

# The Alphabet Soup Explained:

An Analysis of the Special Lending Facilities  
at the Federal Reserve

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## **About the Author**

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## Introduction

Under normal economic conditions, the Federal Reserve has the responsibility for conducting the nation's monetary policy. By controlling the availability and cost of money, the Fed tries to achieve the two goals of maintaining high levels of employment and low inflation. When institutions face liquidity crises, with a lack of cash and a perception of mistrust in the market, the central bank may act as a "lender of last resort" and provide emergency credit through its discount window operations.

The events of the last year and a half have prompted the Federal Reserve to respond in unique and unconventional ways: establishing currency swap lines with foreign central banks, buying mortgage-backed securities directly, providing liquidity to certain markets, and financing the merger of individual financial institutions. Chairman Ben Bernanke has overseen this aggressive expansion of the Federal Reserve's monetary policy toolkit. He classifies the Fed's actions into three separate categories – (1) short-term lending to financial institutions, (2) providing liquidity to key markets, and (3) buying longer-term securities from the government sponsored entities.<sup>1</sup> A fourth category, not mentioned by the Fed Chairman, would be participating in the rescues and mergers of individual financial firms. In the past year and a half, the Federal Reserve has responded in these ways to changing economic conditions and emerging crises in financial markets.

In late 2007, as the imminent collapse of the housing bubble became apparent, the Federal Reserve created the first of many liquidity facilities, the Term Auction Facility, to lend to depository institutions. For a while, the TAF remained the only special facility beyond the Fed's discount window. With the collapse of Bear Stearns in March 2008, the Fed attempted to calm financial markets with two facilities designed for short-term borrowing at investment banks, as well as a special purpose vehicle to facilitate the takeover of Bear Stearns by JP Morgan Chase.

These efforts were relatively small compared with the explosion in activity during the months of September and October in 2008. The Federal Reserve agreed to purchase debt from the government-sponsored entities, Fannie Mae and Freddie Mac, and provided an emergency credit line to the failing insurance company American International Group. The watershed event that altered the economic landscape, sparking panic and uncertainty, was the bankruptcy filing of the investment bank Lehman Brothers on September 15, 2008. With institutions collapsing and the stock market tanking, the Federal Reserve expanded eligibility at the liquidity facilities designed for investment banks and created two more facilities designed to provide liquidity directly to money markets. Since then, the most recent addition to the Fed's toolkit, a joint venture with the Treasury, has garnered less participation from financial institutions.

Taken together, the Federal Reserve's actions through its special lending facilities have resulted in a massive expansion of its balance sheet, increasing its total assets from \$900

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<sup>1</sup> Bernanke, Ben S., "The Crisis and the Policy Response," Speech at the Stamp Lecture, London School of Economics, January 13, 2009.  
<http://www.federalreserve.gov/newsevents/speech/bernanke20090113a.htm>

billion to \$2.1 trillion in the past year.<sup>2</sup> This massive sum of money is much larger than the federal stimulus package authorized by President Barack Obama and nearly twice as large as the bank bailout initiated by former Treasury Secretary Henry Paulson. Yet, the Federal Reserve's actions have received scant public scrutiny relative to these other government measures. Because the Fed only publishes aggregate data, it is impossible to tell exactly which firms are borrowing from its liquidity facilities, and just how much. Recently, the Federal Reserve has made modifications that reduce the potential liabilities of some of its lending facilities, but these relatively minor changes have virtually zero effect on the actual balance sheet of the central bank.

In this paper, we analyze the trends in activity at the Federal Reserve's special lending facilities, hoping to provide a better understanding of their operation and significance within financial markets. We look at each of these facilities individually in order to provide a clearer picture of the trends in activity, the decision-making process at the Fed, as well as the interaction between these special facilities and financial markets more generally. We examine the special liquidity facilities in order of relative significance, going from largest to smallest, in terms of total value outstanding.

