

The Federal Reserve as Global Lender of Last Resort, 2007-2010

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1. Introduction

On December 1, 2010, the Federal Reserve (the Fed) released previously confidential information about its special emergency programs during the financial crisis, as required by the Dodd-Frank Wall Street Reform and Consumer Protection Act. The Fed's disclosures included the names of the financial institutions and foreign central banks that received financial assistance from the Fed during the crisis, the amounts borrowed, the dates credits were extended, the interest rates charged, information about collateral, and a description and rationale of the credit terms under each Federal Reserve emergency facility.¹ While the Dodd-Frank law did not require the release of these details for crisis lending through the Fed's regular discount window, the Fed was forced to disclose this information by order of the Supreme Court on March 31, 2011 after Wall Street bankers and the Fed ran out of legal appeals to block publication.²

These disclosures revealed the extent to which the Fed had served as a *global* lender of last resort during the crisis, providing liquidity in U.S. dollars to private foreign banks and central banks with significant dollar-denominated exposures. The scale of the Fed's lending to foreign banks was truly extraordinary: private foreign banks took over 70% of the Fed's discount window loans during the crisis and about 65% of the loans from its other broad-based facilities like the Term Auction Facility (TAF) and the Commercial Paper Funding Facility (CPFF).

¹ The Fed's crisis transactions data are available at http://www.federalreserve.gov/newsevents/reform_transaction.htm.

² In 2008, Bloomberg News LP filed a request for the Fed's discount window data under the Freedom of Information Act. When the Fed denied the request, Bloomberg filed a lawsuit and then won a trial court ruling in 2009. The Fed appealed the decision but a federal appeals court handed Bloomberg another victory in March 2010. At that point the Fed conceded the issue. However, the verdict was appealed by the New York Clearing House Association, which represents 10 of the nation's largest banks. The U.S. Supreme Court rejected the appeal on March 21, 2011, breaking a policy of confidentiality that dates back to the Fed's founding. Going forward, the Dodd-Frank law stipulates that the Fed must release data on discount-window loans after a two-year lag. See Appelbaum 2011.

Moreover, the Fed's largest program, accounting for over 25% of its total assets, channeled over half a trillion dollars to foreign central banks via "Central Bank Liquidity Swap Lines"—bilateral agreements in which the Fed swapped dollars for foreign currency with other central banks who then used the dollars to provide liquidity to private institutions in their jurisdictions.³

Until the disclosures, the Fed had suppressed this information because it has no mandate to support foreign banks or serve as lender of last resort to the rest of the world, and because of the potentially explosive political reaction in Congress to what would appear as a massive foreign aid program for banks.⁴ On the day the Fed published the first installment of this detailed information on its Web site, news organizations from around the world touted the unexpectedly large participation of foreign banks in the various Fed programs. *The Financial Times* headlined with "European Banks Took Big Slice of Fed Aid" and noted that "foreign banks were among the biggest beneficiaries of the \$3,300bn in emergency credit provided by the Federal Reserve during the crisis...a revelation...that underlines the global nature of the turmoil and the crucial role of the Fed as the lender of last resort for the world's banking sector."⁵ *The New York Times* highlighted the global aspects of the Fed's crisis lending and quoted the response of socialist Senator Bernie Sanders (VT), author of the Dodd-Frank disclosure provision: "After years of stonewalling by the Fed, the American people are finally learning the incredible and jaw-dropping details of the Fed's multitrillion-dollar bailout of Wall Street and corporate America. Perhaps most surprising is the huge sum that went to bail out foreign private banks and corporations including two European megabanks--Deutsche Bank and Credit Suisse--

³ Goldberg, et al 2010.

⁴ Irwin (2013, 154) reports that "The scale of lending to foreign banks...was a closely guarded secret even by standards of the always secretive Fed...During the panic, this information was so closely held—and had it been known publically, so potentially explosive—that only two people at each of the dozen reserve banks were allowed access to it."

⁵ Hardin et al. 2010.

which were the largest beneficiaries of the Fed's purchase of mortgage-backed securities.”⁶

Three months later, when the Fed released the details of its discount window lending by order of the Supreme Court, *Bloomberg News* headlined with “Foreign Banks Tapped Fed’s Secret Lifeline Most at Crisis Peak.” Bloomberg reported that foreign banks accounted for “at least 70 percent of the \$110.7 billion borrowed” at the discount window at the peak of the crisis in October 2008.⁷

The Fed’s disclosures were unanticipated: Fed officials could not have known at the time of the crisis that they would later be required to reveal the transaction-specific details of their emergency liquidity operations. The Fed’s policy had always been to keep these the names of the borrowers and counterparties confidential, on the grounds there is a stigma attached to borrowing from the Fed during a crisis. As Fed Chairman Ben Bernanke put it, “Releasing the names of these institutions in real-time, in the midst of the financial crisis, would have seriously undermined the effectiveness of the emergency lending and the confidence of investors and borrowers.”⁸ But the disclosure requirements were not contemplated until after the crisis (and will only be required in the future with a two-year lag, as mandated by the Dodd-Frank law).⁹ Bernie Sanders’ disclosure amendment to the Dodd-Frank bill was introduced nearly two years after the Fed’s emergency lending peaked.¹⁰ Likewise, lending through the Fed’s discount window peaked nearly two years before the Supreme Court required the Fed to release data on its discount window loans during the crisis. It is unlikely that either the Fed itself or the banks that

⁶ Sewall and McGinty 2010.

⁷ Keoun and Torres 2011.

⁸ Available at <http://www.federalreserve.gov/generalinfo/foia/emergency-lending-financial-crisis-20111206.pdf>

⁹ As required by the Dodd-Frank law, the Fed is now releasing the transaction details of its discount window and open market operations with a two-year lag.

¹⁰ Sanders’ disclosure amendment (S.AMDT.3738) was proposed on May 6, 2010 and approved by a vote of 98-0 on May 11, 2010.

made use of the Fed's crisis programs could have anticipated these disclosures at the time they were making their crisis decisions.

I exploit the unanticipated nature of the disclosures at two levels of analysis. At the international level, I use the disclosed information to examine the motivations behind the Federal Reserve's global operations during the 2007-2010 crisis. I focus on the Fed's selection of foreign central banks to receive "Central Bank Liquidity Swap Lines," the bilateral agreements that enabled 14 central banks in Europe and elsewhere to funnel dollars to private banks in their jurisdictions. I focus on the swap agreements because the Fed had discretion over which central banks to select for these facilities. My findings suggest that political factors help account for the selection into swap agreements. In fact, controlling for a central bank's dollar liquidity needs as well as a number of other economic characteristics, I find that the best predictor of a central bank being selected by the Fed for a currency swap arrangement is the exposure of private U.S. banks to a foreign market (where "exposure" is measured as the share of the individual foreign market in the total consolidated foreign claims of U.S. money center banks).¹¹ This variable alone accounts for 59% of the variation in the dependent variable is robust to a number of economic and financial controls. The finding suggests that the Federal Reserve was motivated to serve as a lender of last resort for certain foreign countries at least in part because it served the interests of the major U.S. banks. This interpretation is consistent with Aizenman and Pasricha (2010), who focus more narrowly on the Fed's selection of four emerging markets for swap lines, and with McDowell's (2012) qualitative analysis of the Fed's international lending during the crisis.

The second way I use the disclosures follows from this finding but involves domestic politics. Within the United States, the disclosures contributed to a congressional backlash against

¹¹ "Money center banks" are defined as large private financial institutions located in the nation's financial centers that conduct almost all the nation's international lending.

the Federal Reserve's policy of confidentiality and its political independence. This reaction is important because the Federal Reserve is beholden to the U.S. Congress for its authorities and its independence and must therefore maintain a support coalition in Congress to protect itself from legislative challenges.¹² When the disclosures revealed that the Fed had provided more aid to foreign banks and central banks than to domestic banks, legislative pressure on the Fed intensified in Congress.¹³ This pressure culminated in Ron Paul's 2012 "Audit the Fed" legislation, which would end the Fed's confidentiality about the banks and countries it supports and reduce the Fed's monetary policy independence. The bill was very popular in the House of Representatives where it was approved on July 25, 2012 by a roll-call vote of 327-98.

I analyze voting on this bill and find that the influence of large U.S. money center banks extends to Congress by way of campaign contributions: contributions from money center banks reduce the likelihood that a representative will vote in favor of the bill by 15 percentage points, plus or minus 5%. This result establishes a connection between the international and domestic levels as private U.S. banks appear to have influence over both the Fed's global decisions and the congressional response to those decisions.

It may not come as a surprise that the Federal Reserve is responsive to the influence of private sector financial interests. After all, the formal structure of the Federal Reserve ensures that individuals with careers and backgrounds in the banking sector will hold leadership positions throughout the Federal Reserve System.¹⁴ Furthermore, private bankers have privileged access to the Federal Open Market Committee (FOMC) via the Federal Advisory

¹² Hetzel 1986; Kane 1982.

¹³ For a narrative of events, see Irwin 2013.

¹⁴ Adolph 2013; Faust 1996; Havrilesky 1995; Havrilesky and Gildea 1991; Woolley 1984.

Council.¹⁵ By the same token, there is substantial agreement that private financial institutions hold sway over Congress via campaign funding.¹⁶ In this paper, I extend the analysis to the Fed's *international* actions during the recent crisis and consider whether the interests of U.S. banks were reflected in the Fed's global choices as well as in the voting behavior of legislators in the responses to these choices.

In the process of analyzing the congressional response to the disclosures, I uncover a surprising new result of importance to the structure of the Federal Reserve: voting on the Audit the Fed bill marked a pronounced break with the past in terms of the legislator ideology and partisanship such that the Left is now positioning itself as the defender of the Fed (by voting against the bill) while the Right is attacking it for generating moral hazard on a global scale by giving bailouts to foreign banks. All but one Republican representative voted in favor of Paul's anti-Fed legislation while Democrats split about evenly (89-97), largely on ideological grounds. Focusing only on Democrats (which eliminates the concern that election-year presidential politics influenced member voting), I find that right-wing Democrats were as much as 67 percentage points more likely to vote "yes" on this bill than left-wing Democrats. In short, in the aftermath of the worst financial crisis since the Great Depression, the Left is now defending the Federal Reserve while the Right is challenging it to be more transparent, more accountable, and dramatically less "global".

The plan of the paper is as follows. Section 2 provides background on the financial crisis and a summary of the Fed's global lender-of-last-resort activities. Section 3 introduces the data,

¹⁵ The Federal Advisory Council was established in the Federal Reserve Act of 1913 specifically to provide the banking industry with a powerful voice in policy deliberations. The council is composed of representatives of primarily large banks appointed by the board of directors of each of the Federal Reserve banks. See Havrilesky 1990.

¹⁶ Mian, Sufi, and Trebbi 2010; Kroszner and Strahan 1999; Kroszner and Stratmann 1998.

models, and results of my analyses of the Fed's currency swap arrangements. Section 4 moves to the congressional level and provides analyses of voting on the Audit the Fed bill. Section 5 concludes with a discussion of the Fed's new support coalition in Congress and the implications for the structure of the Federal Reserve.

