

Research Department
Federal Reserve
Bank of
San Francisco

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Float

Even with the recent decline in interest rates, float continues to be a major concern of bankers and cash managers. Float constitutes a transfer of wealth from one party to another, and attempts to create or eliminate it require significant real investments for the banking and cash management industries.

Yet amid the debate over specific float-reduction methods, very little is said about the important role that float plays in the payments system. For example, in eliminating Fed float as mandated, one could reduce its average aggregate level to zero over some period such as a month, or one could eliminate Fed float on every individual transaction. Conceptually, either end could be accomplished, but the effect on individual banks and the payments markets might be quite different.

Economics of float

Float is created whenever there is a mismatch between the time that the payor loses full use of funds and the payee gains full use of the same funds. Although there are many sources of float, two are of concern here: bank float and Federal Reserve float.

As an illustration, suppose that Corporation A in Miami deposits at its local bank a check that is written against a San Francisco bank account of Corporation B. Suppose, in addition, that the Miami bank gives Corporation A immediate credit as a normal part of its checking account service. The fact that immediate credit (i.e., "good funds") was granted and that the paper check takes time to clear creates "bank float." In essence, the Miami bank has loaned funds to Corporation A until such time that the check has cleared and good funds are received from the San Francisco bank.

The Miami bank may choose to send the check directly to the San Francisco bank, or it may route it through either a private correspondent or the Fed network. If the check does

not pass through the Fed, only "bank float" is created; if it does, "Fed float" may also be created. Over forty percent of the nation's checks pass through the Fed and large dollar transfers also are effected through the Fed's electronic systems.

If the Miami bank presents the check to the Miami Fed branch for clearing, the Fed by *convention* credits the Miami bank's reserve account on the basis of a predetermined "availability schedule." Although the availability schedule is highly complex, two days hence is representative for interdistrict items of this nature. If the Fed can clear the check and debit the San Francisco bank's account in two days, no Fed float is created. However, if the Fed by chance takes three days to clear the check, one day of Fed float is created in addition because the Fed has extended good funds on the second day, but doesn't debit the San Francisco bank until the third day.

In the context of paper checks, Fed float is the difference between the stated availability schedule on which the Fed credits the collecting bank's reserve account and the actual clearing time on which it debits the paying bank's reserve account. It is analogous in concept to bank float.

...as a service

Both bank and Fed float can be thought of as constituting a part of the "service" of transacting payments. With the exception of large-denomination business transactions, deposits of paper checks normally are credited with good funds on a predetermined basis. The collecting party values both the fact that availability is predetermined and that it is rapid. Because of its value to customers and its simple accounting requirements, immediate (overnight) credit is the norm for most consumer checking accounts. With known funds availability, the account holder is reasonably sure of his daily cash receipts and thus can gauge his disbursements accord-

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ingly. Given the prevailing use of slow paper checks and equally slow information systems, basing credit on actual clearing times would require intricate information flows and still would result in delayed knowledge of funds availability.

Banks, and the Fed, offer not only predetermined credit, but they also offer "premature" (advance) credit on average. When a bank provides advance credit and positive float is generated, the cost of the float is borne by the bank. As such, bank float is simply part of the bank's cost of providing the joint checking account/check clearing service. Two of many attributes of that service are predetermined credit, and often, advance credit. Since commercial banks are in business for private profit, we must presume that the bank is charging the customer a price that compensates for the cost of float (even though the charge is not linked directly to the float).

The dollar value of float on large-denomination items suggests that advance credit may be a significant part of the value of check-clearing services. For example, the value of three-day float on a \$10,000 check is roughly \$8 at present interest rates, far in excess of the perhaps 25¢ average total handling cost of a check. (With large-denomination checks, the 25¢ figure may be a substantial underestimate, given that processors may have an incentive to employ costly handling procedures in order to reduce the cost of float.)

Since predetermined credit and advance credit both are valued by depositors, we cannot be certain that float ought to be reduced to zero, or that a bank would eliminate float even if it could. In theory, bank customers are willing to pay explicitly for float. A practical problem arises, however, because direct and explicit charges for float would require prohibitively costly information systems under today's technology. Charging the depositor for each float item would require information on the ultimate clearing time of every check. (Even then, charging the depositor explicitly for the float would not necessarily lead to an

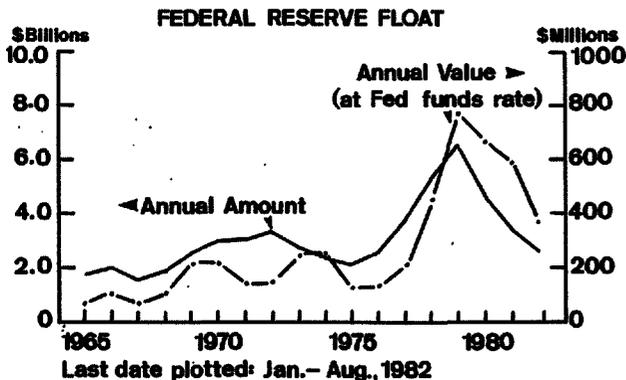
efficient pricing structure, as the amount of float is largely under the control of the check writer, not the depositor.) Thus, banks charge a "bundled" price for check-clearing services (foregone interest and/or fees) that only on average covers the cost of float.