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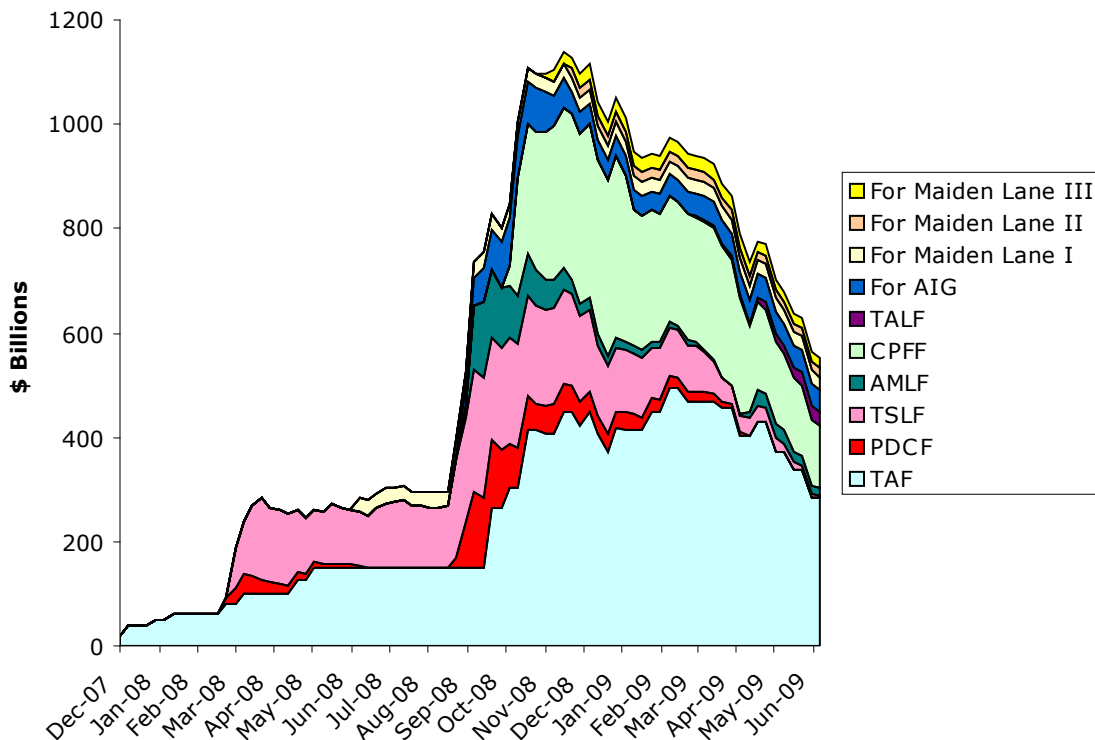
<sup>2</sup> "Recent Balance Sheet Trends," Federal Reserve: Credit and Liquidity Programs and the Balance Sheet, June 5, 2009. [http://www.federalreserve.gov/monetarypolicy/bst\\_recenttrends.htm](http://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm)

## Descriptions of Individual Liquidity Facilities

### Term Auction Facility (TAF)

The first special liquidity facility to be announced by the Federal Reserve was the Term Auction Facility. Since its creation in December 2007, the TAF has consistently held more in total funds outstanding than any other facility, as shown in **Figure 1**. Through the TAF, the Federal Reserve holds biweekly auctions to provide short-term liquidity for depository institutions, especially commercial banks. Banks are often reluctant to borrow from the Federal Reserve because investors and depositors can perceive it as a sign of weakness. In order to overcome this “stigma,” the Fed explicitly structured and advertised the TAF for institutions judged to be in sound financial condition.

**FIGURE 1**  
Lending Activity at Special Federal Reserve Liquidity Facilities, Total Outstanding Since December 2007

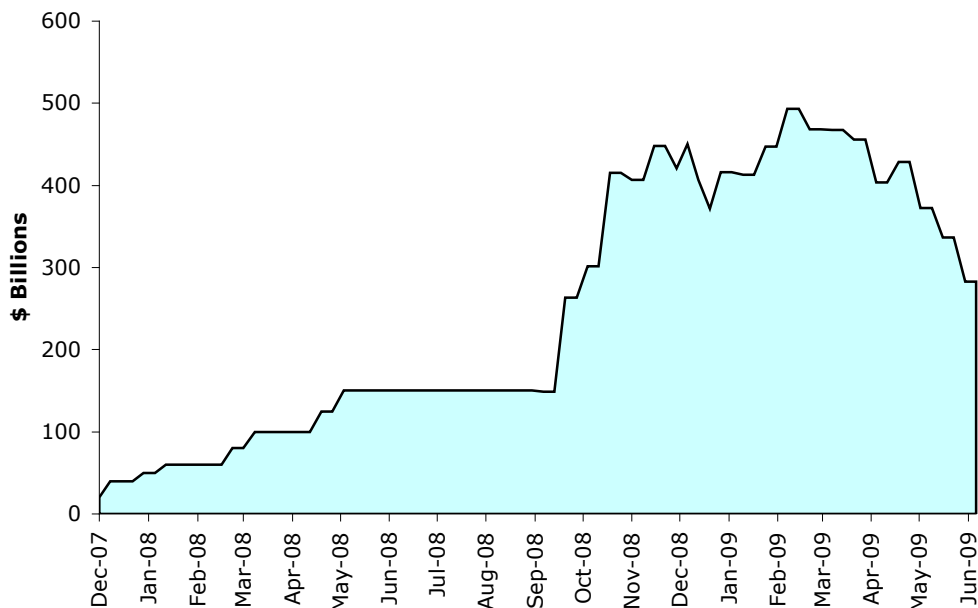


Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

The borrowing terms at the TAF are very similar to the central bank’s discount window, with similar collateral requirements and loan terms of either 28 or 84 days. The auction structure, with its fluctuating bid prices, means that in some cases the Federal Reserve may provide credit at rates lower than what banks would normally pay at the discount window. This fact, as well as the lack of full disclosure regarding how much individual institutions borrow, have made the TAF an attractive source of credit for depository institutions.

Initially, the Fed placed a maximum of \$20 billion on each auction, and total participation remained below \$100 billion. In May 2008, the Fed announced plans to raise the value of TAF auctions from \$50 billion to \$75 billion. For the next five months, the facility held \$150 billion in total funds outstanding. Then, after a tumultuous September, the Fed announced that the sizes of both 24-day and 84-day auctions would be boosted to \$150 billion each, creating the potential for \$600 billion worth of lending. In actuality, the total outstanding value at the TAF has fluctuated around \$400 billion, peaking at \$490 billion in March and falling under \$400 billion in June 2009. Since then, the Fed has scaled back the size of TAF auctions slightly (see Figure 2), reducing the maximum total outstanding from \$600 billion to \$500 billion (see Figure 2). These values make the TAF the largest liquidity facility that the Federal Reserve has created in the last year and a half.

