

The Capital Purchase Program

Chase P. Ross*

Yale Program on Financial Stability
Yale School of Management

Abstract

On October 14, 2008 U.S. policymakers announced a plan to purchase preferred shares in stressed U.S. banks and financial institutions to ensure the U.S. banking system had sufficient capital to withstand further economic deterioration. Using \$250 billion in capital from the Toxic Asset Relief Program (TARP), policymakers used preferred shares to inject \$205 billion into 707 U.S. financial institutions through the Capital Purchase Program (CPP). As of June 2016, the Treasury had received \$226.7 billion in repayments, dividends, interest and other income associated with the program.

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*chase.ross@yale.edu

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1 Overview

1.1 Background

Financial markets became increasingly volatile beginning in the summer of 2007 and sharply more so following the bankruptcy of Lehman Brothers on September 15, 2008 and the subsequent runs on AIG and the Reserve Primary Fund. Combined, the run on the securitized banking system escalated in September 2008 and financial institutions hoarded cash as uncertainty about the value of banks' assets pushed interbank funding rates up. Estimates at the time \$500 billion in losses within the mortgage market through 2008. ([Greenlaw et al.](#)).¹ The provision of private credit collapsed. Emergency liquidity provision by the Federal Reserve helped viable firms finance themselves, but policymakers and market analysts were concerned banks did not have sufficient capital to absorb additional losses. As a response, Congress passed the Emergency Economic Stabilization Act of 2008 (EESA) in early October 2008.² The EESA created the Toxic Asset Relief Program (TARP) with \$700 billion in funding.

Initially, policymakers designed TARP to purchase impaired assets from qualified regulated financial institutions. These purchases would prevent banks from selling their assets at fire-sale prices and using their limited capital buffers to absorb the losses. However, policymakers at the Treasury and Federal Reserve ultimately decided it was best to purchase equity directly from banks instead for three reasons: first, policymakers were concerned the process of setting up the purchasing program's logistics would take too long³; second, it was difficult to set appropriate prices for securitized assets with no market price⁴; and third, equity was a more efficient use of the limited TARP funds than asset purchases.⁵

Capital adequacy is vital for banks to intermediate credit. [Peek and Rosengren \(1997\)](#) shows that banks without sufficient common equity pull back from lending. When supervisors and banks are unable or unwilling to recapitalize the banking system, outcomes for a wide variety of macroeconomic indicators are dim: investment, output and unemployment all suffer. ([Hoshi and Kashyap, 2010](#)). Further, in the week leading up to the announcement of capital injections, banks struggled to finance their operations while interbank

¹The IMF estimated about \$700 billion in aggregate losses and write-downs within the U.S. banking system between 2007Q2 and 2010 Q2. ([Sovereigns, 2007](#)).

²Congress initially tried to pass the law, with a handful of differences, in late September but the bill did not pass. The S&P lost 8.81 percent that day.

³The Treasury expected it would take 45 days until the program could begin its purchases. ([Geithner, 2014](#)).

⁴For example, the Federal Reserve and JPMorgan struggled for many months to negotiate appropriate prices for the pool of Bear Stearns mortgage securities JPMorgan agreed to purchase in March 2008 as part of the Maiden Lane I transaction. ([Geithner, 2014](#)).

⁵For a bank with ten to one leverage, \$1 billion in equity investments is equal to \$10 billion in asset purchases.

33 funding rates increased to all-time highs: the TED spread⁶ peaked at an all-
34 time high of 458 basis points on October 10, 2008 as shown in Figure 1. Equity
35 markets reflected the stresses, as well: the week of October 6 was the worst
36 week for the S& P since 1933.⁷

37 The week of October 6 was particularly stressful for the U.S. banking sys-
38 tem. Notably, the SEC had banned short selling of financial stocks beginning
39 September 19 and expiring on Wednesday October 8. ([Securities Exchange](#)
40 [Commission, 2008](#)). At the same time, Morgan Stanley struggled to remain
41 viable as it was seen as the most vulnerable bank following Lehman. On
42 September 29, Mitsubishi UFJ agreed to purchase 9 percent of Morgan Stan-
43 ley at \$25.25, with the deal closing on October 13. Morgan Stanley executives
44 expressed frustration that the short-sale ban would expire just days before the
45 deal closed. After the ban expired, Morgan Stanley’s shares fell more than
46 60 percent and market analysts remained uncertainty whether the deal would
47 indeed the following week. Ultimately, Mitsubishi renegotiated the deal to
48 purchase a 21 percent stake for \$9 billion.⁸⁹ ([Robinson, 2008a](#)). Further, AIG
49 had depleted its \$85 billion bridge loan the same week and U.S. policymakers
50 had to set up an additional \$37.8 billion program. ([Geithner, 2014](#)).

51 The U.K. government set the precedent for direct capital injections on Oc-
52 tober 8, 2008 when U.K. policymakers unveiled a £400 billion bank assistance
53 package which included £25 billion to recapitalize the banking system, with an
54 additional £25 billion available if policymakers deemed necessary. The recap-
55 italization plan also included the creation of a guarantee scheme of £250 billion
56 for new wholesale debt from banks with a plan to boost Tier 1 capital in the
57 amount supervisors deemed appropriate. U.K. banks had until the end of the
58 year to submit capital plans and their plans to raise private capital. ([Larsen,](#)
59 [2008](#)). However, the panicky selling leading into the weekend of October 11
60 compelled U.K. policymakers to speed up the recapitalization process so they
61 could announce the terms of capital injections by market open on Monday Oc-
62 tober 13. The banks, Barclays in particular, sought extra time to raise private
63 capital and therefore avoid having the government as their largest shareholder.
64 Shortly thereafter U.K. regulators announced a £9 billion investment in RBS

⁶The TED spread is the spread between short-term U.S. Treasury bills (T) and eurodollar futures (ED).

⁷As an indication of the unprecedented level of uncertainty in financial markets, on Friday October 10 the Dow fell 680 points, rebounded 631 points, wiped out the rebound, then rebounded yet again 853 points but then ultimately gave up 129 points on the day. Similarly, the S&P lost 8 percent in the last hour of trading alone. ([Paulson, 2010](#)).

⁸Treasury Secretary Paulson, concerned Mitsubishi may pull back from the deal, sent the board of Mitsubishi a letter the earlier in the day which outlined the principles of their policy actions and that they intended to protect foreign investors, but did not explicitly mention the deal or Morgan Stanley. Within a few hours, Mitsubishi had agreed to the finalized deal. ([Paulson, 2010](#)).

⁹As the deal closed on Columbus day – a bank holiday – Mitsubishi was unable to wire the \$9 billion check. Morgan Stanley needed the cash on an emergency basis, so Mitsubishi gave Morgan Stanley a physical check for the \$9 billion. The check is likely the largest ever written. ([Sorkin, 2009](#)).

