



## FEDERAL RESERVE BANK OF DALLAS

2200 N. PEARL ST.  
DALLAS, TX 75201-2272

June 26, 2006

**Notice 06-31**

**TO:** The Chief Executive Officer of each  
financial institution and others concerned  
in the Eleventh Federal Reserve District

### **SUBJECT**

#### **Consultation Paper on Intraday Liquidity Management and Payments System Risk Policy**

### **DETAILS**

The Board of Governors of the Federal Reserve System has published a consultation paper to seek information from financial institutions and other interested parties on their experience in managing intraday liquidity, credit, and operational risks relating to Fedwire funds transfers and associated transactions.

The Board also seeks views on potential changes in market practices, operations, and its Payments System Risk (PSR) Policy that could reduce one or more of these risks, while maintaining or improving the efficiency of the payments system. This consultation is consistent with the Federal Reserve's long-standing practice of working with the financial industry to address payments system risk issues and provides a framework for discussions about the long-term evolution of the PSR Policy.

The Board must receive comments by December 15, 2006. Please address comments to Jennifer J. Johnson, Secretary, Board of Governors of the Federal Reserve System, 20th Street and Constitution Avenue, N.W., Washington, DC 20551. Also, you may e-mail comments to [regs.comments@federalreserve.gov](mailto:regs.comments@federalreserve.gov). All comments should refer to Docket No. OP-1257.

The public can also view and submit comments on proposals by the Board and other federal agencies from the [www.regulations.gov](http://www.regulations.gov) web site.

### **ATTACHMENT**

A copy of the Board's notice as it appears on pages 35679–87, Vol. 71, No. 119 of the *Federal Register* dated June 21, 2006, is attached.

### **MORE INFORMATION**

For more information, please contact this Bank's Reserve and Risk Management Division at (214) 922-5585. Previous Federal Reserve Bank notices are available on our web site at [www.dallasfed.org/banking/notices/index.html](http://www.dallasfed.org/banking/notices/index.html) or by contacting the Public Affairs Department at (214) 922-5254.

**FEDERAL RESERVE SYSTEM****[Docket No. OP-1257]****Consultation Paper on Intraday Liquidity Management and Payment System Risk Policy****AGENCY:** Board of Governors of the Federal Reserve System.**ACTION:** Notice; Request for comments.

**SUMMARY:** The Board of Governors of the Federal Reserve System ("Board") is publishing this consultation paper to seek information from financial institutions and other interested parties on their experience in managing intraday liquidity, credit, and operational risks relating to Fedwire funds transfers and associated transactions. The Board also seeks views on potential changes in market practices, operations, and its Payments System Risk (PSR) Policy that could reduce one or more of these risks, while maintaining or improving the efficiency of the payments system. This consultation is consistent with the Federal Reserve's long-standing practice of working with the financial industry to address payments system risk issues and provides a framework for discussions about the long-term evolution of the PSR Policy.

**DATES:** Comments must be received on or before December 15, 2006.

**ADDRESSES:** You may submit comments, identified by Docket No. OP-1257, by any of the following methods:

- **Agency Web Site:** <http://www.federalreserve.gov>. Follow the instructions for submitting comments at <http://www.federalreserve.gov/generalinfo/foia/ProposedRegs.cfm>.

- **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

- **E-mail:** [regs.comments@federalreserve.gov](mailto:regs.comments@federalreserve.gov). Include the docket number in the subject line of the message.

- **FAX:** 202/452-3819 or 202/452-3102.

- **Mail:** Jennifer J. Johnson, Secretary, Board of Governors of the Federal Reserve System, 20th Street and Constitution Avenue, NW., Washington, DC 20551.

All public comments are available from the Board's Web site at <http://www.federalreserve.gov/generalinfo/foia/ProposedRegs.cfm> as submitted, unless modified for technical reasons. Accordingly, your comments will not be edited to remove any identifying or contact information. Public comments may also be viewed electronically or in paper in Room MP-500 of the Board's Martin Building (20th and C Streets, NW.) between 9 a.m. and 5 p.m. on weekdays.

**FOR FURTHER INFORMATION CONTACT:**

Jeffrey Marquardt, Deputy Director (202-452-2360), Lisa Hoskins, Assistant Director (202-452-3437), or Susan Foley, Manager (202-452-3596), Division of Reserve Bank Operations and Payment Systems, Board of Governors of the Federal Reserve System; for users of Telecommunications Device for the Deaf ("TDD") only, contact (202) 263-4869.

**SUPPLEMENTARY INFORMATION:****I. Executive Summary**

The Federal Reserve's PSR Policy sets out the general public policy objectives of *safety and efficiency* for payments and settlement systems.<sup>1</sup> The Federal Reserve is currently reviewing the long-term effects of market, operational, and policy changes by the financial industry and the Federal Reserve on intraday liquidity and risks in financial markets and the payments system, including account overdrafts (daylight overdrafts) at the Federal Reserve Banks (Reserve Banks). In connection with this review, the Board is seeking information from financial institutions and other interested parties on their experience in managing intraday liquidity, credit, and operational risks relating to Fedwire funds transfers and associated transactions. The Board is also seeking commenters' views on potential changes in market practices, operations, and its PSR Policy that could reduce one or

<sup>1</sup> See the Board of Governors of the Federal Reserve System, "Payments System Risk Policy" at <http://www.federalreserve.gov/paymentsystems/psr/policy.pdf>.

more of these risks, while maintaining or improving the efficiency of the payments system. The body of this paper also includes a list of more detailed objectives relating to safety (e.g., low systemic risk, low direct credit risk to the Federal Reserve and the private sector, and rapid final payments) and efficiency (e.g., low cost of making payments, equitable treatment of all payments system participants, effective tools for implementing monetary policy, and low transaction costs in the Treasury securities market) that the Board has previously used to conduct payments system risk analysis. The paper also provides broad examples of tradeoffs, particularly risk tradeoffs, among these detailed objectives (e.g., efforts to reduce systemic risk may be associated with increased levels of daylight overdrafts in Reserve Bank accounts, and efforts to reduce daylight overdrafts may be associated with delays in making final payments.) An important goal of this consultation is to identify opportunities to shift these trade-offs in a favorable manner that lowers the overall risks and costs in the payments system over the long run.

