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The Commercial Paper Funding Facility (U.S. GFC)

Rosalind Z. Wiggins

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Rosalind Z. Wiggins
Yale University

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Commercial Paper Funding Facility¹

Rosalind Z. Wiggins²

Yale Program on Financial Stability Case Study
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Abstract

In mid-September 2008, prime money market mutual funds (MMMFs) began experiencing run-like redemption requests sparked by one fund that had “broken the buck” because of large exposure to Lehman Brothers commercial paper (CP). As a result, MMMFs, which are significant investors in CP, became reluctant to hold CP. Within a week, outstanding CP had been reduced by roughly \$300 billion. The CP market experienced severe shortening of maturities and increased rates, making it difficult for issuers to place new paper. When government efforts to assist the MMMFs did not resolve the stresses in the CP market, the Federal Reserve announced, on October 7, 2008, the Commercial Paper Funding Facility (CPFF), which sought to backstop the CP market and revive term lending.

The CPFF (through a special purpose vehicle) purchased highly rated US dollar-denominated three-month unsecured and asset-backed commercial paper (ABCP) from eligible US issuers. Purchases were funded with loans from the Federal Reserve Bank of New York (FRBNY). The CPFF was highly utilized in its first weeks, purchasing the overwhelming majority of new term CP; its usage then waned as market conditions improved. At its highest level, in January 2009, the CPFF held \$350 billion—20% of all outstanding CP. The CPFF expired on February 1, 2010, with all loans paid in full. The program accumulated approximately \$5 billion in earnings that was paid to the FRBNY. The program is credited with backstopping the market, providing a rollover option for maturing paper, and providing much needed year-end financing. Its role in helping to revive the term-lending market, however, has been debated, but there is evidence that it did help increase lending between CPFF participants and their relationships with nonfinancial corporate borrowers.

Keywords: short-term funding, commercial paper, asset-backed commercial paper (ABCP), mutual fund, money market mutual fund, liquidity facility, wholesale funding, Lehman Brothers, Reserve Primary Fund

¹ This case study is part of the Yale Program on Financial Stability (YPFS) selection of New Bagehot Project modules considering the responses to the global financial crisis that pertain to market liquidity programs.

Cases are available from the *Journal of Financial Crises* at <https://elischolar.library.yale.edu/journal-of-financial-crises/>.

² Rosalind Z. Wiggins— Director, Global Financial Crisis Project and Senior Editor, YPFS, Yale School of Management.

Commercial Paper Funding Facility

At a Glance

Following the bankruptcy of Lehman Brothers on September 15, 2008, a number of prime money market mutual funds (MMMFs) began to experience run-like redemption requests after one fund with heavy exposure to Lehman's commercial paper (CP) "broke the buck," announcing that it could no longer maintain its \$1 per share net asset value (NAV). As a result, MMMFs, which are significant investors in CP, retreated from CP.

Consequently, the CP market experienced severe narrowing of terms and a corresponding increase in rates, making it difficult for issuers to place new paper, especially term paper. When government efforts to assist the MMMFs did not resolve the stresses in the CP market, the Federal Reserve announced on October 7, 2008, the Commercial Paper Funding Facility (CPFF).

Under the CPFF, the Federal Reserve Bank of New York (FRBNY) made loans to a special purpose vehicle—the CPFF LLC—which in turn purchased highly rated, US dollar-denominated, three-month unsecured and asset-backed commercial paper (ABCP) from eligible US issuers (represented by primary dealers). The FRBNY loans were funded from its discount window, and interest was charged at the target federal funds rate. The maturities of each loan mirrored that of the CP purchased. The LLC held the CP until maturity and repaid the loans to the FRBNY with interest when the CP matured.

Summary Evaluation

During its first weeks of operation, CPFF LLC purchased the overwhelming majority of newly issued three-month CP, and the launch of the program led to a significant jump in CP issuance. Assets of the LLC more than doubled after one month and reached a peak of \$350 billion in January 2009, when the CP it first purchased matured and rolled over. After the early weeks, as market conditions improved, utilization of the CPFF waned. The last of CPFF LLC's holdings matured on April 26, 2010, and the LLC was dissolved on August 30, 2010. All loans that were made to the LLC by the FRBNY were repaid in full in accordance with their terms, and all of the CP that the LLC purchased was repaid in accordance with stated terms. The FRBNY received \$5 billion in earnings from the LLC as its sole member. The CPFF coexisted with other government programs aimed at addressing the stress in the CP market, so it is difficult to fully assess its impact. However, the program is credited with backstopping the market, providing a rollover option for maturing paper, and assisting year-end financing. Its role in helping to revive the term-lending market, however, has been debated, but there is evidence that it did help increase lending between CPFF participants and their relationships with nonfinancial corporate borrowers (Li 2015).

Summary of Key Terms

Purpose: To fund indirect purchases of highly rated three-month unsecured and ABCP from eligible US issuers so as to provide liquidity to the CP market and stimulate term lending.

| | |
|--------------------------|--|
| Announcement Date | October 7, 2008 |
| Operational Date | October 27, 2008 |
| Expiration Date | February 1, 2010 |
| Dissolution of CPFF LLC | August 30, 2010 |
| Legal Authority | Section 13(3) of the Federal Reserve Act |
| Funding Source | FRBNY discount window |
| Interest Rate | Target federal funds rate |
| Peak Utilization | \$738 billion aggregate purchases; \$350 billion outstanding (January 2009); 82 issuers (total) |
| CP Eligible for Purchase | Three-month USD-denominated unsecured and ABCP rated at least A-1/P-1/F1 issued by eligible US issuers |
| Special Purpose Vehicle | CPFF LLC |
| Administrator | FRBNY |
| Participants | US Department of the Treasury contributed \$50 billion to support the CPFF Various expert firms were hired to assist the LLC with administration and investments. |

| Commercial Paper Funding Facility: United States Context | |
|---|---|
| GDP (SAAR, Nominal GDP in LCU converted to USD) | \$14,681.5 billion in 2007 \$14,559.5 billion in 2008 <i>Source: Bloomberg</i> |
| GDP per capita (SAAR, Nominal GDP in LCU converted to USD) | \$47,976 in 2007 \$48,383 in 2008 <i>Source: Bloomberg</i> |
| Sovereign credit rating (5-year senior debt) | As of Q4, 2007: Fitch: AAA Moody's: Aaa S&P: AAA As of Q4, 2008: Fitch: AAA Moody's: Aaa S&P: AAA <i>Source: Bloomberg</i> |
| Size of banking system | \$9,231.7 billion in total assets in 2007 \$9,938.3 billion in total assets in 2008 <i>Source: Bloomberg</i> |
| Size of banking system as a percentage of GDP | 62.9% in 2007 68.3% in 2008 <i>Source: Bloomberg</i> |
| Size of banking system as a percentage of financial system | Banking system assets equal to 29.0% of financial system in 2007 Banking system assets equal to 30.5% of financial system in 2008 <i>Source: World Bank Global Financial Development Database</i> |
| 5-bank concentration of banking system | 43.9% of total banking assets in 2007 44.9% of total banking assets in 2008 <i>Source: World Bank Global Financial Development Database</i> |
| Foreign involvement in banking system | 22% of total banking assets in 2007 18% of total banking assets in 2008 <i>Source: World Bank Global Financial Development Database</i> |

| | |
|---|--|
| Government ownership of banking system | 0% of banks owned by the state in 2008 <i>Source: World Bank, Bank Regulation and Supervision Survey</i> |
| Existence of deposit insurance | 100% insurance on deposits up to \$100,000 for 2007 100% insurance on deposits up to \$250,000 for 2008 <i>Source: Federal Deposit Insurance Corporation</i> |

I. Overview

Background

On September 16, 2008, the day after Lehman Brothers filed for bankruptcy, the \$62 billion Reserve Primary Fund, a money market mutual fund (MMMF) wrote down its \$785 million exposure to Lehman commercial paper (CP), which caused it to “break the buck,” and it announced a net asset value (NAV) of less than \$1 per share. Since investors tended to believe their MMMF holdings were as good as cash (only one MMMF had ever broken the buck before), the fund’s announcement prompted run-like redemption requests by many MMMF investors, and in the following week, investors withdrew \$117 billion from prime MMMFs (Adrian, Kimbrough, and Marchioni 2011).