65 and Lloyds/HBOS preferred shares, giving the government a majority share
66 of RBS and more than 40 percent share of Lloyds/HBOS. Barclays agreed to
67 forgo its dividends through 2008 while it sought to raise an additional £10
68 billion privately. (Robinson, 2008b).

69 Shortly thereafter, U.S. policymakers announced direct capital injections
70 with TARP funds on October 14, 2008 through the so-called Capital Purchase
71 Program (CPP) with \$250 billion from TARP funds.

72 1.2 Program Description

73 This case divides the CPP into three distinct phases: the initial round of cap-
74 ital injection on October 13, Columbus Day, to 9 of the largest bank holding
75 companies (BHCs), the application-based CPP investments available to other,
76 mostly smaller, banks between October 2008 and November 2008, and Trea-
77 sury’s subsequent exit from its CPP investments which continues as of July
78 2016.

79 Columbus Day Capital Injections

80 Following the tumultuous week of October 6 – the worst week for the S&P since
81 1933, as well as notable stresses on Morgan Stanley and AIG – regulators de-
82 cided they needed to do something “dramatic.” (Paulson, 2010). Policymakers
83 had little time to develop a plan. In addition to developing a new wholesale
84 bank debt guarantee program, former President of the New York Federal Re-
85 serve Timothy F. Geithner noted “Treasury and Fed officials’] other challenge
86 that weekend was to figure out the structure of capital investments—what kind
87 of capital, who would get it, how to price it, and so forth. This would be
88 the most sweeping government intervention in the private markets since the
89 1930s, and we had two days to design it.” (Geithner, 2014). The plan they
90 ultimately developed was similar to one used in the UK, capital injections
91 through preferred shares alongside a guarantee¹⁰ on new wholesale bank debt;
92 in fact, U.S. policymakers had received a copy of the UK’s capital plan before-
93 hand and found the terms to be more punitive than the U.S. plan called for.
94 (Paulson, 2010).

95 Policymakers feared stigma surrounding the CPP would prevent the firms
96 which needed capital from using the program. The U.K. program was volun-
97 tary and only the weaker firms accepted capital – Barclays, HSBC, and Stan-
98 dard Chartered refrained from participation – and markets punished those
99 weak firms. However, no U.S. regulator had the ability to compel private fi-
100 nancial institutions to accept government capital. To address this, the CPP

¹⁰This guarantee was the Debt Guarantee Program (DGP), itself one of two compo-
nents of the Temporary Liquidity Guarantee Program (TGLP). The second component was
the Transaction Account Guarantee Program (TAGP). See the Yale Program on Financial
Stability’s paper on the program: [tk]. See also: [https://www.fdic.gov/regulations/
resources/tlgp/](https://www.fdic.gov/regulations/resources/tlgp/).

came with a 5 percent dividend for the first five years which regulators hoped was cheap enough to get all nine banks to participate. Further, to persuade the most important banks to join the program and therefore prevent the program from being stigmatized, policymakers arranged a meeting between the heads of the relevant regulatory agencies with the leaders of the most systemically important banks.

Hank Paulson, the U.S. Treasury Secretary, invited the leaders of the major nine U.S. banks¹¹ to meet on Monday October 13. Treasury did not select the banks invited to this initial CPP meeting; consistent with the final design of the CPP which called for each banks' application to be approved and overseen by their relevant federal banking regulator (FBR), the New York Fed and the OCC selected the banks. Regulators chose the banks based on their systemic importance rather than business line – the banks included the four largest commercial banks, three investment banks¹² and two clearing and settlement banks with systemic importance to underlying financial infrastructure.

Some bank leaders were reluctant to take the capital, but ultimately agreed to take the capital – even if they initially felt it was unnecessary. The CPP funds and the FDIC guarantee of new wholesale bank debt were a joint package, banks could not choose one or the other. (Geithner, 2014). At its core, the program depended on whether the strongest and most systematically important banks would join the program, and by calling the leaders of these banks together regulators were able to convince them of the value of participation. Table 1 lists the amount of capital investment in each of the nine banks as determined on Columbus Day.

A day before the CPP's announcement on October 14, Assistant Secretary Neel Kashkari announced that Treasury would pursue a standardized program to purchase equity across a wide set of financial institutions. (Bayazitova and Shivdasani, 2012). Thus, leaks emerged about the nature of the meeting and markets responded positively – the S&P had its largest one day point increase to date. The program was formally announced the next day on October 14, 2008. The press statement announcing the program noted, “Nine large financial institutions already have agreed to participate in this program, moving quickly and collectively to signal the importance of the program for the system. These healthy institutions have voluntarily agreed to participate on the same terms that will be available to small and medium-sized banks and thrifts

¹¹These banks included JP Morgan, Bank of America, Citigroup, Wells Fargo, Goldman Sachs, Morgan Stanley, Merrill Lynch (although Bank of America was acquiring it), State Street and Bank of New York Mellon.

¹²Bank of America had agreed to purchase Merrill Lynch on September 15, 2008 with the transaction closing in the first quarter of 2009. Additionally, both Morgan Stanley and Goldman Sachs converted from independent investment banks to bank holding companies on September 21. The two converted to BHCs for similar reasons: the “market views oversight by the Federal Reserve and the ability to source insured bank deposits as providing a greater degree of safety and soundness... [Goldman Sachs] view[s] regulation by the Federal Reserve Board as appropriate and in the best interest of protecting and growing our franchise across our diverse range of businesses.” (Goldman Sachs, 2008).

across the nation.” (U.S. Treasury, 2008a). In sum, Treasury allocated \$250 billion from TARP to the CPP, with \$125 billion allocated to the first nine banks and the remainder available through the application-based program.

The following summarizes the key features of the CPP program, which are discussed in detail below:¹³

- Preferred investment of 1 to 3 percent of risk-weighted assets (RWA) to qualified financial institutions (QFIs).
- 5 percent dividend for first 5 years, 9 percent after.
- QFIs included U.S. BHCs and banks; excluded foreign institutions or U.S. branches or agencies of foreign firms.
- Included 10-year warrants with option for Treasury to purchase amount equal to 15 percent of preferred equity.
- Various compensation and management restrictions (increased in February 2009).
- To exit preferred equity must be redeemed in full with “qualified equity offering” with regulators’ approval
- After repayment of preferred, firms could purchase back warrants at fair market price.
- If redeemed before January 2010 firms would get a discount on the warrants.

Eligibility Qualifying financial institutions (QFIs) were eligible to apply to the CAP. QFIs included BHCs, financial holding companies, insured depository institutions, and savings and loan holding companies, that were organized and operating in the United States, and deemed viable by the appropriate federal banking agency. Financial institutions controlled by foreign entities were ineligible. S corporations and mutual depository institutions were ineligible, but were eligible for another program. Public firms electing to participate must have submitted an application to their primary federal banking regulator before November 14, 2008. (Morrison Foerster, 2009a) and (Treasury, 2008c). The Treasury noted the program was not “first come first served” in that Treasury had sufficient capital to allocate from TARP for all QFIs which chose to participate.