**FIGURE 2**  
**Term Auction Facility (TAF), Total Outstanding**



Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

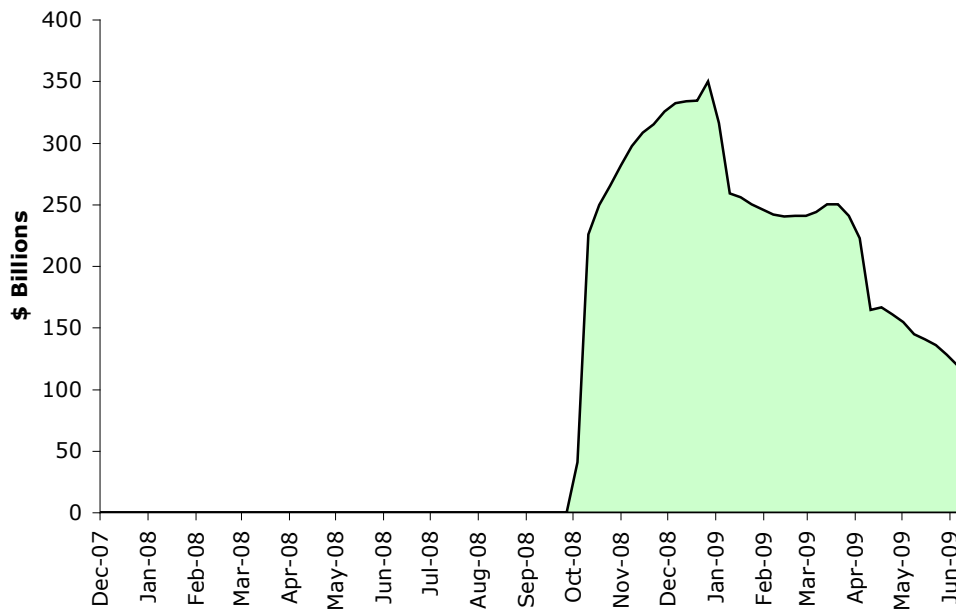
### Commercial Paper Funding Facility (CPFF)

The second largest liquidity facility, announced in October 2008 just after Congress approved the Troubled Assets Relief Program (TARP), was designed to provide liquidity for the commercial paper market. Commercial paper is the debt that institutions use to fund everyday operating expenses, such as payroll. During the financial crisis, money market mutual funds and other regular buyers of commercial paper had become reluctant to purchase any unsecured debt in money markets, and the volume of outstanding loans shrank.

In response, the Federal Reserve created the Commercial Paper Funding Facility to provide a liquidity backstop for issuers of commercial paper. Through the CPFF, the Federal Reserve finances a special purpose vehicle that purchases three-month unsecured and asset-backed commercial paper from eligible issuers. Participating institutions pledge the commercial paper as collateral in exchange for funds, while the Fed holds the debt to maturity. The facility effectively eliminates any risk that issuers would not be able to roll over their maturing commercial paper. The interest rate on borrowing is priced according to an overnight index swap rate, plus a fixed premium.

In the first several months of operation, the facility became a significant player in the commercial paper market. In January 2009, the CPFF's total outstanding value peaked at \$350 billion in a market estimated around \$1.5 trillion in size. At the end of January, about \$245 billion of commercial paper initially sold to the Fed was set to mature. Private investors were able to purchase a significant portion of the debt, and the total outstanding at the CPFF decreased by nearly \$100 billion. Three months later, at the end of April, the Fed resold much of its commercial paper holdings in the market again, and the value of the CPFF decreased sharply. As of July 2009, the CPFF had fallen to \$120 billion in total outstanding value. The steady decline is an indication that institutions are becoming less reliant on the Fed's backstop in the commercial paper market (see Figure 3).

**FIGURE 3**  
**Commercial Paper Funding Facility (CPFF), Total Outstanding**



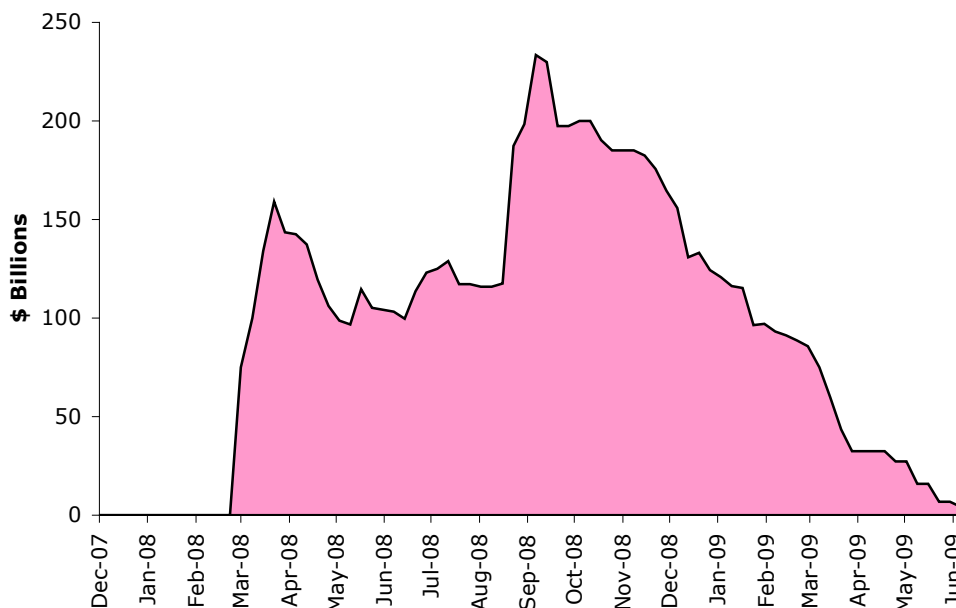
Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