As they scrambled for cash to meet redemptions and maintain their expected \$1-per-share NAVs, MMMFs, which in the aggregate are significant investors in CP, refused to roll over the maturing CP they held or to purchase new CP. A month after Lehman’s bankruptcy, outstanding CP had declined by \$300 billion (Adrian, Kimbrough, and Marchioni 2011). Seventy percent of this decline was a flight from financial CP, which was CP issued by banks and other financial institutions, which is traditionally unsecured. Seventy-five percent of the remaining CP was being rolled over daily, in contrast to traditionally being issued with maturities of 30 days or more (Anderson and Gascon 2009). After September 2008, this contraction in maturities was coupled with sharply elevated rates, all but freezing the market for term CP and asset-backed commercial paper (ABCP).

Concerned that stresses on the MMMFs and seizing up of the CP market might have negative effects on the financial system and possibly spill over to the broader economy, the government took steps to counter the stresses, including an optional guarantee of MMMF accounts against losses resulting from a fund breaking the buck³ and the indirect purchase of high-quality ABCP from MMMFs that experienced investor runs.⁴ Although these actions helped to protect the MMMFs, and forestall their selling assets at greatly depressed prices, they did not fill the gap in demand for CP created by the exit of MMMFs, nor did CP rates stabilize.

Program Description

On October 7, 2008, the Federal Reserve (the Fed) announced the Commercial Paper Funding Facility (CPFF), which was intended to provide a liquidity backstop to the CP market by funding the purchase of highly rated CP from issuers and “to improve liquidity in short-term funding markets and thereby increase the availability of credit for businesses and households” (Federal Reserve 2008a; Federal Reserve 2008c). The CPFF was established pursuant to the Fed’s emergency authority under Section 13(3) of the Federal Reserve Act of 1913 (FRA)⁵ and was funded from the Fed’s discount window (FRBNY 2009).

³ US Treasury Temporary Guarantee Programs for Money Market Funds. Also see McNamara (2016) discussing the guarantee program.

⁴ See Wiggins (forthcoming) discussing the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF).

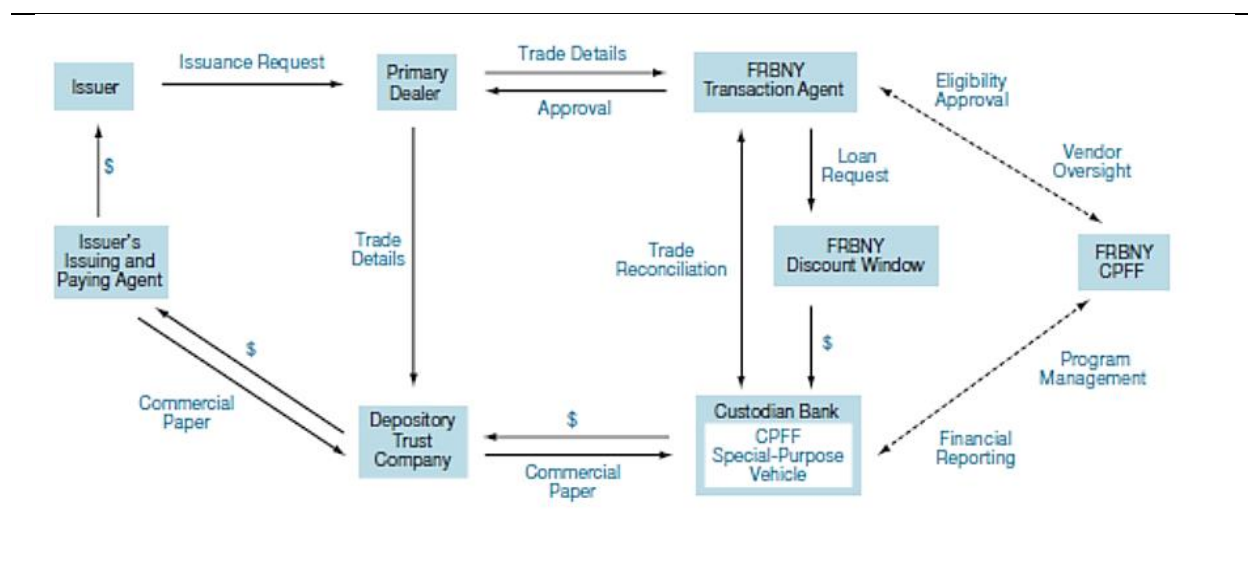
⁵ Federal Reserve Act of 1913, Section 13(3) (12 U.S.C. § 343)—“Discount of Obligations Arising out of Actual Commercial Transactions, as Amended.”

A designer of CPFF comments that it was regarded by many Fed staffers as the program that most pushed the envelope of what was legal under FRA Section 13(3). This was because the Fed was effectively lending on a mostly unsecured basis and relying on accumulated upfront fees to cover potential losses. At the time, this structure was intensely debated.

Under the CPFF, the Fed purchased highly rated, US dollar-denominated, three-month unsecured CP and ABCP from a wide range of eligible financial and nonfinancial US issuers (FRBNY 2009). The purchases were made indirectly through a newly established special purpose vehicle, CPFF LLC, which was administered by the Federal Reserve Bank of New York (FRBNY), the LLC's managing, and only, member (Adiran, Kimbrough, and Marchioni 2011).

As shown in Figure 1, under the CPFF, the FRBNY loaned funds to the LLC, which then purchased and held eligible CP from the primary dealers that represented eligible issuers. The FRBNY loans were secured by all of the assets of the LLC, including the CP purchased, assets purchased with the accumulated upfront fees paid by the issuers, any uninvested fees, and any earnings. The rate charged to the LLC on loans from the FRBNY was the same as the targeted federal funds rate charged to depository institutions that borrowed from the Fed's discount window, and the term of each loan mirrored the three-month term of the CP purchased. When the CP matured, the LLC repaid the loan to the FRBNY with interest. All assets and liabilities of the LLC were consolidated onto the balance sheet of the FRBNY.

Figure 1: Issuance to the Commercial Paper Funding Facility (CPFF)



Note: Solid Lines represent steps in the transaction; dashed lines represent some of the control.

Source: Adiran, Kimbrough, and Marchioni 2011.

Eligible Issuers

Issuers eligible to sell CP to the CPFF were US issuers of CP, including US issuers with a foreign parent company (FRBNY 2009). Each legal entity that issues CP was considered a separate issuer under the CPFF.

An issuer with an eligible foreign parent, however, could not sell to the LLC any CP issued by other parts of the organization. In addition, in determining its Maximum Face Value⁶ (which was the maximum amount of CP that a participating issuer could have outstanding on any day) such issuer would not include any commercial paper issued by other parts of the organization (FRBNY 2009).

Issuers who wished to access the CPFF were required to register with the Fed at least two business days in advance of their intended use of the CPFF by submitting the completed Issuer Registration Documents and paying the facility registration fee of 10 basis points (0.1%) on their Maximum Face Value (FRBNY 2009).

CPFF Purchased

The CPFF purchased only three-month, US dollar-denominated unsecured CP and ABCP that was rated at least A-1/P-1/F1 by a nationally recognized statistical rating organization (NRSRO) (FRBNY 2009). If rated by multiple NRSROs, the CP had to be rated at least A-1/P-1/F1 by two or more NRSROs.

