

The Rise and Fall Of Federal Reserve Float

By John E. Young

One of the principal responsibilities of the Federal Reserve System is to provide for an efficient payments system. In meeting this responsibility, the Federal Reserve operates a nationwide check collection service that transports checks and transfers funds among banks. The use of checks in the payments system gives rise to float. Broadly speaking, float is a sum of money representing outstanding checks, that is, checks written for which payment has not been collected.

During the late 1970s, check float resulting from the operation of the Federal Reserve's check collection service rose to historically high levels. Because the increase in Federal Reserve float depressed Treasury revenues and complicated monetary policy implementation, Congress directed the Federal Reserve through the Monetary Control Act of 1980 (MCA-80) to reduce and price its float. As a result, Fed-

eral Reserve float has fallen dramatically in recent years.

This article reviews Federal Reserve check float policy with concentration on the measures adopted to comply with the MCA-80. The first section describes how float arises in the operation of the payments system, the various types of Federal Reserve float, and the policy significance of float. The second section provides an historical perspective on the rise and fall of Federal Reserve float. The final section discusses some of the implications of the reduction and pricing of Federal Reserve float for Treasury revenues, monetary policy, banks and their customers, and the payments system.

Float: its origins and policy significance

Float arises in the clearing of checks through the payments system. To understand the origins of float, the various types of float, and its policy significance, it is useful to describe briefly the check collection system.

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The check collection system

The function of the check collection system is to move checks rapidly from the bank of first deposit (payee bank) to the bank on which the check was drawn (payor bank) and to transfer the associated money value from the payor to the payee bank.¹

The route varies that a check travels from the payee to the payor bank. Some checks are cleared privately within the banking system while others pass through the Federal Reserve System. About 30 percent of all checks are drawn on the same bank at which they are deposited.² Clearing of these checks is completed internally. The remaining checks involve two banks and are normally processed by more participants in the check collection system. Some are cleared through local clearinghouse associations of banks or through correspondent banks. Others are processed through the Federal Reserve System.

A brief example illustrates the Federal Reserve's role in the check clearing process. A Kansas City bank receiving a check drawn on a Boston bank may decide to clear the check through the Federal Reserve. If so, the Kansas City bank sends the check to the Federal Reserve Bank of Kansas City which then transfers the check to the Federal Reserve Bank of Boston. The Federal Reserve Bank of Kansas City credits the reserve account of the local bank (payee bank) while the Boston Federal Reserve Bank presents the check to the payor bank and debits that bank's reserve account to complete the transfer of funds.³

¹ For a thorough discussion of the check collection system, see *A Quantitative Description of the Check Collection System*, Vol. 1 Federal Reserve Bank of Atlanta, 1981, pp. 55-59.

² "A Quantitative Description of the Check Collection System," Federal Reserve Bank of Atlanta, p. 67.

³ The Federal Reserve's check collection system consists of 48 check processing offices and an Interdistrict Transportation Sys-

Defining float

In general, float is a sum of money associated with the interval between the time a check is written and payment is collected. Float can be divided into non-Federal Reserve and Federal Reserve float. Non-Federal Reserve float occurs from the time a check is written to the time credit is received by the payee bank. Federal Reserve float occurs from the time the payee bank receives credit from the Federal Reserve to the time payment is actually collected from the payor bank.⁴

Non-Federal Reserve float arises from various processing delays that lengthen the time between the writing of a check, its deposit, and receipt of credit. In contrast, Federal Reserve float arises because banks clearing checks through the Federal Reserve are guaranteed credit for the checks within a given time, even though payment may not have been collected.⁵ In part, this approach to credit availability reflects the large volume of check processing—volume so great that it is not feasible for credit availability to be matched with collection time for every check. Instead, the granting of credit availability is based on the usual time required to collect payment. The credit guarantee also reflects the Federal

tem. For more details, see "A Quantitative Description of the Check Collection System," Federal Reserve Bank of Atlanta, pp. 55-59.

⁴ This is positive check float. Alternatively, if the payee institution is credited after the payor institution is charged, then negative Federal Reserve check float results. Since positive float nearly always exceeds negative float, net float is nearly always positive.

