

# Economic Commentary

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## Methods of Cash Management

by John B. Carlson

Cash management—the control of payments, receipts, and any resulting transactions balances—has become increasingly sophisticated over the past decade. High interest rates, rapidly declining real costs of information-processing technology, proliferation of new financial instruments, and a changing regulatory environment all have contributed to a broadened market for cash-management practices that may soon include every small transactor in the nation, no matter how small. The cash-management process continues to have a significant impact on the public's portfolio holdings and consequently on the structure of financial markets.<sup>1</sup> This impact is perhaps most evident in depository institutions, which have lost some of their share of the market for financial assets despite their offerings of new financial services and more attractive instruments.

High interest rates have made it feasible for many firms to invest in cash-information and forecasting systems that allow them to speed collection of receivables and increase certainty about the timing of receipts and payments. Firms use better cash-flow forecasts to decrease precautionary balances, releasing funds for investment. Developing computer and communications technologies are continuously reducing the real costs of new systems and increasing their appeal to an ever widening market.

Refinement of overnight investment opportunities has made it profitable to manage cash on a daily basis to free funds for

periods as short as overnight. Security repurchase agreements (RPs), in addition to more traditional money-market investments, have become common substitutes for cash in large firms. Other financial innovations, particularly money-market mutual funds ( MMMFs), are better suited to individuals and small- to medium-size firms, making it easier to manage cash balances more carefully.

The changing financial environment, both a cause and an effect of the cash-management process, continues to have an impact on the public's portfolio, particularly in the way liquidity is maintained. This, in turn, has important implications for measures of money and for the implementation of monetary policy. Some of the most widely used methods of cash management are described in this article, with the intent of suggesting likely portfolio implications, both past and future (see figure 1).<sup>2</sup>

### Collection of Funds

A fundamental way for a firm to marshal additional cash without borrowing is to accelerate the collection of its receivables. A popular technique offered by many banks for this purpose is the **lock-box service**. First developed in 1947, the lock-box system enables businesses to decentralize the processing and collection of their re-

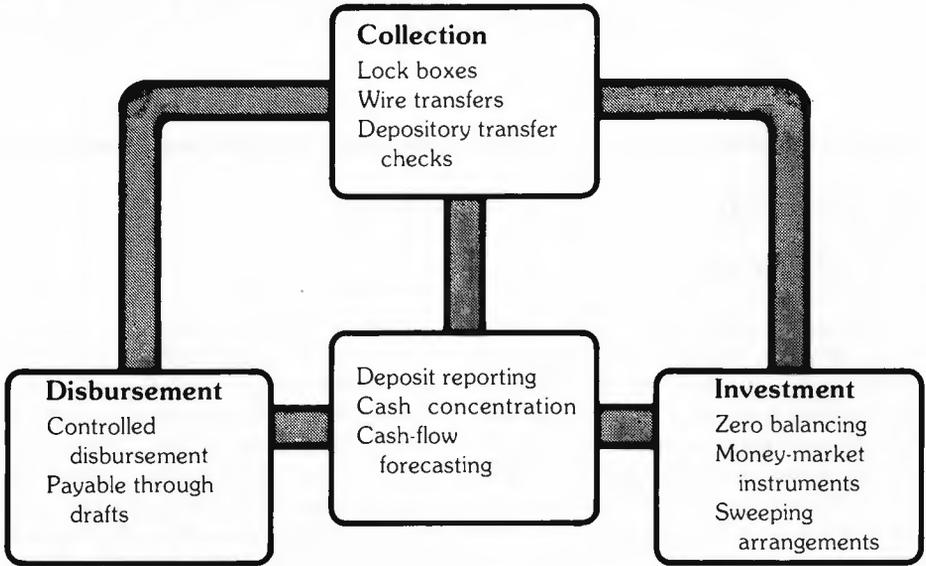
2. Implications for the money measures and for monetary policy are the subjects of a forthcoming sequel to this article.

1. The impact of the cash-management process on the monetary aggregates was discussed extensively in Richard D. Porter, Thomas D. Simpson, and Eileen Mauskopf, "Financial Innovation and the Monetary Aggregates," *Brookings Papers on Economic Activity*, vol. 1, 1979, pp. 213-29.

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*The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.*

**Figure 1 Components of Cash Management**



ceipts, locating this function near the source of payment. The firm receives payment earlier by eliminating mailing time (mail float) and may obtain earlier availability of funds by reducing the collection time once the payment enters the banking system (bank float).

