	83,040,602.46	525,261.98
Foreign	6,720,000.00	7,680,000.00
Other	9,444,388.30	8,547,198.92
Total Deposits	969,390,980.60	875,915,759.88
Deferred Availability Cash Items	561,396,020.14	532,090,131.73
Other Liabilities	14,610,626.39	11,914,843.17
Total Liabilities	$4,041,261,064.13	$3,807,324,741.78
CAPITAL ACCOUNTS		
Capital Paid In	$ 29,116,650.00	$ 27,303,600.00
Surplus	29,116,650.00	27,303,600.00
Total Capital Accounts	$ 58,233,300.00	$ 54,607,200.00
Total Liabilities and Capital Accounts	$4,099,494,364.13	$3,861,931,941.78

Comparative Statement of Earnings and Expenses

	1967	1966
Current Earnings:		
Advances to Member Banks	$ 335,764.19	$ 1,586,882.21
Foreign Loans on Gold	13,443.26	31,346.20
Invested Foreign Currency Balance	1,212,088.39	1,054,797.03
U.S. Government Securities — System Account	112,844,042.35	96,255,480.94
All Other	18,543.47	19,324.21
Total Current Earnings	114,423,881.66	98,947,830.59
Net Expenses	14,013,270.10	12,190,897.99
Current Net Earnings	100,410,611.56	86,756,932.60
Additions to Current Net Earnings:		
Profit on Sales of U. S. Government Securities (net)	39,336.10	0
All Other	80,862.19	63,723.42
Total Additions	120,198.29	63,723.42
Deductions from Current Net Earnings:		
Loss on Sales of U.S. Government Securities (net)	0	129,795.03
All Other	13,064.36	19,382.59
Total Deductions	13,064.36	149,177.62
Net Addition or (Deduction)	107,133.93	(85,454.20)
Net Earnings before Payments to U.S. Treasury	$100,517,745.49	$86,671,478.40
Dividends Paid	$ 1,680,896.99	$ 1,619,325.71
Payments to U.S. Treasury (Interest on F.R. Notes)	97,023,798.50	84,347,452.69
Transferred to Surplus	1,813,050.00	704,700.00
	$100,517,745.49	$86,671,478.40

Volume Figures for Years 1966 and 1967

TRANSACTION	Volume in Pieces or Units (Daily Average) 1967	1966	Volume in Dollars (Annual Total) 1967	1966
Discounts and Advances			$1,260,804,000	$ 4,104,361,000
Daily Average Outstanding			7,961,000	35,254,750
Purchases and Sales of U.S. Securities for Member Banks	9	10	340,999,400	324,157,700
Currency Sorted and Counted	1,367,754	1,391,735	2,513,871,502	2,457,556,194
Coin Counted and Wrapped	3,980,514	4,204,636	93,295,750	96,234,850
Check Collection	1,722,710	1,596,301	144,083,526,428	130,793,598,296
Noncash Collection: Notes, Drafts, and Coupons (except U.S. Government)	4,888	5,188	1,740,206,652	1,113,532,949
Safekeeping of Securities:				
Pieces Received and Delivered*	592	421	10,371,985,172	18,794,938,718
Coupons Detached	2,490	2,494	55,704,053	51,107,601
Transfers of Funds	998	927	231,104,652,049	191,210,841,147
Issues, Redemptions, and Exchanges:				
U.S. Securities (Direct Obligations)	950	1,139	14,374,166,010	17,121,717,387
U.S. Savings Bonds and Savings Notes	41,401	40,449	547,240,715	559,878,356
All Other	36	42	152,720,025	120,100,550
U.S. Government Coupons Paid (Direct Obligations)	2,206	2,204	213,837,035	216,498,645
Federal Taxes: Depositary Receipts and Direct Remittances	4,271	3,680	3,855,952,107	3,238,609,901
Currency Verified and Destroyed	466,585	245,542	384,400,000	87,162,000
Deposits and Withdrawals — Treasury Tax and Loan Accounts	694	651	12,265,573,567	11,570,585,441

*Data here not comparable with earlier years, due to change in reporting procedure.