... as a subsidy

The mechanics of Fed float are similar to those of bank float. When banks bring checks to the Fed for clearing, it grants predetermined credit, albeit normally with a lag. On average, it also gives some advance credit, generating positive Fed float. The daily variability of Fed float comes from many sources: unexpected processing delays and equipment malfunctions within Fed offices, transportation delays, and computer or communications breakdowns. The positive level on average results from an availability schedule that is somewhat ambitious relative to these factors. While the availability schedule is based on actual historical data, the Fed tends to round fractions of a day down to the nearest whole number. (Advance credit turns out to average only a fraction of a day per transaction.)

Although the mechanics of bank float and Fed float are comparable, the interpretation of a positive average level of float differs. In the case of a private commercial bank, float cost is borne internally and must be passed on to the bank's customers if the bank is to remain in business. In the case of the Fed, however, the cost of Fed float historically has been borne by the U.S. Treasury in that the Treasury's revenues from the reserve tax have been reduced by the interest-value of the float.

When Fed float is positive (negative), total bank reserves are created (extinguished) temporarily because of the mismatch between when one bank's reserve account at the Fed is credited and another bank's is debited. Such reserves have a market value that is determined by the Federal funds rate. (The Fed funds rate is the interest rate that banks charge each other for overnight reserve loans.) While



imposed in part for monetary control purposes, (non-interest-bearing) required reserves may be likened to a tax imposed by government on the banking system (and indirectly, its customers). Positive Fed float represents a "subsidy" that partially offsets the much larger tax imposed through required reserves. Even at its annual peak in 1979, the \$6.5 billion of Fed float still represented only a partial offset to the \$41 billion in sterile reserves required of member banks.

In the years preceding passage of the Monetary Control Act (MCA) of 1980, Fed float and free Fed services were used as partial offsets to the cost of holding idle reserves at the Fed. Despite these offsets, Fed membership was declining as banks increasingly sought to escape the rising cost of required reserves. The MCA of 1980 addressed the issues of required reserves, Fed services, and float simultaneously. It made required reserves universal and independent of Fed membership; it required the Fed to price its nongovernmental services at full cost plus a margin for taxes and cost of capital (presently 16 percent); and it required the Fed to eliminate or price its float.

The float issue was no small part of the package. At passage of the MCA, the implicit value of Fed float (see chart) exceeded the \$400-\$500 million combined annual cost of all Fed services that were mandated to be priced!

Eliminating Fed float

Random elements and uncertainties such as transportation delays and equipment malfunctions make both bank float and Fed float extremely volatile on a day-to-day basis. Although the volatility and aggregate level of float often are related, the issue regarding the subsidy value of Fed float does not necessarily center on eliminating its daily variance, but rather on reducing its average aggregate level to approximately zero. One could achieve this end by (1) moving paper checks through the Fed at a faster average rate, (2) extending the availability schedules slightly, or (3) altering "deposit" and "presentment"

hours—the deadlines within the day by which the Fed accepts checks from depositing banks and presents checks to paying banks. (By altering availability schedules, the Fed would be changing only the accounting conventions. In contrast, by altering deposit and presentment hours, the Fed would require that checks actually move according to different deadlines.) Most of the reduction in Fed float since 1979 is the direct consequence of investments the Fed has made to move checks faster. But to reduce float further, the Fed is considering both of the other possibilities.

It is possible that both the average level of float and its day-to-day volatility could be reduced simultaneously if the Fed were to move towards a real-time electronics payments system—i.e., one in which debits, credits, and information flows (confirmations) are effected simultaneously. (If the commercial banking system were to adopt real-time electronic payments, bank float could be eliminated similarly.) Wire transfers and automated clearing house (ACH) transfers with simultaneous confirmation constitute such a system.

In a world in which it is difficult to charge the depositor directly for float, and nearly impossible to charge the initial check writer, there is considerable merit to moving toward electronic systems that hold the ultimate promise of eliminating float altogether. They also would eliminate the credit risk associated with delays between credits and debits.

But despite their ultimate promise, fully electronic payments systems are still some distance in the future. In the meantime, the Fed must eliminate or price its float. In the context of Fed float as a subsidy and a political issue, it is the average level of Fed float that is central, not necessarily its daily volatility. There are many ways to reduce or eliminate this average level while still retaining the system of predetermined credit that is of value to depositing banks.

Jack H. Beebe

VERLE B JOHNSTON
 AV-LEGIS. ANALYST
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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 11/17/82	Change from 11/10/82	Change from year ago	
			Dollar	Percent
Loans (gross, adjusted) and investments*	161,402	- 314	7,471	4.9
Loans (gross, adjusted) — total#	141,845	- 234	8,753	6.6
Commercial and industrial	45,466	- 44	5,497	13.8
Real estate	57,490	- 8	2,082	3.8
Loans to individuals	23,386	- 9	87	.4
Securities loans	2,060	- 151	11	.1
U.S. Treasury securities*	6,507	- 121	1,060	19.5
Other securities*	13,050	- 41	- 2,342	- 15.2
Demand deposits — total#	41,205	418	590	1.5
Demand deposits — adjusted	28,049	- 825	187	.7
Savings deposits — total	32,440	- 87	2,714	9.1
Time deposits — total#	98,894	- 773	12,468	14.4
Individuals, part. & corp.	88,787	- 670	10,824	13.9
(Large negotiable CD's)	35,865	- 797	2,764	8.9
Weekly Averages of Daily Figures	Week ended 11/17/82	Week ended 11/10/82	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves (+)/Deficiency (-)	96	139	33	
Borrowings	14	39	16	
Net free reserves (+)/Net borrowed(-)	82	100	17	

* Excludes trading account securities.

Includes items not shown separately.

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