A lock-box arrangement consists of a bank picking up the firms' payments from a post-office box and processing the receipts. Participating banks also are given authority (power of attorney) to deposit payments for the customer, reducing the number of times a check is handled. The services provided are tailored to the needs of each customer. Typically, banks offering lock-box arrangements have reciprocal relationships with banks in other large cities to help the firm establish a network of processing points. Large corporate customers with nationwide sales may find it optimal to have these collection points in many major cities, whereas smaller firms may have a few lock boxes set up in areas where most of their business is transacted. Lock boxes can reduce collection time by two or three days just by eliminating cross-country delivery of payments. Mail float is further reduced because mail can be picked up sooner from lock boxes than through regular mail delivery.

In addition, receiving payments in the proximity of the source enhances the availability of funds offered by the collecting bank. Deposited funds drawn on banks in the same Federal Reserve District as the collecting bank are generally available the next day for the depositor. If, however, funds are drawn on banks outside the same Federal Reserve District, the collecting bank may not offer availability for two days or more.

Lock-box systems also can improve certainty about near-term collected balances at the time investment decisions are made, so that balances may be fully utilized. Information on collected balances at lock-box points can be transmitted to the master bank, along with balances available within the next few days. Some master banks notify their customers at specified times when and where lock-box items become collected. Many banks now provide all available information on line, i.e., via their own computer terminal or even touch-tone telephone.

Up-to-date information on lock-box balances often is included as part of a more comprehensive **deposit-reporting system** that summarizes the firm's total cash position using a nationwide communications network. Besides reporting on cur-

rent collected balances, these systems may include balance histories and details on debit and credit activities. Banks also offer **account analysis** on a monthly basis so that cash managers can analyze more carefully the costs of cash management. Balance reporting—a basic element of deposit-reporting systems—is becoming a popular bank service for smaller businesses, which find it useful to verify their current balances via telephone. Regardless of the level of sophistication, these systems generally improve the timeliness of accurate information for the firms adopting them, creating additional investment opportunities and reducing the need for costly short-term loans to cover unexpected shortfalls.

Decreasing real costs of information-processing systems has facilitated the development of another important cash-management device, the **cash-concentration account**. Pooling of balances from a network of receiving accounts permits cash managers to exploit economies of scale that arise from investing and disbursing from one large account rather than many smaller accounts. Firms consolidate funds from their network of banks using **wire transfers** and **depository transfer checks**. The costs of these transfers (which also have declined in real terms over time) are outweighed by the economies gained. The benefits derive largely from the increased certainty; unexpected cash-flow variations tend to average out in one large account, reducing the need for costly precautionary balances. The net yield of the cash-management effort is further enhanced by spreading fixed brokerage fees over a larger investment sum. Moreover, centralizing the cash-management function can reduce operating costs, primarily through reducing personnel.

In addition to improving the information on very near-term collected balances, cash managers have developed methods for **forecasting the pattern of receipts and disbursements** over longer time horizons. This enables them to coordinate the maturities of their short-term assets with cash needs. While many large firms have their own methods of forecasting, many large banks can offer inexpensive standardized cash-flow forecasting techniques to their smaller customers.

## Disbursement of Funds

Two disbursement methods currently employed by large firms—**controlled disbursement** and the use of **payable through drafts**—provide precise knowledge on daily clearings, allowing more extensive utilization of funds. Controlled disbursement is a practice that allows the firm to **control the funding** of its disbursement account so that it need not deposit funds in excess of the clearings against such an account for any given day. Typically, this practice involves an arrangement whereby a city bank will set up a disbursement account at a branch or holding company affiliate located strategically close but outside the city boundaries. The branch or affiliate is chosen because it receives its cash letter (check presentments from the Federal Reserve) earlier in the day than does the city bank and because the number of checks presented is only a fraction of those presented to the city bank.<sup>3</sup> This enables the branch or affiliate to sort the presentments more quickly and inform each account holder of the dollar volume of its clearings presented by the Federal Reserve that day, often before 10:00 am. The customer must fund only the amount of these clearings so that, in effect, no balances are maintained. In practice, such arrangements may require small balances to cover possible over-the-counter presentments or as compensation for the service.