Preferred Terms The CPP purchased preferred shares from qualified financial institutions (QFIs) in the amount of 1 to 3 percent of risk-weighted assets or \$25 billion, whichever was less. The CPP shares were non-voting senior preferred shares except “on matters that could adversely affect the shares.” (U.S. Treasury, 2008a). The shares carried a 5 percent dividend for 5 years and then increased to 9 percent thereafter. The preferred shares would count

¹³See Morrison Foerster (2009a).

174 towards the firm's Tier 1 capital¹⁴, and was senior to common equity and pari
175 passu with existing preferred shares. The CPP shares were callable after 3
176 years and Treasury was able, at any time, to transfer the shares to a third
177 party.

178 Dividends were due quarterly, and if a participating institution did not
179 pay dividends in full for more than 6 quarterly periods Treasury could appoint
180 two directors. Once the institution paid dividends for 4 consecutive quarters
181 Treasury would remove its directors. The shares had a liquidation preference
182 of \$1,000 per share, or higher if necessary given the authorized preferred stock.
183 Additionally, QFIs with CPP shares were not allowed to issue dividends for
184 the 3 years following the CPP investment. The CPP also required Treasury's
185 consent before any share repurchases other than would normally occur or for
186 benefits. In the case that QFIs had existing covenants or other limitations on
187 issuance – for example, anti-dilution protections on existing preferred shares
188 – firms had 30 days after approval of the program to handle any necessary
189 corporate actions. (Morrison Foerster, 2008).

190 **Warrants** In addition to Treasury's purchase of preferred shares, Treasury
191 would also receive 10-year warrants equal to 15 percent of the preferred CPP
192 investment. The warrants would come with a strike price equal to the average
193 price of the firms' common stock in the 20 days preceding the issuance of
194 the CPP preferred shares. In the case shareholders withhold consent on the
195 warrants the warrant's strike price would decrease 15 percent per 6 months
196 up to a maximum 45 percent discount. (U.S. Treasury, 2008a). Treasury did
197 not receive warrants if the CPP investment was less than \$50 million or if the
198 QFI was a certified Community Development Financial Institution. (Morrison
199 Foerster, 2009a).

200 **Redemption** Participating CPP institutions must redeem the preferred CPP
201 shares with a qualified equity offering of any Tier 1 perpetual preferred or com-
202 mon stock. (U.S. Treasury, 2008a). A qualifying equity offering is the sale of
203 Tier 1 qualifying perpetual preferred or common stock for cash. Within the
204 first 3 years of the CPP investment the proceeds of the offering be at least 25
205 percent or more of the CPP preferred investment, and after 3 years can be any
206 amount at any time. Consent of the primary federal banking regulator is re-
207 quired before any qualifying equity offering. Repayment If the QFI redeemed
208 its preferred shares before December 31, 2009, Treasury reduced the number of
209 common shares associated with its warrants in half. The QFI could purchase
210 any other equity securities or warrants held by Treasury at fair value after the
211 QFI had redeemed its CPP preferred shares in full. (Treasury, 2008c) and
212 (Morrison Foerster, 2008).

¹⁴The Federal Reserve's interim final rule from October 17, 2008 allowed without restric-
tion the use of CPP preferred shares within Tier 1 capital. (Board of Governors of the
Federal Reserve System, 2008).

Executive Compensation Restrictions The CPP as announced four main compensation, requiring financial institutions (quoted from [U.S. Treasury \(2008a\)](#)):

1. “ensur[e] that incentive compensation for senior executives does not encourage unnecessary and excessive risks that threaten the value of the financial institution,”
2. “required clawback of any bonus or incentive compensation paid to a senior executive based on statements of earnings, gains or other criteria that are later proven to be materially inaccurate,”
3. “prohibition on the financial institution from making any golden parachute payment to a senior executive based on the Internal Revenue Code provision,”
4. “agreement not to deduct for tax purposes executive compensation in excess of \$500,000 for each senior executive.”

The executive compensation restrictions required by the CPP were revised with the American Recovery and Reinvestment Act of 2009 (ARRA). Congress passed ARRA, most commonly called the ‘Stimulus,’ in February 2009 and retroactively placed stricter limits on executive compensation. These new restrictions included rules on accrued compensation, luxury expenditures, golden parachutes, shareholder say-on-pay, and independent compensation committee, among various other restrictions. ([Morrison Foerster, 2009c](#)).

Application-based Capital Injections

The CPP can be separated into the first 9 banks’ participation and the application-based participation which was available to all QFIs. QFIs had until November or December 2008 to submit their application to the program, depending on what type of institution it was. Public institutions had until November 14, 2008 to apply. The application process included the following steps (as summarized by [Morrison Foerster \(2009a\)](#)).

1. After deciding to participate, an applying QFI consults with its primary federal banking regulator as it completes the application using the most recent supervisory reports available, along with any material changes in the firm’s financial condition as the program was only available to “viable” QFIs. ([Treasury, 2008b](#)).
2. QFI submits the application to their primary federal banking regulator. The primary federal banking regulator then rejects or approves the application and recommends the QFI for the CPP to Treasury.
3. Any QFI with limitations on the issuance of preferred securities or with similar limitations had to submit additional information on these limitations.

251 4. Treasury’s Investment Committee recommends or does not recommend
252 investment to the Assistant Treasury Secretary for Financial Stability
253 whose final decision accepts or rejects the QFIs application “giving con-
254 siderable weight to the recommendation of the primary federal banking
255 regulator.”

256 5. Finally, the QFI could accept or reject the Treasury’s capital investment.

257 The involved regulators standardized the forms and worked to make the ap-
258 plication and process consistent across the various federal banking regulators.
259 Treasury did not publicly disclose its methodology for approving or disproving
260 applications, however [Taliaferro \(2009\)](#) finds the FDIC rejection rate was 11
261 percent, the Federal Reserve’s was between 20 and 39 percent, and Treasury
262 approved almost all application it received. There was a number of banks that
263 also received approval – or otherwise would have – but withdrew from the
264 program.¹⁵ Once a QFI and Treasury agreed to a CPP investment, Treasury
265 announced it within 48 hours. There was no public disclosure of QFIs which
266 were rejected or withdrew from the program.

267 Accounting guidance at the time of the CPP announcement required QFIs
268 to account for the CPP warrants as bifurcated instruments or mark-to-market
269 liabilities. To prevent the warrants from affecting the income statement in ad-
270 verse ways, the SEC and Financial Accounting Standards Board (FASB) “re-
271 leased guidance that, despite accounting guidance, the warrants in the [CPP]
272 may be treated as permanent equity.” ([Morrison Foerster, 2009a](#)).