## Term Securities Lending Facility (TSLF)

The Term Securities Lending Facility is designed for financial institutions registered with the Fed as primary dealers, including some of the world's largest investment banks. Announced in March 2008, the TSLF allows these institutions to exchange a variety of securities for Treasuries, which are seen as safe and reliable instruments in financial markets. The bond-for-bond exchange typically matures after one month. The facility operates under an auction format, similar to the TAF. There are two types of auctions at the TSLF, Schedule I and Schedule II, which are held on an alternating biweekly basis. Schedule II auctions have more lenient collateral requirements, allowing banks to pledge certain asset-backed and mortgage-backed securities not accepted at Schedule I auctions. This greater flexibility has made Schedule II auctions consistently more popular throughout the financial crisis.

The TSLF has been quite active ever since its inception. In March 2008, the facility's first month in operation, its total value outstanding reached nearly \$160 billion. Participation decreased slightly in the following months but increased dramatically during September and October of 2008. In response to the upheaval in financial markets after the fall of Lehman Brothers, the Federal Reserve broadened the set of eligible collateral at the TSLF to include a wide variety of corporate, municipal, asset-backed and mortgage-backed securities. The TSLF reached \$230 billion in total outstanding value as broker dealers sought after the safe Treasury securities offered by the facility. The total outstanding remained above \$150 billion through the end of 2008, but has tapered off significantly since then, falling under \$10 billion in June 2009 (see **Figure 4**). Responding to the decrease in demand, the Federal Reserve announced plans to conduct TSLF auctions monthly instead of biweekly, decreasing the maximum potential outstanding from \$200 billion to \$75 billion.

**FIGURE 4**  
Term Securities Lending Facility (TSLF), Total Outstanding



Source: Federal Reserve Bank of New York, TSLF Operations and author's analysis



## Primary Dealer Credit Facility (PDCF)

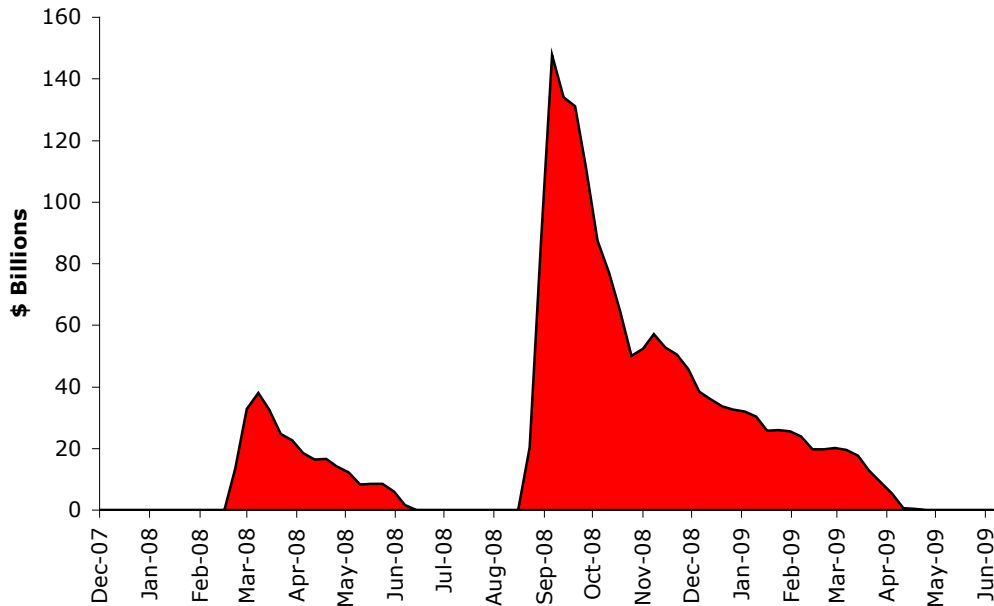
The Primary Dealer Credit Facility was also designed for investment banks. Announced in March 2008, the facility provides overnight loans on a daily basis to foster short-term borrowing between institutions. It is through overnight markets that banks make daily capital adjustments to balance out their books, so insuring against the risk of liquidity freezes was a high priority for the Fed. The interest rate on loans through the PDCF is equivalent to the primary credit rate, currently 50 basis points.

Participation at the PDCF has experienced two distinct peaks in activity, coinciding with an expansion in eligibility. In late March and early April of 2008, after the collapse of Bear Stearns, the total volume outstanding approached \$40 billion. After this period of increased activity, borrowing tailed off at the PDCF, approaching zero in June 2008. The lull in activity did not last long, however. In mid-September, amid growing concerns surrounding the investment bank Lehman Brothers, the Federal Reserve agreed to make it easier for institutions to participate in the PDCF. With fears of a “broad run on the U.S. financial system,” the Fed agreed to accept as collateral the same set of securities used in open market trading, including stocks and other debt securities.<sup>3</sup> The change allowed the total outstanding at the PDCF to reach extraordinary heights in September and October. The total outstanding value of the facility reached almost \$150 billion. Since then, borrowing has declined steadily, eventually returning back to zero in May 2009, as demand for the facility curtailed (see **Figure 5**).