The information gains from this practice are obvious, although somewhat limited. Clearly, the cash manager gains more timely, precise information on checks presented through the Federal Reserve System, enabling the remaining funds to be invested earlier in the day. If payments are large, however, there is risk that the collecting banks would send checks directly to the paying bank and thus may be pre-

3. A city bank that has branches outside the city limits is permitted to have two endpoints (three if it has a country branch) at which the Federal Reserve will present checks drawn on the bank. Federal Reserve policy also states that the additional endpoint is for the benefit of collecting institutions, not the paying institution. The additional endpoint is not to be used by the paying institution to identify a certain class of items or customers, nor is it to be used to offer a specific financial service such as controlled disbursement.

sented near the end of the day. If individual payments are large, they may exceed the buffer balances held by the depositor resulting in costly overdrafts that may or may not be covered by a standing line of credit (itself involving a fee). Furthermore, because disbursements to local recipients may be presented late in the day, they often are made from a separate account. Thus, information gains from controlled disbursements are achievable only for a limited class of payments, e.g., out-of-town payables. These payments must be large enough so that the investment return is sufficient to cover the costs involved but not so large to any one vendor to result in direct presentments arriving late in the day after all excess funds have been committed. Local payments including payrolls and dividends are likely to be presented over-the-counter at any time so that such clearings cannot be known with certainty during the same day.

Controlled disbursement is sometimes confused with **remote disbursement**, a practice whereby cash managers set up their own disbursement accounts at banks in remote areas, e.g., Helena, Montana. While this enables improved information on presentments, it gives rise to float, which can delay the need to fund a disbursement account.<sup>4</sup> The practice also uses additional resources to return checks to remote areas or perhaps across country. For these reasons remote disbursement is discouraged by the Federal Reserve System.<sup>5</sup>

Another less common practice for controlling disbursements more closely is the use of a **payable through draft** (PTD). Although the form of the PTD is quite similar to a check, the distinctions are significant. The most important is that a PTD is not drawn on a bank but on its customer to whom the PTD must be presented. The bank named on a PTD is designated only as a channel for presentation. The bank is not authorized to pay the instrument by debiting the drawee's account. The PTD must be presented to the drawer for acceptance and payment. Thus, it is the obligation of the drawee to authenticate signatures and to stop payment.

The key feature of PTDs is that they are not balance accounts. Cash managers need provide funds for payment only after

PTDs have been accepted by the firm, although some banks may require compensating balances in a regular checking account. When large numbers of small-dollar payments are made nationwide, they may not clear until weeks later. PTDs thus enable cash managers to avoid holding balances for such payments. Although the extra handling involved with PTDs may result in an extra day of float to the drawee, his bank typically would require reimbursement so that the net benefits of using PTDs for eliminating cash balances may not exceed those of other zero-balancing techniques.

4. Although not as evident, controlled disbursement offered at city banks also can create float (that can extend the availability of funds for the paying firm). Because outlying presentment points are processed first, the Federal Reserve requires that collecting banks meet earlier deadlines. For example, if a New York bank collects funds drawn on a non-city bank or branch in the Cleveland region, it must present the checks (encoded) to the Federal Reserve Bank of New York before 5:30 pm to obtain next-day availability of funds. The deadline for checks drawn on a bank in Cleveland's city limits is 7:30 am. Because the first deadline falls so close to the end of the business day, it is much more difficult to get next-day availability on such items when collecting through the Federal Reserve Bank of New York.

A New York bank has alternative ways of collecting these funds. First, it may arrange its own means to send such checks to the Federal Reserve Bank of Cleveland before 12:01 am the next day to receive availability that day. (The deadline for city banks is 6:30 am.) Large New York City banks collecting a large-dollar value of funds can send the checks directly to the paying banks. Thus, cash managers cannot be certain that controlled disbursement will extend the availability of such funds. Furthermore, the Depository Institutions Deregulation and Monetary Control Act of 1980 requires that the Federal Reserve charge for float, thereby increasing incentives to reduce float.

5. The practice of remote disbursement can affect the image of the paying firm. The extended availability of funds generally comes at the expense of delayed availability to the firm's vendors and employees (if payroll is paid from the remote point) and thus may have adverse effects on the firm's relationships. In response, vendors may require earlier payment from customers using this practice, or even set up lock boxes in the remote areas, undoing the gains achieved by remote disbursement. Employees may be encouraged to seek direct deposits as a benefit. Thus, the reaction to remote payment practices conceivably could reduce availability of funds to firms employing this technique, while also affecting their images.

A more recent use of the PTD is to provide payment capabilities for money-market mutual funds (MMMFs). These funds generally have large numbers of shareholders who have "check-writing" privileges on the funds. By issuing PTDs to their shareholders, MMMFs are able to determine whether a shareholder's portion is sufficient to cover his draft before acceptance and payment.