273 Unwinding CPP Investments

274 As Treasury began to wind down its CPP portfolio, Treasury had three options:
275 wait for repayment from the firm, restructure (through a merger, for example),
276 or sell the investment via auction.¹⁶ ([Massad, 2012](#)). The frequency and type
277 of exit from the CPP is shown in Figure 2.

278 **Repayment** Consistent with the characteristics of high quality capital, Trea-
279 sury did not require CPP firms to repay their capital investments at any spe-
280 cific time frame. Instead, firms repaid when they felt appropriate. In practice,
281 many of the largest banks repaid their CPP investments through 2009, either
282 as a response to the various TARP limits involved with the program or because
283 of some amount of stigma surrounding the program. As of February 2016, 261
284 firms had repaid their CPP investments in full.¹⁷

¹⁵The number is not known exactly, but [Taliaferro \(2009\)](#) notes 158 applications to the Federal Reserve were withdrawn, of which the Federal Reserve Office of the Inspector General said the “majority” were eligible to participate.

¹⁶Please see Xu (2016) for further details on the mechanics of Treasury’s exit from its CPP portfolio.

¹⁷This includes firms that refinanced \$2.21 billion in CPP investments through the Small Business Lending Fund (SBLF) and \$360 million in exchanges of CPP investments with the Community Development Capital Initiative. ([U.S. Treasury, 2016](#)).

Restructuring Firms could restructure their capital investments in connection with a merger or some other plan to raise capital. In such a transaction, Treasury would receive cash – sometimes as a discount to the original investment – or other marketable securities. Roughly 40 institutions restructured their CPP investments or merged with other institutions. Treasury had discretion in accepting or rejecting a restructuring offer in its effort to ensure taxpayers maximize the value of their investments.

Auctions Treasury’s third option was to sell its CPP securities through auctions. Auctions sold either a single institution’s CPP securities or pooled many firms’ securities together depending on the size of the QFI. The bank (with their regulators’ approval) or a designated bidder, normally a familiar shareholder could submit an “opt-out bid” to be removed from the set of firms to be auctioned. The auction used a modified Dutch auction in which the price of securities lowered until there were enough bids to sell all the securities. All the securities are then sold at that price. This is considered a “modified” auction in the sense that there was a floor, often set by the firm’s opt-out bid. Treasury previously used Dutch auctions to sell CPP warrants.

In pooled auctions, a single bidder was allocated all auctioned securities. In single institution auctions, many bidders were allocated portions of the auctioned securities at the single clearing price. As of February 2016, Treasury led 28 auctions for 190 CPP institutions yielding \$3.04 billion in proceeds. This amounts to about 80 percent of the face value of the CPP investments.

1.3 Outcomes

By December 9, 2008, Treasury used \$204.9 billion in 742 transactions involving 707 financial institutions, less than the initial outlay of \$250 billion. Some banks turned down CPP funds after receiving approval from Treasury, and these banks had higher quality assets or were in better performing regions of the country. This suggests stronger banks viewed the CPP as costly. (Bayazitova and Shivdasani, 2012). As of February 2016, the status of the CPP is as follows: repayments of \$199.6 billion, write-downs of \$5.1 billion, \$300 million of outstanding investments, and \$27.1 billion of total income. In sum, Treasury recovered \$226.7 billion, as of February 2016. Figure 3 provides further breakdowns of the program status to date. Of the 707 financial institutions with CPP investments:

- Full repayment: 261
- Sold at auction: 190
- Refinanced through the Small Business Lending Fund or Community Development Capital Initiative: 165
- Restructured through non-auction sales: 39
- Bankruptcy/Receivership: 32

- 325 – Merged with other CPP institutions: 4
- 326 – Remain in program: 16 (as of February 2016)

327 ([Government Accountability Office, 2016](#)) The program skewed to larger firms:
 328 the 9 largest institutions ultimately accounted for \$134.2 billion and 331 of the
 329 707 recipients received CPP investments below \$10 million. Firms took, on
 330 average, 2.9 percent of RWA in capital suggesting that participating firms
 331 maximized the capital they could receive from the program. Although Tier 1
 332 capital ratios increased from 10.9 percent to 13.8 percent after the CPP invest-
 333 ments, the aggregate amount of tangible common equity fell due to mounting
 334 credit losses and write-downs. ([Bayazitova and Shivdasani, 2012](#)).

335 Four small banks repaid their CPP investments on March 31, 2009 and
 336 were the first set of banks to repay CPP investments. The banks cited concerns
 337 about stigma associated with the program as well as TARP’s compensation
 338 limitations. ([Dash, 2009](#)). [Bayazitova and Shivdasani \(2012\)](#) compile a sample
 339 of 590 publicly traded banks with annual and quarterly financial statements
 340 and information on executive compensation; they find that 95 banks had an-
 341 nounced their intention to repay their CPP investments by November 2009.
 342 The largest firms repaid preferred investment by June and purchased warrants
 343 by August 2009. Of the 14 remaining remaining in the program, Treasury
 344 expects most of the institutions will exit through restructuring.

345 It is not possible to isolate the effect of the CPP on the banking system
 346 due to the number of simultaneous programs and events, particularly over the
 347 Columbus Day Weekend. However, it is clear that the CPP’s announcement
 348 on October 14 was coincided with material tightening in both Ted spreads, as
 349 seen in Figure 1, and large-cap bank CDS spreads, as seen in Figure 4.

350 However, the CPP did not resolve market concerns surrounding the un-
 351 derlying health of the banking system as in February 2009 U.S. policymakers
 352 embarked on a stress test of the 19 largest BHCs with a public capital backstop
 353 available to the BHCs found to have insufficient capital. The capital backstop,
 354 the Capital Assistance Program (CAP), was structured very similarly to the
 355 CPP and was similarly available to all QFIs in the US.

356 The CPP and the CAP differed because the CAP came with a 9 percent
 357 dividend (rather than 5 percent ratcheting to 9 percent after 5 years), and after
 358 7 years the CAP preferred share mandatorily converted to common equity.
 359 The CPP had no option for conversion to common. The stress test which
 360 accompanied the CAP, called the Supervisory Capital Assessment Program
 361 (SCAP), concluded in May 2009. The SCAP publicly disclosed bank specific
 362 line-by-line exposures and expected losses under a severely adverse scenario,
 363 finding 10 firms required an additional \$75 billion. Ultimately, the market
 364 viewed the SCAP as credible and sufficiently stressful and marked a turning
 365 point in the financial crisis. ([Bernanke, 2015](#)) and ([Geithner, 2014](#)) 9 of the
 366 10 firms found capital privately, and the remaining firm (GMAC) received
 367 public capital through a separate capital program available to the automotive
 368 industry, the Automotive Industry Financing Program. ([Ross, 2016a](#)). Thus,

the CAP was never used.¹⁸ Figure 4 shows CDS spreads over time during the
CPP, CAP, and SCAP.