Over the past twenty-five years, significant changes to U.S. payments and settlement systems have substantially reduced systemic risk. In accord with U.S. and international risk policies and standards, a number of these changes have relied increasingly on the use of central bank money—in this context, balances that financial institutions hold in accounts at Reserve Banks—to strengthen the management of credit and liquidity risk in private-sector clearing and settlement arrangements. Such changes have had the effect of increasing significantly the intraday demand for central bank money and hence the demand for daylight overdrafts at the Reserve Banks, which are a major source of these funds.

The long-term growth of payment transactions such as Fedwire funds transfers, along with continuing financial market developments, have also contributed to greater demand for intraday liquidity and central bank money, and to greater daylight overdrafts at the Reserve Banks. Following a sharp initial decline in daylight overdrafts in the mid-1990s when the Board implemented fees for these overdrafts, and particularly since about 1997, both average and peak daylight overdrafts have been growing slowly but steadily. This growth has generated gradually increasing credit exposures of the Reserve Banks. Data and additional details are provided in the appendix.

The Federal Reserve has taken very significant steps over time to control the credit exposures of Reserve Banks to daylight overdrafts. These steps include establishing an extensive program of both risk limits (net debit caps) and daylight overdraft fees, and some limited use of collateral. However, given the growing demand for intraday central bank money and accompanying daylight overdrafts, significant further opportunities may be available to mitigate the growing credit exposures of the Reserve Banks, for example through the greater use of collateral, while also improving intraday liquidity management for the banking system.

Partly in response to the introduction of daylight overdraft fees, a number of depository institutions introduced explicit strategies and techniques to manage their intraday liquidity and daylight overdrafts. More recently, a combined effect of depository institutions' intraday liquidity management strategies, coupled with other factors, has been to shift the sending of larger Fedwire payments to later in the day. From an operational risk perspective, delaying the sending of large payments until late in the day increases the potential magnitude of liquidity dislocation and risk in the financial industry if late-in-the-day operational disruptions should occur. An increase in such risk is particularly troublesome in an era of heightened concern about operational disruptions from a range of sources. There may be significant opportunities to both improve intraday liquidity management and reduce late-in-the-day operational risk.

In July 2006, the Federal Reserve will implement change—announced in 2004—to its daylight overdraft rules for government sponsored enterprises and certain international organizations. The changes will require these organizations to eliminate their daylight overdrafts at the Reserve Banks relating to their interest and redemption payments and to pay a penalty fee if daylight overdrafts occur in their accounts as a result of their general corporate payment activity.<sup>2</sup> The changes, however, may indirectly increase further the demand for intraday liquidity by depository institutions, and possibly raise their daylight overdrafts. The preparations for this policy change

are being closely monitored by the Federal Reserve.

The subsequent sections of this consultation paper summarize long-term developments involving intraday liquidity and risks in the context of the Federal Reserve's PSR Policy, and provide a brief list of possible market, operational, and policy changes that might further assist depository institutions, financial markets, and the Reserve Banks in managing intraday risks. These ideas should be regarded as preliminary and intended for further study. If the Board has specific proposals for changes to Federal Reserve operations or policies as a result of this consultation process, they would be issued for public comment.

## II. Background

The Federal Reserve's Payments System Risk Policy emerged from growing concerns in the late 1970s and early 1980s about systemic risk in the clearance and settlement functions for key financial markets as well as increasing intraday account overdrafts (daylight overdrafts) by depository institutions at the Reserve Banks. Over the years, the Federal Reserve has engaged in extensive discussions with the financial industry on these matters. The outgrowth has been a series of market, operational, and policy changes by the industry and the Federal Reserve that together have substantially reduced systemic risk, while creating a significant, structural intraday demand for central bank money.

For example, the industry has made important institutional and risk management changes that rely on the intraday use of central bank money to reduce private-sector risks.<sup>3</sup> These changes include The Depository Trust Company (DTC) making commercial paper eligible for its book-entry securities program in 1990 and expanding its Same-Day Funds Settlement program to all securities settling through its system in 1996.<sup>4</sup> In 2001, the Clearing House Interbank Payment System (CHIPS) introduced a system that requires CHIPS participants to use central bank money to pre-fund

<sup>3</sup> These changes are consistent with current standards in the Federal Reserve's PSR Policy that are derived from international standards established by the G-10 central banks' Committee on Payment and Settlement Systems and the Technical Committee of the International Organization of Securities Commissions.

<sup>4</sup> The Depository Trust Company (DTC) is a limited-purpose trust company that provides custody and settlement services for corporate, municipal, and other securities. DTC is a member of the Federal Reserve System and a clearing agency registered with the Securities and Exchange Commission.

<sup>2</sup> The PSR Policy change for government sponsored enterprises and certain international organizations is available at <http://www.federalreserve.gov/boarddocs/press/other/2004/20040205/default.htm>. (See also 69 FR 57917, September 28, 2004.)

CHIPS payments and settlements. This system also uses payment queuing techniques and algorithms that allow a participant's incoming funds transfers to fund outgoing transfers in order to conserve and manage the use of the pre-funded intraday liquidity within the system.<sup>5</sup> In 2002, CLS Bank International (CLS) began settling foreign exchange transactions using payment-versus-payment techniques, along with the (intraday) funding of daily settlements in central bank money for seven (now fifteen) currencies, including the U.S. dollar.<sup>6</sup> In connection with their respective settlement processes, these systems accumulate significant intraday balances in their Reserve Bank accounts.