As was the market custom, the LLC purchased CP at a discount from face value (FRBNY 2009). The applicable discount was based on a rate equal to a spread over the three-month overnight index swap (OIS) rate on the day of purchase. The spread for unsecured CP was 100 basis points per annum, and the spread for ABCP was 300 basis points per annum. For unsecured CP, an additional 100 basis points per annum was imposed as a credit enhancement fee, to be paid on each trade execution date. This fee was to compensate the Fed for the higher risk involved with respect to unsecured CP and to ensure that the lending was “indorsed or otherwise secured to the satisfaction of the Federal Reserve Bank,” a requirement of Section 13(3) of the FRA. An issuer of unsecured CP that participated in the Federal Deposit Insurance Corporation’s (FDIC’s) Temporary Liquidity Guarantee Program (TLGP),⁷ which was implemented on October 14, 2008, could avoid the credit enhancement fee for issues covered by the TLGP, which was accepted by the CPFF as a satisfactory guarantee (FRBNY 2009). The CPFF provided same-day settlement, operating as an immediate source of funds.

Use of Third Parties

The FRBNY relied on a combination of existing and new infrastructure to implement the CPFF and sought the input of market participants when deciding on the terms and operational details of the CPFF (Federal Reserve 2008c). For example, the FRBNY required each CP issuer to utilize a primary dealer as an issuing agent, even if the issuer usually placed its CP directly. In this way, the Fed relied on the primary dealers’ market knowledge and

⁶ The Maximum Face Value was calculated as the greatest amount of US dollar-denominated A-1/P-1/F1 CP that the issuer had outstanding on any day between January 1 and August 31, 2008 (Registration Instructions). The Registration Instructions also provided that, “[i]f the Issuer has more than one commercial paper program, [the Maximum Face Value] should be the aggregate amount outstanding under all programs on a single day and all of the Issuer’s programs should be listed below ... The Issuer agrees that while participating in this Facility, it will not sell commercial paper to the CPFF such that the total amount of commercial paper outstanding (including commercial paper held by the CPFF and other investors) would exceed the Maximum Face Value.”

⁷ On October 14, 2008, the Federal Deposit Insurance Corporation (FDIC) implemented the Temporary Liquidity Guarantee Program (TLGP) consisting of two components: (1) the Transaction Account Guarantee Program (TAGP), an FDIC guarantee in full of noninterest-bearing transaction accounts; and (2) the Debt Guarantee Program (DGP), an FDIC guarantee of certain newly issued senior unsecured debt (FDIC, n.d.).

their verification of potential issuers' creditworthiness based on established market criteria (Adrian, Kimbrough, and Marchioni 2011).

In similar fashion, the FRBNY hired Pacific Investment Management Company, LLC (PIMCO) to advise it in setting up the CPFF infrastructure and to provide transaction agent and investment management services (Adrian, Kimbrough, and Marchioni 2011). It hired State Street Bank and Trust (State Street) to hold custody of the LLC's assets and perform its administrative functions. (The LLC had no employees. State Street, in essence, operated on its behalf.) The Depository Trust Company, which traditionally cleared CP transactions for the primary dealers and State Street, among others, also provided these services for the CPFF.

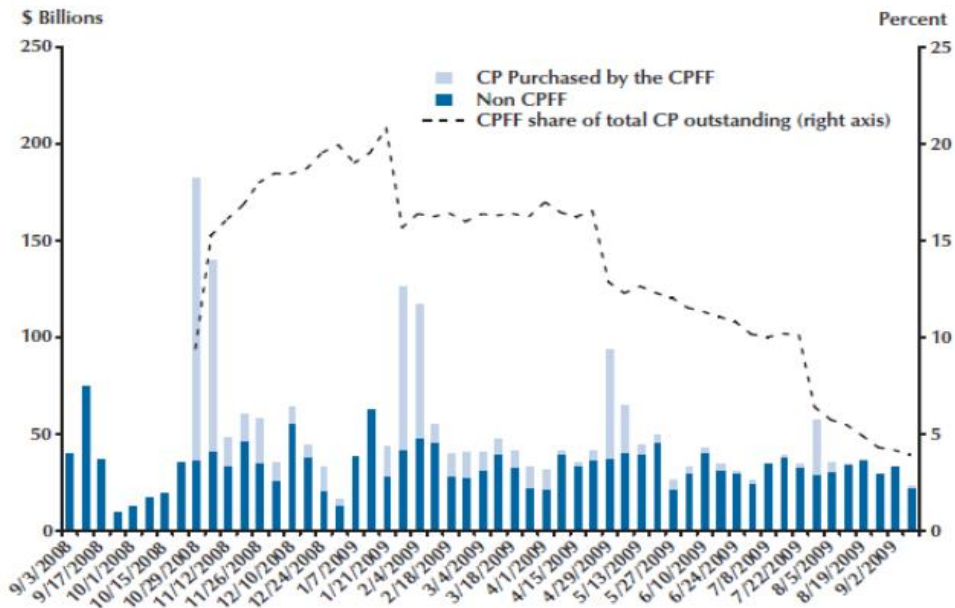
The consultation with and use of experts enabled the Fed to begin issuer preregistration for the CPFF on October 20, 2008, and to make the first purchases of CP pursuant to the CPFF on October 27, 2008, just 20 days after the facility's announcement (Adrian, Kimbrough, and Marchioni 2011).

Outcomes

Usage of the CPFF was aggressive, and rates on CP in the market fell precipitously as soon as the program was announced. On the first day of operation, the CPFF purchased more than \$50 billion of CP; in its first week, \$144 billion. During the next few weeks, it purchased the overwhelming majority of newly issued three-month CP. Assets of the CPFF more than doubled after one month, reaching \$293 billion by the end of November 2008, and reached \$333 billion by the end of December 2008. The CPFF reached its peak of \$350 billion—the maximum amount outstanding at any one time—during the third week of January 2009, when the CP first purchased by the CPFF matured and was rolled over. At this time, the LLC owned 20% of all outstanding CP (Anderson and Gascon 2009).

Figure 2 illustrates the CPFF's share of new issues and outstanding CP during its tenure.

Figure 2: CPFF Share of Purchases and Outstanding Commercial Paper



Source: FRB, H.4.1 Table; Federal Reserve Bank of New York (Anderson and Gascon 2009).

In total, the CPFF purchased an aggregate of \$738 billion in CP, including \$342 billion of ABCP (Li 2015). Eighty-two issuers participated in the CPFF; however, when aggregated at the sponsor level, it is evident that usage was somewhat concentrated as the top 10 issuers accounted for approximately \$474 billion, or more than half of the program total. Approximately 10% of the purchased CP was from nonfinancial corporations or their finance affiliates, such as General Electric Company, Ford Motor Company, General Motors Corporation, and BMW (Li 2015; van Deventer 2011).

Figure 3 shows the patterns of usage of the CPFF by the 10 largest sponsors. Included are a number of large financial institutions and nonfinancial institutions that were known to be having difficulties at the time, such as American International Group, Dexia SA, Fortis SA/NV, and Citigroup (van Deventer 2011). Notably, this grouping included a number of US subsidiaries of foreign banks, with UBS-related issuers having the most CP purchased by the program. In aggregate, banks with European parents accounted for nearly 60% of the utilization of the CPFF. This became a point of controversy when disclosed by the Fed in 2011.

