Reduction in daylight credit and systemic risk exposes the Federal Reserve to risks in its role as a provider of daylight overdrafts and as the potential lender of last resort. A broad range of issues has emerged as the Federal Reserve has taken the first steps toward risk reduction.

Defining a daylight overdraft is not simple, but, once defined, pricing should reduce banks’ daylight overdrafts of their Federal Reserve Bank accounts. Controlling this credit risk, however, introduces new and more complicated issues. If payments traffic were to shift to private networks, it becomes necessary to ensure that elimination of direct credit risk does not create increased systemic risk. Requiring risk-sharing agreements in domestic private networks could limit this counterproductive transformation.

However, concerns about effective supervision of foreign participants in private domestic networks, and the possibility of dollar-payment traffic shifting to unregulated offshore networks must be addressed. This adds a new dimension to the already thorny issue of an international division of labor among national regulatory agents that will be consistent with both fair and prudent global competition.

Another alternative, and the one being proposed, is to define a simple rule that minimizes intraday float within existing legal constraints of payment recognition. The result is that payments involving the U.S. Treasury would be posted at the opening of the day, or in midafternoon, while other non-Treasury items would be posted at the close of business.

### Concluding Comments

Controlling payment system risk is a relatively new policy venture. Banks first had to operate within daylight overdraft limits only as recently as 1986. Changing the way banks manage their payments during the day could reduce the credit risk and systemic risk exposures the Federal Reserve now faces in its role as a provider of daylight overdrafts and as the potential lender of last resort. A broad range of issues has emerged as the Federal Reserve has taken the first steps toward risk reduction.

A "commercial paper" is most familiar when it is done between two large businesses that have established lines of credit with each other. In this case, the bank or financial institution lends a sum of money to the company at a negotiated interest rate and a specific date of repayment. If the company is unable to repay the loan, the bank can seize the company's assets to recover the money. This is an example of a secured loan because the bank has collateral to cover the risk.

Daylight overdraft volumes mushroomed over the past 20 years, in connection with the telecommunications revolution, the globalization of banking and securities markets, and the explosion in volume of financial market activity, especially for overnight financing.

Banks use overnight loans to meet the demand for funds that arises when they have more liabilities than assets, or when they have more cash than they need. They use these loans to support their daily operations, such as paying employees and suppliers on time. If a bank cannot repay its overnight loan, it may fail.

An effective payment system risk policy must deal with complex, sometimes-interrelated issues. These range from how to devise a workable international division of labor among sovereign bank-regulatory agents, all the way to the basic operational question of how to define a real-time daylight overdraft that includes off-line activities.

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**Payment System Risk Issues**

by E. J. Stevens

At its May 31, 1989 meeting, the Board of Governors of the Federal Reserve System began amending its existing payment system risk policy. The amendments adopted or proposed are the outgrowth of a two-year examination of the interrelated set of international, domestic, and operational issues involved in reducing the risks created in making payments.

Payment system risk issues arise in both Federal Reserve and private large-dollar-value electronic payment systems. Risk exists in these networks when payments are financed by a special form of lending.

Federal Reserve Bank lending to banks is most familiar when it is done through the discount window, at the discount rate, secured by eligible collateral, to be repaid one or more days later. Less familiar is the special form of lending called a daylight overdraft, which occurs when a bank’s payments exceed the balance in its account for some portion of the day. This net debit creates a kind of uncollateralized Federal Reserve Bank loan, made and to be repaid during the course of a single banking day, automatically, and at no charge. In private networks, such net debits represent loans to participants who have paid more than they have received, and are extended by those who have received more than they have paid.

Starting in 1986, the Board’s initial policy simply required each bank to set a limit on its daylight overdrafts (including net debits on private systems). The need for a more fully articulated policy is suggested by the broad range of payment system risk issues now recognized. This Economic Commentary examines the broad outline of those issues.

**Payment System Risk**

All risks carry some risk of loss. Cash risks counterfeit; checks risk insufficiency; drafts and other forms of credit risk non-payment.

Daylight overdraft volumes mushroomed over the past 20 years, in connection with the telecommunications revolution, the globalization of banking and securities markets, and the explosion in volume of financial market activity, especially for overnight financing.

Banking practices increasingly came to rely on free Federal Reserve daylight credit. Introduction of real-time accounting systems assisted some banks in managing their own daylight exposures in this environment. Federal Reserve accounting systems operate on a real-time basis only in maintaining problem banks and some specialized institutions. In general, Federal Reserve Banks do not prevent daylight overdrafts, but, since 1986, attempt to control daylight credit risk exposures.

The risk involved with daylight credit is that, at the end of a day, a paying bank might be unable to repay its daylight overdraft to a Federal Reserve Bank or on a private network. This would mean that the bank had...
failed, leaving the Federal Reserve or participants in a private network holding an uncanceled debt of the failed bank.

Payment system risk policy has twin concerns. One is the direct credit risk exposure of Federal Reserve Banks. The other is potential systemic risk as participants hold exposure of Federal Reserve Banks.

• International Issues. To what extent that the inability to settle a private system failure on a private system would prevent counterparty banks from meeting their own obligations, that some of their counterparties in turn would be unable to pay, and so on in a complex chain of payment failures that might disrupt the entire financial system.

- **International Issues**
  - Putting aside domestic payments for the moment, international dollar payments involve both domestic and offshore networks.
  - The central banks of the 10 major developed nations, the G-10, are currently exploring the offshore networks in particular.
  - The clearing process involves two stages.
  - The CHIPS. Operated by the New York Clearing House, is the offshore equivalent of such a network for multilateral payment netting.
  - The clearing window is an offshore example.