Statement of Condition

At the end of 1967, for the first time in the Bank's history, *Total Assets* surpassed $4 billion. While the rate of increase in total assets, at slightly over 6 percent, was somewhat lower than the 8-percent-plus gain recorded in 1966, 1967's increase was above that of most other recent years.

Among the asset changes, *Gold Certificate Reserves*, declined by $77.4 million — 10 percent. The major factors contributing to an increase in gold reserves, Treasury transfers — and less significantly, clearings of the notes of other Federal Reserve Banks, and interest on participation in the Open Market account — failed to offset the negative influence of private commercial and financial transactions, representing transfers to other districts, at year's end. The resulting decline in the Bank's gold reserves was, very largely, a result of the nation's continued loss of gold to foreign central banks, and of activities in defense of the dollar, in the face of heightened gold market speculation, following Great Britain's devaluation of the pound in mid-November.

The $12.6 million increase in *Other Cash* is largely a reflection of a build-up of the Bank's coin inventory — to the highest levels in its history. Increasing supplies of the new clad coin were received for circulation, which added to the Bank's accumulating inventory of mixed silver and clad coin being held for return to the Treasury.

The near-84 percent increase in the Bank's *Foreign Currency* holdings traces, primarily, to heightened activity under the reciprocal currency agreements in effect between the System and foreign central banks — activity designed to forestall temporary disequilibrating gold movements.

The principal changes contributing to the $234 million increase in the Bank's liabilities were an increase of some $108 million in *Federal Reserve Notes* in circulation, and an increase of nearly $83 million in the *U. S. Treasurer's Collected Funds* deposit.

The Bank's gold reserve ratio stood at 27.9 percent, compared with 32.5 percent a year earlier. The decline — while partially attributable to the increase in Federal Reserve notes in circulation, against which the reserve is measured — is an indication of the nation's continuing balance of payments problems.

Earnings and Expenses

Total Current Earnings of the Bank rose $15.5 million — by more than 15 percent — somewhat below 1966's near-$19 million increase. Higher earnings, attributable to the Bank's participation in the System's *U. S. Securities*, and *Invested Foreign Currency* accounts, were reduced by somewhat lower earnings from other functions — particularly from *Advances to Member Banks*, which were at the lowest level since 1963.

More than half of the near-15 percent increase in *Net Expenses* stemmed from the increased cost of people — as the Bank revised the structure of its salaries, retirement program, and other benefits, in order to align the Bank's compensation scales more competitively with those of other employers in the area. Increased costs for many items — from armored car services, to the printing of Federal Reserve Notes — contributed to the balance of the additional expenses.

Net Earnings, after adjustments, totaled $100.5 million — $13.8 million higher than in 1966. Of these earnings, almost $1.7 million was paid to member banks as their statutory 6 percent dividend on Federal Reserve Bank stock. Just over $1.8 million was transferred to *Surplus*, to equal *Paid In Capital*. All of the balance, more than $97 million, was paid to the Treasury as an interest charge, levied by the Board of Governors, on Federal Reserve Notes, under Section 16 of the Federal Reserve Act.

Volume of Operations

During 1967, an average of more than 1.7 million checks a day were processed by the Bank's check collection department — over 125,000-a-day more than in 1966 — representing a near-8 percent increase in the number of checks handled. This year's dollar volume amounted to over $144 billion — a 10 percent increase over the level of 1966.

Advances to member banks, at the end of 1967, were at the lowest levels since 1963. Daily borrowings — a more meaningful measure of discount window activity than any single day's figure — averaged $7.9 million in 1967, compared with $35.3 million, in 1966. There were, in fact, five days during the year, on which no banks were borrowers from the Fed.

A variety of influences contributed to 1967's relative inactivity at the discount window. The Fed's policy of monetary ease throughout almost the entire year provided higher levels of reserves, relative to banks' needs; higher levels of savings, and increased trading in Federal Funds provided alternative sources of funds; and loan demands were more moderate, as many corporate borrowers sought to acquire needed funds directly from the money market.

