United States: Central Bank Swaps to the Eurozone, UK, and Canada, 2001

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Abstract

The September 11, 2001, attacks on New York City damaged much of the infrastructure that powered US bank payments systems and the government securities market. The Federal Reserve responded quickly with several measures to inject liquidity and promote confidence in the domestic financial system. It also created or expanded swap lines with foreign central banks between September 12 and 14 to provide dollar liquidity to financial institutions with US dollar funding needs. The swap agreements allowed the European Central Bank (ECB) to draw up to USD 50 billion, the Bank of England (BoE) up to USD 30 billion, and the Bank of Canada (BoC) up to USD 10 billion in exchange for an equivalent value of their domestic currency. The central banks could then lend US dollars to institutions in their jurisdictions. After 30 days, the ECB and BoE agreements expired, and the BoC agreement reverted to its prior level of USD 2 billion. Ultimately, the ECB was the only institution to draw on the lines, but the Fed's timely response was praised for mitigating the immediate economic impacts of the attacks.

Keywords: currency swap lines, liquidity, crisis response

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1 This case study is part of the Yale Program on Financial Stability (YPFS) selection of New Bagehot Project modules considering central bank swap line programs. Cases are available from the Journal of Financial Crises at https://elischolar.library.yale.edu/journal-of-financial-crisis/.

2 Research Associate, YPFS, Yale School of Management.
Overview

The September 11, 2001, terrorist attacks on New York City destroyed part of the physical infrastructure of the US financial system and led major central banks across the world to prepare to provide liquidity as needed. The national central banks in the Eurosystem quickly provided domestic access to euros, but their banks faced a need for US dollar liquidity as well (ECB 2002). Within the US, there was a loss of operational capability stemming from damaged infrastructure and tragic loss of life at New York financial firms. The result was issues with trading, clearing, and settling a range of financial instruments, particularly government securities, and dysfunction in the interbank lending market (Lacker 2003). Some banks had excess reserves but were unable to find borrowers, while other banks awaiting funds were forced to borrow by taking overdraft positions with the Federal Reserve. The net effect was an increase in effective demand for reserves from the Fed. The Fed announced immediately on Tuesday morning that its discount window was available, but some foreign institutions with dollar funding needs were unable to access the window (Fed 2002b).

To indirectly get dollars to those foreign institutions, the Federal Reserve set up bilateral, unidirectional swap lines with the European Central Bank (ECB) for USD 50 billion, the Bank of England (BoE) for USD 30 billion, and the Bank of Canada (BoC) for USD 10 billion. The ECB line was established on September 12, the BoC line on September 13, and the BoE line on September 14 (Fed 2002b). Canada’s agreement represented an increase of USD 8 billion

Key Terms

<table>
<thead>
<tr>
<th>Participating Parties</th>
<th>Federal Reserve, ECB, BoE, BoC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Swap</td>
<td>Series of bilateral, unidirectional currency swap lines</td>
</tr>
<tr>
<td>Currencies Involved</td>
<td>The three non-US central banks could borrow USD in exchange for: EUR for the ECB, GBP for the BoE, and CAD for the BoC</td>
</tr>
<tr>
<td>Launch Date</td>
<td>ECB: Sept. 12, 2001; BoE: Sept. 14, 2001; BoC: Sept. 13, 2001</td>
</tr>
<tr>
<td>End Date</td>
<td>Each agreement ended 30 days after initiation</td>
</tr>
<tr>
<td>Date of First Usage</td>
<td>Only the ECB drew funds during the program; it did so on Sept. 12, 13, and 14</td>
</tr>
<tr>
<td>Interest Rate and Fees</td>
<td>Interest payable from the ECB to the FRBNY would be agreed to by the parties at the time they entered into the transaction, and no interest would be paid by the FRBNY to the ECB. No info was found on the other agreements</td>
</tr>
<tr>
<td>Amount Authorized</td>
<td>ECB: USD 50 billion; BoE: USD 30 billion; BoC: USD 10 billion</td>
</tr>
<tr>
<td>Peak Usage Amount and Date</td>
<td>ECB: peak drawing of USD 14.1 billion on Sept. 13, 2001; peak amount outstanding of USD 19.5 billion on Sept. 14, 2001; BoE and BoC: no usage</td>
</tr>
</tbody>
</table>

(continued)
over its existing USD 2 billion swap line. Each of the lines allowed the borrowing central bank to draw US dollars in exchange for an equivalent value of its respective currency (Fed 2001d; Fed 2001b; Fed 2001c). The Fed deposited dollars drawn through the swap into the account of the borrowing central bank at the Federal Reserve Bank of New York (FRBNY). The borrowing central bank could then lend dollars to its domestic financial institutions. At the same time, the corresponding foreign currency was deposited into and held in an FRBNY account at the borrowing central bank and was held there as collateral. At the expiration of the swap, the transaction was unwound and the currencies were returned (FRBNY 2001).