Figure 3: Ten Largest Sponsors That Utilized the Commercial Paper Funding Facility (CPFF)

| Parent/Sponsor Name | Amount (millions) | Frequency | CP Type | Discount Rate (%) | Credit Enhancement (%) |
|----------------------------------|----------------------|------------|------------|-------------------------|------------------------------|
| UBS | 74,531.102 | 11 | CP | 1.452 | 1.000 |
| American International Group | 60,230.602 | 90 | CP | 1.908 | 0.711 |
| Dexia SA | 53,476.301 | 42 | CP | 1.370 | 1.000 |
| Hudson Castle | 53,343.199 | 48 | ABCP | 3.320 | 0.000 |
| BSN Holdings | 42,794.000 | 57 | ABCP | 3.326 | 0.000 |
| The Liberty Hampshire Company | 41,379.801 | 36 | ABCP | 3.365 | 0.000 |
| Barclays PLC | 38,774.898 | 7 | CP | 1.320 | 1.000 |
| Royal Bank of Scotland Group | 38,517.000 | 67 | ABCP | 2.975 | 0.164 |
| Fortis Bank SA/NV | 38,483.699 | 69 | ABCP | 3.173 | 0.072 |
| Citigroup | 32,735.000 | 10 | ABCP | 2.711 | 0.000 |
| Total | 474,265.602 | 437 | | | |

Note: This table illustrates the 10 largest sponsors by total amount that used the Commercial Paper Funding Facility during the period of October 27, 2008, to February 1, 2010. The names are shown at the sponsor level instead of issuer level. This information is collected from the Federal Reserve Board. The "Amount (millions)" column indicates the total amount of CP/ABCP purchased by the Federal Reserve. The "Frequency" column shows the total numbers of transactions. The "Discount Rate" column denotes the lending fee for accessing the CPFF, which was equal to a three-month OIS rate plus 100 basis points per annum for unsecured commercial paper. The discount rate imposed for asset-backed commercial paper was a three-month OIS plus 300 basis points. The "Credit Enhancement" column indicates the surcharge of a 100 basis point per annum fee paid up front on each sale of commercial paper to the CPFF LLC in the cases without any collateral.

Source: Li 2015.

As market conditions improved, utilization of the CPFF waned. By December 2009, the facility held only \$10 billion of assets, and by April 2010, the balance fell to zero. The aggregate lent under the facility during its tenure was \$738 billion. In terms of dollars expended, it was the third-largest program implemented by the Fed to combat the financial crisis. Only the Term Auction Facility (TAF)⁸ and the US dollar swaps with foreign central banks⁹ were larger.

The CPFF expired on February 1, 2010. All loans that were made to the LLC by the FRBNY were repaid in full in accordance with the terms of the facility, and all the CP that the LLC

⁸ See Wiggins and Metrick 2016a for a discussion of the Term Auction Facility (TAF).

⁹ See Wiggins and Metrick 2016b for a discussion of the US dollar swaps with foreign central banks.

purchased was repaid in accordance with stated terms. The last of the LLC's holdings matured on April 26, 2010, and it was dissolved on August 30, 2010. The LLC accumulated nearly \$5 billion in earnings, primarily from interest income, credit enhancement fees, and registration fees, which was paid to the FRBNY as managing member.

II. Key Design Decisions

1. The CPFF was established under the Federal Reserve's emergency powers under Section 13(3) of the Federal Reserve Act.

In establishing the CPFF, the Fed relied on its authority under Section 13(3) of the Federal Reserve Act, which permits the Federal Reserve Board (the Board), in unusual and exigent circumstances, to authorize Reserve Banks to extend credit to individuals, partnerships, and corporations that are unable to obtain adequate credit accommodations. Federal Reserve counsel cited a litany of events¹⁰ in its memorandum analyzing the deteriorating market conditions and found that they were directly affecting the broader economy “[b]y restricting the availability of credit” and “disrupt[ing] the commercial paper market and other forms of financing for a wide range of firms.” (Alvarez et al. 2009). Counsel then concluded that there was manifest evidence that “unusual and exigent circumstances” existed sufficient to support the Board’s authorization of the CPFF under Section 13(3) of the FRA and also “sufficient evidence to support a judgment that adequate credit accommodations for eligible issuers of term CP are not available from other banking institutions” (Alvarez et al. 2009).

The CPFF represented a shift in the Fed’s policy approach to the crisis because it was a direct effort to backstop a particular credit market that was failing. Further, through the CPFF, the Fed in effect extended its discount window lending well beyond the entities to which it traditionally lent—depository institutions and primary dealers—to provide liquidity to a wide variety of financial and nonfinancial entities of varying sizes. Given the limited tools available to the Fed, the CPFF in essence enabled it to utilize its pool of funds in a new way to combat the deepening crisis.

A designer of CPFF comments that it was regarded by many Fed staffers as the program that most pushed the envelope of what was legal under FRA Section 13(3). This was because the Fed was effectively lending on a mostly unsecured basis and relying on accumulated upfront fees to cover potential losses. At the time, this structure was intensely debated.

2. The FRBNY determined that the CPFF loans were “indorsed or otherwise secured to [its] satisfaction” as required by Section 13(3) of the Federal Reserve Act.

The wording of FRA Section 13(3) is broad and permits a Federal Reserve Bank discretion to determine whether it is “secured to [its] satisfaction” in acting under the section. CPFF design elements—having issuers preregister and be vetted, requiring use of a primary dealer, upfront registration fees, credit quality, pricing, and maximum issuance amount—were structured with the intent to protect the Fed from associated risks. Moreover, the legal staffs of the Board and the FRBNY were involved in providing advice regarding the

¹⁰ Developments cited included: (1) that for the past year, “the CP market has been under considerable strain as money market mutual funds (MMMFs) and other investors have become increasingly reluctant to purchase CP”; (2) that financial systems in the US and abroad were under “extraordinary stress, particularly the credit and money markets”; and (3) that banks were “constrained in their ability to lend” and others were reluctant to lend to them (Alvarez et al. 2009).

design and implementation of the CPFF and concluded that the FRBNY could reasonably determine that its loans to the LLC would be adequately secured on several levels:

- Under the CPFF, the FRBNY's loans to the LLC would be secured by all of the assets of the LLC, including the CP purchased, assets purchased with the accumulated upfront fees paid by the issuers, any uninvested fees, and any earnings. In addition, the CP eligible for purchase under the facility would be highly rated, and purchases would be subject to a discount from face value. Based on the sum of these facts, counsel concluded that the FRBNY could reasonably conclude that all loans to the LLC would be "secured to [its] satisfaction" with respect to all loans to the LLC.

Counsel further determined that if individual purchases of ABCP were considered, the FRBNY could reasonably reach a similar conclusion because the ABCP was collateralized by the pools of assets underlying the ABCP, even though these pools might dip below the face value of the ABCP. Moreover, the risk of a drop in value was somewhat mitigated by the discount applied at purchase.

- With respect to individual purchases of unsecured CP, counsel found that the credit premium fee of 100 basis points charged acted as an insurance premium (Alvarez et al. 2009). This fee, together with the facility registration fee of 10 basis points on the Maximum Face Value charged to each issuer, provided a pool¹¹ to compensate the FRBNY for any losses resulting from the CP.

3. The FRBNY outsourced certain key CPFF administrative functions.

The Fed had to build new legal, trading, investment, custodial, and administrative infrastructure for CPFF operations as well as establish essential financial and operational risk controls. Time was of the essence, so the Fed accessed market expertise and operational efficiencies through contracted third parties that regularly participated in the CP market:

- *PIMCO* advised the FRBNY in setting up the CPFF infrastructure and provided transaction agent and investment management services.
- *State Street* provided administrative and custodial services (in essence, it held the LLC in custody and performed all its administrative functions). The LLC had no employees.
- *Primary dealers* acted as agents verifying issuers' eligibility. Since they had established relationships with the FRBNY and actively underwrote, placed, and made a market in CP, they were well suited to intermediate between the CP issuers and the

11 The transcript from a Federal Open Market Committee (FOMC) meeting that occurred a week after the CPFF began preregistration reflects that, "[a]t the close of business last week [the first week of CPFF operations], 79 issuers had registered to use the facility, paying 10 basis points, or \$580 million, to cover the potential issuance of commercial paper. The 10 basis point fee provides a little equity to get the program off and running" (FOMC 2008b). The CPFF also accepted participation in the FDIC's Temporary Liquidity Guarantee Program in lieu of the credit enhancement fee.