¹⁸See [Ross \(2016a\)](#) for additional information on the SCAP and [Ross \(2016b\)](#) for additional information on the CAP.

2 Key Design Decisions

2.1 The CPP bought equity and not assets.

Although the TARP had been passed with the intention of purchasing bad assets in order to shore up banks' balance sheets, Secretary Paulson moved policy towards formally using equity injection in a meeting with the President on October 7. Treasury had worked to preserve the ability to inject capital in exchange for equity in the EESA legislation in order to potentially save a systemically important financial institution from failure. However, given the quickly declining market conditions, the technical challenges of setting up an asset purchase program, and the limited funds available, Treasury decided it was best to use capital injections. (Paulson, 2010).

Initially, policymakers considered a program where the government matched funds raised by banks from private investors. However, as politically palatable as matching would be, it became clear that banks were unable to raise funds privately. Additionally, Treasury did not want to use common stock because of the associated voting rights. Preferred shares became the best option as the shares could be repaid regardless the price performance of the common stock, it was non-voting in most situations, and it carried a bonus for the taxpayer in the form of a dividend.

2.2 The CPP and the debt guarantee program were effectively available together and not separately.

During the Columbus Day capital injections, regulators made clear that banks could not choose to participate in the guarantee program and not in the capital program: “[i]t was a package deal, not a la carte.” However, the joint announcement of the CPP along with the guarantee program caused some confusion as the two programs were closely related but had a variety of differences, specifically in the compensation restrictions for each program. Moreover, while regulators in the Columbus Day meeting emphasized the two programs were offered jointly, by the letter of the law “no capital investment by a federal regulator required for the financial institutions volunteering for the guarantee program. An institution can participate in either, both or neither, depending only on eligibility.” (Morrison Foerster, 2009b).

2.3 The CPP preferred shares were not convertible to common equity, unlike the CAP.

The CPP carried a 5 percent dividend for the first five years which increased to 9 percent thereafter, whereas the CAP carried a 9 percent dividend from the start. Unlike the CPP, however, the CAP allowed conversion to common equity at any point – at a 10 percent discount to the share price in the 20 days leading up to the CAP's announcement. It is clear this conversion option

was a key component of the program, as the CAP allowed banks to exchange their CPP shares to CAP shares beyond their maximum injection in terms of percent of risk-weighted assets. (Glasserman and Wang, 2011).

While the conversion option may have been worth the increased dividend to some banks, there was possibly an expectation of implicit convertibility in the CPP shares – Citi converted its CPP shares in the weeks immediately following the CAP announcement. Therefore, many banks may have felt the increased dividend was not worth the explicit convertibility option.

2.4 The CPP had no time limit on redemption.

The CPP had no time limit on when participating firms redeemed Treasury’s CPP investment. This contrasts with the CAP which required firms to redeem or convert to common equity within 7 years. Firms were required to repay the CAP “solely with the proceeds of one or more issuances of common stock for cash.” (Treasury, 2009). Glasserman and Wang (2011) note that smaller firms which faced a sufficiently large cost of issuing new equity would have been forced to carry a 9 percent dividend for 7 years or otherwise convert to common at a dilutive discount to existing shareholders. This may explain why the CPP was widely used and the CAP was not used.

2.5 Foreign financial institutions were ineligible for the CAP.

The CAP, consistently with the SCAP, used the same definition of QFI as defined for the purposes of the CPP as unveiled in the fall of 2008. Notably, this excluded foreign institutions and U.S. branches or agencies of foreign institutions. This is largely due to the fact that foreign bank branches and agencies have no capital of their own and are subject to a different set of regulatory requirements than depository institutions in the US. Therefore, it is not possible to stress test their capital adequacy.¹⁹

2.6 The CPP dividend started at 5 percent, and increased to 9 percent after 5 years.

The Treasury considered a structure where the CPP preferred shares carried two levels of dividends, ratcheting after a certain point. Initially, Treasury policymakers considered a higher starting dividend – between 7 or 8 percent per year. Ultimately, however, they decided to start with 5 percent as it “was the best way to make a capital purchase program attractive to banks while giving them an incentive to pay back the government.” Secretary of the Treasury Hank Paulson attributes this decision at least in part to a conversation with

¹⁹For further discussion of Federal Reserve regulation of foreign institutions, see <https://www.newyorkfed.org/aboutthefed/fedpoint/fed26.html>.

the well-known investor Warren Buffet, who suggested a lower initial dividend. (Paulson, 2010).

2.7 The CPP used preferred shares and not common shares.

Preferred shares were politically advantageous because they carried little voting rights, however they were not as loss absorbing as common equity. Additionally, Treasury had to get permission from other regulators to ensure the preferred shares would indeed count towards Tier 1 capital for all involved institutions. (Paulson, 2010) and (Board of Governors of the Federal Reserve System, 2008). As market analysts focused on financial institutions' TCE which excludes preferred shares, the CAP provided the explicit option to convert government capital investments to common equity in the case of further losses and credit writedowns. Therefore, the CPP's preferred shares acted more like a "low-interest loan than true investments in their long-term health..." (Geithner, 2014).

2.8 The terms of CPP investments did not vary across firms.

Treasury decided to offer the CPP on the same terms for all involved firms, unlike other similar preceding programs. For example, Hoshi and Kashyap (2010) describes Japan's March 1998 capital injection which purchased ¥100 billion in subordinated debt or loans with interest rates corresponding to a bank's financial health. The CPP ultimately decided to offer uniform terms to all institutions for two reasons: it would be difficult to design fair institution-specific pricing, and because policymakers wanted to avoid stigmatizing the weaker firms with more expensive capital. Further, the U.K. intervention in the days before the CPP allowed stronger firms to refrain from participation, and the equity prices of the weaker participating firms suffered from the stigma associated with the program. "[T]he system as a whole was undercapitalized, and unless the broader shortfall was addressed, the crisis would keep migrating from the relatively weak to the relatively strong.... Recapitalizing the entire system would benefit everyone, so allowing firms to opt out and still enjoy those benefits would have been truly unfair." (Geithner, 2014).

3 Evaluation

Hoshi and Kashyap (2010) compare the CPP with capital injection programs in Japan in the 1990s. In the Japanese experience, Hoshi and Kashyap (2010) finds that banks may refuse capital injections. First, accepting capital injections may signal that the firms will have higher-than-expected future losses, and therefore the market would punish existing shareholders. Second, banks

may refuse because the new government claims would be senior to existing equity claims. Existing shareholders would see no benefit until after the government had been repaid, and, if the bank had debt trading at a large discount, the capital injection's value would accrue to debt holders. The reduced upside to common shareholders therefore reduces their willingness to participate in such a program. The CPP's use of preferred shares were vulnerable to this situation.