⁵ Federal Reserve float results not only from check clearing, but also from other funds transfers done by the Federal Reserve. These include wire transfers, securities transfers, and automated clearinghouse transfers. However, check float is the predominant source of Federal Reserve float. The Federal Reserve did not make available separate data on check float until recently. Therefore, data on total Federal Reserve float are used in this article.

Reserve's belief that the efficiency of the payments mechanism requires that banks know exactly when reserves become available.

The credit guarantee given by the Federal Reserve is based on availability schedules, which guarantee credit ranging from the same day for checks drawn on local banks to two business days later for checks drawn on remote banks. While availability schedules guarantee credit availability, the Federal Reserve may not always collect payment in the corresponding time. When payment collection is delayed, Federal Reserve float arises.

Types of Federal Reserve float

A variety of events can cause payment collection times to lag credit availability, creating various types of Federal Reserve float. Hold-over float results from delays in check processing at Federal Reserve offices caused by such things as unexpected peak volumes and the malfunction of check processing equipment. Return-item float results from checks being returned from payor banks to the Federal Reserve because of insufficient funds. Interterritory float results from delays in transportation when a bank sends checks outside its own Federal Reserve district directly to the processing office that serves the payor bank and the checks do not reach their destinations as scheduled. Intraterritory float is similar to interterritory float, except that both banks are in the same Federal Reserve district. Midweek closing float and nonstandard holiday float result from credit being given for checks that are not charged to closed payor banks.

The policy significance of Federal Reserve float

Federal Reserve float is extremely small compared with non-Federal Reserve float. For example, Federal Reserve float averaged \$1.3

billion in 1983, while total check float was an estimated \$380 billion.⁶

Although Federal Reserve float accounts for little of the total float, it is significant to policymakers for two reasons. First, Federal Reserve float adds reserves to the banking system. Reserves are added because guaranteed credit availability means that reserve accounts of some banks at the Federal Reserve are credited before the accounts of others are debited. If the difference is not offset, the additional reserves provided to the banking system could tend to lower interest rates and spur money growth. To hit its weekly reserve targets in the conduct of monetary policy, it is desirable that the Federal Reserve be able to accurately predict Federal Reserve float. Large, unexpected movements in float make this task difficult.

Second, Federal Reserve float represents a subsidy to the banking system. The subsidy arises because the provision of reserves during the time between the crediting of the payee bank's reserve account and the debiting of the payor's account amounts to an interest-free loan to the banking system. This subsidy must be financed by Treasury revenues and, ultimately, by taxpayers. In addition, the subsidy distorts the relative prices of various methods of making payments, encouraging the use of the Federal Reserve's check collection system over other payments mechanisms.

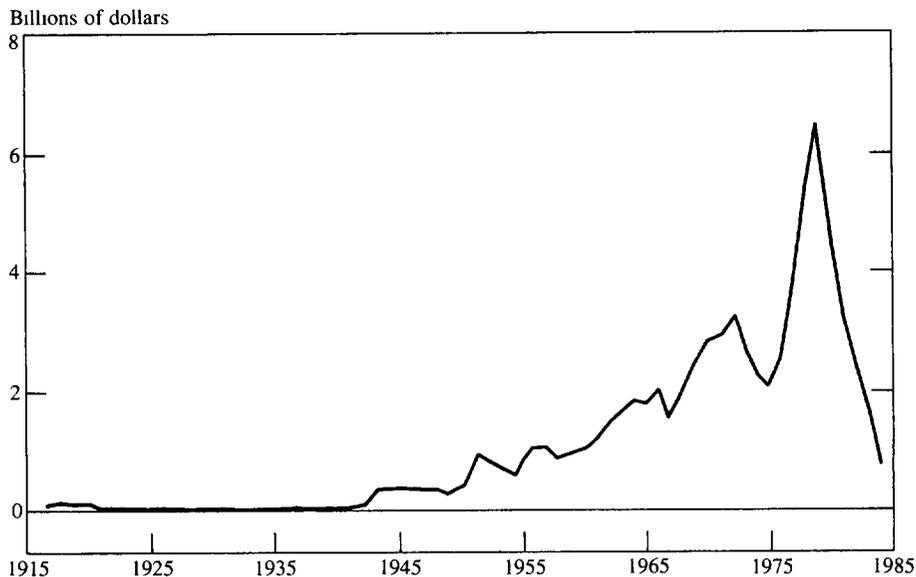
Thus, efforts to reduce and price Federal Reserve float could have advantages in facilitating monetary policy, increasing Treasury revenues, and improving the efficiency of the payments mechanism.