The ECB was the only institution to draw on its swap line. The ECB made draws on September 12, 13, and 14, with a peak amount outstanding of USD 19.5 billion on September 13 (FRBNY 2001). The ECB made the dollars it acquired available to national central banks (NCBs) within the Eurosystem. The NCBs could then provide dollar liquidity to their domestic banks. The ECB’s amount outstanding under the swap line returned to zero by September 17, and it made no further draws (ECB 2002).

The ECB and BoE swap lines and the temporary augmentation of the BoC line expired 30 days after initiation (FRBNY 2001).

**Summary Evaluation**

The Fed faced many challenges in the days following September 11. The chairman of the Federal Reserve, president of the New York Fed, and Secretary of the Treasury were all overseas at the time of the attack (Broaddus 2003; Ip et al. 2001). Nonetheless, the Fed acted quickly. At 9:44 am EST on September 11, less than an hour after the first plane hit the North Tower, the Fed put out a message via the Fedwire system to assure banks that the system was fully operational; it followed with a press release at around noon (Lacker 2003). Fed officials have argued that the quick response successfully protected the financial system by facilitating payments and helping smooth the uneven distribution of bank balances. McAndrews and Potter said that the Federal Reserve System’s use of discount window and intraday lending, and later open market operations, restored payments coordination and met liquidity needs (McAndrews and Potter 2002). By the end of September, trading volumes in the interbank market and elsewhere were close to normal, and the federal funds rate was trading around the target (Fed 2002b). A report to Congress took the view that the timely action in the days after the event helped contain the short-run economic effects of 9/11 on the overall economy (Makinen 2002).
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GDP (SAAR, nominal GDP in LCU converted to USD)</strong></td>
<td>$10.6 trillion in 2001</td>
</tr>
<tr>
<td></td>
<td>$10.9 trillion in 2002</td>
</tr>
<tr>
<td><strong>GDP per capita (SAAR, nominal GDP in LCU converted to USD)</strong></td>
<td>$37,134 in 2001</td>
</tr>
<tr>
<td></td>
<td>$37,998 in 2002</td>
</tr>
<tr>
<td><strong>Sovereign credit rating (five-year senior debt)</strong></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>Moody’s: Aaa</td>
</tr>
<tr>
<td></td>
<td>S&amp;P: AAA</td>
</tr>
<tr>
<td></td>
<td>Fitch: AAA</td>
</tr>
<tr>
<td>2002</td>
<td>Moody’s: Aaa</td>
</tr>
<tr>
<td></td>
<td>S&amp;P: AAA</td>
</tr>
<tr>
<td></td>
<td>Fitch: AAA</td>
</tr>
<tr>
<td><strong>Size of banking system</strong></td>
<td>$6.0 trillion in 2001</td>
</tr>
<tr>
<td></td>
<td>$6.2 trillion in 2002</td>
</tr>
<tr>
<td><strong>Size of banking system as a % of GDP</strong></td>
<td>56.2% in 2001</td>
</tr>
<tr>
<td></td>
<td>56.7% in 2002</td>
</tr>
<tr>
<td><strong>Size of banking system as a % of financial system</strong></td>
<td>28.9% in 2001</td>
</tr>
<tr>
<td></td>
<td>30.4% in 2002</td>
</tr>
<tr>
<td><strong>Five-bank concentration of banking system</strong></td>
<td>29.4% in 2001</td>
</tr>
<tr>
<td></td>
<td>30.9% in 2002</td>
</tr>
<tr>
<td><strong>Foreign involvement in banking system</strong></td>
<td>Data not available in 2001</td>
</tr>
<tr>
<td></td>
<td>Data not available in 2002</td>
</tr>
<tr>
<td><strong>Existence of deposit insurance</strong></td>
<td>Yes in 2001</td>
</tr>
<tr>
<td></td>
<td>Yes in 2002</td>
</tr>
</tbody>
</table>

*Sources: Bloomberg, World Bank Global Financial Development Database; World Bank Deposit Insurance Dataset.*
Key Design Decisions

1. **Purpose and Type:** The US Federal Reserve entered into bilateral, unidirectional swaps with the European Central Bank, the Bank of England, and the Bank of Canada to provide US dollar liquidity to those countries’ banks.