2. The Fed's Global Lending during the Crisis

The Federal Reserve Act of 1913 gave the Fed responsibility for both setting monetary policy and for maintaining the stability of U.S. financial markets. In the latter capacity, the Fed supervises U.S. banks (as well as foreign banks with branches in the U.S. that are members of the Federal Reserve System) and provides lender-of-last-resort services to these institutions during crises. During the 2007-2010 financial crisis, the Fed provided more than a trillion dollars in emergency loans to the financial sector to address the breakdown of interbank and other money markets and to avert the failure of individual firms of systemic-importance, like AIG. According to the General Accounting Office (GAO), which conducted a one-time audit of the Fed's emergency operations under the authority of the Dodd-Frank law, "the scale and nature of this assistance amounted to an unprecedented expansion of the Federal Reserve System's traditional role as lender-of-last-resort."¹⁷

The programs were unprecedented partly because of their international scope. The largest program, measured in terms of the peak dollar amount of loans outstanding, was the Central Bank Liquidity Swap Lines program (see **Table 1**). But other emergency programs, such as the Term Auction Facility (TAF) and the Commercial Paper Funding Facility (CPFF) were

¹⁷ United States GAO 2011, 1.

also tapped by foreign financial institutions via their branches in the United States.¹⁸ In fact, U.S. branches and subsidiaries of foreign institutions received more than half of the total dollar amount of TAF and CPFF loans made (see **Table 2, Table 3, and Figure 1**). Foreign banks were also heavy borrowers at the Fed’s discount window during the crisis. **Table 4** indicates that 15 of the 30 largest borrowers (measured by peak loan amount) at the discount window were branches or agencies of foreign banks. Overall, the Fed provided loans to banks from 26 foreign countries.

The proximate reason the Fed provided last-resort loans to non-U.S. banks was that foreign financial institutions experienced severe funding shortages in U.S. dollars after interbank markets froze up in October 2008.¹⁹ These dollar shortages were a direct outgrowth of the explosive growth of cross-border banking since 2000. As depicted in **Figure 2**, foreign banks, particularly European banks, began accumulating large amounts of dollar-denominated assets, including subprime Mortgage-Backed Securities (MBS), via the shadow banking system.²⁰ Dollar-denominated assets of banks outside the U.S. peaked at a whopping \$10 trillion before the crisis, an amount equal to the total assets of the U.S. commercial banking sector.²¹ Those were the dollar assets on their books. But foreign banks had a similar amount of dollar liabilities because they had funded their dollar asset positions in short-term wholesale markets, particularly by borrowing dollars from U.S. money market mutual funds. This led to the build-up of maturity

¹⁸ Foreign banks and bank holding companies operating in the U.S. are eligible for Federal Reserve services—including emergency services—under the principle of “national treatment,” or parity of treatment between domestic and foreign banks.

¹⁹ Shin 2012; Goldberg, et al. 2010; McGuire and von Peter 2009; Allen and Moessner 2010; Fleming and Klagge 2010.

²⁰ The shadow banking system is the collection of non-bank financial intermediaries that provide services similar to traditional commercial banks outside the purview of regulators. It includes hedge funds, money market funds, structured investment vehicles, and the off-balance sheet activities of investment banks.

²¹ Shin 2012.

and currency mismatches: given their reliance on U.S. short-term wholesale for dollar funding, foreign banks were vulnerable to losses on their long-dated and illiquid dollar-denominated subprime assets. When wholesale dollar funding markets tightened during the credit crisis--and then froze completely after the Lehman Brothers bankruptcy in October 2008--foreign banks could not roll over their dollar liabilities. Although the resulting dollar liquidity crisis affected both U.S. and foreign banks, it was particularly acute for foreign banks since they did not hold significant U.S. dollar deposits and relied more heavily on the wholesale and swap markets to fund their dollar-denominated assets. In short, the rapid expansion of cross-border borrowing and lending in U.S. dollars placed the Federal Reserve in the unprecedented position of having to provide dollar liquidity to banks throughout the globally-integrated financial system.

In response to the global dollar liquidity crisis, the Federal Reserve simultaneously established two programs: the Term Auction Facility (TAF) and the Central Bank Liquidity Swap Lines program. While the TAF addressed domestic dollar funding pressures, the Fed recognized that the new facility was unlikely to alleviate dollar funding pressures overseas since interbank lending was effectively frozen and foreign central banks' could not create dollars (typically, central banks lend to domestic banks in domestic currency). Although U.S. branches of foreign banks could borrow dollars from the Fed, many foreign banks could not. The Fed stepped in by offering dollar swap lines to foreign central banks, which enabled these central banks to provide dollar liquidity to banks within their jurisdictions. According to Bordo, "These swap lines essentially extended the Term Auction Facility's reach beyond U.S. borders by financing term dollar funding facilities for foreign banks."²²

²² Bordo et al 2012, 8.

The Fed's Federal Open Market Committee (FOMC) approved temporary swap lines with 14 central banks between December 2007 and October 2008 (**Table 5**). These central banks used the U.S. dollars obtained through the swap lines to make dollar loans to private financial institutions in their jurisdictions. The foreign central banks assumed the risk of losses on these dollar loans and paid the Fed interest.²³ **Figure 3** illustrates how these swap agreement worked. For example, in the first currency swap with the European Central Bank (ECB) on December 20, 2007, the Fed exchanged \$10 billion for an equivalent value of euros—€6.93 billion at the prevailing exchange rate of 1.442 dollars per euro—and the ECB then lent those dollars to banks in the Eurozone that were suffering from a dollar shortage. There was no exchange rate risk for the Fed since the exchange rate was fixed at the time of the agreement. Moreover, the ECB assumed all the credit risk on the dollar loans it made to private banks in the Eurozone. While the “tenor” (number of days until the swap matured) varied, this particular swap matured in 28 days and required the ECB to pay the Fed an interest rate of 4.65% during that period. At maturity, the ECB returned \$10 billion to the Fed and the Fed returned €6.934 billion to the ECB, closing out the transaction. The process was repeated until the dollar shortage crisis abated in early 2010. During that time, the Fed conducted 271 separate swap transactions with the ECB, totaling \$171 billion in currency swaps (**Table 5**).

Dollars outstanding to all 14 foreign central banks peaked at \$586 billion in December 2008, with the ECB accounting for about 80 percent of total dollars drawn (**Table 5**). At the peak, the temporary swap lines accounted for over 25 percent of the Fed's total assets.²⁴ By most accounts, the swaps were successful in channeling dollar liquidity abroad, signaling central

²³ Fleming and Klagge 2010.

²⁴ *Ibid*, 5.

bank cooperation, and calming markets.²⁵ The swap lines expired in February 2010. However, the Fed reauthorized the swap lines with five foreign central banks in May 2010 in response to strains in dollar funding markets associated with the Eurozone debt crisis. As the Eurozone crisis continues, five swap lines have been reauthorized, with the latest extension running to February 2014. **Figure 4** shows the outstanding value of the Fed’s dollar swaps to June 2013. I focus on the Fed liquidity swaps conducted during the subprime crisis because of their larger scale and broader scope: swaps arrangements peaked at nearly \$600 billion in late-2008 and involved central banks from nearly every region of the world.

How did the Federal Reserve determine which central banks to select for swap lines during the subprime crisis? We learn from the GAO audit mandated by the Dodd-Frank law that the FOMC had control over these decisions and consideration began once a foreign central bank requested a swap line: “The FOMC’s consideration of a new swap line arrangement generally followed a request from an interested foreign central bank, but not all requests were granted.”²⁶ Hence, establishing a swap arrangement required a *request* from a foreign central bank and *approval* by the FOMC. While the names of the central banks that were denied swap lines by the FOMC are not public knowledge, the GAO audit did reveal the criteria the FOMC said it used to evaluate these requests. Based on internal memorandums and communication with Federal Reserve Board staff, the GAO found that the FOMC’s approval of swap line requests “were generally based on the economic and financial mass of the country’s economy, a record of sound economic management, and the probability that the swap line would make an economic difference.” The GAO audit also noted that “the swap line arrangements were generally made with foreign central banks of important U.S. trading partners or global financial centers, such as

²⁵ Goldberg, et al. 2010; Baba et al. 2009; Obstfeld et al. 2009.

²⁶ United States GAO 2011, 118.

Switzerland, Japan, and England, based on global funding needs.”²⁷ Further insight into the selection of foreign central banks comes from FOMC member William Poole, President of the Federal Reserve Bank of St. Louis. Poole voted against establishing swap lines with the ECB and the Swiss National Bank on that the grounds that these central banks held large foreign currency reserves, presumably in dollars, that could be used to backstop dollar liquidity in Europe (*Minutes* 11 December 2007).

The broader point is that the Fed *selected* central banks for swap lines on basis of certain objective economic and financial considerations. Yet political exigencies may also have influenced the Fed’s list of criteria (Irwin 2013, 154-155). The Fed may have realized that revelation of its massive lending to foreign banks and central banks would smack of “foreign aid”—which is always controversial in Congress—and therefore tried to justify the swaps as being in the interests of the United States.²⁸ This could explain why the FOMC included a country’s importance as trading partner on its list of criteria. A “record of sound economic management” may also have been included for a similar reason: if the Fed had conducted a swap with a foreign central bank that was widely viewed as politically dependent and untrustworthy—say, the central bank of Peru or Russia—it might be hard to justify the swap to Congress. Then again, FOMC officials may simply have been concerned about the ability of foreign central bankers to carry out dollar liquidity operations on behalf of the Federal Reserve. In this view, which Irwin espouses, Bernanke and other FOMC officials viewed central bankers that had demonstrated competence in macroeconomic management as trustworthy.²⁹ In any case, the FOMCs selection criteria are more or less quantifiable and can therefore be evaluated

²⁷ Ibid.

²⁸ Milner and Tingley (2011) show that right-wing ideology has a large and significant negative effect on congressional voting on foreign aid legislation.

²⁹ Irwin 2013, 153-155.

empirically. In the analysis below, I control for these considerations in an effort to isolate the influence of private U.S. money center banks on the Fed's choice of central banks for swap agreements. Money center banks comprise the interest group that I expect to wield influence over the Federal Reserve's international credit policies during the crisis.

3. Correlates of the Fed's Central Bank Swap Arrangements

My measure of cross-country variation in the Fed's foreign lending decisions during the subprime crisis is SWAP LINE, an indicator variable equal to one if the Federal Reserve selected a country or central bank jurisdiction for a dollar swap line during the crisis. Fourteen central banks received swap lines from the Fed between December 2007 and October 2008 (**Table 5**). I draw on the FOMC's swap line selection criteria to estimate the economic, financial, and potentially political covariates of the Fed's foreign lending during the crisis. I also consider an interest group covariate: the loan exposure of U.S. money center banks to foreign markets. Previous research has shown that U.S. money center banks comprise a key constituency for international last-resort lenders such as the International Monetary Fund (IMF) and the U.S. Treasury Department's Exchange Stabilization Fund.³⁰ This is because such last-resort lending ensures that the countries in which these banks are highly exposed are protected under the lender's insurance umbrella.³¹

I expect that U.S. money center banks will have substantial influence over the Fed's international credit policies during financial crises. According to Woolley, "Bankers are the sole interest group with the combination of access and technical expertise required to successfully

³⁰ The U.S. Treasury Department's ESF was tapped to provide financial rescues to emerging market economies during the 1990s.