The behavior of Federal Reserve float

The behavior of Federal Reserve float over

⁶ "The Tug-of-War Over Float," *The Morgan Guaranty Survey*, December 1983, p 11

CHART 1
Federal Reserve float



Source: *Federal Reserve Bulletin*

time is primarily determined by such factors as check volume growth and changes in Federal Reserve regulations. As shown in Chart 1, float was of negligible importance until 1939, after which it began trending upward to record levels in the late 1970s. The level has since fallen sharply in recent years. To identify the principal factors behind this pattern, it is useful to examine float before the MCA-80 and afterward.

Pre-MCA-80

The low level of float until 1939 and the upward trend until 1979 can generally be explained by changes in availability schedules and growth in the payments system. Beginning in 1916, Reserve banks implemented

availability schedules with credit availability ranging from the same day to as many as eight days later. This policy resulted in historically low levels of float as payment collection times generally matched availability schedules.

The policy was modified by reducing maximum credit deferral, first in 1939 to three days, and then in 1951 to two days. The modifications increased float sharply because the changes in availability were not matched by shorter payment collection times. Meanwhile, growth in the economy spurred growth in the payments system. Between 1939 and 1979, the volume and dollar value of checks processed by the Federal Reserve grew at compound annual rates of about 7 and 9 percent, respectively. Since float is related directly to the volume of checks processed and their dol-

lar value, the rapid growth in the payments system helped to increase float.⁷

Two events temporarily reversed the upward trend in float in the early 1970s. First, the Federal Reserve amended its Regulation J in 1972 so that payor banks located outside of Federal Reserve cities have their reserve accounts debited the day a check is presented, instead of the next day. Second, the Federal Reserve implemented its Regional Check Processing Center (RCPC) program in 1973. The program was intended to expand significantly the areas in which checks are cleared on a same day basis.

From 1976 to 1979, however, float increased sharply. The increase was attributable to the high inflation, high interest rate environment of the late 1970s. Rising interest rates increased the time value of money and encouraged cash management practices such as remote disbursement that increased float. Remote disbursement is the practice of writing checks on remotely located banks to increase the time required for checks to clear. The practice allowed corporations to invest their cash longer by increasing float. Also, reflecting in part rising inflation, the value of checks processed by the Federal Reserve increased about 78 percent from 1976 to 1979. This increase in the value of checks processed contributed to the rise in float.

⁷ The rapid increase of float in the early 1940s also reflects World War II. For a complete discussion of the availability schedule modifications, see Paul F. Metzker, "The Federal Reserve System's Check Float: An Assessment of Its Magnitude, Effect, and Possible Reduction," Thesis, Stonier Graduate School of Banking, Rutgers University, June 1982, pp. 56-61. See *Twenty-Eighth Annual Report of the Board of Governors of the Federal Reserve System*, Board of Governors, 1918, p. 37, and *Sixty-Sixth Annual Report of the Board of Governors of the Federal Reserve System*, Board of Governors, April 25, 1980, p. 323. for payments system data references.

Post-MCA-80

The increase in float in the late 1970s gave rise to congressional pressure to reduce float and to the MCA-80. The subsequent decline in float in recent years can be attributed to a series of Federal Reserve actions both before and after the MCA-80.