These and other changes have substantially reduced systemic risk, but have also created a structural intraday *demand* for central bank money—balances at Reserve Banks—currently averaging about \$50 billion per day to support the settlement and risk management activities of key private sector payment and settlement systems. On peak days, this demand can exceed \$150 billion. The demand, which can “lock up” significant amounts of liquidity in the aggregate during the day, is met largely using Fedwire funds transfers and associated daylight overdrafts in the accounts of depository institutions. Other needs for intraday funds, including funding for other Fedwire payments used to settle transactions in financial and commercial markets, create additional intraday demand for central bank money.

There are two main sources of *supply* to meet this intraday demand. One is overnight balances held at the Reserve Banks and the other is daylight overdrafts.<sup>7</sup> Since the mid-1990s, overnight balances held at the Reserve Banks have declined by over one third to \$18 billion at the end of 2005.<sup>8</sup> Over

the corresponding time period, average total daylight overdrafts at the Reserve Banks grew from \$23 billion to \$42 billion. (Peak overdrafts averaged about \$120 billion at the end of 2005.)<sup>9</sup> Thus, to meet the continued growth in intraday demand for central bank money the industry has become increasingly reliant on daylight overdrafts at the Reserve Banks.

Considering the growth in payments and financial market activity, the Reserve Banks' experience with daylight overdrafts since the early 1980s is not surprising. Overdrafts grew substantially from 1988 to 1993 as the value and volume of Fedwire transactions expanded. In 1994, the Federal Reserve began charging fees for daylight overdrafts. Initially, total daylight overdrafts declined significantly, owing primarily to changes in the settlement practices in the government securities and repo markets. By 1997, total daylight overdrafts began growing again and have grown at approximately 8 percent per year since that time. At first, these increases were driven primarily by the continuing growth of daylight overdrafts attributable to Fedwire funds transfers. Since 2001, overdrafts attributable to Fedwire securities transfers have begun growing again, reinforcing the increase in total overdrafts (See Appendix, Chart 1). Recently, overdrafts attributable to both Fedwire funds and securities transactions have grown roughly in line with the value of the underlying transfers, with an upward trend in overdrafts attributable to Fedwire funds transfers in 2005 (See Appendix, Chart 2).

The Federal Reserve has undertaken a number of efforts over a long period to address the credit risk associated with providing intraday central bank money through daylight overdrafts at the Reserve Banks without unduly disrupting financial markets. The Federal Reserve has established key policies and programs to measure, monitor, and control intraday credit risk to the Reserve Banks; these policies and programs include introducing limits on account-holders' overdrafts (net debit caps), pricing (intraday overdraft fees), and in certain cases, permitting collateralization of large overdrafts (max caps). Taken together, these initiatives have encouraged the industry to economize on the use of daylight

overdrafts in their accounts at Reserve Banks and have helped limit the Reserve Banks' credit risk exposures.

In July 2006, the Federal Reserve will implement changes—announced in 2004—to its daylight overdraft rules for government sponsored enterprises and certain international organizations. The changes will require these organizations to eliminate their daylight overdrafts at the Reserve Banks relating to their interest and redemption payments and to pay a penalty fee if daylight overdrafts occur in their accounts as a result of their general corporate payment activity. The changes, however, are likely to increase further the demand for intraday liquidity by some depository institutions, and possibly raise their daylight overdrafts.

To date, the rise in daylight overdrafts has not necessarily resulted in the Reserve Banks assuming significantly greater credit risk. The overall growth of commercial bank capital and the continued financial strength of depository institutions have supported increasing volumes of payments and rising levels of daylight overdrafts. Over the long term, however, either the continued growth of uncollateralized daylight overdrafts or a reduction in the financial strength of depository institutions could increase the direct credit risk to the Reserve Banks from daylight overdrafts.

In recent years, intraday liquidity management strategies of depository institutions, coupled with other factors, have increased the amount of large Fedwire payments made late in the day. The aggregate value of Fedwire funds transfers sent after 5 p.m. Eastern Time (ET) has increased from 20 percent of the daily value of Fedwire funds transfers in 1998 to over 30 percent in 2005.<sup>10, 11</sup> (See Appendix, Chart 3) On peak payment volume days, the percentage of payments delayed may be even larger. The upcoming changes in policy affecting government sponsored enterprises could further affect this shift. As noted earlier, the larger the number and value of Fedwire or other payments that are made late in the day, the greater the risk to financial markets that payments will not be settled in a timely manner if significant operational disruptions were to occur late in the day.

A related long-standing concern of the Federal Reserve has been that

<sup>5</sup> The Clearing House Interbank Payment System (CHIPS) is a real-time final payments system operated by The Clearing House Payments Company. In January 2001, The Clearing House implemented operational and rule changes to allow all transactions settled in CHIPS to be final upon release from CHIPS' central queuing system.

<sup>6</sup> CLS Bank International (CLS), an Edge Corporation supervised by the Federal Reserve, offers payment-versus-payment settlement of foreign exchange trades. Prior to the creation of CLS, many foreign exchange trades were subject to foreign exchange settlement risk (also known as Herstatt risk), which included significant credit risk.

<sup>7</sup> A Fedwire funds transfer funded by a daylight overdraft provides an increase in the intraday balance of central bank money to the recipient.

<sup>8</sup> Balances held at the Reserve Banks are the sum of required reserve balances, required clearing balances, and excess balances. These balances

ranged from \$29 to \$34 billion in 1994, declined gradually to a low of \$12 billion in 2000, and ranged from \$18 to \$23 billion in 2005.

<sup>9</sup> Historical peak and average daylight overdraft data and aggregate fees are available on the Board's Web site at <http://www.federalreserve.gov/paymentsystems/psr/data.htm>.