³¹ Gould 2003; Oatley 2002.

affect [Fed] policy choice.”³² But banks in the nation’s money center of New York City have special access, particularly when it comes to the Fed’s foreign policies, because the Federal Reserve Bank of New York (FRBNY) conducts all international operations for the Federal Reserve and, during the recent crisis, implemented all of the Fed’s emergency facilities.³³ Moreover, the FRBNY is also the largest (by assets) and most influential of the 12 regional Federal Reserve Banks and the only regional bank with a permanent vote on the FOMC. Private bankers elect two-thirds of the FRBNY’s Board of Directors and the FRBNY president--who is usually selected from a Wall Street bank--maintains close connections with bankers during his tenure. For example, when reporters from the *New York Times* examined Timothy Geithner’s personal calendar (obtained via a Freedom of Information Act request), they found that he “forged unusually close relationships with executives of Wall Street’s giant financial institutions” during his five years as president of the FRBNY.³⁴

In short, money center banks comprise the dominant constituency for the FRBNY. They maintain a formal role in selecting the FRBNY’s leadership and they have close informal connections to its president—arguably, the Fed’s most powerful international policymaker. These connections suggest that money center banks could have had influence on the Fed’s swap line decisions. But what *interests* do money center banks have in these swap arrangements?

Beyond their size, the crucial feature that distinguishes money center banks from other banks is that that engage in international lending. In fact, just eleven money center banks account for almost all the foreign loans extended by U.S. financial institutions. According to data from the Federal Financial Institutions Examination Council, the following money center

³² Woolley 1984, 28.

³³ United States GAO 2011.

³⁴ Becker and Morgenson 2009, A1.

banks accounted for 93% of all the consolidated foreign claims of U.S. banks in 2007: Bank of America Corp., Bank of New York Co., Citigroup, Deutsche Bank (Taunus Corp.), HSBC Holdings PLC., JPMorgan Chase, State Street Corp., Wachovia Corp., and Wells Fargo.³⁵

The concentrated nature of foreign lending suggests a simple hypothesis: U.S. money center banks would prefer to have the Fed extend swap agreements to countries in which they are most heavily exposed, all factors considered. That is, financial self-interest may have played a role in the selection of swap arrangements.³⁶ I argue that dollar swap arrangements were more likely in foreign markets where private U.S. banks were highly exposed because this is where swap facilities conferred the greatest benefits on the exposed U.S. banks. Without access to dollar funding via Fed currency swaps, private foreign banks needing to rollover their dollar liabilities would have been severely impaired, necessitating the abrupt forced sale of their dollar assets. This deleveraging of dollar assets would have exacerbated problems for U.S. banks, which had counterparty relationships with foreign banks.³⁷ As an agent of private U.S. banks, the Federal Reserve thus selectively targeted foreign central banks for bilateral swap arrangements, favoring those that were more important to the financial interests of U.S. banks and discriminating against those that were less important. The relevant implication is that not all central banks could expect help from the Federal Reserve during periods of global financial turmoil. The Fed favored foreign markets that were more important to the U.S., which are those where private U.S. banks have high loan exposures.

³⁵ Federal Financial Institutions Examination Council Statistical Release E.16, December 31, 2007 <http://www.ffiec.gov/E16.htm>

³⁶ McDowell 2012; Aizenman and Pasricha 2010.

³⁷ As McDowell (2012, 185) put it, “Ultimately, by implementing the swap programme, the Fed stepped in when wholesale markets failed and effectively delivered dollars to foreign central banks which then delivered the currency to their national banks, allowing them to continue servicing their dollar-denominated debt [to U.S. financial institutions].”

My measure of the interests of U.S. money center banks is U.S. BANK EXPOSURE, the consolidated claims of U.S. banks on individual countries divided by the consolidated claims of U.S. banks on all countries in December 2007.³⁸ These data highlight the role of large financial institutions located in the nation's money centers (i.e., "money center banks") because these large banks conduct almost all the nation's international lending. My argument is that U.S. money center banks benefit when the Fed provides dollar liquidity to foreign countries in which they are highly exposed. The bank exposure variable ranges from zero (indicating that U.S. banks had no financial claims on a country's financial and non-financial institutions in 2007) to maximum of 0.24 for the Eurozone (indicating that U.S. banks had extended nearly one-quarter of their total foreign loans to Eurozone institutions).

While it is not possible to observe money center bank influence directly, we can assess the degree which the Fed's selection of swap lines correlates with their interests. **Table 6** reports the results of probit regressions of SWAP LINE on U.S. BANK EXPOSURE and controls. The dependant variable takes the value of one for countries that the FOMC selected for dollar swap lines between December 2007 and October 2008, zero otherwise (see **Table 5**). Since the ECB received a swap line for all members of the currency union, I code a single observation for the ECB and sum (or average, where appropriate) covariate values of the 12 Eurozone member countries in 2007. The results show a positive and significant U.S.BANK EXPOSURE estimate across all four models, which is consistent with Aizenman and Pasricha's (2010) results for the smaller group of emerging market nations. In Model 1, this covariate alone accounts for 59% of the variation in the data. But the fit improves Models 2-4 and provides some evidence in support of the Fed's selection criteria. The set of controls is derived from the GAO's audit, during which

³⁸ Bank of International Settlements (BIS), Consolidated Banking Statistics, Table 9B, Foreign claims by nationality of reporting banks, immediate borrower basis.

FOMC members and Federal Reserve staff described the factors that shaped their selection of countries for swap lines. The following criteria were highlighted by Fed officials as increasing the chances a foreign central bank would be selected for a swap line:

- The economic and financial “mass” of the country or central bank jurisdiction
- Whether the country/jurisdiction was home to a global financial center
- The country’s or jurisdiction’s importance to the U.S. as a trading partner
- The central bank’s record of sound economic management
- The central bank’s foreign currency reserves
- The dollar funding needs of foreign private financial institutions

Controlling for these factors is important because many of these variables are correlated with U.S. BANK EXPOSURE (see **Appendix 1** for the correlation matrix). In Model 2, I control for a country’s “economic mass” with GDP (a country’s gross domestic product divided by total world GDP, in billions USD, 2007), and a country’s “financial mass” with LIQUID LIABILITIES (a country’s liquid liabilities divided by total world liquid liabilities, in millions of USD, 2007).³⁹ Liquid liabilities—aka M3—equals currency plus demand and interest-bearing liabilities of banks and other financial intermediaries. It is the broadest available indicator of the extent of financial intermediation and therefore a suitable proxy for a country’s financial importance or “financial mass”.

In Model 2, the estimate for GDP is positive and significant at the 10% level. This gives

³⁹ World Economic Outlook (WEO) Database and Beck et al (2000) Financial Structure Database. For the Eurozone, I sum the values of the twelve countries under the ECB’s jurisdiction in 2007.

some credence to the FOMC's claim that it considered the "economic mass" of a country (or central bank jurisdiction) when allocating swap lines. However, GDP is not significant in Model 3 and it is wrongly signed (but not significant) in Model 4. LIQUID LIABILITIES is significant in Models 2 and 3 but wrongly signed, given the FOMC's claim about how it allocated swap lines. It appears that countries with greater shares of the world's total financial intermediation were *less* likely to participate in a swap arrangement with the Fed. Perhaps financially-important countries were less likely to need (and therefore request) a swap line from the Fed. Or perhaps the Fed was less likely to grant such requests when they came from financially-important countries. Without knowing the full list of countries that approached the Fed for assistance, we can't discriminate between these accounts. But either way, the result cuts against the Fed's claim that it considered "financial mass" when it established swap agreements with central banks.

Models 2 and 3 introduce BILATERAL TRADE, which is U.S. bilateral trade with a country (imports plus exports) as a share of total U.S. trade (imports plus exports) in 2007.⁴⁰ The sign on this estimated effect of BILATERAL TRADE in both models is negative (but not significant), which cuts against the Fed's claim that swaps were more likely to be given to important U.S. trading partners. This is consistent with Aizenman and Pasricha's (2010) result for the smaller set of emerging market nations. The results suggest that the FOMC's argument about supporting countries that are important U.S. trading partners may have been an *ex-post* sop to Congress. In any case, there is no evidence that the Fed's foreign assistance to banks in other

⁴⁰ Data are from Barbieri and Keshk 2012.

countries was based on U.S. trade relationships.⁴¹

Models 2-4 controls for INFLATION, which is a proxy for the FOMC's concern with the competence of a central bank and its "record of sound economic management." When a central bank presides over stable and low inflation, the Fed may have been more likely to view it as a credible partner in extending dollar liquidity to local banks. INFLATION is measured as the annual percentage change in CPI inflation averaged over the previous decade (1997-2007).⁴² In all three models, the INFLATION estimate is negative and significant, suggesting that the FOMC did consider "sound economic management" as a criterion for selection. Countries with higher average inflation rates over the prior decade were less likely to receive a swap agreement with the Fed.⁴³ This is consistent with the characterization of foreign central banks as competent "subcontractors" for the Fed, providing dollar lender-of-last-resort services in foreign jurisdictions.⁴⁴

Models 2 and 3 also control for a central bank's foreign currency reserves with RESERVES, in line with FOMC member William Poole's concern that the Fed should not grant swap facilities to central banks with large international reserves. RESERVES are measured as a central bank's total international reserves (excluding gold) as a share of GDP.⁴⁵ Although the currency composition of official reserves is not available, it is acceptable to assume that currency reserves correlate closely with U.S. dollar reserves, since the dollar is the world's dominant

⁴¹ Substituting U.S. exports to a country as a share of total U.S. exports for bilateral imports plus exports (on the grounds that Congress tends to view international trade in mercantilist terms) produces very similar results.

⁴² Inflation data are from the IMF's International Financial Statistics.

⁴³ Alternative measures of central bank credibility, including various measures of "central bank independence" do not perform as well as the actual price-level data. These results are available on request.

⁴⁴ Obstfeld 2009.

⁴⁵ These data are from the IMF's International Financial Statistics, series RAXGFX.

reserve currency.⁴⁶ The estimates in Models 2 and 3 suggest that William Poole’s argument was relevant to selection: central banks with large official reserves were less likely to participate in Fed swap agreements. However, without knowing the names of all the central banks that approached the Fed for swap lines, we cannot infer whether large reserves reduced the likelihood that a central bank would request a swap line or whether large reserves reduced the odds the Fed would grant a swap line once it was requested.