The Federal Reserve took several actions just before the MCA-80 to reduce float. First, the Federal Reserve Board criticized remote disbursement and called for its elimination. Second, check processing guidelines at Reserve banks were modified to limit holdovers to an average of 3 percent of check volume. Prior to the modifications some Reserve banks had average holdovers greater than 3 percent. Third, the Federal Reserve expanded its program of monitoring "direct sends." A direct send occurs when banks send checks drawn on banks in another Federal Reserve district directly to the processing office in that district rather than to the local Federal Reserve office. The expanded monitoring program was designed to detect payment collection delays caused by deposit delays so that credit availability could be better matched with collection times. Finally, the Federal Reserve increased staffing and equipment, expedited handling of checks of \$250,000 or more, and encouraged automated clearinghouse payments as a check substitute.⁸

After the MCA-80, the Federal Reserve developed a series of measures to reduce and price float. The approach generally was to reduce float through cost-effective operational improvements and modifications in availabil-

⁸ The criticism and call for elimination of remote disbursement come in a January 11, 1979, Federal Reserve press release. For a discussion of the other actions to reduce float, see Philip E. Coldwell, "The Future of the Payments System," paper presented at the Cash Management Institute's First National Forum, March 11, 1980, pp. 6-7.

TABLE 1
MCA-80 measures to reduce and price Federal Reserve check float

Type of Float	Amount of Float Affected (millions)	Type of Measure	Date of Implementation	Bank Incurring Reduction or Pricing	Float Cost Recovery
Holdover	\$650	Reduce/price	Apr. 1981/Feb.-Oct. 1983	Payor/Payee	Indirect
Interterritory	1,000	Reduce/price	July 1983	Payee	Direct
Interterritory return-item	130	Eliminate	August 1983	Payor	—
Other return-item	20	Price	October 1983	Payee	Indirect
Intraterritory	110	Price	October 1983	Payee	Indirect
Accounting error*	30	Price	October 1983	Payee	Indirect
Nonstandard holiday†	50	Reduce/price	April 1984	Payee	Indirect
Midweek closing‡	110	Reduce/price	April 1984	Payor	Direct

* Float arising from Federal Reserve accounting errors.
† Days a bank is closed because of state or local holidays, but the Federal Reserve remains open.
‡ Midweek closings are regular weekdays on which banks may close as permitted by state law.

Sources: *Federal Reserve Bulletin* and *Washington Financial Reports*

ity schedules. Any remaining float was to be priced. The pricing of float meant that banks would be charged interest for reserves provided in the form of float rather than receiving these reserves interest free. The MCA-80 directed the Federal Reserve to price its float at the federal funds rate. This meant, for example, that if the average level of float during the year was \$200 million and the federal funds rate was 10 percent, the cost of float to be recovered for the year was \$20 million.⁹ Specific measures to reduce and price float are listed in Table 1.

The reduction and pricing of float varied with the type of float. Holdover float was reduced by reducing check clearing times, which was accomplished mainly through inter-

nal operational improvements. Pricing of remaining holdover float was phased in over a specified time. Interterritory float was reduced or priced at the discretion of the payee bank.¹⁰ Interterritory return-item float was eliminated simply by deferring the crediting of payor bank reserve accounts for returned checks by one day.¹¹ Nonstandard holiday float was reduced either by deferring credit for checks drawn on banks closed for nonstandard holidays or by pricing this float.¹² Midweek clos-

⁹ The federal funds rate is the interest rate banks charge one another for overnight loans. This a logical rate for pricing float since float essentially represents a similar loan from the Federal Reserve to banks.

¹⁰ Federal Reserve banks offer depositing banks two credit availability options on interterritory checks. Under both options, banks can choose to reduce float or pay for it directly. See "Fed Float Reduction Program," *Washington Financial Reports*, March 14, 1983, pp. 534-538.

¹¹ Interterritory return-item float had occurred because Federal Reserve banks debited payee bank reserve accounts (for returned checks) the day after crediting payor bank reserve accounts.

¹² Credit deferral is generally limited to nonstandard holidays where all the banks in a state are closed. Float resulting from other nonstandard holidays is priced. The Federal Reserve Board has proposed an amendment to Regulation J that would further reduce this float and shift the reduction and pricing to payor

ing float was reduced by debiting payor bank reserve accounts for checks presented to them on midweek closings. As an option, payor banks can have this float priced instead.