The Fed set up or expanded the three swap lines to make dollar liquidity available to foreign banks whose US operations had been disrupted. Since many of these banks did not have sufficient collateral prepositioned at the Fed’s discount window, the swap lines allowed them to borrow dollars from their home central banks instead (Fed 2002b).

The Fed’s swap line with the ECB allowed the ECB to make dollars available to national central banks within the Eurosystem. Those central banks could then lend dollars to the US branches of European banks. The Fed also created a swap line with the Bank of England and augmented the existing swap line with the Bank of Canada to help facilitate the settlement of US dollar transactions (Fed 2001c; Fed 2001d). These agreements were bilateral and unidirectional in that the purpose was to provide US dollars to foreign central banks, not to provide foreign currencies to the Fed (Fed 2002b).

2. **Part of a Package:** The swaps were part of the Fed’s broad response to the terrorist attacks. The Fed cut rates, opened the discount window, expanded open market operations, eliminated most fees and penalties on overdrafts, extended operating hours, and allowed check float to increase considerably.

Demand for reserves rose among depository institutions immediately after the September 11 attacks, and various issues with payment networks restricted supply (Fed 2002a).

At around noon on September 11, just a few hours after the attack, the Fed put out a press release reassuring the market that the discount window was available to help banks with liquidity issues (Fed 2001a; Lacker 2003). While that source of funds was used extensively by depository institutions, some US branches of foreign financial institutions faced challenges positioning collateral to secure credit at the discount window, which led to the opening of the swap lines (Fed 2002a).

In normal times, the Fed credits banks that deposit checks according to the normal schedule on which they collect funds from other banks, meaning the amount of credits in excess of collected funds is close to zero for an average period. Positive check float effectively creates a loan to the banking system, and in the days after September 11, the Fed chose to continue crediting checks on the normal schedule despite large delays in the collection of funds. This resulted in a net injection of funds into the banking system of USD 47 billion on Thursday, September 13, after averaging less than USD 1 billion per day during the first eight months of 2001 (Lacker 2003).

Along with extending operating hours, the Fed reduced or eliminated penalties on overnight overdrafts (Fed 2002b). From September 11 through September 21, the Fed waived daylight
overdraft fees for account holders and eliminated penalties on overnight overdrafts for depository institutions. The Fed charged depository institutions the effective federal funds rate on their overnight overdrafts, while non-depositories were charged the extended credit rate, 4% at the time, plus 55 basis points (bps) (Lacker 2003).

The Fed also allowed flexibility around bank capital ratios since some banks experienced temporary balance sheet growth as they lent to corporations that drew on credit lines to replace temporarily suspended commercial paper or had difficulty settling transactions. Settlement issues led the Fed to increase the security lending program limit from 45% of each issue to 75% starting on September 27 and continuing into October (Lacker 2003). This let primary dealers access collateral more easily.

During the week of September 11, the Fed used open market operations to provide reserves, with a peak injection of USD 81 billion on Friday September 14 (Fed 2002a). On Monday, September 17, the FOMC lowered the federal funds rate by 50 bps, to 3%, and cut the discount rate by 50 bps, down to 2.5% (Fed 2001e).

3. Legal Authority: The Fed has authority to enter into swap lines under section 14 of the Federal Reserve Act.

The Fed’s swap lines are authorized under section 14 of the Federal Reserve Act and are overseen by the Federal Open Market Committee (FOMC). The swap line with the Bank of Canada was an expansion of the ongoing bilateral swap line created in 1994 as part of the North American Framework Agreement (NAFA) (Fed n.d.). NAFA was established in 1994 between the US, Canada, and Mexico alongside the North American Free Trade Agreement (Fed 1994; Henning 2002).