The final criterion mentioned by the FOMC—private foreign banks’ “need” for dollar liquidity—is potentially the most important but data availability is limited to a smaller sample of countries. Models 3 and 4 controls for the “dollar funding needs” of private financial institutions in foreign countries with DOLLAR SHORTAGES, which is constructed from the Bank of International Settlements (BIS) Locational Banking Statistics following the method elaborated in Allen and Moessner (2010). The BIS collects data on the currency-specific claims and liabilities of banks for a subset of 39 BIS reporting countries.⁴⁷ Although this dramatically reduces the sample size in Models 3 and 4, it does provide a fairly accurate measure of “dollar liquidity needs”. Specifically, DOLLAR SHORTAGES is measured as the net outstanding U.S. dollar cross-border claims on BIS reporting banks and non-banks in a country/jurisdiction in December 2008, where “net” is defined as total dollar cross-border liabilities minus claims in all foreign and domestic currencies at the end of 2008. By this measure, the largest dollar liquidity shortage was in the United Kingdom (-\$153.6 billion), which was the largest borrower from the Federal Reserve during the crisis (**Table 5**). Since negative values indicate dollar shortages, I expect the

⁴⁶ The currency composition of official foreign exchange reserves for individual countries is kept strictly confidential by the IMF, although it does release global aggregates in its Currency Composition of Official Foreign Exchange Reserves (COFER) series. According to these data, the U.S. dollar composed 64% of global official foreign exchange reserves in 2007.

⁴⁷ Currency-specific banking data are not available *by country* from the BIS’s online database at <http://www.bis.org/statistics/bankstats.htm>. The BIS provided these data upon request.

estimated effect of DOLLAR SHORTAGES to be negative.

While the estimate of DOLLAR SHORTAGES is negative as expected in both models, it is significant only in Model 4, which drops BILATERAL TRADE and RESERVES in order to maximize sample size and substitutes GLOBAL FINANCIAL CENTER for LIQUID LIABILITIES as a proxy for international financial importance. GLOBAL FINANCIAL CENTER is an indicator variable equal to 1 if a country is home to a global financial center city.⁴⁸ The DOLLAR SHORTAGE estimate is negative and significant in this model, which accords with the Fed’s criterion: countries with “greater need” of dollar liquidity were more likely to get a swap line from the Fed. GLOBAL FINANCIAL CENTER also enters positively and significantly, which supports the Fed’s statements on this criterion.

The central point is that, despite the introduction of numerous controls and changes in the sample, the estimate on U.S BANK EXPOSURE remains positive and significance across all four models in **Table 6**. To get a sense of the magnitude of the effect, **Figure 5** plots the predictive margins and confidence intervals of receiving a Fed swap line from Model 3, holding covariates to their means while increasing U.S. BANK EXPOSURE from its minimum to its maximum value. The figure illustrates the substantively large effect of U.S. bank exposure on the probability of receiving a Fed swap line. When U.S. money center banks have \$1 billion in claims on a country’s residents, the chance of participating in a Fed swap is just 13%. But when U.S. banks hold \$41 billion in claims on a country’s residents, the probability of getting a Fed swap rises to 57%, a 44 percentage point increase. The loan exposure of U.S. banks appears to be a powerful predictor of Fed swap lines.

⁴⁸ The Global Financial Centres Index at <http://www.zyen.com> designates cities in 7 countries as “global financial centers”: Canada (Toronto), Germany/Eurozone (Frankfurt), Hong Kong, Japan (Tokyo), Singapore, Switzerland (Zurich), and the United Kingdom (London).

Overall, the results in **Table 6** reveal a remarkably consistent pattern: foreign central banks that participated in the Fed swap line program were in areas where U.S. banks held larger claims. In other words, the exposure of U.S. banks to a foreign country correlates strongly and positively with the Federal Reserve’s swap line decisions. This suggests that the private foreign banks that tapped the Fed’s swap lines for dollar liquidity had counterparty relationships with U.S. banks that overlap closely with U.S. banks’ foreign lending exposures.

4. Congressional Voting on Ron Paul’s “Audit the Fed” Bill

Immediately following the Federal Reserve’s court-ordered disclosure of the names and nationalities of the banks and central banks that had borrowed from the Fed, Ron Paul began plans for congressional hearings: “I am surprised and deeply disturbed to learn the staggering amount of money that went to foreign banks. These lending activities provided no benefit to American taxpayers, the American economy, or even directly to American banks.”⁴⁹ Paul’s efforts culminated in a bill that would make the Federal Reserve more transparent on a permanent basis: *The Federal Reserve Transparency Act of 2012* (H.R.459). This legislation, popularly known as “Audit the Fed”, was approved by the House of Representatives on July 25, 2012 and then sent to the Senate, where it is awaiting a place on the legislative calendar.⁵⁰ I analyze House voting on this bill to see if the influence of money center banks extends beyond the Fed to the political body that has power over the Fed: the U.S. Congress. I also explore the nature of the support coalition in Congress that backs the Federal Reserve and protects it from legislative challenges. Inasmuch as Congress created the Federal Reserve and conducts regular

⁴⁹ Felsenthal and Zargham 2011.

⁵⁰ Senate Majority Leader Harry Reid (D-NV) said he would keep the bill from coming to a vote, effectively blocking its progress in the Senate. See Peterson and Hughes 2012.

oversight of its congressionally-delegated authority, the Fed's vaunted political independence is overstated. The Fed is beholden to Congress and therefore must maintain a support coalition in order to protect its authority. So, in addition to examining the impact of private-sector banks, I also explore the characteristics of Representatives (and their constituents) that shape voting on the Audit the Fed bill.

The goals of this bill are to make the one-time Dodd-Frank Act disclosures a permanent feature of congressional oversight of the Fed and to extend the GAO's audit authority to the Fed's open market operations. According to the congressional report that accompanied the bill to the floor, the Dodd-Frank Act provided a one-time exception to legal restrictions that prevented the GAO from auditing the Fed in four key areas: "(1) Transactions for or with a foreign central bank, foreign government or international financing agency; (2) Deliberations, decisions, or actions on monetary policy matters, including discount window operations, reserves of member banks, securities credit, interest on deposits, and open market operations; (3) Transactions made under the direction of the Federal Open Market Committee; and (4) Any discussions or communications among or between members of the Federal Reserve Board of Governors and officers and employees of the Federal Reserve System related to the above."⁵¹ H.R.459 would remove these restrictions. Elijah Cummings (D-MD) wrote the minority opinion section of the report and argued that the bill would critically undermine the political independence of the Federal Reserve.⁵²

The bill was very popular in the House where the vote was taken under a procedure called "suspension of the rules." Suspension is typically used to pass non-controversial bills

⁵¹ Committee on Oversight and Government Reform report, CRPT-112hrpt607-pt1. <http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt607/pdf/CRPT-112hrpt607-pt1.pdf>

⁵² Ibid

since votes under suspension require two-thirds majority. The tally of 327-98 easily met this threshold. All Republicans except Robert Turner (R-NY) voted in favor of the bill. But Democrats were divided, with 89 Democrats joining Republicans to approve the bill and 97 voting against.

While election-year politics probably had some impact on voting, it is noteworthy that Republicans, the traditional supporters of the Fed's independence, voted *en masse* for the bill while Democrats, the party that usually attacks the Fed as an unaccountable power with incestuous relations with banks, lined up as the Fed's protector. In a striking indicator of this reversal, Democratic Whip Steny Hoyer (D-MD) implored Democrats to vote "no" on the grounds that the bill "impedes the independence of this critical institution...House Republicans cannot be allowed to hold our economy or our critical economic institutions hostage in order to further their extreme agenda."⁵³

The whip was not effective as almost half of the Democrats broke ranks and voted with Republicans. I analyze Democrats' vote choice on this bill with an eye toward gauging the influence of money center banks and identifying the personal and constituency factors that contribute to legislators' decisions. While previous research has shown that campaign contributions from money center banks shape vote choices in other areas, such as funding for the IMF and foreign aid, I extend this analysis to voting on the "Audit the Fed" bill.⁵⁴ My measure of bank influence is BANK CONTRIBUTIONS, operationalized as campaign contributions from money center banks' Political Action Committees (PACs) to representatives during the two election cycles prior to the vote, divided by total contributions a representative received from all

⁵³ Office of the Democratic Whip Steny Holler <http://www.democraticwhip.gov/content/daily-whip-tuesday-july-24-2012>

⁵⁴ Milner and Tingley 2011.

sources during these two cycles. My expectation is that representatives that are more dependent on banks for campaign contributions are more likely to the vote against H.R.459.

I identify “money center banks” from the FFIEC’s list of “Large Financial Institutions” that account for over 90% of all foreign banking claims held by U.S. banks (see above). The banks comprising this group are: Bank of America, Bank of New York, Citigroup, Deutsche Bank (Taunus Corp.), HSBC, JPMorgan Chase, State Street Corp., Wachovia Corp., and Wells Fargo. Deutsche Bank and HSBC are foreign-owned banks with branches in the United States and each has a PAC that contributes to congressional campaigns. This measure thus captures the role that money center banks play in Congress via contributions to campaigns.

Model 1 in **Table 7** reports results of a probit model regression of Democrats’ voting on H.R.459. The BANK CONTRIBUTIONS estimate is negative and statistically significant. Model 2 controls for the political “ideology” of representatives using the first dimension DW-NOMINATE score, which is derived from a spatial model of representatives’ individual roll-call voting histories. As Poole and Rosenthal (2000) explain, the first dimension can be interpreted as a representative’s position on government intervention in the economy. Values range from -1 to 1, with higher values indicating a more right-wing, anti-government ideology. The estimate in Model 2 suggests that right-leaning Democrats are more likely than left-leaning Democrats to support auditing the Fed.⁵⁵

This ideological finding is interesting for two reasons. First, it suggests that not all Republicans that supported the bill did so to harm President Obama’s chances in the upcoming

⁵⁵ House members’ ideology is at least partly a reflection of the ideology of House district constituencies. But separating member ideology from district ideology is difficult. I acknowledge that a member’s ideology, as measured by DW-Nominate, reflects both individual and district-level attributes. See Levendusky, Pope, and Jackman 2008; and Canes-Wrone, Cogan, and Brady 2002.

election: right-wing ideology probably mattered too. Second, it suggests that the revelations of the Fed's massive global operations during the crisis may have reversed ideological positions on the Federal Reserve, so that the Right now opposes the Fed for its internationalist, interventionist activities while the Left supports it for these very same reasons.⁵⁶

However, material factors may have contributed to the Right's shift in positions. For example, if older, home-owning constituents were especially hard hit by the crisis and also more likely to be right-wing, these estimates might be confusing constituent ideology with material motivations. Research on Tea Party adherents indicates that these right-wing constituents tend to be older (62 years of age on average), wealthier, and more strongly supportive of the Social Security and Medicare programs than moderate conservatives.⁵⁷ As retired homeowners living on savings, these constituents may have a material basis for criticizing the Federal Reserve. On the one hand, they may hold the Fed responsible for the housing crisis, since easy credit conditions early in the cycle facilitated the boom. The subsequent bust devastated older citizens who saw their primary nest eggs – their homes – plummet in value. On the other hand, the Fed's stimulus programs in the aftermath of bust have dramatically reduced the return on retiree savings. With deposit interest rates hovering near zero for several years, the Fed became vulnerable to attacks from older, more conservative constituents.

To control for the possibility that opposition to the Fed among right-leaning constituents is based on these material considerations, Model 3 includes SOCIAL SECURITY, which is the share of a district's population receiving OASDI benefits, and FORECLOSURE RATE, which is

⁵⁶ See Milner and Tingley (2011) for a similar argument about the negative effect of right-wing ideology on support for foreign aid, and for the Right's opposition to funding the international financial institutions.