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<sup>3</sup> Torres, Craig and Liz Capo McCormick, “Fed Widens Collateral, Banks Set Up \$70 Billion Fund,” Bloomberg, September 15, 2008.  
<http://www.bloomberg.com/apps/news?pid=20601110&sid=aDtOgpksgIA>

**FIGURE 5**  
**Primary Dealer Credit Facility (PDCF), Total Outstanding**



Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

### **Asset-Backed Commercial Paper Money Market Fund Liquidity Facility (AMLF)**

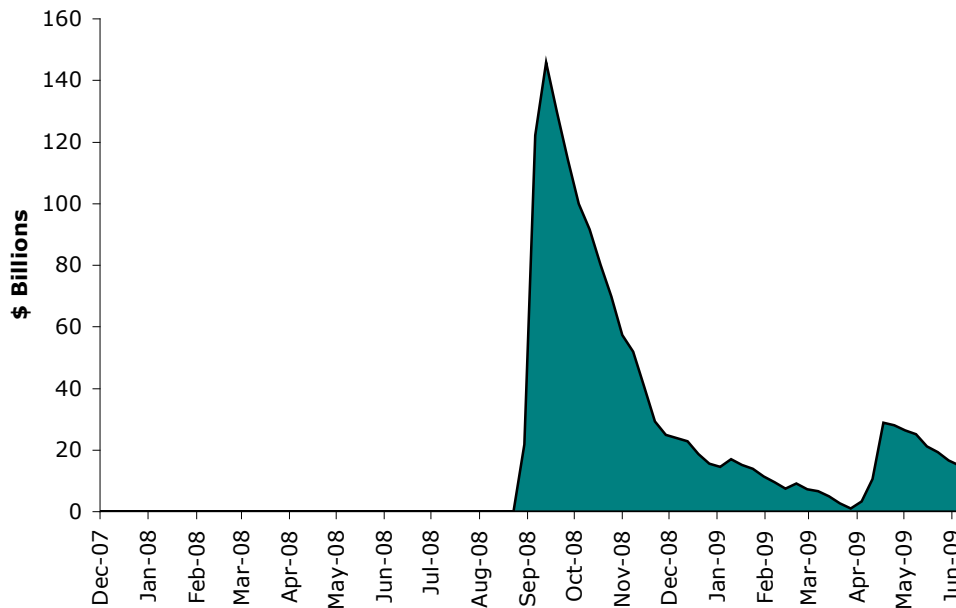
In an effort to further bolster money markets, the Federal Reserve created the Asset-Backed Commercial Paper Money Market Fund Liquidity Facility to finance the purchase of asset-backed commercial paper from money market mutual funds. Announced in September 2008, the AMLF allows depository institutions and bank holding companies to borrow funds from the Fed in exchange for highly-rated asset-backed commercial paper. The term of the loans is typically two weeks or less, and they carry an interest rate equivalent to the primary credit rate offered by the Boston Federal Reserve, currently 50 basis points.

Like the PDCF and the TSLF, participation in the special lending facility has fluctuated with levels of strain in the financial markets. Created shortly after the Lehman Brothers bankruptcy, participation at the AMLF peaked in its first month of operation, reaching a total value outstanding of \$140 billion. After the initial burst in activity, lending tailed off dramatically, dipping below \$1 billion in April 2009.

In the month of May, activity at the AMLF experienced an unexpected uptick. The Federal Reserve had announced it would exclude commercial paper facing a downgrade from the facility. At the same time, several ratings firms announced that certain major financial institutions would be facing downgrades in the future. Taken together, the two events sparked a massive sell off as investors looked to unload their debt before it received a

downgrade. Total outstanding at the AMLF increased by nearly \$30 billion, as shown in **Figure 6**. Some have referred to the episode as “market paranoia,” but it serves to demonstrate the extreme sensitivity in financial markets currently.<sup>4</sup>