<sup>10</sup> All times noted are Eastern Time (ET). Data discussed here exclude the value of payments to and from CLS, CHIPS, and DTC.

<sup>11</sup> The Fedwire Funds Transfer Service business day begins at 9 p.m. on the preceding calendar day and closes at 6:30 p.m. The cut-off time for third-party transfers is 6 p.m.

depository institutions' intraday liquidity management strategies may lead them to delay sending Fedwire payments until they receive payments in order to manage their use of daylight overdrafts at the Reserve Banks. If this practice became widespread, it could lead to a form of "gridlock" in the payments system with multiple depository institutions waiting for each other to send payments in order to obtain intraday funds and limit their daylight overdrafts.

Over time, Board and Reserve Bank staff has engaged members of the financial industry in various discussions about the causes of and concerns about late-in-the-day payments and increasing overdraft levels, as well as potential actions to address these and other concerns. From preliminary information and analysis, the Board understands that the growing volume of late-in-the-day Fedwire payments may be caused by (1) the late-in-the-day settlement by some private systems and the associated late release of intraday funds into the market, (2) mismatches of payments sent over CHIPS and Fedwire whereby some participants are consistently long (or short) for the CHIPS settlement, resulting in large sums of liquidity being consistently distributed late in the day to some institutions, (3) the increasingly late-in-the-day reconciliation of positions by money market participants and corresponding late-in-the-day determination of final funding requirements, which results in depository institution customers initiating late-in-the-day payments, and (4) the use of general liquidity management strategies by depository institutions that rely on internal queuing of Fedwire payments, especially large payments, to reduce their daylight overdrafts and daylight overdraft fees.

### III. Examples of Potential Market, Operational, or Policy Changes

Looking forward, there may be important trade-offs among PSR Policy objectives that need to be analyzed in light of experience and could be improved. As noted in the executive summary, the Board's general public policy objectives are to foster the *safety* and *efficiency* of payments and settlement systems.<sup>12</sup> Additional subsidiary objectives derive from these broad objectives. The following detailed objectives were published in the Board's

study that led to the pricing of daylight overdrafts in the 1990s:<sup>13</sup>

#### *Safety*

- Low direct credit risk to the Federal Reserve.
- Low direct credit risk to the private sector.
- Low systemic risk.
- Rapid final payments.

#### *Efficiency*

- Low operating expense of making payments.
- Equitable treatment of all service providers and users in the payments system.<sup>14</sup>
- Effective tools for implementing monetary policy.
- Low transaction costs in the Treasury securities market.

Among these detailed objectives, some trade-offs are readily apparent. For example, lower systemic risk has been achieved by strengthening risk controls in private systems, including using central bank money as a settlement asset and risk management tool. These changes, however, have created the large structural intraday demand for central bank money that is satisfied primarily through daylight overdrafts at the Reserve Banks, contributing to the growing direct credit exposure of the Reserve Banks.

As noted earlier, charging for overdrafts initially lowered the direct risk exposure of the Reserve Banks and encouraged depository institutions to economize on their use of daylight credit. The resulting increased operating expense of making payments, however, provided an incentive to delay sending Fedwire payments leading, other things equal, to greater operational risk exposure from the greater value of funds transfers processed later in the day. The potential trade-off between direct credit risk to the Reserve Banks and operational risk exposure to the financial markets from delays in sending payments was recognized when the pricing of overdrafts was initiated. Early on there was little evidence that payments were being shifted to later in the day. In the past five years, however, payments have shifted, implying that operational risk exposure has also been rising.

The strategic question for the industry and policy makers is whether there are

market, operational, or policy changes, that could, if taken individually or in combination, significantly reduce one or more of these risks, while maintaining or improving the efficiency of the payments system. Depository institutions and others have highlighted a number of items that could be analyzed further by the Federal Reserve and the industry. These ideas should be regarded as preliminary and are reported here for further comment and study. These include the following:

#### *Possible Market Changes*

- Foster an intraday market to exchange liquidity between institutions that hold positive balances at the Reserve Banks and those that run negative balances.
- Foster a market for the early return of federal funds or other money market investments.

#### *Possible Operational Changes*

- Enhance private settlement systems to economize further on the use of central bank money, for example, by developing multiple settlement periods to release liquidity earlier in the day.
- Add liquidity saving mechanisms to the Fedwire funds transfer system.
- Establish throughput requirements for the Fedwire funds transfer system.

#### *Possible PSR Policy Changes*

- Make greater use of voluntary or required collateral to cover daylight overdrafts in Reserve Bank accounts.
- Introduce a lower price for collateralized than for uncollateralized daylight overdrafts.
- Introduce time-of-day pricing of daylight overdrafts.

#### *Possible Market Changes*

As part of the discussions around the introduction of daylight overdraft fees in 1994, some industry participants questioned whether these fees would create sufficient incentives to establish an intraday funds market. It is not clear whether the cost of setting up an intraday funds market, practical problems, or both discouraged industry action. Since that time, depository institutions have experienced additional liquidity pressures from time-critical payments that may provide an incentive to establish more formal market arrangements for exchanging intraday liquidity. The policy, operational, and technical implications of establishing such a market are not clearly understood.

In addition, intraday liquidity pressures may encourage growth in the market for the early return of Federal funds or other money market

<sup>12</sup> See Board of Governors, "Payment System Risk Policy," op.cit. See also Committee on Payment and Settlement Systems, "Core Principles for Systemically Important Payment Systems," <http://www.bis.org/publ/cpss34ep1.pdf>.

<sup>13</sup> See "Controlling Risk in the Payment System," Report of the Task Force on Controlling Payments System Risk to the Payments System Policy Committee of the Federal Reserve System, Board of Governors of the Federal Reserve System, August 1988.