The FOMC’s 2001 Authorization for Foreign Currency Operations, which it reaffirmed on January 30, 2001, authorized and directed the FRBNY to carry out the FOMC’s foreign currency directives and authorizations. Paragraph 2 of the 2001 Foreign Currency Directive expressly directed the FRBNY to maintain a unidirectional currency swap arrangement with the Bank of Canada for up to USD 2 billion. It also stated that any changes to such an agreement or any terms of a proposed new agreement “shall be referred for review and approval” to the FOMC (Fed 2001f). The FOMC met on September 12, 13, and 14, 2001, to establish the ECB, BoC, and BoE swap lines, respectively (Fed 2002b).

The FOMC’s 2001 Foreign Currency Directive, which it also reaffirmed on January 30, 2001, states in paragraph 2, part B, that the Federal Reserve System shall achieve its foreign currency goal of countering disorderly market conditions in part by maintaining unidirectional swap arrangements with certain foreign central banks (Fed 2001f).

4. Governance: Drawings under the arrangements were subject to approval by the Federal Open Market Committee (FOMC) if possible and the Foreign Currency Subcommittee or Chairman of the Committee if necessary.

The FOMC’s 2001 Procedural Instructions with Respect to Foreign Currency Operations, which it reaffirmed on January 30, 2001, outlined the FRBNY’s responsibility to clear foreign
currency operations with the FOMC, the FOMC’s Foreign Currency Subcommittee, and the Chairman of the Committee, who is also the chair of the Federal Reserve Board. The FRBNY’s general practice is to clear any swap drawings proposed by a foreign bank with that Subcommittee or the FOMC chairman if they are below the larger of USD 200 million or 15% of the overall swap arrangement size. Drawings exceeding that amount are generally cleared with the full Committee. The FOMC chair may approve a draw of any size if he or she believes that consultation with the full Committee or its subcommittee is not feasible in the time available (Fed 2001f). The FRBNY and ECB agreement specifically states that all draws must have prior approval of the FOMC or an authorized delegate (ECB 2001).

The Board of Governors reported in its 2001 Annual Report that, with the exception of an initial drawing by the ECB on September 12 of up to USD 12 billion, USD 5.4 billion of which was actually drawn, individual drawings were subject to approval by the FOMC’s Foreign Currency Subcommittee. The report provides no further explanation for why the September 12 draw was not approved by the Subcommittee (Fed 2002b).

Details of the swaps were included in the Fed’s annual report and report to Congress (Fed 2002a; Fed 2002b).

5. **Administration:** To facilitate a draw on the swap lines, the Federal Reserve Bank of New York made dollar deposits available in an ECB, BoE, or BoC account at the FRBNY in exchange for an equivalent value of foreign currency deposited at an FRBNY account at the respective central bank.

The ECB could request up to USD 50 billion, which the Fed would then make available as dollar deposits in an ECB account at the FRBNY in exchange for euro deposits of an equivalent value held in an FRBNY account at the ECB (Fed 2001b). At the end of the transaction, drawn US dollars, along with any interest, would be repaid to the FRBNY through the ECB account at the FRBNY. In the event that the US dollars were not repaid at the end of the transaction, the FRBNY could retain all or a portion of the euros in its account at the ECB (ECB 2001).

The BoE and BoC had similar arrangements but did not use them (Fed 2001c; Fed 2001d; FRBNY 2001).

6. **Communication:** The Fed and each borrowing central bank announced the swaps via press releases.

The Fed issued press releases on September 13 (ECB) and 14 (BoE and BoC) announcing the newly established swap lines and the temporary augmentation of the BoC line. In each case, the stated goal was to “facilitate the functioning of financial markets and provide liquidity in US dollars” (Fed 2001b; Fed 2001c; Fed 2001d). The ECB, BoE, and BoC each announced their swaps on the same date as the Fed.

The ECB described its use of funds as making dollar deposits available to central banks within the Eurosystem that could then use the funds to meet the liquidity needs of banks in the region (ECB 2002).
7. Eligible Institutions: The Fed made separate bilateral, unidirectional agreements with the ECB, BoE, and BoC.

The Fed entered into temporary swap agreements for up to USD 50 billion with the ECB and up to USD 30 billion with the BoE and increased the authorized amount of its existing swap agreement with the BoC from USD 2 billion to USD 10 billion (FRBNY 2001). The BoC’s preexisting swap agreement was part of the Fed’s participation in the North American Framework Agreement (Fed n.d.; Fed 1994; Fed 2002b).