## Investment of Funds

Techniques that hasten the collection of receivables and allow precise predictions of daily clearings generally free cash for investment purposes. But the investment opportunities that arise from the two classes of practices can be different. Techniques that accelerate the collection of receivables to permanently faster rates reduce working capital needed to operate a business. There is no reason to expect an equivalent increase in any other specific asset or a decrease in a particular liability.

On the other hand, disbursement practices, balance reporting, and balance concentration tend to create limited, albeit sometimes lucrative, investment opportunities. This largely reflects the limitations on the information gains of the techniques employed. For example, controlled disbursement provides only information about the clearings of a given day. Without additional information, a cash manager has no knowledge about clearings on the next day. The funds released by controlled disbursement may be needed to cover the account on the next day. Thus, they are often invested in a buffer stock of overnight instruments, particularly RPs.

The practice of investing all collected funds on a daily basis is known as **zero balancing**. Banks will sometimes assist their customers in this practice by arranging RPs or overnight Eurodollar borrowings or even arranging the sale of overnight commercial paper of their own holding company. The banks sometimes require minimum investments of \$1 million, making this method practical only for their largest deposit holders.

More intensive monitoring of cash balances by smaller firms and households has been encouraged by the increasing convenience and choice of very liquid **money-**

**market instruments** that pay market-determined rates of interest, which have remained high in recent years. The phenomenal success of MMMFs has simultaneously increased the public's awareness of the gains of more careful cash management and sensitized a broader segment of the public to interest-rate changes.

The transactions costs associated with the new instruments are relatively low. Most MMMFs offer a check-writing privilege to access funds, making them at least as convenient as a regular passbook account. But the check-writing privilege typically requires checks to be for \$500 or more. Some recently organized MMMFs offer access to funds through bank-credit-card accounts, on which checks also can be written. Although there are no debit minimums, these MMMFs currently require sizable investment sums. The investment minimums of at least one such MMMF can be satisfied by including the value of securities (whether purchased on margin or not) and cash held with the affiliated brokerage firm. This arrangement can create borrowing power to the extent permitted by the margin account. If debits exhaust all funds available in the MMMF and cash accounts, they may be covered by margin loans to the extent that a sufficient amount of securities is held. Thus, the borrowing power in the margin account becomes available for almost any financial need—including day-to-day expenditures made by the credit card or by a check on that account. However, because of a Securities and Exchange Commission regulation, an MMMF with this feature is not available to corporations.

The development of MMMFs has had a sizable impact on the public's portfolio. As of December 1981, MMMFs amounted to \$184 billion, up from \$9 billion in December 1978. Although it is impossible to determine where these funds came from, many analysts argue that the greatest part of the growth came at the expense of growth in the depository industry, which was unable to respond with its own attractive instruments because of current and past regulations and economic conditions.

One regulatory change in 1975 permitted banks to offer savings accounts to businesses and to state and local governments.

Within a year or so, this bank liability grew to over \$10 billion. As interest rates began to rise above the ceiling rates imposed on these accounts, their levels declined slightly. To make savings accounts more convenient, some banks offer **sweeping arrangements** that transfer funds daily into (or out of) savings when demand deposits rise above (or fall below) predetermined thresholds.<sup>6</sup> The lower threshold typically is chosen high enough to compensate the bank (at least in part) for the service. Some banks offer sweeping arrangements linking a transactions account (including NOWs) to other higher-yielding assets, particularly overnight RPs but also to nonbank liabilities such as MMMFs. Sweeping arrangements of all types are becoming increasingly popular for small businesses and institutions with transactions balances relatively larger than those of households.

Sweeping arrangements linking depository transactions accounts to MMMFs are currently in an incipient stage. A major

6. If three or more transfers are made from a savings into a demand-deposit account, then the savings account is subject to Regulation D reserve requirements for transactions accounts.

bank-credit-card company recently has introduced its own MMMF linked to transactions deposits at its member depository institutions, and another bank-card company plans to introduce a similar arrangement. These new MMMF-related sweeping arrangements are designed to permit participating banks to set parameters and fees that are appropriate for their own markets.

If priced to compete with conventional money-market instruments, sweeping arrangements could appeal to a very large number of transactors, making their potential impact on the form in which the public maintains its desired liquidity at least as pervasive as any previous innovation. Unlike most previous innovations, however, rapid growth in sweeping arrangements conceivably might increase the level of transactions balances if attractive daily interest makes it worthwhile for customers to maintain required minimum transactions balances above average account levels currently held. Accurate assessment of the impact on money measures thus may require detailed knowledge about the distribution of individual transactions balances, illustrating a potential problem in interpreting monetary growth.

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