<sup>14</sup> This objective can be viewed as supporting efficient financial markets.

investments. The return of Federal funds late in the day provides borrowers rather than lenders with the use of that liquidity throughout the day. Lenders may find an early return option beneficial during periods in which they anticipate making large or time-critical payments. Terms acceptable to both parties could be negotiated to compensate for the early return. Currently, transactions supporting the early return of funds appear to be relatively rare. A more active market could effectively amount to an implicit market for intraday funds. It is not clear whether there is sufficient demand to support a larger early-return market. It is also possible that operational changes to Fedwire would be needed in order to support such market arrangements.

#### Possible Operational Changes

As noted earlier, operational changes in private settlement systems over the past several years have created a significant, structural intraday demand for central bank money. These systems established procedures that require participants to transfer funds to them early in the day to begin clearing transactions and to transfer additional funds during the day if needed for risk management purposes or final settlements. While these processes clearly reduce systemic risk, they can also "lock up" significant amounts of liquidity in the aggregate during the day. It may be possible for private settlement systems to modify their procedures to release liquidity earlier in the day by developing multiple cutoff or settlement periods. There may be other operational changes that could enhance private settlement systems in order to economize further on the use of intraday liquidity, particularly in the form of central bank money.

The Reserve Banks could also explore establishing a liquidity saving mechanism for the Fedwire funds transfer system. For example, a liquidity saving mechanism could involve adding new features to Fedwire that depository institutions could use to economize on the use of intraday central bank money, while retaining the existing (real-time gross settlement) functionality of Fedwire. While a depository institution could still designate that a Fedwire funds transfer settle immediately as it does today, such new features could allow depository institutions to designate certain payments to be placed into a central queuing system and settled using algorithms that allow the liquidity provided by incoming payments to a depository institution to be used to settle that institution's outgoing payments. Versions of these

features are used by CHIPS and the RTGS Plus system in Germany. Such features will also be included in the new wire transfer systems in the European Union (Target 2), Japan, and other countries. In the typical designs for such systems, payments retain their individual identity and are settled on a gross basis. Like netting arrangements, however, the systems use the liquidity from pairs or groups of payments to fund and settle offsetting or nearly offsetting payments, potentially reducing the demand for central bank money and daylight overdrafts needed to conduct payment activity.<sup>15</sup>

In theory, the use of liquidity saving mechanisms in the Fedwire Funds Service could also help promote the earlier sending of Fedwire payments that are held in depository institutions' internal queues. For example, suppose a depository institution (Bank X) could enter payments into a central queue in the Fedwire system subject to rules that these payments would not be sent until sufficient liquidity is available to fund these payments, and the liquidity takes the form of payments held in the queue on behalf of other depository institutions that are destined for Bank X. In this case, payments could be entered into the central queue early in the day without incurring daylight overdrafts fees since no intraday credit would be used. If a number of depository institutions enter payments early, then these payments could also be settled earlier in the day, using significantly less daylight credit from the Reserve Banks. In essence, technical changes to Fedwire could allow depository institutions to better coordinate their payment flows and shift some of these flows to earlier in the day.

In addition to, or in place of, technological changes, the Federal Reserve could consider adopting procedural changes that can affect the timing of payments, such as establishing Fedwire funds transfer throughput requirements. Throughput requirements are used by some other systems around the world. For example, participants could be expected to submit a certain percentage of their Fedwire payments volume by 10 a.m., another percentage by noon, and so on. Meeting throughput requirements, however, may be difficult

for individual participants to achieve and also difficult to enforce.

#### Possible PSR Policy Changes

In 2001, the Board stated that it might consider several changes to its PSR Policy, including the introduction of two-tiered pricing for daylight overdrafts, with one rate for uncollateralized overdrafts and a second, lower rate, for collateralized overdrafts.<sup>16</sup> Greater use of collateral to cover daylight overdrafts coupled with two-tier pricing could lower the cost of daylight overdrafts, reduce direct credit risk to the Reserve Banks, and increase the flexibility of the supply of intraday central bank money through the daylight overdraft mechanism. Concerns about possible adverse effects on depository institutions or the payments system as a whole figured importantly in decisions not to require the full collateralization of daylight overdrafts when the PSR Policy was initially developed. Since 2002, however, the level of collateral pledged to Reserve Banks for discount window and PSR purposes has increased steadily. In 2005, 64 percent of the approximately 270 depository institutions that paid daylight overdraft fees had assets pledged to the Reserve Banks for discount window purposes. These data imply that the role of collateral in supporting daylight overdrafts could be augmented with little to no adverse effect on many institutions.

Potential collateral policies can have different characteristics that influence the degree to which they would reduce risk to Reserve Banks, affect the intraday supply of central bank money, and influence the timing of payments. The terms for providing collateralized intraday credit, the availability of eligible collateral and its opportunity cost, and the associated charges for daylight overdrafts would be major factors in a collateral policy. For example, the collateralization of daylight overdrafts might be either required (for all daylight overdrafts or some portion thereof) or voluntary (i.e., pledged at the depository institution's discretion); the definition of eligible collateral might be either narrow or

<sup>15</sup> In recent years, both central banks and private-sector systems have explored new features for payments systems that help coordinate the timing of payments among depository institutions and help conserve the amounts of liquidity needed to make payments. For a discussion of developments in liquidity saving features and their history, see Committee on Payment and Settlement Systems, "New developments in large-value payment systems," Bank for International Settlements, May 2005. (<http://www.bis.org/publ/cps67.pdf>)

<sup>16</sup> See 66 FR 30208, June 5, 2001. The Board issued a subsequent notice in 2002 discussing comments received regarding its potential longer term policy direction, including two-tiered pricing. (67 FR 54424, August 22, 2002) In this notice, the Board stated that it would continue to evaluate the benefits and drawbacks of implementing two-tiered pricing. The Board also stated that it intended to allow depository institutions with collateral pledged to be charged the collateralized price for daylight credit up to the level of that collateral before being charged the higher price for uncollateralized daylight credit.

broad; the daylight overdraft fee might be either risk-based or not, with the fee for uncollateralized credit set above the fee for collateralized credit.