Fed. Issuers were required to sell through a primary dealer even if the issuer normally issued its CP directly without use of an agent (Registration Instructions).

- *Depository Trust Company*, which traditionally cleared CP transactions for the primary dealers, CP issuing and payment agents (hired by issuers), and State Street, provided these services for the CPFF. This permitted the CPFF to purchase CP through the market's standard clearing institution and provided same-day settlement, which made it a viable option for issuers facing unexpected liquidity needs (Registration Instructions).

Combining existing and new infrastructure and incorporating market expertise in this manner permitted the Fed to: (1) analyze a number of options in designing the facility, such as fees and managing credit risk, hypothetical losses, and moral hazard; and (2) design a structure that was consistent with market standards and easily accessible to a wide number of potential issuers (Adrian, Kimbrough, and Marchioni 2011). Use of experts also helped make the CPFF operational by October 27, 2008, just 20 days after its announcement.

4. The CPFF was limited to “legacy issuers,” those that had issued CP before the adoption of the CPFF.

The CPFF was intended to address the gap in funding caused by recent market disruptions, not to be an additional liquidity channel. Thus, the CPFF was originally available only to “legacy issuers,” any company that had issued CP before its inception, including those with a foreign parent. In January 2009, the Fed further clarified this eligibility criterion with respect to ABCP issuers. Such an issuer was deemed to have been inactive (and thus not eligible to participate in the CPFF) if the issuer had not issued ABCP to institutions other than the sponsoring institution for any period of three consecutive months or longer between January 1 and August 31, 2008 (FRBNY, CPFF: FAQs Jan. 23, 2009). This modification reinforced the original intent of the facility and sought to limit moral hazard by excluding issuances that “no longer had a natural investor base,” and mitigated the risk of funding issuers that the market had withdrawn from for reasons unrelated to the crisis (Adrian, Kimbrough, and Marchioni 2011).

5. There were no restrictions on the type of entity that could borrow under the CPFF, subject to being a US entity and “legacy issuer.”

In implementing the CPFF, the Fed decided that because of the broad nature of the CP market, to be an effective backstop the CPFF had to be accessible to a “large cross-section of the commercial-paper market while minimizing credit risk to the Reserve Bank” (Adrian, Kimbrough, and Marchioni 2011). CP issuers were a varied group of financial and nonfinancial entities. Issuers eligible to utilize the CPFF had to be US entities, and included US subsidiaries of foreign companies. However, any type of US company meeting the definition of “legacy issuer” could utilize the CPFF. A narrower facility—for example, one limited to financial entities—might not have addressed the issue of spillover to the real economy.

Because the group of potential issuers was much broader than the limited types of firms the Fed usually dealt with (depository institutions and primary dealers), it relied on its primary dealers, which had CP market expertise and knowledge of issuers, as intermediaries. The terms of the CPFF required issuers to sell through one or more primary dealer(s), even if the issuer normally issued its CP directly. In this way, there was one additional check on potential issuers' creditworthiness.

6. US subsidiaries of foreign companies were permitted to borrow under the CPFF.

US subsidiaries of foreign companies were eligible to borrow under the CPFF as long as they otherwise met the definition of “legacy issuer.” An analysis of the CPFF transaction data shows that, on average, European banks had borrowings of \$145.5 billion, 57.3% of the average outstanding borrowings under the CPFF. A number of banks that were experiencing well-reported difficulties were among the list of top borrowers, including UBS, Dexia SA, Royal Bank of Scotland, and Fortis SA/NV (van Deventer 2011).

7. The amount of CP that could be purchased from any one issuer was limited.

The maximum amount of a single issuer’s commercial paper that CPFF LLC could own at any time was “the greatest amount of US dollar-denominated A-1/P-1/F1 commercial paper the issuer had outstanding on any day between January 1 and August 31, 2008.” This amount was called the “Maximum Face Value.” If an issuer had more than one CP program, the Maximum Face Value would be the aggregate amount outstanding under all programs on a single day. In addition, by executing the CPFF Issuer Registration Form and Qualification Certification, the issuer agreed that while participating in the CPFF, it would not sell CP to the CPFF such that the total amount of CP outstanding (including CP held by the CPFF and other investors) would exceed the Maximum Face Value. These limitations helped to maximize availability of the CPFF.

8. Fees and lending rates were structured to maximize availability while discouraging arbitrage and moral hazard.

Similar to a bank loan commitment fee, a *facility registration fee* of 10 basis points (0.1%) times the issuer’s Maximum Face Value was required for issuers seeking to utilize the CPFF. The fee was payable upon registration and nonrefundable, even if the issuer never issued CP under the CPFF. General Electric, whose GE Capital unit was the largest US issuer of CP in October 2008 (and traditionally a direct issuer), registered and announced plans to use the program that it called “good for the market and very important for the buyers of GE paper as it provide[d] a secondary market” (Layne 2008).

As was the market custom, the CP was purchased at a discount from face value. The CP purchased by the LLC was discounted based on a rate equal to a spread over the three-month OIS rate on the day of purchase. As shown in Figure 4, the spread for unsecured commercial paper was 100 basis points per annum and the spread for ABCP was 300 basis points per annum.

Figure 4: Applicable Rates and Fees under the CPFF

| Type of Fee | Type of CP | |
|--|---|---|
| | Unsecured | ABCP |
| Lending Rate (Discount/Haircut) | 3-month overnight index swap rate (OIS) + 100 bps | 3-month overnight index swap rate (OIS) + 300 bps |
| Unsecured Credit Surcharge | 100 bps on settlement | None |
| Total | 3-month OIS + 200 bps | 3-month OIS + 300 bps |
| Registration Fee | 10 bps x Maximum Face Value | 10 bps x Maximum Face Value |

Source: FRBNY CPFF: Program Terms and Conditions, Effective October 14, 2008.

For unsecured CP, a *credit enhancement fee* of 100 basis points was charged on settlement. This was to compensate the Fed for the higher risk involved and to ensure that the Fed was “secured to [its] satisfaction” with respect to the unsecured CP, a requirement of FRA Section 13(3). However, this fee could be waived if the issuer participated in the FDIC’s TLGP (FRBNY 2009).

Fees under the CPFF were originally lower than market rates but were designed to be unattractive when the market recovered, creating a disincentive for issuers to continue to utilize the CPFF. As was expected, as the market recovered, usage of the CPFF declined. In extending the CPFF to February 1, 2010, the Federal Reserve explained “[i]nterest rates posted on the CPFF are at levels that are increasingly unattractive for many borrowers as market conditions improve, and accordingly usage of the CPFF is declining fairly steadily” (Federal Reserve 2009b).

9. CPFF accepted only highly rated US dollar-denominated, three-month CP and ABCP for purchase.

CP eligible for purchase by the CPFF was only that rated A-1/P-1/F1, unsecured or asset-backed. Consistent with Rule 2a-7 (which provides restrictions governing MMMFs), per fund conventions, a split rating was acceptable if two ratings were top-tier. In the time between Lehman’s bankruptcy and the CPFF starting operations, outstanding CP dropped by \$300 billion, and 70% of this decline was due to financial CP (Adrian, Kimbrough, and Marchioni 2011; Anderson and Gascon 2009). ABCP, which was widely used to finance consumer and commercial assets and which had experienced substantial contraction during 2007, experienced a much smaller drop, but maintaining this type of consumer and small business funding was perceived as key to containing the crisis. Since highly rated CP constituted nearly 90% of the market at the time, limiting the eligible CP to these criteria still enabled the Fed to backstop almost the entire market while also shielding the Fed from CP with greater credit risk (Adrian, Kimbrough, and Marchioni 2011).