Float costs resulting from float pricing are recovered by the Federal Reserve directly or indirectly (Table 1). The cost of interterritory and midweek closing float is recovered directly from banks through reductions in credits earned on clearing balances or through an explicit charge. The cost of all other float types is recovered indirectly through a per-item charge. The Federal Reserve projects this float and the volume of checks to be processed every year. The cost of float is then calculated using the current federal funds rate. The float cost is divided by the projected volume to determine the per-item charge needed to recover float costs. This cost is added to other costs of operating the check collection system to arrive at a total per-item charge for check collection services. The Federal Reserve monitors float cost recovery so that over the long run they neither over collect nor under collect for float, as required by the MCA-80.

Implications of float reduction and pricing

The recent reduction and pricing of float have had important implications for monetary policy, Treasury revenues, banks and their customers, and the payments system.

Monetary policy

The Federal Reserve formulates and implements monetary policy in order to promote sustainable and noninflationary economic

banks. See Press Release, Board of Governors of the Federal Reserve System, November 18, 1985

growth. The Federal Open Market Committee (FOMC), the policymaking arm of the Federal Reserve, meets eight times a year to formulate monetary policy. The FOMC then issues operational directives to the Trading Desk at the Federal Reserve Bank of New York.

The Trading Desk implements monetary policy by influencing the level of reserves in the financial system. The level of reserves in turn affects the money supply and economic growth. The Desk influences reserves primarily by conducting open market operations, that is, by buying and selling government securities. The Desk adds reserves by buying securities and drains reserves by selling securities.

There are factors influencing reserves over which the Trading Desk has little or no control, however. These uncontrolled factors, particularly Federal Reserve float, tend to complicate the implementation of monetary policy by causing reserves to deviate from desired levels. To maintain the desired level of reserves, the Desk must add or drain reserves to offset the unwanted effects of uncontrolled factors. Offsetting uncontrolled factors is a problem, however, because the Federal Reserve cannot precisely predict their day-to-day movement. Float, one of the most volatile factors and a primary source of unpredictability, has made reserve management more difficult.¹³

The reduction of float in recent years has helped to reduce this impediment to reserve management. As the level of float has been reduced, there also has been a reduction in its

¹³ For a discussion of the volatility and unpredictability of float and its adverse effect on reserve management, see "Federal Reserve System-Check Clearance Float," Hearings, Committee on Government Operations, U S Congress, March 17, 1966, pp. 8-9, 14. See also Arline Hoel, "A Primer on Federal Reserve Float," *Monthly Review*, Federal Reserve Bank of New York, October 1975, p. 252.

volatility. Thus, to the extent that a reduction in volatility allows for more accurate float predictions—and to more accurate predictions of uncontrolled factors generally—the ability of the Desk to maintain reserves at levels consistent with monetary policy has been enhanced.

Treasury revenues

Float increases reserves in the banking system. In response to the increase, the Trading Desk sells government securities to offset the unwanted effect on reserves. Because the securities held by the Federal Reserve earn interest, float lowers the interest income the Federal Reserve earns by reducing its holdings of securities. Lower interest income reduces Treasury revenues by reducing Federal Reserve surpluses returned to the Treasury. The amount of the reduction depends on float and market interest rates. For example, float averaged \$6.6 billion in 1979 and the interest rate on securities sold to offset float was approximately 10.6 percent. The result was a direct revenue loss to the Treasury of about \$700 million.¹⁴

The direct revenue loss overstates the effective revenue loss, however, because float increases taxable income in the private sector. The increase in taxable income results from the float subsidy, which generates interest income that would not exist otherwise. The effective Treasury revenue loss is the difference between the direct loss and the taxes recovered on the float-generated interest

income. It is difficult to estimate how much the Treasury actually recovers in taxes, since the interest could show up as income to payor banks, their customers, and elsewhere in the economy. As a rough approximation, however, if each dollar of interest income is subject to the maximum corporate income tax of 46 percent and the remaining 54 cents is taxed at a personal rate of 25 percent, the Treasury would recover 59.5 cents on each dollar of interest income, i.e., $\$0.595 = \$0.46 + (0.25 \times \$0.54)$. The effective Treasury revenue loss, then, is about 40 percent of the direct Treasury revenue loss.¹⁵