Systemic risk is the central regulatory concern in these private networks. Using current CHIPS as an example, total payments of about $700 billion are processed through the clearing system each business day. At the end of the day, net debit positions are paid from Federal Reserve Bank deposits (directly or via correspondents) and are redistributed to participants in net credit positions.

- **Domestic Issues**
  - The Federal Reserve in effect operates two large-dollar-value electronic payment networks, Fedwire and the securities wire. Fedwire simply transfers recibs between participants to settle payments. A common transaction would involve two banks.
  - The country of residence questions arising in the clearing and settlement of most offshore networks are complicated issues.
  - The central banks of the 10 major developed nations, the G-10, are currently exploring these issues, with the assistance of the Bank for International Settlements (BIS).

The Federal Reserve has long urged, and CHIPS has now agreed to adopt, internal guarantees of shared funding by all network participants in the event that any participant is unable to cover its deficit position on the network at the end of a day. This would reduce or eliminate system risk by assuring settlement without a chain-reaction of failures.

Introducing this sort of settlement guarantee has two important implications. One is that participants may change their procedures for making and settling payments in order to avoid responsibility for weaker members of CHIPS. For example, if guarantees of shared funding are required of all onshore participants, then Fedwire networks may become more attractive. Or pairs of banks may simply bypass multinet banks. FXNet has been created recently, offering electronic settlement through which pairs of banks with a large volume of payments back and forth can make and settle these payments directly.

The second important implication of the CHIPS risk-sharing agreement is that the Federal Reserve could require participants to make the presumption of rescue unacceptable to the Federal Reserve, whether implicit or explicit. That is, if the Federal Reserve could be counted on to mount a rescue, the probability of needing a rescue would increase as the market discipline of counterparty credit scrutiny eroded.

Which nation's authorities are responsible for payment systems with multilateral participants is an issue that is only beginning to receive attention, partly instigated by the larger regulatory issuers of both country versus country of residence questions arising in banking. Which authorities should be concerned with dollar payment networks operating offshore, and for a dollar payment system activities of foreign banking institutions participating in onshore networks are complicated issues.

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Fedwire daylight overdraft limits were lowered in 1988, in line with the initial policy intention to reduce System daylight credit risk exposure gradually over time. At the same time, the Federal Reserve Board of Governors initiated a thorough review of its payment system risk policy, with particular attention to the possibility of replacing or augmenting quantity limits with some form of daylight overdraft pricing, discussed below.

Daylight overdrafts originating on the securities wire have not been subject to acceptance limitations. Reducing daylight overdrafts from this source is made difficult by the concentration at a handful of banks intimately involved in the clearing and settlement of most daily trading in U.S. Government securities.

The paramount issue here is how to price daylight overdrafts from this source on a par with those on Fedwire, or to develop a policy that accommodates them.

The alternative would minimize potential disruption of the U.S. Government securities market, although it could discourage development of multilateral networks.

- **Pricing Daylight Overdrafts**
  - How to price daylight overdrafts on the Federal Reserve networks was one issue that emerged in recent System staff studies. Initially, three proposals generated considerable interest. Federal Reserve Governor Wayne Angell's proposal suggested that banks borrow overnight federal funds on the discount window at a penalty rate on the average overdraft during the day. In conjunction with the further proposal that the System pay a lower-market rate of interest on excess reserves, the Angell proposal amounted to a stick and a carrot to induce banks to hold sufficient excess reserves to avoid daylight overdrafts.

A second proposal, originating with the Federal Reserve Bank of New York, would have had banks hold interest-earning supplemental reserve balances in proportion to their daylight overdrafts. This would have required banks to hold more excess reserves directly, but not necessarily by enough to eliminate daylight overdrafts completely.

The third proposal, and the one that the Board of Governors has published for public comment, simply would phase in a信贷 price on an overdraft of 1 percent at an annual rate on the average daily daylight position of a bank in excess of a deductible. For example, the price should be set at a level that would reduce the Federal Reserve risk on the average overdraft in excess of the deductible. The price should be set at a 1 percent rate, or 0.5 dollars per million dollars per day. How high this price should be is an important question. Pricing can reduce payment system risk to the extent that it reduces changes in their payment practices. For example, banks that borrow overnight federal funds go into daylight overdrafts when they repay at the beginning of the next day. They then reborrow from identical sources toward the end of the day. A large share of daylight overdrafts represents this Federal Reserve daylight bridge.

In general, the price of daylight overdrafts makes it cheaper for banks to adopt alternative methods of financing. One alternative, expected to gain widespread use, is for borrowing banks to repay only the net difference, if any, at the beginning of the next business day.

For another example, banks might switch payments to existing or newly formed private payment networks that, under the Board's policy, must include arrangements for assuring settlement finality. The fee would be effective in reducing direct credit risk of the Federal Reserve, while risk-sharing agreements like those above to be introduced in CHIPS would protect against increased systemic risk.

- **An Operational Issue**
  - Developing a long-run Federal Reserve payment system risk reduction program requires a robust definition of a daylight overdraft. To be operational, the definition must allow banks to monitor their daylight overdraft positions on a real-time basis during the day.

The issue is how a daylight overdraft monitoring program will affect reserve deposits and banks' balance from offshore activities such as check clearing, currency shipments, ACH payments, Treasury items, etc. Rules applicable to these activities only specify the day, not the time of day, on which funds are available. Currently, the System's ex-post daylight overdraft monitor adds the net amount of all of these offshore activities to the monitor as a single daily adjustment, with the opening balance, if a net credit, or the closing balance, if a net debit.

The current procedure cannot continue, if banks are expected to pay for daylight overdrafts, because a bank could