⁵⁷ Skocpol and Williamson 2011.

the share of a district's private housing stock in foreclosure.⁵⁸ The estimates are both positively signed but not significant.⁵⁹ Given that estimated effect of DW-NOMINATE remains virtually unchanged, it is fair to conclude that ideology is driving representatives' voting, not the hardships endured by older constituents during the crisis. I consider the implications of this finding in the conclusion.

In Model 4, I control for additional factors to ensure that estimates on bank campaign contributions and member ideology are not spurious. BANK HQ is an indicator variable equal to 1 if a representative's district is home to the headquarters to one of the nation's eleven money center banks. I expected a negative sign since these banks opposed H.R.459. The estimate, however, is positive and but not significant. Note that contributions from banks remain negatively and significantly related to voting. CHAMBER SENIORITY counts the number of terms representatives have served in the House. The estimate is negative and significant, indicating that more senior Democrats were less likely to support the bill, in line with their party's whip. Nevertheless, the ideology estimate is hardly affected. FINANCE COMMITTEE is an indicator variable equal to 1 if a representative sits on the House Financial Services Committee.⁶⁰ Membership on this committee may be correlated with bank contributions since interest groups are known to bestow larger contributions on legislators with greater influence over their industries. The estimate is positive but not significant. Model 5 applies the same

⁵⁸ The source for the social security data is the U.S. Social Security Administration, Office of Retirement and Disability Policy, Office of Research, Evaluation, and Statistics, December 2010. http://www.ssa.gov/policy/docs/factsheets/cong_stats/2010/index.html. The foreclosure rate is from the real estate listing service Hotpads.com <http://hotpads.com/sites/Election/congressional-districts-all>

⁵⁹ The results (not reported) are nearly identical when the share of a district's population aged 65 and over is used in place of the share of social security beneficiaries. The two measures are highly correlated ($r = 0.85$).

⁶⁰ Data on seniority and committee membership are from Stewart and Woon 2011.

analysis to voting by all representatives, Democrats and Republicans. The estimates are very similar to those in Model 4.

Figures 6 and 7 presents computed marginal effects from Model 4 (Democrats only). **Figure 6** illustrates the predictive margins of BANK CONTRIBUTIONS on the probability of voting “yes” on Audit the Fed. According to the figure, there is a 58% chance that a Democrat will vote “yes” on the bill when getting a zero share of contributions from money center banks. However, a Democrat that gets just 1 percent of his total contributions from banks is 38 percentage points less likely to favor the bill, with a predicted probability of voting “yes” of 20%. Contributions from big banks seem to have large effects even when they comprise relatively small shares of representatives’ total receipts.

The same holds for member ideology. According to **Figure 7**, moving DW-NOMINATE from the value of the most left-wing Democrat (Jim McDermott, WA-7) to the value of the most right-wing Democrat (Heath Shuler NC-11) increases the odds of voting “yes” on the bill by 67 percentage points. Ideology also appears to have a large effect on voting to make the Fed more transparent. Note, however, that the direction of this effect is the reverse of traditional coalition patterns. The Right is now challenging the Fed to be more transparent, more accountable, and less beholden to banks while the Left is positioning itself as the defender of the Fed. I consider this historic reversal in the conclusion.

5. Conclusion

The Dodd-Frank law combined with a Supreme Court ruling to force the Federal Reserve to disclose nearly all borrower-specific information about its lending during the crisis. The disclosures revealed that the Fed had provided vast amounts of dollar liquidity to foreign banks and central banks—a consequence of the rapid globalization of banking in the new millennium

that left many foreign banks exposed to disruptions in short-term dollar funding markets. Had the Fed not supported foreign banks when these markets froze in 2008, the credit crisis in the U.S. would almost certainly have been worse. In a broader sense, the disclosures revealed that the Federal Reserve had become—by default—the lender of last resort to the *world's* most international private banks.

At the time they were making crisis decisions, Federal Reserve officials did not know they would have to reveal this borrower-specific information. In this paper, I exploited the unanticipated nature of the disclosures for two purposes. First, I used data from the disclosures to evaluate cross-country variation in the Fed's foreign lending. I created an indicator variable for the 14 central bank jurisdictions the Fed selected for dollar swap lines and regressed this variable on set of economic and financial variables that proxy for the Fed's selection criteria (as revealed by the GAO audit), plus a political-economy variable that captures the interests of U.S. money center banks: their exposure in a foreign market as a share of their total foreign exposure. While I found some support for the Fed's selection criteria, the factor that most strongly and consistently “predicts” the Fed's foreign lending is the extent to which large U.S. banks have financial claims on a country.

It is perhaps impolitic for the Fed to acknowledge the role that money center banks played in shaping its crisis decisions. Yet serving the interests of these banks is a formal component of the Fed's political organization. Banks elect the majority of the regional reserve banks' directors and the directors of the FRBNY which, in conjunction with the FOMC, manage the Fed's international operations and its crisis programs. But the Federal Reserve has a greater principal to whom it owes its existence: the U.S. Congress. Hence, the second way I exploited the disclosures was to examine the congressional response to them.

The revelations of the Fed's support for foreign banks and central banks prompted legislation in the House to make the one-time Dodd-Frank disclosures permanent, and to go beyond them in certain areas. Ron Paul's "Audit the Fed" bill would remove remaining limits on GAO audits of the Fed's operations, including its transactions with foreign central banks and its open-market operations, which might compromise the Fed's political independence. I analyzed voting on this bill with the aim of seeing whether global banks have influence over the Fed's ultimate principal by way of contributions to congressional campaigns. I found that voting against this bill is strongly correlated with the share of campaign contributions representatives receive from the 11 money center banks that account for nearly all foreign lending by U.S. banks. I also found something surprising and worthy of further analysis: Right-leaning Democrats strongly support auditing the Fed--apparently even at the risk of a politicizing monetary policy--while left-leaning Democrats oppose such changes to the Fed's structure.

With all but one Republican voting "yes", and 97 mostly right-wing Democrats joining them, the Fed seems to have fallen out of favor with the Right. Put another way, Ron Paul's anti-Fed ideas, which have long been considered to be on the fringe, appear to be moving into the mainstream. This is a break from the past since the Right has historically supported the Federal Reserve for its conservative commitment to monetary stability.

What is causing this historic reversal? While it is too soon to say with certainty, the analysis suggests that it is *not* being driven by the hardships that older, conservative home-owning Americans experienced during the crisis. My regressions show no correlation between voting to audit the Fed and district foreclosure rates, district social security beneficiaries, or the share of residents aged 65 and older in a district. This leaves open the possibility that the Dodd-Frank/Supreme Court disclosures themselves fueled the Right's ideological antipathy of the Fed.

The financial crisis downgraded monetary policy to a second-order concern for the Fed, which concentrated on restoring stability to the increasingly globalized financial sector. This shift in focus exposed the Fed to attacks from the right of the political spectrum, where people tend to see financial instability as *caused* by excessive government intervention in the economy. From this perspective, the Fed's emergency loans were "bailouts" that created the moral hazard that caused banks to take on too much risk in the first place. In addition, the disclosures revealed the Fed to be an institution committed to *global* financial stability, which touched another nerve on the Right. Details of the Fed's support for foreign banks and central banks antagonized right-wing legislators, who have long opposed "internationalism," foreign aid, and organizations like the IMF that backstop the international financial system.⁶¹

In short, the disclosures may have led the Federal Reserve to be associated with "globalization," "bailouts," and "excessive government intervention," thereby reversing the Right's traditional support for the central bank. Among Republicans, suspicion that the Federal Reserve's quantitative easing programs both improved President Obama's reelection prospects and imply higher future inflation also raised the ire of the Right. Yet support for annual audits of the Fed appears closely tied to the disclosures. For example, the Republican Party made Fed audits a central plank in its 2012 election platform: "Because the Federal Reserve's monetary policy actions affect both inflation and economic activity, those actions should be transparent. Moreover, the Fed's important role as a lender of last resort should also be carried out in a more transparent manner. A free society demands that the sun shine on all elements of government. Therefore, the Republican Party will work to advance substantive legislation that brings

⁶¹ Milner and Tingley 2011.

transparency and accountability to the Federal Reserve, the Federal Open Market Committee, and the Fed's dealings with foreign central banks."⁶²

Will the Right's opposition to the Federal Reserve persist beyond the current economic downturn and impinge on the Fed's independence? This was the pervasive question at the Fed's annual symposium in Jackson Hole, Wyoming in the fall of 2012.⁶³ My analysis suggests that the globalization of financial intermediation poses an important long-run political challenge for the Fed and its supporters. Inasmuch as foreign banks continue to hold substantial liabilities in U.S. dollars, the Federal Reserve will be on the hook to act as a global lender of last resort. This is evident today as the dependence of European banks on dollar financing and has led the Federal Reserve to extend its central bank swap arrangements to deal with dollar liquidity problems associated with the Eurozone debt crisis.⁶⁴ While its operations may be increasingly global, the Federal Reserve's legitimacy with the Right appears to end at the water's edge, leaving the Fed on the horns of a classic "globalization vs. domestic politics" dilemma.⁶⁵ With its political support in the United States dwindling, the Fed's continuing extension of liquidity services to non-U.S. banks will likely provoke greater anti-Fed sentiment from the Right.

⁶² Republican National Committee. 2012. "We Believe in America." Republican Platform 2012, p. 4. Downloaded from http://www.gop.com/2012-republican-platform_Committee/

⁶³ Pedro Nicolaci da Costa. "At Jackson Hole, a Growing Fear for Fed Independence." Reuters News Agency. September 2, 2012. <http://www.reuters.com/article/2012/09/02/us-usa-fed-politics-idUSBRE88109Q20120902>

⁶⁴ Ivashina, Scharfstein, and Stein 2012.

⁶⁵ Rodrik 2000.

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Table 1: Broad-Based Federal Reserve Emergency Programs Covered by the GAO Audit

<i>Broad-based programs</i>	Dollars, in billions		<i>Description</i>
	<i>Peak dollar amount outstanding</i>	<i>Balance as of 6/29/2011</i>	
TAF - Term Auction Facility (Dec. 12, 2007–Mar. 8, 2010)	\$493	\$0	Auctioned one-month and three-month discount window loans to eligible depository institutions
Dollar Swap Lines (Dec. 12, 2007–Feb. 1, 2010) ^a	586	0	Exchanged dollars with foreign central banks for foreign currency to help address disruptions in dollar funding markets abroad
TSLF - Term Securities Lending Facility (Mar. 11, 2008–Feb. 1, 2010)	236	0	Auctioned loans of U.S. Treasury securities to primary dealers against eligible collateral
PDCF - Primary Dealer Credit Facility (Mar. 16, 2008–Feb. 1, 2010)	130	0	Provided overnight cash loans to primary dealers against eligible collateral
AMLF - Asset-Backed Commercial Paper	152	0	Provided loans to depository institutions and their affiliates to finance purchases of eligible asset-backed commercial paper from money market mutual funds
CPFF - Commercial Paper Funding Facility (Oct. 7, 2008–Feb. 1, 2010)	348	0	Provided loans to a special purpose vehicle to finance purchases of new issues of asset-backed commercial paper and unsecured commercial paper from eligible issuers
MMIFF - Money Market Investor Funding Facility (Oct. 21, 2008 but never used)	No loans provided	0	Created to finance the purchase of eligible short-term debt obligations held by money market mutual funds
TALF - Term Asset-Backed Securities Loan Facility (Nov. 25, 2008–June 30, 2010)	48	13	Provided loans to eligible investors to finance purchases of eligible asset-backed securities

^a To deal with ongoing dollar liquidity shortages, dollar swap lines with the European Central Bank, the Bank of England, the Bank of Canada, and the Swiss National Bank were reopened in May 2010 and have been extended to February 2014. *Source:* United States General Accounting Office (2011).