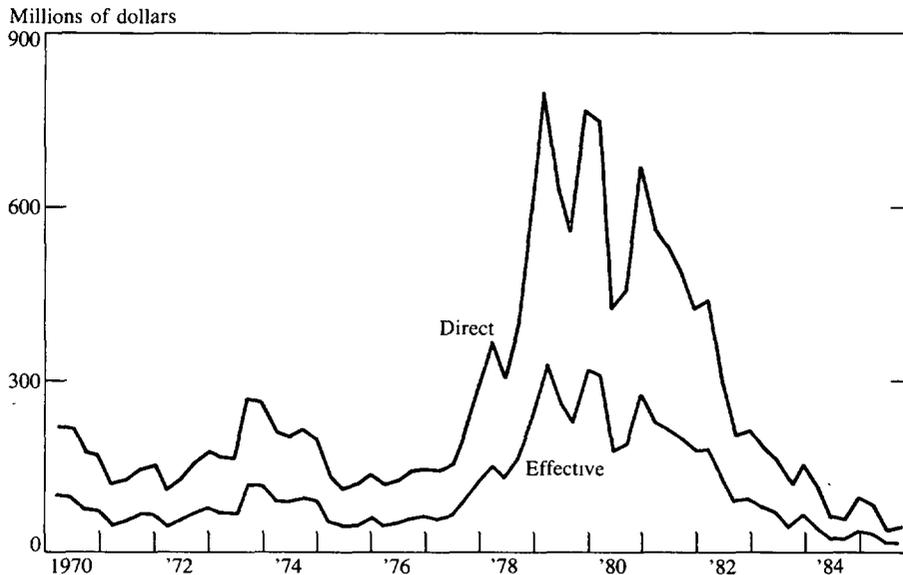
Chart 2 shows estimates of effective Treasury revenue losses based on the assumptions above. According to this calculation, Treasury revenue losses averaged just under \$100 million from 1970 to 1977. Revenue losses rose sharply in 1977, reflecting rising interest rates and float levels, and then peaked at about \$300 million in 1979.

The implication of float reduction for Treasury revenue losses is clear from Chart 2. Revenue losses began declining in 1979 when float began its sharp decline. The decline of Treasury revenue losses was slowed by high interest rates in 1979 and 1980 but has been reinforced by falling rates since 1981. The remaining Treasury revenue losses were eliminated with the implementation of float pricing beginning in late 1983. By reducing Treasury revenue losses, float reduction and pricing have made a marginal contribution to lowering the budget deficit.

¹⁴ Most open market operations involve securities with maturities of less than 90 days. A simple average of the federal funds rate and the 3-month Treasury bill rate is therefore used to approximate the interest rate on securities sold to offset float. See Thomas A. Gittings, "Sinking Float," *Economic Perspectives*, Federal Reserve Bank of Chicago, May 1980, p. 20

¹⁵ See Benjamin Wolkowitz, Peter R. Lloyd-Davies, "Reducing Federal Reserve Float," *Federal Reserve Bulletin*, December 1979, pp. 945-946. While the estimation of direct Treasury revenue losses is fairly straightforward, estimation of effective revenue losses is complex and beyond the scope of this paper. The estimates in Chart 2 are thus a crude approximation of effective Treasury revenue losses

CHART 2
Approximate direct and effective treasury
revenue losses due to Federal Reserve float
 (quarterly at annual rates, 1970:Q1-1985:Q3)



Banks and bank customers

The effective Treasury revenue losses resulting from float represent a transfer payment or subsidy to banks and their customers. Float is, in effect, an interest-free loan that generates interest income for banks and their customers—interest income that would otherwise be gained by the Treasury. By reducing and pricing float, the Federal Reserve transfers this wealth back to the Treasury. The transfer has implications for banks and their customers.

Float reduction and pricing have some negative implications for banks and their customers. The reduction and pricing of float increase the costs of clearing checks through the Federal Reserve. Increased costs may encourage some banks to use other check

clearing arrangements that were previously less desirable than the Federal Reserve's check clearing operations. For banks continuing to use the Federal Reserve's check clearing services, float pricing means an increase in costs. For instance, the Federal Reserve recovered about \$42 million in float costs from banks in 1984. This cost was at least partially passed on to bank customers. Banks generally pass on float costs by incorporating them into per-item charges, charging them directly to customers, or having customers maintain higher compensating balances.