10. Purchases under the CPFF were limited to three-month CP.

When the CPFF was enacted, 75% of newly issued CP had a maturity of one to four days. Because the CPFF was designed to offer funding beyond what was already available in the market, its focus became term lending. Traditionally, CP has been more liquid at one- and three-month maturities, and since there were funding concerns for the approaching year end, the Fed decided that the CPFF would purchase only three-month CP. Further, providing term funding also helped to mitigate rollover risk. Issuers could place CP for longer periods than the short maturities that the market was then accepting, and the Fed believed that this would provide additional stability to the market because issuers did not have to immediately look to refinance such amounts (Adrian, Kimbrough, and Marchioni 2011).

11. The Federal Reserve utilized a special purpose vehicle, CPFF LLC, to purchase CP under the CPFF rather than purchase and hold it directly.

The FRBNY administered the CPFF and provided three-month loans to the LLC. The LLC would then use the funds to purchase eligible commercial paper from eligible issuers through a primary dealer as issuing agent. The FRBNY's loans were secured by the LLC's assets, including the CP that it purchased, fees that it collected and any uninvested fees, and earnings and proceeds from investments. This structure was chosen because the Fed would be dealing in a security that it did not normally handle and with many types of entities that it did not normally lend to. (Adrian, Kimbrough, and Marchioni 2011).

12. The CPFF was funded through loans from the FRBNY discount window.

Each week, the FRBNY loaned funds to CPFF LLC through the custodian, which would then transfer the funds to the LLC. The LLC would then purchase the CP, which operated as security for the loans, from the primary dealers (acting as the issuers' issuing and payment agents). When the CP matured, the issuer paid the LLC the principal plus interest. CPFF LLC then repaid the FRBNY the principal of its loan and interest at the federal funds target rate on the original loan date. The US Treasury also made a special deposit of \$50 billion to the FRBNY in support of the CPFF (Federal Reserve 2009a; FOMC 2008a).

III. Evaluation

GE Capital registered for the CPFF on October 23 and first accessed the facility on October 27, 2008. It commented favorably on the facility in a statement to its investors made on November 12, 2008:

While we have continued to issue our commercial paper without disruption, we believe this facility has added an important liquidity backstop to the \$1.6 trillion commercial paper (CP) market, helping to reduce rollover risk for participating issuers and providing support for a more active secondary market. The CPFF has strengthened confidence in the prime commercial paper market and has resulted in more term buying, thus extending our average maturity range. We are eligible to access the CPFF for up to \$98 billion.

This facility in addition to the recently announced Money Market Investor Funding Facility will provide significant support for the CP market. We are seeing maturities extending and improved pricing in the market as a result of this program. (GEC 2008)

In testifying before the US House of Representatives Committee on Financial Services on November 18, 2008, then-Federal Reserve Chairman Ben Bernanke also cited the impact of the CPFF as favorable: "[It has] allow[ed] many firms to extend significant amounts of

funding into next year,” resulting in “greater stability in money market mutual funds and the commercial paper market” (Bernanke 2008).

A report that the Federal Open Market Committee (FOMC) received at its January 2009 meeting described the impact of the CPFF and other Fed liquidity measures directed at the CP market:

Conditions in the commercial paper (CP) market improved over the intermeeting period, likely reflecting recent measures taken in support of this market, greater demand from institutional investors, and the passing of year-end. Yields and spreads on 30-day A1/P1 nonfinancial and financial CP as well as on asset-backed commercial paper (ABCP) declined modestly and remained low. Yields and spreads on 30-day A2/P2 CP, which is not eligible for purchase under the CPFF, dropped sharply after the beginning of the year as some institutional investors reportedly reentered the market. The dollar amounts of outstanding unsecured financial and nonfinancial CP and ABCP rose slightly, on net, over the intermeeting period. This small change was more than accounted for by the increase in CP held by the CPFF. In contrast, credit extended under the AMLF declined over the intermeeting period. (FOMC 2009)

As noted above, the CPFF coexisted with other government programs aimed at addressing the stress impacting the CP market, so it is difficult to assess its independent impact. In explaining the high usage of the CPFF, however, Adrian, Kimbrough, and Marchioni (2011) point to two factors: (1) its directness and (2) its scope:

First, the CPFF addressed problems in short-term debt markets at their root—through direct lending to issuers—at a time when issuers faced potential liquidity shortfalls as a result of market dislocations. Indeed, the main factor distinguishing the CPFF from the other two facilities [the Asset-backed Commercial Paper Money Market Mutual Fund Liquidity Facility and the Money Market Investor Funding Facility (MMIFF)] is the CPFF’s role as a backstop to issuers, whereas the other facilities [indirectly] provide emergency lending to institutional money market investors. Second, the CPFF backstopped issuance of both unsecured and secured commercial paper, while the AMLF funded only ABCP and the MMIFF special-purpose vehicles purchased only certificates of deposit, bank notes, and commercial paper from specific financial institutions. (Adrian, Kimbrough, and Marchioni 2011)

Adrian, Kimbrough, and Marchioni also conclude that usage of the CPFF was accompanied by a narrowing of the spread between CP rates and comparable OIS rates.

Anderson and Gascon (2009) credits the CPFF with successfully backstopping the CP market, providing a rollover option for maturing paper, and assisting year-end financing. However, the authors that its role in helping to revive the term lending market is less certain, although it was a substantial purchaser in its early weeks. Additionally, they find that some CP issuers that participated in CPFF turned to the Temporary Liquidity Guarantee Program of the FDIC, which guaranteed bank debt at far longer maturities.

In a more recent paper, Li (2015) explores the impact of the CPFF on those banks that used it and concludes that it generated several favorable effects. Banks that participated in the CPFF experienced reduced rollover risks and significant positive abnormal stock returns during the tenure of the CPFF. Second, banks that used the CPFF also increased the quantity of the loans that they made and decreased the yield on loans for firms with which they had strong past relationships. Thus, Li concludes, the CPFF generated strong positive spillover effects from the financial institutions that utilized it to those financial and nonfinancial entities with which they had preexisting relationships, increasing the supply of liquidity.

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V. Key Program Documents

Summary of Program

FRBNY CPFF: Program Terms and Conditions: Effective June 25, 2009 – *FRBNY documents outlining the key terms of the CPFF.* https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Terms_and_Conditions.pdf.

FRBNY CPFF: Program Terms and Conditions: Effective October 14, 2008 – *outlines the major rules and requirements of applying for eligibility and participating in the CPFF.* https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Terms_and_Conditions_Oct08.pdf.

FRBNY CPFF: Program Terms and Conditions: Effective January 23, 2009 – *modifies eligibility requirements.* https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Terms_and_Conditions_Jan09.pdf.

FRBNY CPFF: Program Terms and Conditions: Effective February 3, 2009 – *extends the facility’s tenure.*

https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Terms_and_Conditions_Feb09.pdf.

FRBNY CPFF: Program Terms and Conditions: Effective June 25, 2009 – *extends the facility's tenure and modifies certain terms.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Terms_and_Conditions_June09.pdf.

FRBNY CPFF: Frequently Asked Questions: Effective October 19, 2009 – *FRBNY documents providing FAQs and corresponding responses concerning operational issues and key features of the CPFF.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Commercial%20Paper%20Funding%20Facility%20Frequently%20Asked%20Questions.pdf>.

FRBNY CPFF: Frequently Asked Questions: Effective January 23, 2009 – *Early FAQ document articulating details of the CPFF program.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_FAQ_Jan09.pdf.

FRBNY CPFF: Frequently Asked Questions: Effective February 3, 2009 – *FAQ document from the FRBNY answering questions that arose between January 23, 2009 and February 3, 2009.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_FAQ_Feb09.pdf.