Hoshi and Kashyap (2010) additionally lays out a set of lessons to be learned from the Japanese experience and compares these to the U.S. experience. They find that – like the Japanese – U.S. regulators were reluctant to nationalize and wind-down the least healthy banks, citing that both Bank of America and Citigroup needed large capital injections 2 months after the CPP injections.²⁰ However, they note the lack of feasible resolution policies for complex financial institutions as a reason why regulators did not choose to wind down any institutions: particularly, the inability for the government to take over an institution and continue to service swap agreements. “Had the U.S. tried to buy Citigroup and push it through bankruptcy using the existing law it would have been operating in uncharted territory.” (Hoshi and Kashyap, 2010).²¹

Diamond and Rajan (2009) describes that danger from leaving toxic assets on weak firms' balance sheets: fire-sales depress asset prices below fundamental valuations and distort the incentive for healthy banks to continue lending and instead compel healthy banks to hoard capital to protect against the fire-sales. Hoshi and Kashyap (2010) note that sufficiently well-capitalized banks can reduce the likelihood of a fire-sale as they take the other side and prevent prices from falling so far from fundamental values: “we see the uncertainty over asset quality being intimately tied to the size of the capital shortage.”

Hoshi and Kashyap (2010) also note that U.S. policymakers successfully avoided requiring banks to provide credit to certain companies, demographics or industries.²² However, in response to political concerns surrounding how banks used the CPP funds, Treasury issued a number of “Use of Capital” reports which asked banks to provide information for public disclosure.²³ (Bernanke, 2015).

²⁰These injections, called the Targeted Investment Program (TIP), provided \$20 billion to each Citigroup and Bank of America in December 2008. “The program gave Treasury the necessary flexibility to provide additional or new funding to financial institutions that were critical to the functioning of the financial system.” Both institutions repaid their TIP investments in full with accrued dividends, yielding a positive return of \$4.4 billion for Treasury. (U.S. Treasury, 2008b).

²¹Further, they note that Japanese legislators explicitly passed laws which allowed for the wind-down of major financial institutions, and used it in at least two significant cases.

²²The support for the auto industry is an exception, however, the CPP did not incentivize the creation of “financial zombie companies.”

²³See, for example, the 2009 Use of Capital Survey: <https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/cap/use-of-capital/Pages/2009.aspx>.

517 [Bayazitova and Shivdasani \(2012\)](#) compile a sample of 590 publicly traded
518 banks with annual and quarterly financial statements and information on ex-
519 ecutive compensation and study which banks and under what circumstances
520 banks were most likely to participate in the CPP. First, they find that CPP
521 was viewed by banks as relatively costs because many of the strongest banks
522 refrained from participating. The banks with strong capital ratios, stable
523 funding profiles, high average asset quality and operating in better performing
524 regions were less likely to participate in the CPP. However, weaker banks did
525 indeed participate, suggesting the CPP managed stigma.

526 Second, [Bayazitova and Shivdasani \(2012\)](#) finds Treasury was most likely
527 to accept applications from larger banks with greater systemic risks rather
528 than the banks with high levels of troubled assets. In their sample of public
529 banks, they also find many banks which received approval for participation
530 from Treasury but ultimately decided to withdraw their application, suggesting
531 CPP capital was viewed as relatively costly. However, banks which announced
532 their approval for CPP funds and later decided to not use the funds experienced
533 no significant change in equity prices; rather, the largest gains associated with
534 the CPP came when the program was initially announced and now when a
535 bank was specifically approved by Treasury for the funds. They also find that
536 compensation limits related to the CPP played an important role in whether
537 a bank used CPP funds and also on their subsequent repayment.

538 Finally, [Bayazitova and Shivdasani \(2012\)](#) suggests the CPP may have
539 slowed the banking system’s recovery because the CPP used preferred shares
540 and the only buffer protecting the government’s claim was common equity
541 holders. Therefore, market analysts paid close attention to banks’ tangible
542 common equity as an indication of the likelihood the government would na-
543 tionalize a bank. The SCAP – the stress test conducted between February
544 and May 2009 – certified a bank’s capital adequacy and reassured investors
545 of the government’s intentions with respect to protecting its CPP preferred
546 investment and valuations of bank stocks accordingly responded positively in
547 May 2009.

548 [Veronesi and Zingales \(2010\)](#) find Columbus Day weekend capital injec-
549 tions resulted in a \$84-107 billion net benefit to taxpayer, mostly due to re-
550 ductions in the probability of bankruptcy which they estimated would have
551 destroyed roughly one-fourth of the enterprise value of the involved banks.
552 To calculate the net benefit, they measure the difference-in-difference between
553 the the banks’ CDS rates and of GE capital – a large non-bank financial com-
554 pany that did not participate in the CPP. By this measure, the Columbus
555 Day intervention increased debt by \$119 billion, which added to the abnormal
556 change in bank common and preferred equity, measures the enterprise value of
557 the involved banks increased by \$128 billion. The FDIC deposit guarantee of
558 derivative liabilities increases this to \$131 billion. Subtracting the difference
559 of capital injection from the value of the preferred equity and warrants given
560 to Treasury, yields a net benefit between \$84 billion and \$107 billion; even if
561 the deadweight loss of taxation is 30 percent, the Columbus Day injections

562 still have a positive value of between \$71 billion and 89 billion. [Veronesi and](#)
563 [Zingales \(2010\)](#) note that because “all the major banks were “forced” to par-
564 ticipate by a very strong arm-twisting exercise by Treasury Secretary Paulson”
565 the first 9 banks likely did not benefit from any certification effect about the
566 value of assets they held. Rather, they measure that most of the net bene-
567 fit from two effects: first, the negative effect of uncertainty surrounding how
568 the government would interfere with the bank’s management; and second, the
569 positive effect of the lowered likelihood of probability.

570 [Veronesi and Zingales \(2010\)](#) also compares the actual CPP Columbus
571 Day intervention with four alternatives: the original asset purchase plan, the
572 original asset purchase program at above-market premiums, the British inter-
573 vention without any debt-guarantees, and a debt-for-equity swap. They find
574 the debt-for-equity swap the most attractive plan, as it does not require val-
575 uation of existing assets. Of the three former plans, they find the Columbus
576 Day injection was a good balance of up-front cost and the value at risk, with
577 much of the value of the program coming from the economical debt guarantee
578 program. They find that equity injections without the guarantee would have
579 been roughly twice as expensive. They find it would have taken between \$3.1
580 trillion and \$4.6 trillion in asset purchases to reduce CDS rates as much as the
581 Columbus Day injections. Finally, they find the original asset purchase pro-
582 gram revised to overpay by 20 percent would cost about \$1 trillion to reduce
583 CDS rates as much as the actual intervention.