Table 2: Largest CPFF Borrowers (U.S. dollars in billions)

Rank	Issuer of unsecured commercial paper or sponsor of ABCP issuer	ABCP	Unsecured commercial paper	Issuer total	Percent of total CPFF issuance
1	UBS AG (Switzerland)	0.00	74.50	74.50	10.10
2	American International Group	36.3	24	60.2	8.2
3	Dexia SA (Belgium)	0	53.5	53.5	7.2
4	Hudson Castle	53.3	0	53.3	7.2
5	BSN Holdings (United Kingdom)	42.8	0	42.8	5.8
6	The Liberty Hampshire Company	41.4	0	41.4	5.6
7	Barclays PLC (United Kingdom)	0	38.8	38.8	5.3
8	Royal Bank of Scotland Group PLC (United Kingdom)	24.8	13.7	38.5	5.2
9	Fortis Bank SA/NV (Belgium)	26.9	11.6	38.5	5.2
10	Citigroup Inc.	12.8	19.9	32.7	4.4
11	Natixis (France)	4.7	22.3	27	3.7
12	General Electric Co	0	16.1	16.1	2.2
13	Ford Credit	15.9	0	15.9	2.1
14	Bank of America Corporation	0	14.9	14.9	2
15	State Street Corporation	14.1	0	14.1	1.9
16	GMAC LLC	13.5	0	13.5	1.8
17	KBC BANK NV (Belgium)	9	2.3	11.3	1.5
18	ING Group NV (Netherlands)	0	10.9	10.9	1.5
19	Dresdner Bank AG (Germany)	5.1	4.9	10	1.4
20	Northcross (United Kingdom)	8.6	0	8.6	1.2
21	WestLB (Germany)	8.2	0	8.2	1.1
22	Merrill Lynch & Co	0	8	8	1.1
23	Allied Irish Bank (Ireland)	0	6.6	6.6	0.9
24	Bayerische Motoren Werke AG (Germany)	0	6.2	6.2	0.8
25	Handelsbanken (Sweden)	0	6	6	0.8
	All Others	24.9	61.8	86.7	11.80
	Total	342.3	395.9	738.3	100.00

Notes: Shaded rows indicate foreign financial institutions. Data are from United States General Accounting Office (2011), Table 20, p. 196. Borrowing is aggregated at the parent company level and includes borrowing by branches, agencies, subsidiaries, and sponsored ABCP conduits.

Table 3: Largest TAF Borrowers at the Parent Company Level

Rank	Parent company of TAF borrowing institution	Total TAF loans (Billions USD)	Percent of total
1	Bank of America Corporation	280	7.3
2	Barclays PLC (United Kingdom)	232	6.1
3	Royal Bank of Scotland Group PLC (United Kingdom)	212	5.5
4	Bank of Scotland PLC (United Kingdom)	181	4.7
5	Wells Fargo & Co.	159	4.2
6	Wachovia Corporation	142	3.7
7	Societe Generale SA (France)	124	3.3
8	Dresdner Bank AG (Germany)	123	3.2
9	Citigroup Inc.	110	2.9
10	Bayerische Landesbank (Germany)	108	2.8
11	Dexia AG (Belgium)	105	2.8
12	Norinchukin Bank (Japan)	105	2.8
13	JP Morgan Chase & Co.	99	2.6
14	UniCredit SpA (Italy)	97	2.5
15	Mitsubishi UFJ Financial Group, Inc. (Japan)	84	2.2
16	WestLB AG (Germany)	78	2.1
17	Deutsche Bank AG (Germany)	77	2
18	Regions Financial Corporation	72	1.9
19	BNP Paribas SA (France)	64	1.7
20	Sumitomo Mitsui Banking Corporation (Japan)	56	1.5
21	UBS AG (Switzerland)	56	1.5
22	HSH Nordbank AG (Germany)	53	1.4
23	Mizhuo Financial Group, Inc. (Japan)	51	1.3
24	Commerzbank AG (Germany)	51	1.3
25	Hypo Real Estate Holding AG (Germany)	47	1.2
	All others	1,051	27.5
	Total	3,818	100.0

Notes: Shaded rows indicate foreign financial institutions. Data are from United States General Accounting Office (2011), Table 30, pp. 231-32. Total borrowing is aggregated at the parent company level and includes borrowing by branches, agencies, and subsidiaries for foreign financial organizations.

Table 4: Largest Borrowers at the Fed's Discount Window, August 2007 to April 2010

Rank	Origination Date	Borrower	Maturity Date	Peak Borrowing (Billions USD)
1	10/1/2008	AIG	9/22/2010	61.00
2	10/29/2008	CPFF	1/27/2009	56.56
3	9/26/2008	BANK OF NY MELLON	9/29/2008	44.11
4	12/31/2008	DEXIA CREDIT LOCAL NY BR (Belgium)	1/5/2009	37.00
5	11/6/2008	DEPFA BK PLC NY BR (Ireland)	11/7/2008	28.50
6	3/28/2008	JPMORGAN CHASE BK NA	3/31/2008	28.50
7	10/6/2008	WACHOVIA BK NA	1/2/2009	23.00
8	10/6/2008	ROYAL BK OF SCOTLAND PLC NY B (United Kingdom)	10/7/2008	8.40
9	3/27/2008	BANK OF NY	3/28/2008	7.50
10	10/14/2008	SOVEREIGN BK	10/15/2008	7.26
11	9/29/2008	FORTIS BK SA/NV NY BR (Belgium)	9/30/2008	6.96
12	11/24/2008	US CENTRAL FCU	11/25/2008	6.00
13	9/17/2008	BANK OF SCOTLAND PLC NY BR (United Kingdom)	10/17/2008	5.00
14	9/19/2008	SOCIETE GENERALE NY BR (France)	12/18/2008	4.00
15	10/8/2008	MS CO	10/9/2008	3.63
16	5/28/2008	ERSTE BK OESTERREICHISCH NY BR (Austria)	6/6/2008	3.50
17	10/9/2008	MORGAN STANLEY BK NA	10/14/2008	3.25
18	6/30/2008	DEUTSCHE BK AG NY BR (Germany)	7/1/2008	3.04
19	3/28/2008	CALYON NY BR (France)	4/4/2008	3.00
20	9/16/2008	NORINCHUKIN BK NY BR (Japan)	12/15/2008	3.00
21	12/22/2008	WESTERN CORP FCU	12/23/2008	2.75
22	5/19/2008	HSH NORDBK AG NY BR (Germany)	8/15/2008	2.50
23	9/18/2008	LANDESBK BADEN WUERTTEMBERG NY (Germany)	10/16/2008	2.50
24	3/31/2008	RBS CITIZENS NA	4/1/2008	2.24
25	10/7/2008	COMMERZBANK AG NY BR (Germany)	1/5/2009	2.00
26	9/18/2008	WASHINGTON MUT BK	9/22/2008	2.00
27	6/20/2008	BANK OF AMER NA	6/23/2008	1.70
28	4/10/2008	BNP PARIBAS EQUITABLE TOWER B (France)	4/11/2008	1.64
29	9/22/2008	ABCP - JPMORGAN CHASE BK	9/29/2008	1.15
30	9/29/2008	BANK TOK-MIT UFJ NY BR (Japan)	10/8/2008	1.00

Notes: Shaded rows indicate foreign financial institutions. These data are from Bloomberg News, which compiled the Fed's court-ordered discount window data into spreadsheets and released them at <http://www.bloomberg.com/news/2011-12-23/fed-s-once-secret-data-compiled-by-bloomberg-released-to-public.html>.

Table 5: Federal Reserve Dollar Liquidity Swap Lines with Foreign Central Banks

Foreign Central Bank (date announced)	Number of Transactions	Peak Amount (Billions USD)	Peak Trade Date
European Central Bank (12/12/2007)	271	170.93	Oct 15 2008
Bank of England (09/18/2008)	114	76.31	Oct 15 2008
Bank of Japan (09/18/2008)	35	50.17	Oct 21 2008
Swiss National Bank (12/12/2007)	81	13.11	Jan 13 2009
Danmarks Nationalbank (09/24/2008)	19	10.00	Oct 24 2008
Sveriges Riksbank (09/24/2008)	18	10.00	Oct 15 2008
Reserve Bank of Australia (09/24/2008)	10	10.00	Sep 26 2008
Norges Bank (09/24/2008)	8	7.05	Jan 27 2009
Bank of Korea (10/29/2008)	10	4.00	Dec 2 2008
Banco de Mexico (10/29/2008)	3	3.22	Apr 21 2009
Bank of Canada (09/18/2008)	0	0	-
Reserve Bank of New Zealand (10/28/2008)	0	0	-
Banco Central do Brasil (10/29/2008)	0	0	-
Monetary Authority of Singapore (10/29/2008)	0	0	-

Notes: These data cover the swap agreements that ran between December 1, 2007 and February 1, 2010. Peak amount represents the largest dollar swap transaction under the arrangement. Peak trade date indicates the date the largest swap took place. The central banks of Canada, New Zealand, Brazil, and Singapore did not draw on their swap lines. These data are derived from the Fed's disclosures at http://www.federalreserve.gov/newsevents/reform_swaplines.htm

Table 6: Fed's Selection of Central Banks for Dollar Swap Lines

	(1) Swap Line	(2) Swap Line	(3) Swap Line	(4) Swap Line
U.S. Bank Exposure (% world)	0.070*** (0.020)	0.110*** (0.026)	0.102*** (0.031)	0.049*** (0.015)
GDP (% world)		98.117* (56.492)	50.128 (63.961)	-14.882 (20.244)
Liquid Liabilities (% world)		-71.434*** (21.541)	-59.348** (25.660)	
Bilateral Trade (% total U.S. trade)		-12.218 (15.422)	-4.053 (16.236)	
Inflation (ave 1997-2007)		-0.960*** (0.258)	-1.094*** (0.381)	-0.362** (0.146)
Reserves (% of GDP)		-2.879*** (0.955)	-3.642** (1.486)	
Dollar Shortages			-0.006 (0.005)	-0.030** (0.013)
Global Financial Center				4.299* (2.393)
Constant	-2.202*** (0.231)	0.629 (0.647)	2.311* (1.286)	-0.232 (0.628)
Observations	149	116	33	39
Pseudo R-Squared	0.59	0.79	0.75	0.62
P-Value	0.000	0.000	0.015	0.006
Log Pseudolikelihood	-18.85	-8.274	-5.459	-9.687
Wald Chi-Squared	12.38	32.12	17.26	16.08

Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The dependant variable is SWAP LINE which equals one if the FOMC selected a foreign central bank for a dollar swap arrangement, zero otherwise. Since the ECB received a swap line, I code a single observation for the Eurozone and then sum (or average, where appropriate) covariate values for its twelve member countries in 2007.