The downstream purpose of the three agreements was to stabilize US financial markets by providing dollar liquidity to European, British, and Canadian banks with US dollar funding that had been disrupted by the attack (Fed 2002b).

While research hasn’t yielded any information on swap lines being considered with other central banks during the crisis, the FRBNY was authorized to transact in Canadian dollars, pounds sterling, euro, Danish kroner, Japanese yen, Mexican pesos, Norwegian kroner, Swedish kronor, and Swiss francs with foreign monetary authorities, the US Treasury, the US Exchange Stabilization Fund, the Bank for International Settlements, and other international financial institutions (Fed 2001f). At the time, the Fed also had an existing USD 3 billion swap line, which it did not choose to augment, with the Bank of Mexico as part of the Fed’s participation in the North American Framework Agreement (NAFA) (Fed n.d.; FRBNY 2001).

8. Size: The maximum draws under the agreements were USD 50 billion for the ECB, USD 30 billion for the BoE, and USD 10 billion for the BoC.

The ECB was eligible to draw up to USD 50 billion, the BoE could draw up to USD 30 billion, and the BoC could draw up to USD 10 billion (Fed 2001b; Fed 2001c; Fed 2001d). The BoC’s USD 10 billion swap line was a temporary expansion of USD 8 billion over the existing USD 2 billion line created in 1994 as part of the NAFA (Fed n.d.; Fed 2002a).

9. Process for Utilizing the Swap Agreement: Either party could desire to enter a swap transaction, at which point the two parties would agree on the necessary terms.

In the Fed and ECB swap agreement, either party could request to enter into a swap transaction, at which point the two would agree to the amount, the value date, the exchange rate, the maturity date, and the interest rate. The value date refers to the date on which the USD would be credited to the ECB’s account at the FRBNY and the euro amount would be credited to the FRBNY account at the ECB (ECB 2001).

10. Downstream Use of Borrowed Funds: Funds were offered to national central banks in the Eurosystem that could offer them to euro area banks.

The ECB was the only one of the Fed’s three counterparties to draw on its swap line. Funds borrowed were offered to national central banks of the Eurosystem and used to meet dollar liquidity needs of euro area banks (ECB 2002). The ECB’s draws were fully repaid by
September 17, 2001 (FRBNY 2001). The parties have not released further information about which national central banks of the Eurosystem borrowed dollars under the arrangement.

11. **Duration:** The parties to the swaps did not specify the duration of swap transactions conducted under the swap agreements; the ECB repaid all drawings within three business days.

The parties did not reveal the maximum duration of swap transactions conducted under the swap agreements. The ECB was the only counterparty to draw on its line. It unwound all of its transactions within three business days, with a peak amount outstanding of USD 19.5 billion on September 13, 2001 (FRBNY 2001).

See Figure 1 for details of the ECB’s swap usage.

**Figure 1: Dollar Liquidity Swap with the ECB**

<table>
<thead>
<tr>
<th>Date</th>
<th>Drawings</th>
<th>Repayments</th>
<th>Amount Outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/12/2001 (Wed)</td>
<td>5.4</td>
<td>0</td>
<td>5.4</td>
</tr>
<tr>
<td>9/13/2001 (Thu)</td>
<td>14.147</td>
<td>0</td>
<td>19.547</td>
</tr>
<tr>
<td>9/14/2001 (Fri)</td>
<td>3.915</td>
<td>14.147</td>
<td>9.315</td>
</tr>
<tr>
<td>9/17/2001 (Mon)</td>
<td>0</td>
<td>9.315</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: The BoE and BoC did not draw on their lines prior to expiration.

*Source: FRBNY.*

12. **Rates and Fees:** FRBNY transactions took place at market rates.

Unless otherwise authorized by the FOMC, FRBNY transactions in authorized currencies took place at market rates (Fed 2001f). In the ECB swap agreement, the US dollar/euro exchange rate for a draw would be based on the prevailing spot exchange rate, and that same rate would apply to the spot and forward legs of the transactions (ECB 2001).

Any interest paid by the ECB to the FRBNY would be agreed on when each swap transaction was entered into and would be calculated on a 360-day basis from, and including, the date on which the ECB and FRBNY entered the spot leg of the swap up to, but excluding, the maturity date. The FRBNY would not pay interest on the euro portion of any swap as long as the FRBNY held the euros in the FRBNY account at the ECB (ECB 2001).
13. **Balance Sheet Protection:** The structure of the swaps reduced risk by using the same exchange rate for each leg of the transaction and by holding the borrowing central bank’s currency as collateral.