The increase, approaching 8 percent, in the number of funds transfers transmitted by the wire transfer department was accompanied by a 21 percent increase in the total dollar volume of those transfers — an indication that more, larger-dollar transfers are making use of this service.

While the table indicates a modest decline in the processing of wrapped coin, this was more than offset by the increased distribution of loose coin in mint-sealed bags.

Currency verification and destruction operations averaged some 90 percent higher in the volume of pieces handled — and almost three-and-a-half times higher in the dollar volume of work processed. This marked increase in the dollar volume is traceable, in part, to the permission, granted by the Treasury in mid-1966, allowing the Bank to destroy whole unfit notes of its own issue — but, even more significantly, to a very noticeable increase in the public's use of notes of the $5 and $10 denominations.

Float

Float, the difference between *Cash Items in the Process of Collection* and *Deferred Availability Cash Items* — at $134 million — was considerably higher on the last day of 1967, than it had been at the close of business a year earlier. But, the figure for any one day's float is less-than-meaningful, because of the influences of transportation delays and similar happenstance. It should be noted that 1967's float, on a daily basis, averaged $20.7 million — down sharply from the $34 million averages of both 1965 and 1966. Part of this achievement must be credited, obviously, to a somewhat more fortuitous combination of weather and transportation circumstances during the year — but a significant factor was the addition of a fifth high-speed processing unit, which enabled the check collection department to handle a growing volume of checks with increasing efficiency and dispatch.

The Fed Goes "Pre-Authorized"

In November, the Bank announced the availability of a new procedure which banks in the First District might use in making payment to the Fed for checks drawn on them. Called, "Gross Payment — Automatic Charge," the system is, essentially, one of pre-authorized payment.

Previously, following the receipt of the Fed's "cash letter" — the "bill" covering all checks being presented to a bank by the Fed, for payment — a member bank was required to send an individual authorization, requesting the Fed to deduct the net amount due from the bank's Reserve Account . . . in effect, a "check" to cover "the bill."

Obviously, a nonmember bank, which had no Reserve Account, could not authorize a deduction from its Reserve Account to pay such a "bill" — and, therefore, would have to write an actual "check" to cover the payment.

The Gross Payment — Automatic Charge plan involves a pre-authorization, by a participating commercial bank, which enables the Fed, automatically, to deduct the gross amount of each day's bundle of checks being charged to that bank, when due, from the bank's Reserve Account. A nonmember bank may grant a pre-authorization to charge the amount due, to the Reserve Account of its participating correspondent bank, if the correspondent agrees.

A measure of the merit of the plan is the fact that 93 percent of *all* commercial banks in the First District are participating.

DIRECTORS

In the annual election of the Directors of the Bank, William R. Kennedy, President of the Merrimack Valley National Bank, Haverhill, Massachusetts, was elected a Class A director for a three-year term ending December 31, 1970. He succeeds William I. Tucker, Chairman of the Board of Vermont National Bank, Brattleboro, Vermont, who served as a director from 1965 through 1967.

In the same election James R. Carter, President of Nashua Corporation, Nashua, New Hampshire, was re-elected for a three-year term ending December 31, 1970.

Howard W. Johnson, President of Massachusetts Institute of Technology, Cambridge, Massachusetts, was designated Chairman of the Board of Directors of the Bank and Federal Reserve Agent for 1968. He succeeded Erwin D. Canham, Editor in Chief of the *Christian Science Monitor,* who completed nine years of service on our board.

Charles W. Cole, President Emeritus of Amherst College, Amherst, Massachusetts, was redesignated Deputy Chairman of the Board of Directors for the year 1968.

FEDERAL ADVISORY COUNCIL

John Simmen, President, Industrial National Bank of Rhode Island, Providence, Rhode Island, was reappointed by the Board of Directors to serve for a third year as the member of the Federal Advisory Council representing the First Federal Reserve District for 1968.

OFFICERS

Charles E. Turner, formerly Vice President, was appointed Special Adviser to the Bank, effective February 1, 1967, and served in that capacity until his retirement on July 31, 1967.