**FIGURE 6**  
**Asset-Backed Commercial Paper Money Market Fund Liquidity Facility (AMLF), Total Outstanding**



Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

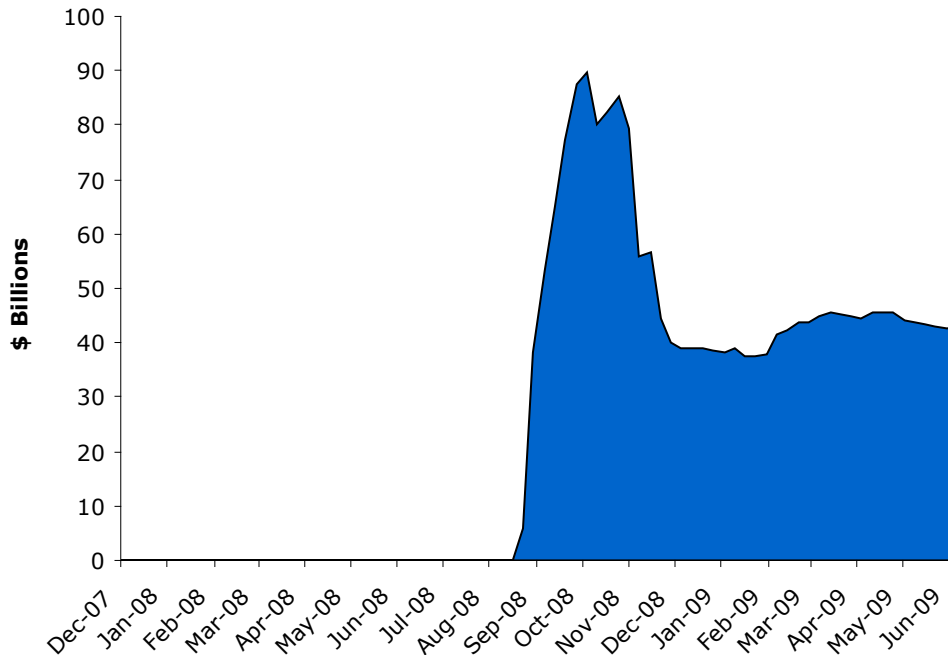
## AIG Credit Line

Beyond providing liquidity to certain institutions and markets, the Federal Reserve has also been involved in the rescue of individual firms. In September 2008, the Federal Reserve participated in the rescue of the failing insurance company, American International Group. The Federal Reserve provided AIG with an \$85 billion line of credit in exchange for a 79.9% equity stake in what was once the world’s largest insurer. In November, the Fed’s financial support for AIG was restructured when two limited liability corporations were created to purchase specific assets from AIG. The Maiden Lane facilities will be covered in-depth in the next section, but their creation meant that the value of the Federal Reserve’s direct credit extension to AIG declined from \$85 billion in November 2008 to \$40 billion in December 2008 (see **Figure 7**).

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<sup>4</sup> Shrivastava, Anusha, “Investors Sell Short-Term Bank Debt,” Wall Street Journal, May 8, 2009.  
<http://online.wsj.com/article/SB124174505166899205.html>

**FIGURE 7**  
**Credit for American International Group (AIG), Total Outstanding**



Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

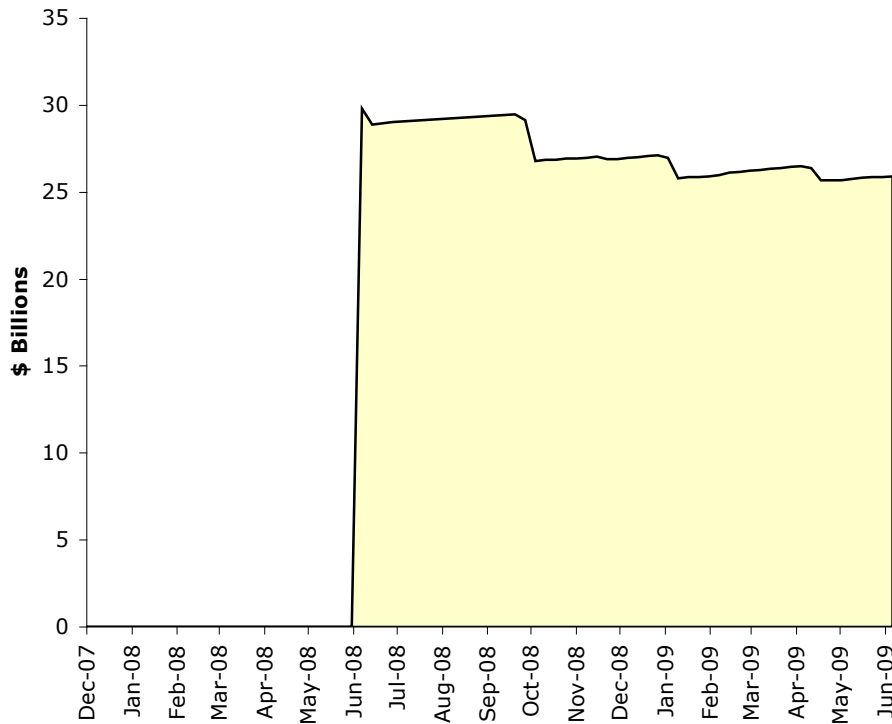
### Maiden Lane Facilities

As mentioned above, the Federal Reserve has participated in the rescue of individual firms during the financial crisis, namely American International Group and Bear Stearns. The actions have stretched the legal limits of the central bank's authority, because by law, the Fed is not allowed to lend on an unsecured basis or purchase assets other than Treasuries and agency-backed mortgage securities from banks. In order to facilitate the rescue and resolution of AIG and Bear Stearns within legal limits, the Federal Reserve created three limited liability corporations in the last year. The Maiden Lane facilities, named after the street in Manhattan where the New York Fed is located, borrow from the Fed and then purchase assets from the failing institutions. These "structured purpose vehicles" still exist on the Fed's balance sheet, but they appear as loans instead of asset purchases.