Given the widespread use of collateral in financial markets to mitigate risk and the potential for daylight overdrafts to become overnight lending by the Reserve Banks, consideration should be given to having collateral play a much greater role in managing daylight overdrafts. Whereas most other central banks require participants to collateralize all intraday overdrafts, the PSR Policy currently requires collateral for daylight overdrafts only in limited circumstances.<sup>17</sup> Over the long run, the greater use of collateral might provide a more flexible means for the Federal Reserve to deal with the impact of future stresses in the financial industry on the availability of intraday balances through the daylight overdraft mechanism. Incentives to increase the amount of collateral pledged to the Reserve Banks could also potentially strengthen further the industry's preparedness to draw on the discount window.

Regarding collateral eligibility, the Reserve Banks' lending policy assumes that if a daylight overdraft is not repaid, it could become a discount window loan and appropriate collateral would be needed to support that loan. As a result, the types of collateral eligible for securing daylight overdrafts currently track the types eligible for discount window purposes.<sup>18</sup> At year-end 2005, collateral pledged to the Reserve Banks for discount window and PSR purposes amounted to almost \$564 billion; 70 percent of this collateral took the form of bank loans.

Regarding fees for collateralized daylight overdrafts, there are several options. Today, the Federal Reserve charges the same fee for collateralized and uncollateralized overdrafts. In contrast, other central banks do not generally charge fees for daylight overdrafts (but do require collateral). It would be possible to consider a risk-

based fee for collateralized overdrafts that was lower than the fee for uncollateralized overdrafts. The Board did not specify a price for collateralized daylight credit in either its 2002 notice or 2001 request for comment on potential longer-term policy direction. The original request for comment, however, discussed a possible methodology for determining a risk differential between collateralized and uncollateralized credit. The Board examined loans for federal funds, which are uncollateralized, and loans through repurchase agreements, which are collateralized, and set forth a possible daylight overdraft fee differential of 12 to 15 basis points (per annum) for a 24-hour period.

Finally, the Federal Reserve might have other options to influence the timing of payments. For example, the Federal Reserve might be able to influence the timing of payments by varying the fee charged for daylight overdrafts through the day so that overdrafts incurred earlier in the day incur a lower fee than overdrafts incurred late in the day.

#### IV. Conclusion

From a public policy perspective, the ideas outlined in Section III can be understood as possibilities for improving the trade-offs among the Federal Reserve's PSR Policy objectives either by affecting the demand for intraday liquidity or by affecting the terms on which Reserve Banks supply intraday central bank money via daylight overdrafts. At this stage, the Board believes it is important to request input from the public on potential changes in market practices, operations, or PSR Policy that could further reduce intraday liquidity, credit, and operational risks. The Board specifically encourages comments on the suggested means to improve trade-offs among safety and efficiency objectives and requests information that will help strengthen the analysis of these trade-offs. The Board also welcomes additional suggestions from financial institutions and other interested parties in connection with the long-term evolution of risk policy. Section V includes a list of specific questions to help frame commenters' analysis and response.

#### V. Questions

1. What intraday liquidity conservation strategies and technologies does your institution use (such as controlling the timing of payments and introducing queuing techniques to conserve on liquidity)? How do these affect your institution's timing for

sending payments? What, if any, changes are you planning with regard to intraday liquidity management?

2. How do the concentrated demands for intraday central bank money by private sector systems influence intraday liquidity management by depository institutions throughout the day? Are there significant concentrated sources of demand for intraday central bank money beyond those already mentioned in the text and how does this demand affect intraday liquidity management?

3. Is the concentration of payments late in the day a concern for your organization? If so, what is the nature of your concern? Does it include operational risk from late-in-the-day payments, and has operational risk to your organization from such payments been increasing or decreasing? What are the key drivers of late-in-the-day payments? How has your organization responded to the late-in-the-day concentration of payments?

4. For the market, operational, and PSR Policy changes discussed in this document and listed as follows, how might the timing of payments and the demand for daylight overdrafts be affected? What advantages or disadvantages do you see for these changes?

- An intraday market to exchange liquidity between institutions that hold positive balances at the Reserve Banks and those that run negative balances.
- A market for the early return of federal funds or other money market investments.
- Enhancements by private settlement systems that further economize on the use of central bank money, for example multiple settlement periods to release liquidity earlier in the day.
- Liquidity saving mechanisms for the Fedwire funds transfer system.
- Throughput requirements for the Fedwire funds transfer system.
- Greater use of voluntary or required collateral to cover partially or fully daylight overdrafts in depository institution accounts at the Reserve Banks.
- Two-tiered pricing for collateralized daylight overdrafts, with a fee charged for collateralized daylight overdrafts set lower than the rate for uncollateralized overdrafts.
- Time-of-day pricing of daylight overdrafts.

5. What are other possible approaches to consider to reduce delays in payments and to manage efficiently and effectively the Federal Reserve's exposure to increasing daylight overdrafts as well as depository institutions' exposure to intraday

<sup>17</sup> For example, Reserve Banks may require collateral from financially-troubled depository institutions or participants that are not eligible to borrow from the discount window. In addition, an institution that is constrained by its net debit cap may be permitted to obtain additional, collateralized daylight overdraft capacity.