Wallace Dickson, former Assistant Vice President, until his appointment as Special Adviser to the Bank, effective February 1, 1967, retired on April 30, 1967.

Daniel Aquilino, formerly Assistant Vice President, was appointed Vice President, effective February 1, 1967.

Harry R. Mitiguy, formerly Assistant Vice President, was appointed Vice President, effective February 1, 1967.

Laurence H. Stone, formerly General Counsel of the Bank, was appointed Vice President and General Counsel, effective January 1, 1968.

John J. Arena, Monetary Economist, resigned from the Bank effective June 23, 1967.

John A. Hayes, formerly Assistant Cashier, was appointed Assistant Vice President of the Bank, effective January 1, 1968.

Robert M. Scanlan, formerly Assistant Cashier, was appointed Assistant Vice President, effective January 1, 1968.

Donald A. Pelletier, formerly Assistant General Auditor, was appointed Assistant Cashier, effective February 1, 1967.

Robert V. Clapp, formerly acting assistant general auditor, was appointed Assistant General Auditor, effective January 1, 1968.

Jared E. Hazleton, who served as an economist in the research department, was appointed Banking Services Officer, effective February 1, 1967.

James T. Timberlake, formerly public services administrator, was appointed Public Information Officer, effective January 1, 1968.

Directors, January 1, 1968

HOWARD W. JOHNSON
Chairman of the Board and Federal Reserve Agent
President, Massachusetts Institute of Technology
Cambridge, Massachusetts

CHARLES W. COLE
Deputy Chairman of the Board; President Emeritus,
Amherst College, Amherst, Massachusetts

CHARLES A. BEAUJON, JR.
President, The Canaan National Bank
Canaan, Connecticut

JAMES R. CARTER
President, Nashua Corporation
Nashua, New Hampshire

WILLIAM R. KENNEDY
President, Merrimack Valley National Bank
Haverhill, Massachusetts

F. RAY KEYSER, JR.
Counsel and Personnel Director,
Vermont Marble Company, Proctor, Vermont

LAWRENCE H. MARTIN
President, The National Shawmut Bank of Boston
Boston, Massachusetts

W. GORDON ROBERTSON
President, Bangor Punta Corporation
Bangor, Maine

MEMBER OF FEDERAL ADVISORY COUNCIL

JOHN SIMMEN

President, Industrial National Bank of Rhode Island
Providence, Rhode Island

Officers, January 1, 1968

GEORGE H. ELLIS, *President*
EARLE O. LATHAM, *First Vice President*
D. HARRY ANGNEY, *Vice President*
DANIEL AQUILINO, *Vice President*
ANSGAR R. BERGE, *Vice President*
ROBERT W. EISENMENGER, *Vice President and Director of Research*
LUTHER M. HOYLE, JR., *Vice President*
STANLEY B. LACKS, *General Auditor*
HARRY R. MITIGUY, *Vice President*
LAURENCE H. STONE, *Vice President and General Counsel*
JARVIS M. THAYER, JR., *Cashier*
G. GORDON WATTS, *Vice President*
PARKER B. WILLIS, *Vice President and Economic Adviser*
PAUL S. ANDERSON, *Financial Economist*
LEE J. AUBREY, *Assistant Vice President*
CHARLES H. BRADY, *Assistant Vice President*
JOHN A. HAYES, *Assistant Vice President*
LORING C. NYE, *Assistant Vice President*
ROBERT M. SCANLAN, *Assistant Vice President*
RICHARD A. WALKER, *Assistant Vice President*
JOHN J. BARRETT, *Assistant Cashier*
ROBERT V. CLAPP, *Assistant General Auditor*
JARED E. HAZLETON, *Banking Services Officer*
RIPLEY M. KEATING, *Assistant Cashier*
DONALD A. PELLETIER, *Assistant Cashier*
RICHARD H. RADFORD, *Assistant Cashier*
PHILIP A. SHAVER, *Secretary and Assistant Counsel*
JAMES T. TIMBERLAKE, *Public Information Officer*