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4 Appendix A - List of Resources

4.1 Summary of Program

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- Term Sheet for Capital Purchase Program, U.S. Treasury – *Treasury document discussing terms of investments made via the CPP.* <https://www.treasury.gov/press-center/press-releases/Documents/document5hp1207.pdf>
- Capital Purchase Program Cheat Sheet, Morrison Foerster, 2008 – *Morrison Foerster summary of the relevant details provided in a client note.* http://media.mofo.com/docs/pdf/081031CaPPCheatSheet_Private.pdf

4.2 Implementation Documents

- Application Guidelines for TARP Capital Purchase Program, U.S. Treasury, 2008 – *Treasury instructions to guide institutions through the process of applying for CPP funds.* <https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/cap/Documents/application-guidelines.pdf>
- Process-Related FAQs for Capital Purchase Program, U.S. Treasury, 2008 – *Describes common questions surrounding the CPP and summarizes eligibility and the process of applying to the relevant federal banking regulator.* <https://www.treasury.gov/press-center/press-releases/Documents/faqcpp.pdf>
- Term Sheet for Capital Assistance Program, U.S. Treasury – *Treasury document discussing terms of investments made via the CAP.* http://www.treasury.gov/press-center/press-releases/Documents/tg40_captermsheet.pdf

4.3 Legal/Regulatory Guidance

- Press Release: Regarding CPP Shares and Tier 1 Capital, Board of Governors of the Federal Reserve System, October 16, 2008 – *Federal Reserve guidance that CPP preferred shares would be included within the definition of Tier 1 capital without restriction.* <https://www.federalreserve.gov/newsevents/press/bcreg/20081016b.htm>

4.4 Press Releases/Announcements

- Joint Statement by Treasury, Federal Reserve, and FDIC, October 14, 2008 – Joint statement by U.S. policymakers describing the CPP and associated guarantee program. <https://www.federalreserve.gov/newsevents/press/monetary/20081014a.htm>
- SEC Halts Short Selling of Financial Stocks to Protect Investors and Markets, September 19, 2008 – Press releases describing the SEC’s ban on shorting financials and its rationale. <https://www.sec.gov/news/press/2008/2008-211.htm>

4.5 Media Stories

- MUFG to renegotiate Morgan Stanley deal, The Financial Times, October 13, 2008 – Article discussing Mitusbshi’s negotiations in light of Morgan Stanley’s collapsing stock price and sharply higher CDS spreads. <http://ftalphaville.ft.com/2008/10/13/16948/mufg-to-renegotiate-morgan-stanley-deal/>
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- Four Small Banks Are the First to Pay Back TARP Funds, New York Times, March 31, 2009 – Article describing the first banks which repaid CPP investments. <http://nyti.ms/29aFjv3>
- U.S. May Convert Banks’ Bailouts to Equity Share, New York Times, April 19, 2009 – Article discussion the possibility of banks converting CPP shares to common equity. <http://www.nytimes.com/2009/04/20/business/20bailout.html>

4.6 Key Academic Papers

- Assessing TARP, Bayazitova, Dinara and Shivdasani, Anil, 2012 – Paper analyzes the banks that did and did not participate in the CPP and examines market reaction and stigma associated with the program.
- Fear of Fire Sales and the Credit Freeze, Diamond, Douglas W and Rajan, Raghuram G, 2009 – Among other things, describes the benefits of asset purchases to prevent fire-sales.
- Valuing the Treasury’s Capital Assistance Program, Glasserman, Paul and Wang, Zhenyu, 2011 – Paper which finds CAP to be very valuable to banks, with a discussion of why banks ultimately did not participate in the program. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1525640

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- 784 • Paulson’s Gift, Veronesi, Pietro and Zingales, Luigi, 2010 – *Measures*
785 *the net benefit of the Columbus Day intervention, compares its price tag*
786 *to other similar measures, and proposes a debt for equity swap program*
787 *design.*

788 4.7 Reports/Assessments

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790 nancial Stability, October 2010 – *Office of Financial Stability report dis-*
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792 *TARP.* [http://www.treasury.gov/press-center/news/Documents/TARP%](http://www.treasury.gov/press-center/news/Documents/TARP%20Two%20Year%20Retrospective_10%2005%2010_transmittal%20letter.pdf)
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794 [pdf](http://www.treasury.gov/press-center/news/Documents/TARP%20Two%20Year%20Retrospective_10%2005%2010_transmittal%20letter.pdf)
- 795 • Troubled Asset Relief Program: Capital Purchase Program Largely Has
796 Wound Down, Government Accountability Office, 2016– *Report summa-*
797 *rizing Treasury’s efforts to wind down their CPP investments, especially*
798 *their use of auctions.* <http://www.gao.gov/products/GAO-16-524>

799 5 Appendix B - Road Map

800 The following is a list of the key design decisions that will likely have to be
801 made in implementing a program similar to the Capital Purchase Program
802 (CPP), a broad-based capital injection program with standardized terms.

5.1 Key Questions

1. Which agency or agencies have the authority and expertise to provide the capital?
 - i) What is the basis of this authority?
 - ii) What particular elements/terms must be satisfied to fit within the authority?
 - iii) After designing, have all required elements been satisfied?
2. How should a the capital injections be structured?
 - i) What sort of security should the public capital be provided through?
 - ii) Should the government take a voting or non-voting stake?
 - iii) Should economic conditions worsen, can the public capital convert into common equity?
 - I) If so, should the securities convert to common at a discount or at face value?
 - iv) Does the investment come with a dividend? If so, what is the right balance between providing capital to firms that otherwise cannot raise capital but is also sufficiently punitive that firms work to replace it with private capital quickly?
 - v) Does the dividend ratchet up after a number of years to compel firms to exit?
 - vi) Is there mandatory conversion to common after a time period? If so, after how long?
 - vii) How does the taxpayer participate in the potential future profitability of the involved firms? Does the public receive warrants, for example?
 - viii) How does the public exit its investment? Over what time frame?
 - ix) How can participating financial institutions redeem their capital injections? With cash proceeds from equity issuance only, as in the CAP?
3. To what extent does the government participate in managing the participating QFI?
 - i) What other constraints will firms using public capital face? (E.g. executive compensation caps, restrictions on common stock dividends, buybacks and cash acquisitions, etc.)
 - ii) Are there sufficient authorized shares to meet the capital backstop's requirements?
 - iii) Does the capital injection trigger any poison pill or covenants?
 - iv) What is the relationship between the capital injection's preferred shares and existing preferred shares?

- 842 4. Which firms are eligible?
- 843 i) Are foreign institutions eligible?
- 844 ii) What tests are conducted to determine capital adequacy and the
- 845 amount of support the public should provide? (E.g., is there a stress
- 846 test?)
- 847 iii) What metric or measure should regulators target to assess capital
- 848 adequacy?
- 849 I) Should the test focus on Tier 1 capital, Tier 1 Common capital,
- 850 tangible common equity, a combination of these or something
- 851 else?
- 852 i) For example, should preferred equity, goodwill and intan-
- 853 gible assets be included in the equity component?
- 854 ii) Should the denominator be based on risk-weighted assets,
- 855 tangible assets or something else?