<sup>18</sup> The Reserve Banks accept a wide range of financial assets as collateral for discount window loans. The collateral eligibility policy is set forth in the Federal Reserve's Regulation A, *Extensions of Credit by Federal Reserve Banks* (12 CFR 201.3). Additional terms and conditions relating to collateral are established in the Reserve Banks' Operating Circular No. 8, *Collateral*, and Operating Circular No. 10, *Lending*, which can be found at <http://frbserve.org/OperatingCirculars/index.html>.



liquidity and credit risks? Are there other market or operational changes in the private sector that could help reduce intraday liquidity and credit risks?

6. Congress is currently considering legislation that would allow the Federal Reserve to pay interest on reserve balances held by depository institutions at the Reserve Banks. How would the payment of interest on reserves affect depository institutions' intraday liquidity management, including the demand for daylight overdrafts at the Reserve Banks? Could the payment of interest on reserves be utilized to reduce the value or timing of daylight overdrafts?

## VI. Appendix

### Daylight Overdrafts

The Federal Reserve introduced the Payment System Risk Policy in 1986,

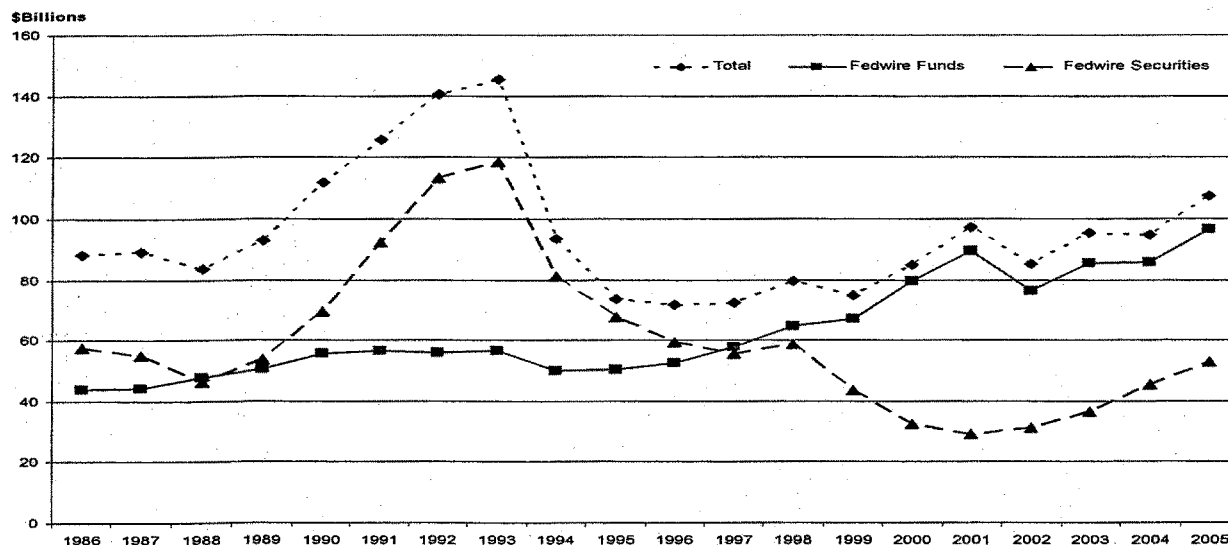
establishing cross-system net debit caps for Fedwire and CHIPS on the use of intraday credit. Over the next two years, cross-system net debit caps were reduced twice and eventually replaced in 1991 with caps that only applied to overdrafts incurred in Reserve Bank accounts. Intraday overdraft fees were formally adopted by the Board in 1992 and became effective in 1994. Almost a decade later, the Federal Reserve implemented a policy allowing certain institutions to request collateralized capacity in excess of the net debit cap.<sup>19</sup>

Chart 1 provides peak overdraft data adjusted for inflation. Average overdraft data show a similar pattern at lower levels. Since 1986, average and peak daylight overdrafts have steadily increased for Fedwire funds transfers. From 1986 to 2005, peak daylight overdrafts associated with Fedwire

funds transfers (adjusted for inflation) have more than doubled from \$44 billion to \$96 billion, growing at a rate of 4.2 percent per year. (In 2005, peak overdrafts associated with funds transfers averaged \$108 billion in nominal dollars.)<sup>20</sup> In contrast, daylight overdrafts related to securities transfers, which had been increasing rapidly prior to the implementation of daylight overdraft fees, decreased rapidly after 1994 once those fees were implemented. Since 2000, however, daylight overdrafts for securities transfers have begun increasing again.

**Chart 1**

Peak Daylight Overdrafts: 1986–2005  
(Annual Averages of Daily Data in 2000 Dollars)



Further, as shown in Chart 2, intraday credit usage associated with Fedwire funds transfers has grown roughly in line with the value of these funds transfers for many years, with an

upward trend in 2005. Average overdrafts resulting from Fedwire funds transfers and the value of Fedwire funds transfers have grown 11 and 9 percent per year, respectively, since 1994.