FRBNY CPFF: Frequently Asked Questions: Effective June 25, 2009 – *Final FAQ document on the CPFF issued by the FRBNY.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_FAQ_June09.pdf.

Implementation Documents

Registration Instructions – *FRBNY instructions and documents to be completed by issuers seeking to qualify to utilize the CPFF, consisting of (1) the Issuer Registration Form, (2) Qualification Certification, and (3) Eligible Program information Form and Certification of FDIC Debt Guarantee.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/RegistrationInstructions.pdf>

Issuer Registration Form and Qualification Certification – *document pursuant to which an issuer provided information necessary to determine its qualification, size of its Maximum Face Value, designated type of CP to be issued and issuing dealer, calculated and paid facility/registration fee, and agreed-to program terms.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/RegistrationInstructions.pdf>

Eligible Program Information Form – *used by the issuer to list its CP programs that were eligible to participate in the CPFF.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/RegistrationInstructions.pdf>

Certification of FDIC Debt Guarantee – *used by the issuer to certify that it was a participant in the Federal Deposit Insurance Corporation's (FDIC's) Temporary Liquidity Guarantee Program (TLGP), that the CP that it sells to the CPFF will be FDIC-guaranteed under the TLGP, and certain other related agreements.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/RegistrationInstructions.pdf>

Investment Management Agreement (October 20, 2008) and Amendment (April 7, 2010) – agreement between CPFF LLC and PIMCO pursuant to which PIMCO provided investment management services in regards to the CPFF, and amendment which adjust fees and provides for a more limited volume of services through June 2010.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_IMA_Agreement.pdf.

Administration Agreement – agreement, dated October 20, 2008, among CPFF LLC, the FRBNY, as managing member of the LLC, and State Street in its capacity as administrator, providing for administration services for the CPFF. [The Custodian Agreement (page 22) and related Fee Letter (page 48) are included here.]
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Administration_Agreement.pdf.

Custodian Agreement [Page 22 of the Administration Agreement] – agreement, dated October 20, 2008, between CPFF LLC and State Street, whereby State Street would provide custodian services to the CPFF.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Administration_Agreement.pdf.

Fee Letter [Page 48 of the Administration Agreement] – letter, dated October 20, 2008, providing a fee structure applicable to the Administration Agreement and the Custodian Agreement.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Administration_Agreement.pdf.

Legal/Regulatory Guidance

Statutory Reference – Section 13(3) of the Federal Reserve Act (12 U.S.C. § 343) on which the Fed relied in authorizing the CPFF.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRA_Section_13_Sept_19_2008_0.pdf.

Legal Memorandum – legal memorandum, dated March 9, 2009, discussing the CPFF in light of the requirements of FRA Section 13(3) and in particular the requirement that any such lending be “indorsed or otherwise secured to the satisfaction of the Reserve Bank.”
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/AlvarezAshtonFallonWeideAllison2009.pdf>.

Press Releases/Announcements

FR Board Announces the Creation of the CPFF to Help Restore Liquidity to the Term CP Market (October 7, 2008) – Press release announcing the creation of the CPFF, articulating the goals of the CPFF, and providing a link to the program’s initial terms and conditions.
[https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Board%20announces%20creation%20of%20the%20Commercial%20Paper%20Funding%20Facility%20\(CPFF\)%20to%20help%20provide%20liquidity%20to%20term%20funding%20markets.pdf](https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Board%20announces%20creation%20of%20the%20Commercial%20Paper%20Funding%20Facility%20(CPFF)%20to%20help%20provide%20liquidity%20to%20term%20funding%20markets.pdf).

FRBNY Announces That PIMCO Will Provide Asset Management Services in Support of the CPFF (October 8, 2008) – FRBNY press release announcing that it would contract with PIMCO, a large investment firm, to provide asset management services related to the CPFF.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_PIMCO.pdf.

Joint Statement by Treasury, the Fed, and the FDIC (October 14, 2008) – *statement regarding actions, including the CPFF, being taken to strengthen confidence in financial institutions and foster functioning of the credit markets.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Joint%20Statement%20by%20Treasury,%20Federal%20Reserve%20and%20FDIC.pdf>.

FR Board Announces Additional Details Regarding the CPFF (October 14, 2008) – *Press release updating the public on the CPFF. It also provides a date for when the program would begin operating.*
[https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/2008%2010%2014%20Board%20announces%20additional%20details%20regarding%20the%20Commercial%20Paper%20Funding%20Facility%20\(CPFF\).pdf](https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/2008%2010%2014%20Board%20announces%20additional%20details%20regarding%20the%20Commercial%20Paper%20Funding%20Facility%20(CPFF).pdf).

FRBNY Releases Expanded CPFF FAQs (October 17, 2008) – *Short FRBNY press release announcing that it had published an updated set of CPFF FAQs.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_FAQ_Oct08.pdf.

FRBNY Issues Instructions and Documents for CPFF Registration (October 20, 2008) – *Archived CPFF registration instruction form developed in collaboration with PIMCO.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/RegistrationInstructions.pdf>

Change to CPFF Eligibility Requirements (January 23, 2009) – *FRBNY announcement of a change to CPFF eligibility requirements to clarify that the CPFF will not purchase ABCP from issuers that were inactive prior to the adoption of the CPFF.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRS%20Bank%20of%20New%20York%20Press%20Release%20Change%20to%20CPFF%20Eligibility%20Requirements%2001-23-2009.pdf>.

FR Board Announces the Extension of Five Liquidity Facilities Including the CPFF through October 30, 2009 (February 3, 2009) – *FRB press release discussing the extension of various crisis-era liquidity facilities that were originally set to expire on April 30, 2009.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Fed_announces_ext_through_Oct_30_2009_existing_liquidity_progs.pdf.

Federal Reserve System Publishes Annual Financial Statements (April, 23, 2009) – *FR Board's 2008 combined financial statements for the combined Federal Reserve banks (which include data regarding the CPFF), the limited liability companies created in 2008-09, and the FR Board.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/BOG_Annual_Financial_Statements_Apr2309.pdf.

FR Board Announces Extensions of, and Modifications to, a Number of Its Liquidity Programs Including the CPFF (June 25, 2009) – *FRB press release announcing the extension of the CPFF, among other programs, through early 2010.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Federal%20Reserve%20Board%20-%20Federal%20Reserve%20announces%20extensions%20of%20and%20modifications%20to%20a%20number%20of%20its%20liquidity%20programs.pdf>.

The FRBNY Releases Updated CPFF FAQs (October 19, 2009) – *FRBNY document that accompanied the October 17, 2009 press release discussed above.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Commercial%20Paper%20Funding%20Facility%20Frequently%20Asked%20Questions.pdf>.

The FR Board Releases a Statement from its January 26–27 FOMC Meeting (January 27, 2010) – *Press release from the FOMC mentioning, among other things, that the CPFF would be closing on February 1, 2010.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_FOMC_Jan2710.pdf.

Media Stories

Fed's New Tool: Business Loan Bailout (CNN Money, October 7, 2008) – *News article discussing the lead up to and initial operations plan for the CPFF.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Isidore_2008_CNN_News_Feds_new_tool.pdf

Treasury to Guarantee Money Market Funds (New York Times, September 19, 2008) – *News article discussing the Treasury's backstop for money market funds. It has an aside about how the intervention relates to the commercial paper market.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Henriques_2008_Treasury_to_Guarantee_Money_market_funds.pdf

GE Used New Fed Commercial-Paper Funding Facility (Bloomberg.com, October 27, 2008) – *News article reporting that GE Capital, the massive financial unit of General Electric, used the CPFF. It also includes a short summary of the CPFF and quotes from GE spokespeople.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Layne_Bloomberg_2008_GE_Used_CPFF.pdf

Lending Grows – First Time since Lehman Collapse (CNN Money, October 30, 2008) – *News article reporting how the CPFF was responsible for the first instance of growth in the CP market in seven weeks.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Goldman_2008_Lending_Grows_since_lehman.pdf

Key Academic Papers

The Federal Reserve's Commercial Paper Funding Facility (Adrian, Kimbrough, and Marchioni 2011) – *paper providing a detailed discussion of the CPFF's design and impact.*
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/AdrianKimbroughMarchioni2011_0.pdf.