The first of such facilities, Maiden Lane I, was created in March 2008 to facilitate the takeover of Bear Stearns by JP Morgan Chase & Co. The New York Fed made nearly \$30 billion available to Maiden Lane, with JP Morgan providing a smaller supplemental loan. The total outstanding on the loan has declined incrementally to around \$25 billion in July 2009

(see **Figure 8**). The Fed has already reported \$3.1 billion in losses related to the Bear Stearns deal.<sup>5</sup>

**FIGURE 8**  
**Credit for Maiden Lane I, Total Outstanding**



Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

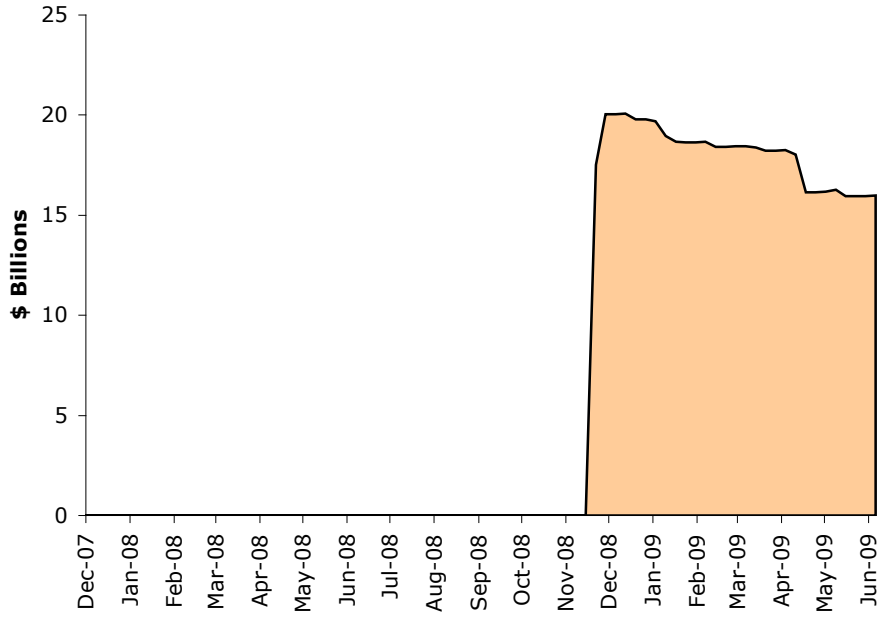
The Federal Reserve also created two additional Maiden Lane facilities in an effort to restructure its financial support for AIG. The Federal Reserve would finance the purchase of mortgage-backed securities through Maiden Lane II and the purchase of collateralized debt obligations through Maiden Lane III. Initially, Maiden Lane II borrowed nearly \$20 billion, and Maiden Lane III borrowed nearly \$25 billion from the Fed. AIG made quick use of the financial support from the central bank. In March 2009, AIG, in conjunction with its Maiden Lane facilities, agreed to settle \$62 billion worth of derivatives contracts with 16 investment banks. Among others, the French-owned Societe Generale received \$16.4 billion, and Goldman Sachs received \$14 billion.<sup>6</sup> In May 2009, after AIG's first quarter earnings reports were made public, holdings under Maiden Lane II and III decreased by \$2 billion and \$6 billion, respectively (see **Figure 9** and **Figure 10**).

<sup>5</sup> Krasny, Ros, "Fed Data Shows Big Losses on Bear Stearns Deal," Reuters, April 23, 2009.

<http://www.reuters.com/article/businessNews/idUSTRE53M5TO20090423>.

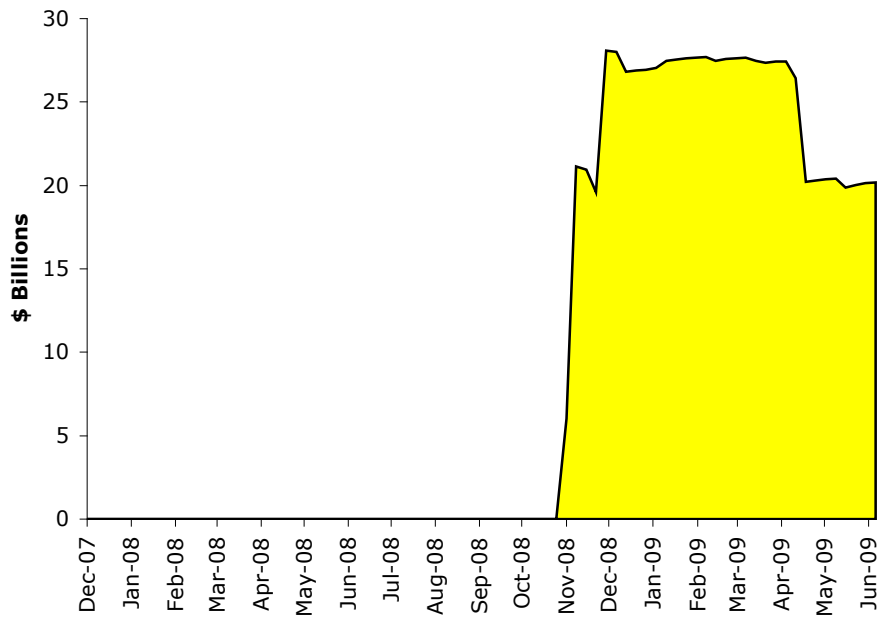
<sup>6</sup> Murti, Bhattiprolu, "AIG, Maiden Lane Will Pay \$62 Billion to Settle Derivatives," Wall Street Journal, March 17, 2009. <http://online.wsj.com/article/SB123732426239261613.html>.