Table 7: House Voting on “Audit the Fed”

	(1) Dems	(2) Dems	(3) Dems	(4) Dems	(5) All
Bank Contributions	-71.374*** (26.214)	-98.493*** (28.541)	-94.135*** (28.700)	-100.912*** (35.028)	-95.293*** (27.059)
DW-Nominate		3.659*** (0.848)	3.618*** (0.880)	3.108*** (0.935)	3.544*** (0.551)
Social Security			1.683 (2.831)	1.840 (2.976)	1.651 (2.950)
Foreclosure Rate			13.335 (15.613)	12.174 (16.050)	12.332 (16.280)
Bank HQ				-0.046 (0.665)	-0.057 (0.663)
Chamber Seniority				-0.048** (0.021)	-0.045** (0.019)
Finance Committee				0.158 (0.323)	0.152 (0.306)
Constant	0.085 (0.107)	1.570*** (0.353)	1.201* (0.653)	1.313* (0.672)	1.487** (0.596)
Observations	186	185	185	182	416
Pseudo R2	0.025	0.117	0.121	0.143	0.518
P-Value	0.0064	0.0000	0.0000	0.0000	0.0000
Log Pseudo-likelihood	-125.6	-113.0	-112.5	-107.9	-108.4
Wald Chi2	7.413	26.95	26.59	35.28	59.09

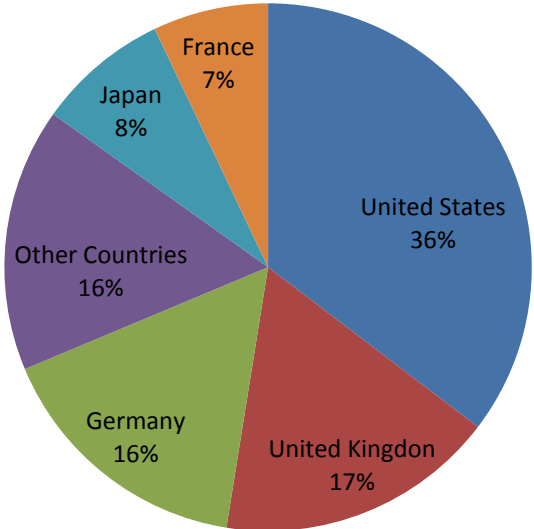
Robust standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The dependant variable is VOTE, a member’s vote on “Audit the Fed” where “yes” = 1 and “no” = 0. Probit Models 1-4 are for Democrats only. Model 5 is for all representatives.

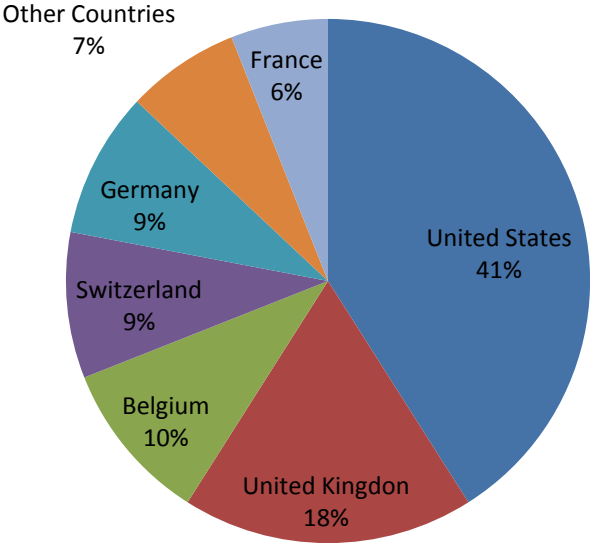
DW-Nominate measures the “left-right” ideology of representatives and ranges from -1 to 1, with higher values indicating a more right-wing ideology. See the text for the definitions of other variables.

Figure 1: TAF and CPFF Borrowing by Country of the Parent Company

Term Auction Facility (TAF)

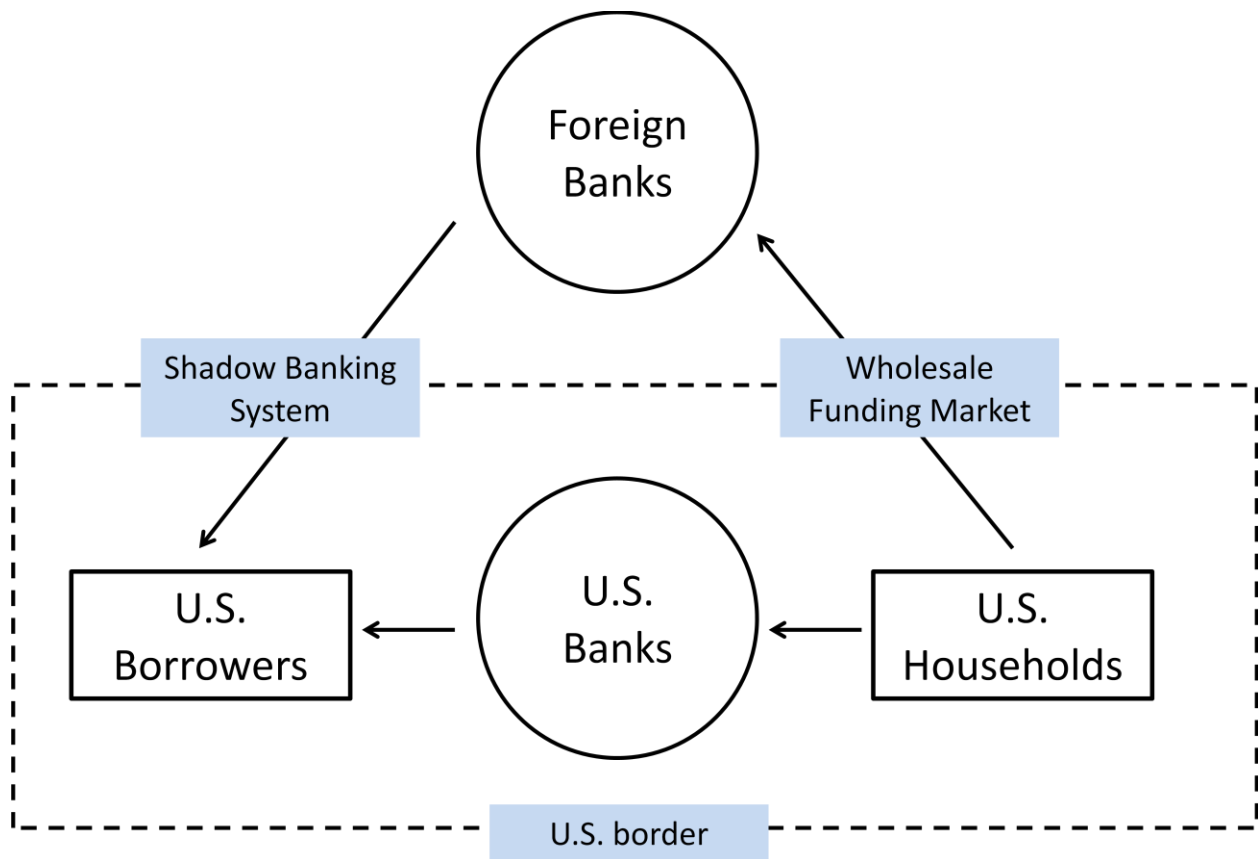


Commerical Paper Funding Facility (CPFF)



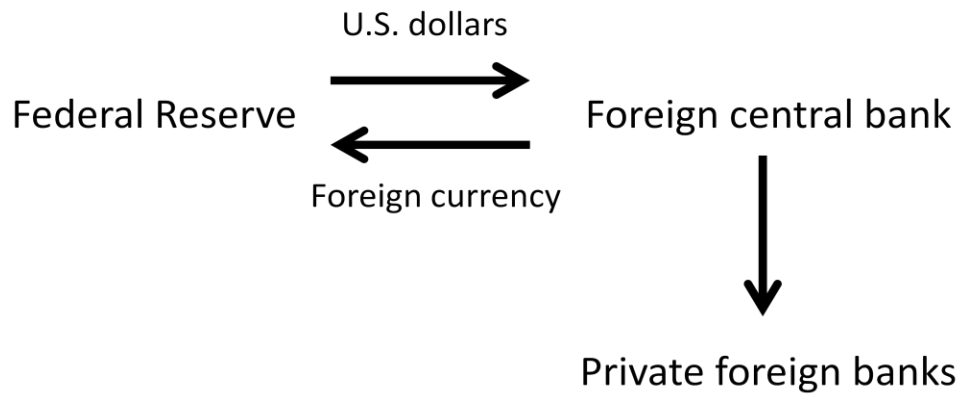
Source: Adapted from United States General Accounting Office (2011), Figure 10, p.134.

Figure 2: Cross-Border Banking and the Onset of the Dollar Liquidity Crisis



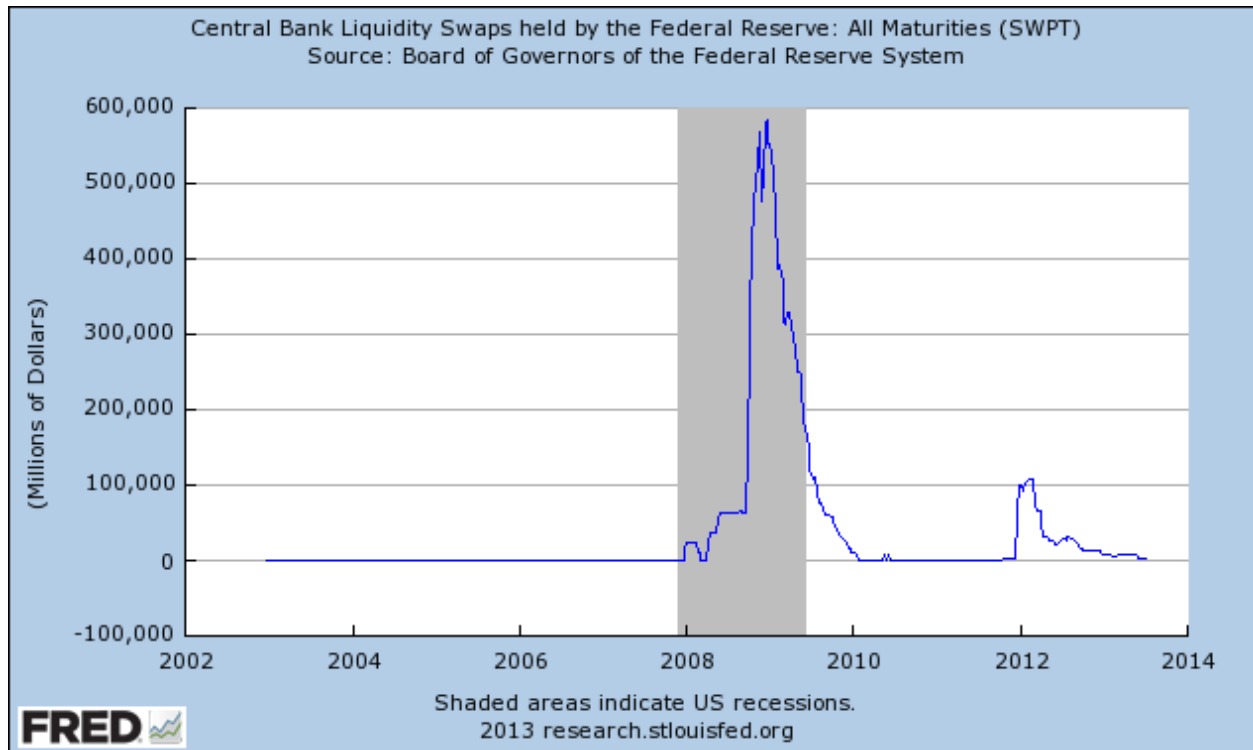
Notes: Adapted from Shin (2012). After 1999, foreign banks, particularly in Europe, began investing heavily in U.S. subprime assets via the shadow banking system. They funded these asset purchases by borrowing dollars in U.S. wholesale markets, particularly from U.S. money market funds. When these wholesale funding markets froze up in October 2008 after the Lehmann failure, foreign banks could not roll-over their short-term dollar liabilities. In response to this dollar liquidity crisis, the Federal Reserve served as global lender-of-last-resort, creating liquidity to meet the foreign demand for U.S. dollars.