The Commercial Paper Market, the Fed, and the 2007-2009 Financial Crisis (Anderson and Gascon 2009) – *paper reviewing the history of the CP market (including its structure and key relationship to MMMFs) and presenting a detailed discussion of the market crisis and the Federal Reserve's response, including the CPFF.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Anderson,%20Richard%20and%20Charles%20S%20Gascon%20The%20Commercial%20Paper%20Market%20the%20Fed%20and%20the%202007-2009%20Financial%20Crisis%202009.pdf>.

When Safe Proved Risky: Commercial Paper during the Financial Crisis of 2007-2009 (Kacperczyk and Schnabl 2010) – *paper discussing the impact of various Fed programs on the CP market, including ABCP.*
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Kacperczyk,%20Marcin%20&%20Philipp%20Schnabl%20When%20Safe%20Proved%20Risky%20Commercial%20Paper%20during%20the%20Financial%20Crisis%20of%202007%20&%202009%202010.pdf>.

The Real Effects of Government Liquidity Provision: Evidence from the Commercial Paper Funding Facility (Li 2015), How Effective Was the Federal Reserve's Commercial Paper Funding Facility? Evidence from Stock Performance and Loan Provisions (March 25, 2014) – paper examining the effects of the CPFF and concluding that participation delivered value in two forms: (1) participants experienced improved stock performance; and (2) a positive spillover effect occurred as participants increased loans and lowered yields to their relationship customers.

SSRN. https://yfpsresourcelibrary.blob.core.windows.net/fcic/YPFS/Li2015_1.pdf.

Ranking of the 82 Borrowers under the Federal Reserve's Commercial Paper Funding Facility (van Deventer 2011) – paper providing information and analysis regarding usage of the CPFF.

<https://yfpsresourcelibrary.blob.core.windows.net/fcic/YPFS/VanDeventer,%20Donald%20Ranking%20of%20the%2082%20Borrowers%20Under%20The%20Federal%20Reserve%20Commercial%20Paper%20Funding%20Facility%2008-30-2011.pdf>

Federal Reserve Crisis Response E: Commercial Paper Market Facilities, YPFS Case Study 2015-1E-v.1 (Wiggins and Metrick, Unpublished) – case study examining the CPFF and other related programs adopted by the Federal Reserve during the crisis to calm the commercial paper markets.

<https://yfpsresourcelibrary.blob.core.windows.net/fcic/YPFS/Wiggins,%20Rosalind%20&%20Andrew%20Metrick%20The%20Federal%20Reserve%20Financial%20Crisis%20Response%20E%20The%20Term%20Asset%20Basket%20Securities%20Loan%20Facility%2002-01-2016.pdf>.

Temporary Guarantee Program for Money Market Funds (McNamara 2016) – YPFS case study discussing the Treasury-FRB efforts to backstop the money market funds sector in the midst of a run.

https://yfpsresourcelibrary.blob.core.windows.net/fcic/YPFS/sites_default_files_private_Cases_YPFS_Temporary-Guarantee-Program-for-Money-Market-Funds-13Jan16-v1.pdf.

Reports/Assessments

Board of Governors of the Federal Reserve System, Office of Inspector General. OIG 2010. *The Federal Reserve's Section 13(3) Lending Facilities to Support Overall Market Liquidity: Function, Status, and Risk Management*. Washington, DC: Board of Governors of the Federal Reserve System, Office of Inspector General, November 16, 2010. https://yfpsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRS_OIG_FRS_Lending_Facilities_Report_11-16-10_0.pdf.

CPFF LLC Financial Statements 2008–09 – audited financial statements of CPFF LLC for the year ended December 31, 2009, and for the period from October 14, 2008, to December 31, 2008.

https://yfpsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_LLC_FinStatements-08-09.pdf.

CPFF LLC Financial Statements 2009–10 – audited financial statements of CPFF LLC as of May 31, 2010, and for the period from January 1, 2010, through May 31, 2010, and as of and for the year ended December 31, 2009.

https://yfpsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_LLC_FinStatements-09-10.pdf.

CPFF Transaction Data – Excel files of transaction data regarding the loans made by the FRBNY to CPFF LLC and purchases of CP by CPFF LLC.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/CPFF_Transaction_Data.pdf.

Domestic Open Market Operations during 2008 – report prepared for the FR FOMC by the Markets Group of the FRBNY discussing various lending programs including the CPFF (January 2009).
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRBNY_Domestic_Open_Market_Operations_01_2009.pdf.

Domestic Open Market Operations during 2009 – report prepared for the FR FOMC by the Markets Group of the FRBNY discussing various lending programs including the reasons for implementing the CPFF and its relation to other programs focused on the CP markets (January 2010).
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRBNY_OMO_09.pdf.

Domestic Open Market Operations during 2010 – report prepared for the FR FOMC by the Markets Group of the FRBNY discussing various lending programs including the CPFF and characteristics and administration of the CP held (March 2011).
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRBNY_OMO_10.pdf.

FOMC Transcript (October 7, 2008) – transcript of FR FOMC conference call on October 7, 2008, approving the CPFF and discussing the reasons for its implementation and initial reactions to its announcement.
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FOMC-TranscriptOct72008.pdf>.

FOMC Transcript (October 28–29, 2009) – transcript of the FR FOMC meeting on October 28–29, 2008, discussing the CPFF, its reception, and impact.
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FOMC-2008b.pdf>.

FRBNY Annual Reports – consolidated audited financial statements of the FRBNY for the years 2008–11 incorporating CPFF data.
<https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRBNY-AnnualReportsFinancialStatements.pdf>.

Federal Reserve Board 95th Annual Report, 2008 – compilation of policy actions taken by the FR Board, minutes of the FOMC meetings, and litigation occurring in 2008.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRB_%20AnnualReport2008.pdf.

Federal Reserve Monthly Reports on Credit and Liquidity Programs and the Balance Sheet – reports of the FR Board prepared from June 2009 to August 2012 as part of its efforts to enhance transparency in connection with its lending and financial stability programs.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRB_ArchiveMonthlyReportCreditLiquidityPrograms.pdf.

Quarterly Report on Federal Reserve Balance Sheet Developments – reports containing similar information published subsequent to August 2012.
https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRB_Quarterly-Report-Balance-Sheet-Developments.pdf.

Federal Reserve Statistical Release (H.15) (October 20, 2008) – reporting on the assets and liabilities of CPFF LLC, consolidated with the assets and liabilities of the FRBNY, its sole beneficiary. The report also notes that the Federal Reserve Board's monthly H.4.1 statistical

release, “Factors Affecting Reserve Balances of Depository Institutions and Condition Statement of Federal Reserve Banks,” was modified to include information related to CPFF LLC. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRB_%20H.15ReleaseSelectedInterestRatesOctober202008.pdf.

Office of Inspector General Report (November 16, 2010) – audit report by the FR’s OIG that discusses the function and status of the various Fed lending programs, including the CPFF, and that identifies the risks in each facility. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/FRS_OIG_FRS_Lending_Facilities_Report_11-16-10_0.pdf.

Testimony of Chairman Bernanke (November 18, 2008) – testimony of the Fed chairman before the House Committee on Financial Services discussing the Fed liquidity programs including the CPFF. <https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Troubled%20Asset%20Relief%20Program%20and%20the%20Federal%20Reserve's%20liquidity%20facilities.pdf>.

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