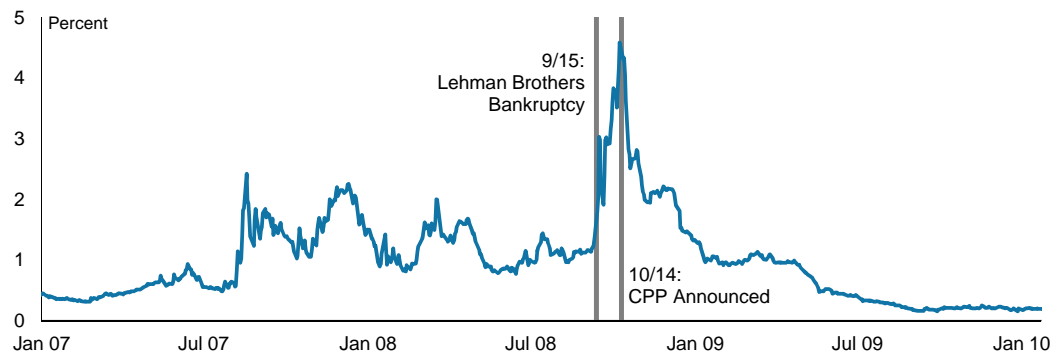
856 5.2 Implementation Steps

- 857 1. Develop the description of the capital injection, including legal authority,
- 858 purpose, firm eligibility, a general timeline, et cetera and seek input from
- 859 industry and other stakeholders.
- 860 2. If necessary, seek approval for the program, funding et cetera.
- 861 3. Produce term sheet and securities purchase agreement for the program.²⁴
- 862 4. Develop application instructions for completing the documentation nec-
- 863 essary to participate in the capital back stop.
- 864 5. Produce capital adequacy targets with which to judge applications.
- 865 6. Find institution specific capital adequacy using supervisors and firms
- 866 own' capital adequacy estimates.
- 867 7. Compare supervisors' capital adequacy estimates with firms' own esti-
- 868 mates and reconcile differences.
- 869 8. Provide capital to firms.

²⁴CPP Example SPA:
[https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/
bank-investment-programs/cap/Pages/contracts.aspx](https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/cap/Pages/contracts.aspx)

870 6 Figures and Tables

Figure 1: Ted Spread



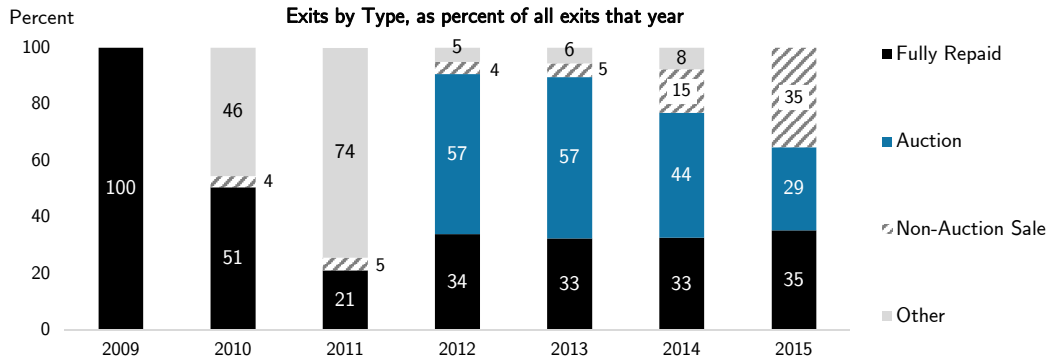
Source: Federal Reserve.

Table 1: Columbus Day Capital Injections

Firm	CPP Investment
Citigroup	\$25 billion
JP Morgan Chase	\$25 billion
Bank of America (acquiring Merrill)	\$25 billion
Wells Fargo (acquiring Wachovia)	\$25 billion
Goldman Sachs	\$10 billion
Morgan Stanley	\$10 billion
Bank of New York Mellon	\$3 billion
State Street	\$2 billion
TOTAL	\$125 billion

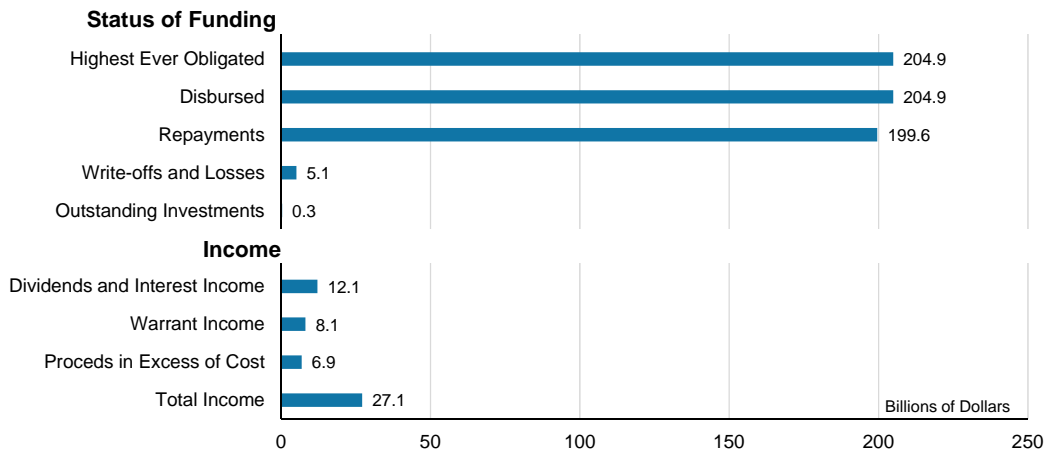
Source: U.S. Treasury.

Figure 2: Exit Types by Year



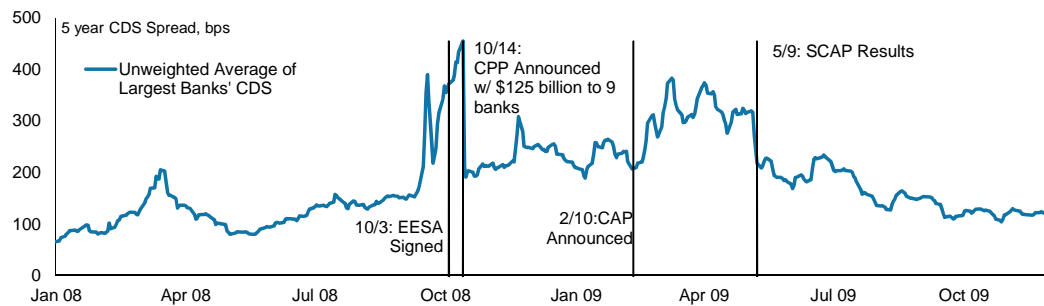
Source: Bloomberg.

Figure 3: CPP Status, June 2016



Source: [Government Accountability Office \(2016\)](#).

Figure 4: CPP and Large Banks' CDS Spreads



Source: Bloomberg.