The borrowing central banks had to provide their own currencies as collateral when drawing dollars (Fed 2001b; Fed 2001c; Fed 2001d). The foreign central bank’s promise to repay the draw acted as the main protection against changes in the value of the collateral, which only mattered in the event of a default. Short of a default, the dollars drawn under the swap would be repaid at the same exchange rate as the initial transaction, meaning the same amount of dollars were returned to the Fed, just with some interest or fee added on to it (ECB 2001).

14. **Other Restrictions:** Swap draws required Fed approval.

The parties did not describe other restrictions. The intention of the swaps was to allow foreign central banks to lend the dollar proceeds to local banks (FRBNY 2001). Each swap draw had to be approved by the FOMC or an authorized delegate, meaning the Fed had some control over the funds (ECB 2001).

15. **Other Options:** The Bank for International Settlements considered a series of dollar-denominated loans from US commercial banks that they would lend to European central banks.

During the brief period between the attack and the Fed’s September 13 announcement of an ECB swap line, the Bank for International Settlements (BIS) worked on arranging unsecured dollar-denominated loans from US commercial banks that the BIS would then lend to European central banks, but this was not needed once the ECB swap line was activated (Fed 2001b; Ip et al. 2001). According to then-Vice Chairman of the Fed Roger Ferguson, the Fed also considered an arrangement in which the Fed would deposit dollars with the BIS, and the BIS would then lend the dollars out to central banks, but officials thought the idea was too complicated (Fed 2006).

16. **Exit Strategy:** After 30 days, the ECB and BoE swaps expired, by which time market conditions were returning to normal. The BoC swap reverted back to an available amount of USD 2 billion.

The ECB and BoE swap agreements, and the temporary expansion of the BoC swap, expired after 30 days (Fed 2001b; Fed 2001c; Fed 2001d; Fleming and Klagge 2010). Market conditions had largely normalized by the end of September, with trading volumes in the interbank market and elsewhere close to normal, and the federal funds rate was trading around target. The BoC swap reverted to an available amount of USD 2 billion (Fed 2002b). As of September 1, 2022, the Federal Reserve has standing swap lines in place with the ECB, BoE, and BoC as well as the Bank of Japan and the Swiss National Bank (FRBNY n.d.). These swap lines allow each of the six central banks to access the currency of any of the other five central banks and are unlimited in size.
References and Key Program Documents

Implementation Documents.

Agreement detailing the swap between the Fed and the ECB. 
https://ypfs.som.yale.edu/node/21573

Federal Open Market Committee meetings describing the NAFA agreement between the US, Canada, and Mexico. 
https://ypfs.som.yale.edu/node/21634

Media Stories.

Speech covering the economic consequences of 9/11. 
https://ypfs.som.yale.edu/node/21496

Interview with former Vice Chairman Roger W Ferguson, Jr. 
https://ypfs.som.yale.edu/node/22302

Web page outlining central bank swap arrangements. 
https://ypfs.som.yale.edu/node/21539

Newspaper article describing the Fed’s response to the September 11 attacks. 
https://ypfs.som.yale.edu/node/21511

Press Releases/Announcements.

Press release announcing availability of the discount window. 
https://ypfs.som.yale.edu/node/21502
Press release announcing Federal Reserve and ECB swaps.
https://ypfs.som.yale.edu/node/2448

Press release announcing Federal Reserve and Bank of Canada swaps.
https://ypfs.som.yale.edu/node/21503

https://ypfs.som.yale.edu/node/2704

Press release describing FOMC action the week after 9/11.
https://ypfs.som.yale.edu/node/21504

Reports/Assessments.

https://ypfs.som.yale.edu/node/21498

Federal Reserve Board web page describing central bank swap lines.
https://ypfs.som.yale.edu/node/21501

Report to congress describing current Fed policy and economic outlook.
https://ypfs.som.yale.edu/node/21505

Annual report mentioning 9/11 response.
https://ypfs.som.yale.edu/node/21506

Minutes from the January 30-31, 2001, FOMC meeting.
https://ypfs.som.yale.edu/node/21500


Key Academic Papers.