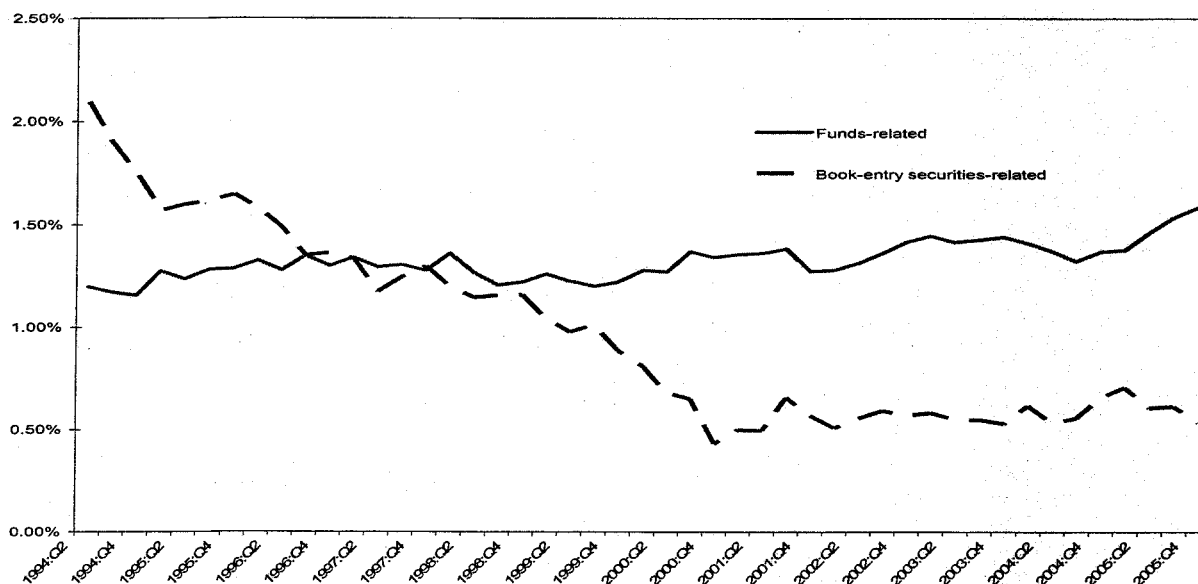
**Chart 2**

Daylight Overdrafts at Reserve Banks as a Percent of Average Daily Value of Fedwire Transfers  
(1994–2005: Daily Averages)

<sup>19</sup>In 2001, in conjunction with allowing certain institutions to request collateralized capacity, the Federal Reserve decided to include book-entry securities overdrafts for the purposes of determining an institution's compliance with its

cap. The Federal Reserve eliminated the frequent and material thresholds that required a depository institution to collateralize overdrafts associated with securities transfers that frequently and materially exceeded its net debit cap.

<sup>20</sup>Historical peak and average daylight overdraft data and aggregate fees in nominal dollars are available on the Board's Web site at <http://www.federalreserve.gov/paymentsystems/psr/data.htm>.



Overall, while total peak system overdrafts are still slightly below pre-pricing levels in nominal dollars (\$120 billion in 2005; \$129 billion in 1993), total average overdrafts now exceed pre-pricing levels (\$41 billion in 2005; \$33 billion in 1993).

#### *Timing of Fedwire Funds Transfers*

In the early years of the Payments System Risk Policy, there was no clear evidence that a substantial value of payments originated on Fedwire shifted

to late in the day in response to policy changes.<sup>21</sup> More recently, as discussed above, structural changes in the payments system, along with technology and market factors, may have contributed to market-wide delays in making Fedwire funds transfers.

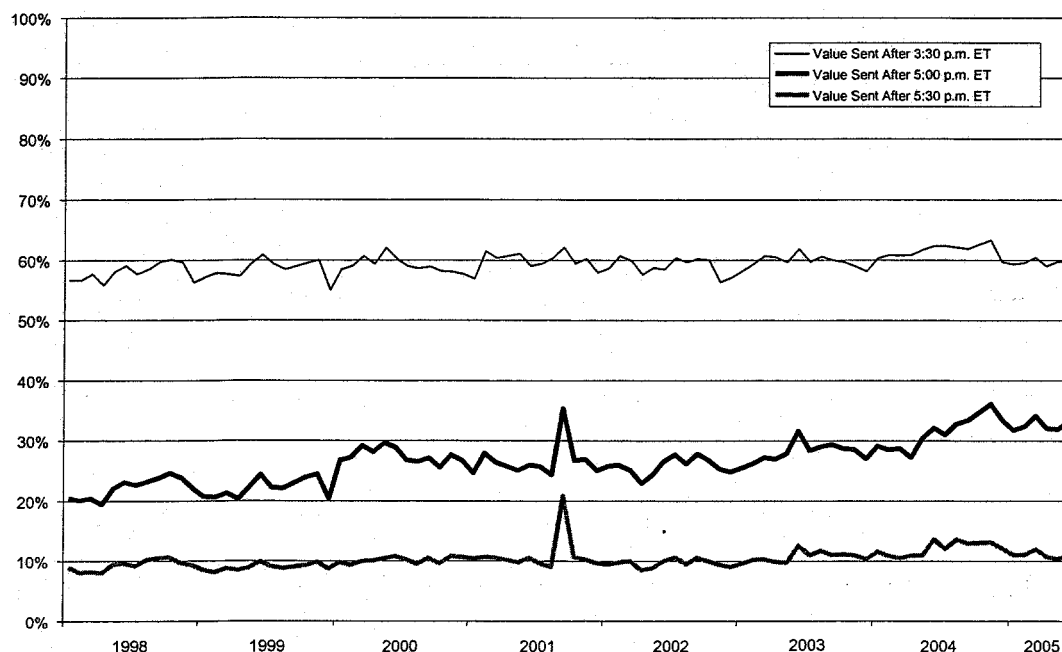
Chart 3 shows that while the percentage of payments slightly increased after 3:30 p.m., the percentage dramatically increased after 5 p.m. The percentage of payments made after 5 p.m. went from 20 percent of payments

in 1998 to over 30 percent in 2005. This calculation excludes all payment transactions sent or received by CHIPS, DTC, or CLS, including transactions related to important end-of-day funding and settlement functions.

#### **Chart 3**

Timing of Fedwire Payments Excluding Transactions Sent or Received by CHIPS, DTC, or CLS

(1998–2005: Percentage of Daily Value—21 Day Moving Average)



<sup>21</sup> See Richards, Heidi Willmann, "Daylight Overdraft Fees and the Federal Reserve's Payment

System Risk Policy," Federal Reserve Bulletin, December 1995.

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By order of the Board of Governors of the  
Federal Reserve System, June 14, 2006.

**Jennifer J. Johnson,**

*Secretary of the Board.*

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