Float reduction also has some positive implications for bank customers. Float reduction results partially from the faster clearing of checks. The faster checks are cleared, the easier it is for customers to reconcile bank statements with their own accounts. Faster check

clearing may also lead to more predictable delays in check presentment, which allow check writers to lower precautionary balances in noninterest-bearing accounts. Payees also benefit from faster check clearing. The shorter the delay before presentment, the less the chance that the check writer's financial status will deteriorate to a point that the check is dishonored. In addition, faster clearing allows the payee to be notified of return-items more quickly, increasing the chances of receiving payment from the payor.¹⁶

The payments system

The MCA-80 was intended partly to promote a more innovative, competitive, and efficient payments system. Pursuant to the MCA-80, the Federal Reserve began pricing its check clearing services in August 1981. Pricing promoted a more efficient payments system by allowing the private sector to compete with the Federal Reserve in check clearing. The MCA-80 further promoted efficiency in the payments system by reducing and pricing float.¹⁷

For example, float reduction resulting from the faster clearing of checks reduces the profitability of cash management techniques such as remote disbursement. Reduced profitability may lead to a decline in the use of such tech-

niques, resulting in a more efficient routing of checks through the collection system and in less resources being devoted to check clearing operations.¹⁸

Reducing and pricing float also help encourage the development of more efficient payment systems, such as electronic funds transfer (EFT) systems.¹⁹ Development of EFT systems may have been impeded because the systems are relatively float free and, therefore, do not provide the subsidy generated by checks. By reducing and pricing float, the MCA-80 helps eliminate this impediment to the development of EFT systems by eliminating the Federal Reserve check float subsidy. EFT systems are more efficient payment systems in two respects. First, EFT systems usually entail an immediate and simultaneous, or float-free, transfer of funds from payor to payee bank. Second, EFT systems eliminate or reduce the costly and time consuming task of sorting checks and transporting them around the country, thereby reducing the resources devoted to the transfer of funds.

Summary

The rise of Federal Reserve float through the 1970s partly reflected the check clearing policies and operations of the Federal Reserve. Similarly, the recent fall of float has reflected

¹⁶ For a discussion of these benefits, see Benjamin Wolkowitz and Peter R. Lloyd-Davies, "Reducing Federal Reserve Float," pp. 948-949.

¹⁷ The pricing of financial services, including float, was undertaken not only to promote a more efficient and equitable payments system, but also to help offset the loss of Treasury revenues resulting from lower reserve requirements. Lower reserve requirements were mandated by the MCA-80. For a full discussion of the rationale behind the pricing Federal Reserve services, see Peggy Brockschmidt and Carl Gambs, "Federal Reserve Pricing—A New Era," *Economic Review*, Federal Reserve Bank of Kansas City, July/August 1981, pp. 3-15.

¹⁸ A study by First Chicago shows that since the MCA-80 check presentation (clearing) times have decreased well over a day on average, reducing significantly the level of float enjoyed by corporations. See Daniel M. Ferguson and Steven F. Maier, "Reducing the Risk in Corporate Disbursement Systems," *Bank Administration*, June 1984, p. 32. See also Benjamin Wolkowitz and Peter R. Lloyd-Davies, "Reducing Federal Reserve Float," p. 949.

¹⁹ EFT systems include point-of-sale terminals, automated teller machines, automated clearinghouses, debit cards, and check truncation. For a description of these, see Paul F. Metzker, "The Federal Reserve System's Check Float: An Assessment of Its Magnitude, Effect, and Possible Reduction," pp. 25-30.

Federal Reserve check clearing policy and operational modifications to control float.

Recent Federal Reserve float policies can be traced to congressional concern over the adverse effects of the rise in float. Specifically, float lowered Treasury revenues by reducing the securities held by the Federal Reserve and, therefore, the earnings from these securities returned to the Treasury. Float also complicated the implementation of mone-

tary policy by causing reserves in the banking system to deviate unpredictably from desired levels. Consequently, Congress directed the Federal Reserve through the MCA-80 to reduce and price float in order to eliminate these adverse effects. The reduction and pricing of float since 1980 have helped to accomplish this goal and, thereby, have contributed to greater efficiency in the nation's payments system.