**FIGURE 9**  
**Credit for Maiden Lane II, Total Outstanding**



Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

**FIGURE 10**  
**Credit for Maiden Lane III, Total Outstanding**



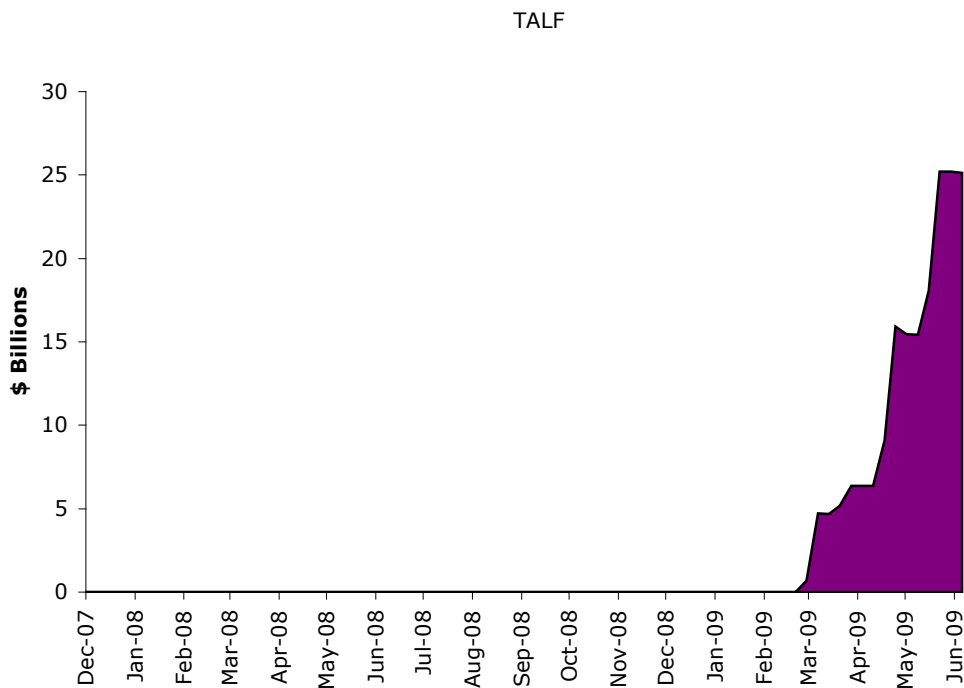
Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

## Term Asset-Backed Securities Loan Facility (TALF)

The most recent addition to the Federal Reserve’s “alphabet soup” of liquidity facilities was announced in November 2008. The Term Asset-Backed Securities Loan Facility is designed to support the issuance of asset-backed securities. The Federal Reserve provides loans for a term of three years in exchange for highly-rated and newly-issued asset-backed securities. The facility especially focuses on securities backed by consumer products, including student loans, auto loans, credit card loans, and loans to small businesses.

For three months after its initial announcement, the TALF was completely inactive. The facility did not begin operating until March 2008. The Federal Reserve, in conjunction with the Treasury, announced plans to broaden the authority of the TALF to participate in markets for consumer debt. Officials indicated that the facility could expand up to \$1 trillion in loans. The actual participation at the TALF, however, fell far short of expectations. Activity stood at \$25 billion as of July 2009, making it smaller than any other special liquidity facility (see **Figure 11**). Investors, it seemed, had become much more hesitant to utilize sources of public financing, even on such favorable terms.

**FIGURE 11**  
Term Asset-Backed Securities Loan Facility (TALF), Total Outstanding



Source: Federal Reserve Statistical Release, H.4.1 Factors Affecting Reserve Balances

In March 2008, the Treasury Department announced an ambitious plan to facilitate the purchase of mortgage-backed securities and establish fair prices in markets that had become clogged during the crisis. The Public-Private Investment Program (PPIP), as envisioned by Treasury Secretary Timothy Geithner, would extend subsidized credit and provide loss guarantees in order to induce private investors to buy up the bad assets that banks held. The

Fed would broaden the collateral requirements of the TALF to include older mortgage-backed securities that still remain on and off the balance sheets of banks. In a separate part of the program, the Federal Deposit Insurance Corporation (FDIC) would guarantee the purchase of other debt using a leverage ratio of six to one.

After the experience of the TALF, many worried the government plan would receive a lukewarm response from investors. The plan was also criticized for being vulnerable to self-dealing on the part of banks. Treasury officials have signaled the program will begin soon, but officials from the Federal Reserve have backpedaled on their commitment to purchasing older mortgage-backed securities. It is still uncertain what form the PPIP will take, but its operation may have significant effects for the Federal Reserve's TALF.



## Conclusion

The special liquidity facilities created by the Federal Reserve in response to the financial crisis have expanded its balance sheet by over \$1 trillion in terms of total assets. This sum is larger than the total price tag of the federal stimulus package passed under the American Recovery and Reinvestment Act (ARRA) as well as the bank bailout authorized by the Troubled Asset Relief Program (TARP). Yet, both of these government responses have received enormously more public scrutiny than any of the actions taken by the Federal Reserve.

The standards of transparency for the Federal Reserve facilities are significantly more lax than the other federal programs, especially the stimulus, which were subject to near full disclosure. Under both the ARRA and the TARP, the public has access to information about which firms and agencies receive money from the government and under what terms. Oversight panels were established to report on the current status, and perceived problems, of these efforts. By contrast, when it comes to the Federal Reserve's special liquidity facilities, there is still almost no information available about who has benefited from these programs.