Figure 3: Federal Reserve Dollar Swap Agreements



Note: In a swap agreement, the Federal Reserve temporarily provides a central bank with U.S. dollars in exchange for its currency at a fixed exchange rate and receives a fee. That central bank in turn lends those dollars to private institutions on a collateralized basis and assumes any credit risk.

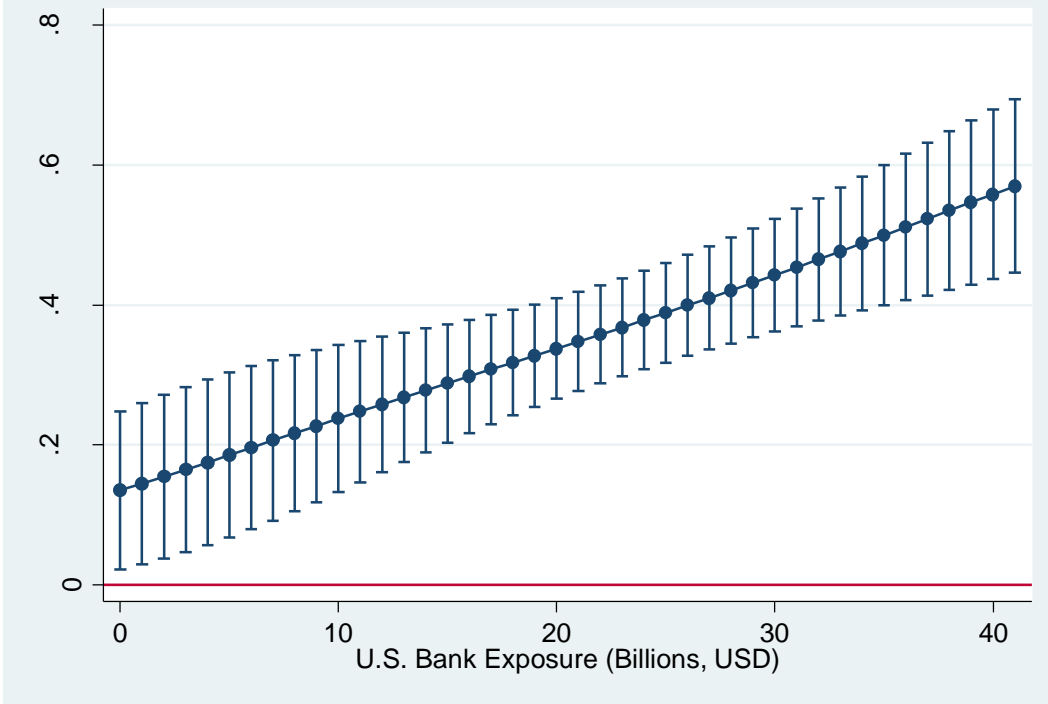
Figure 4: Central Bank Liquidity Swaps held by the Federal Reserve



Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis: *Central Bank Liquidity Swaps [SWPT]*; Board of Governors of the Federal Reserve System;

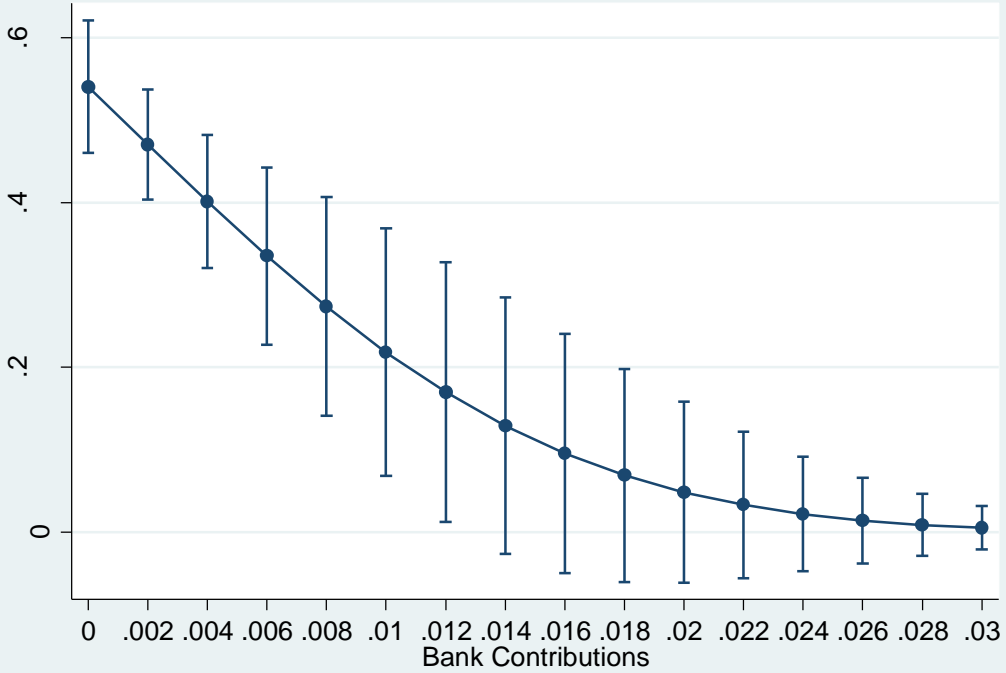
<http://research.stlouisfed.org/fred2/series/SWPT>; accessed July 7, 2013.

Figure 5: Marginal Effects of Bank Exposure on Swap Line Selection

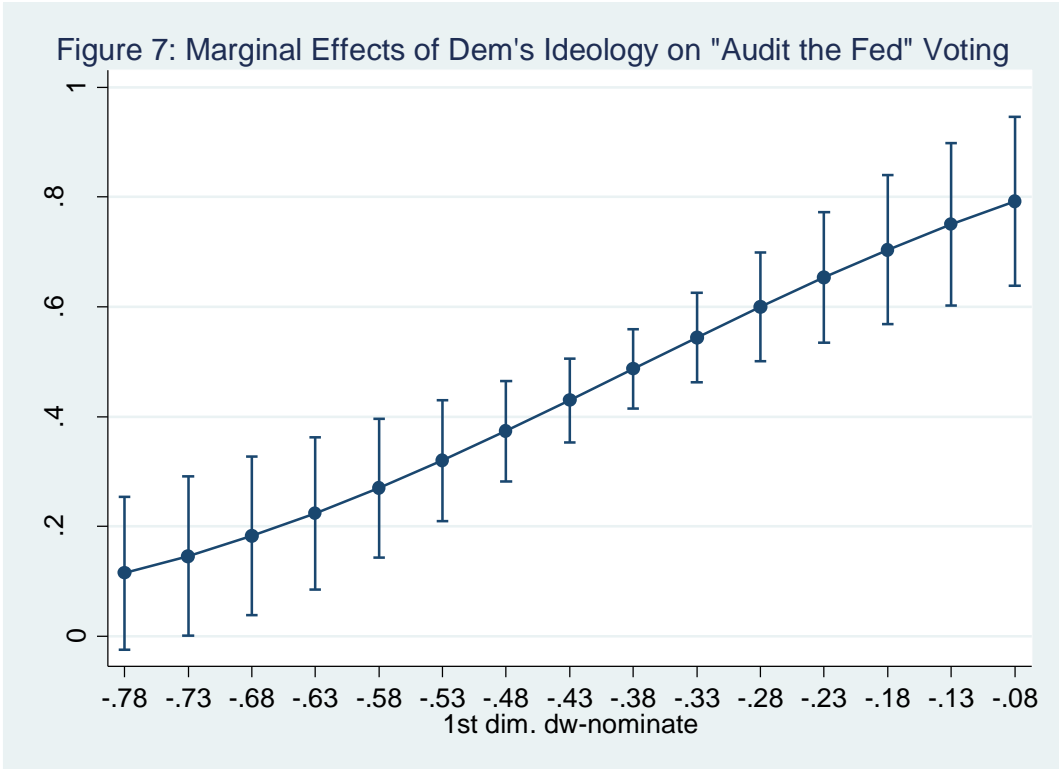


Notes: Predictive margins (with 95% confidence intervals) of a central bank receiving a Fed swap line using Model 3 from **Table 6**, holding covariates to their means while increasing U.S. BANK EXPOSURE from its minimum to its maximum.

Figure 6: Marginal Effects of Bank Contributions on "Audit the Fed" Voting



Notes: The figure displays the predicted marginal effects and 95% confidence intervals of BANK CONTRIBUTIONS on voting “yes” to Audit the Fed. The estimates are based on partial derivatives from Model 4 in **Table 7**.



Notes The figure displays the predicted marginal effects and 95% confidence intervals of BANK CONTRIBUTIONS on voting “yes” to Audit the Fed. The estimates are based on partial derivatives from Model 4 in **Table 7**.

Appendix 1: Correlation Matrix for the SWAP LINE Regressions

	US Bank Exposure	GDP	Liquid Liabilities	Bilateral Trade	Inflation	Reserves	Dollar Shortage	Global Fin. Center
US Bank Exposure	1							
GDP	0.8077	1						
Liquid Liabilities	0.6494	0.6482	1					
Bilateral Trade	0.5378	0.5534	0.5672	1				
Inflation	-0.1573	-0.1006	-0.1647	-0.1678	1			
Reserves	-0.2492	-0.1764	-0.0581	-0.0895	0.1238	1		
Dollar Shortage	-0.754	-0.7771	-0.2967	-0.3801	0.0066	0.3413	1	
Global Fin. Center	0.6531	0.455	0.5903	0.4939	-0.2089	0.0731	-0.1826	1