

The Capital Assistance Program

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Abstract

On February 10, 2009, U.S. financial regulators announced a two-part financial stability plan in order to revive confidence in the U.S. banking system and restart bank lending. The first phase of the plan was a stress test called the Supervisory Capital Assessment Program (SCAP) to assess the capital adequacy and needs of the 19 largest bank holding companies should economic conditions deteriorated further. The second phase of the plan, the Capital Assistance Program (CAP), was a public capital backstop to the banking system available to banks which were deemed to have insufficient capital to absorb losses if economic conditions deteriorated further and they were unable to raise capital from the private sector. Ultimately, the Treasury did not receive any applications for the CAP and the program closed on November 9, 2009.

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1 Overview

1.1 Background

Through 2008 and early 2009 there was significant concern about the underlying health of the banking system and the banking system's ability to withstand the effects of mounting losses across loan and credit portfolios. After the sharp deterioration in market conditions following Lehman Brother's bankruptcy on September 15, 2008, Congress passed the Emergency Economic Stabilization Act of 2008 (EESA) in early October 2008. The EESA established the Toxic Asset Relief Program (TARP) with \$700 billion with which the U.S. Treasury could purchase assets or equity from distressed financial institutions.

Initially, policymakers intended to use TARP to purchase toxic assets from struggling financial institutions. However, due to the complexity in setting acceptable prices for the securities¹, the logistical challenges of quickly establishing a large purchase program², and the relative efficiency of buying assets compared to buying equity, financial regulators and policymakers decided instead to purchase equity from troubled financial institutions. On October 13, 2008 the heads of the U.S. Treasury, Federal Reserve Bank of New York (FRBNY), and the Federal Deposit Insurance Corporation (FDIC) negotiated an aggregate \$125 billion capital injection with the CEOs of 9 large financial institutions accompanied with an FDIC guarantee of new wholesale bank debt and transaction accounts. The banks could not choose between the two programs and had to accept the capital injection to qualify for the FDIC guarantees. All 9 banks agreed to the capital injections. News of the meeting bolstered equity markets and the S&P 500 notched its largest daily increase both in points (104.13) and in percentage points (11.58 percent).

This capital injection was the beginning of the Capital Purchase Program (CPP)³ and was funded from the \$700 billion allocated to TARP. The Treasury, Federal Reserve, FDIC and Office of Comptroller of the Currency (OCC) announced the CPP on October 14, with \$125 billion going to the previously negotiated 9 financial institutions and another \$125 billion for banks which applied to the program between October and November 2008.⁴ (Paulson, 2008). After its final investment in December 2009, the CPP provided \$205 billion in capital to 707 financial institutions. Figure 1 shows that the initial announcement of the CPP helped decrease the probability of bankruptcy for the largest banks.

¹For 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).

²The Treasury expected it would take 45 days until the program could begin its purchases. (Geithner, 2014).

³See Ross (2016b) for further discussion of the CPP.

⁴The application deadline was November 14, 2008. (Treasury, 2008a).

34 1.2 Program Description

35 Despite the CPP’s implementation three months earlier, the fundamental health of
36 the banking system remained in question as President Obama took office in January
37 2009. On February 10, 2009, the U.S. Treasury, Federal Reserve, FDIC, OCC, and
38 Office of Thrift Supervision (OTS) announced a two part financial stability plan in
39 order to bolster confidence in the banking system and help ensure the banking system
40 continued to intermediate credit. The plan’s first component, the Supervisory Capital
41 Assessment Program (SCAP)⁵, was a stress test for the 19 largest bank holding
42 companies (BHCs) in the U.S. which had more than \$100 billion in assets on a con-
43 solidated basis. The plan’s second component was the Capital Assistance Program
44 (CAP) a capital backstop available to BHCs should regulators deem their capital level
45 insufficient.

46 Initial market reaction was not good – the Dow fell 382 points after Treasury
47 Secretary Timothy F. Geithner’s speech introducing the plan. The plan surprised the
48 market by its lack of specificity, but Federal Reserve Chairman Ben Bernanke would
49 later note “with confidence in banks diminishing by the day, I understood the urgency
50 of announcing something.” (Bernanke, 2015). The involved regulators released the
51 full details on the plan on February 25. (Treasury, 2009a).

52 In designing the SCAP and CAP, regulators tried to balance providing the mar-
53 ket information on the tail risks surrounding specific institutions while also credibly
54 providing a capital backstop to mitigate the downside risk that would come should,
55 after public disclosure of the stress test results, an institution be in worse condition
56 than expected. The two part financial stability plan worked to provide support to
57 the struggling banking system, create an exit strategy for Treasury investment, and
58 compensate the taxpayer. (Glasserman and Wang, 2011).

59 If the SCAP test indicated a bank needed more capital and was unable raise
60 private capital, the U.S. Treasury offered a capital backstop through purchases of
61 convertible preferred securities and warrants on common equity. Although capital
62 ratios across most U.S. banks were above regulatory requirements, in the stressed
63 market conditions market participants paid particular attention to the highest quality
64 capital, common equity, rather than the broader Tier 1 Capital.⁶ Therefore, the
65 securities would be convertible to common equity if either the bank became capital
66 inadequate and required additional capital to meet its supervisory requirements or if
67 needed to “retain the confidence of investors.” (Treasury, 2009b).

68 The Treasury offered the CAP to all banks and qualifying financial institutions
69 (QFIs) as first described by the CPP, unlike the SCAP which was limited to the 19
70 largest BHCs. BHCs had 6 months to raise additional private capital, but could apply
71 to the CAP immediately after the publication of the SCAP results and delay actual

⁵See Ross (2016b) for further discussion of the SCAP.

⁶Banks report various metrics of capital adequacy. Market analysts specifically focused on tangible common equity (TCE) as the preferred measure of capital adequacy, which is shareholders’ equity less preferred equity and intangible assets. (Glasserman and Wang, 2011). TCE is the highest quality form of capital as it is permanently available to absorb losses. TCE is a subset of Tier 1 Capital, which is shareholders’ equity plus retained earnings. The SCAP focused on Tier 1 Common Capital, which is Tier 1 capital less preferred shares and non-controlling interests.

72 funding for the 6 months while the firms raised as much private capital as possible.
73 Further, QFIs were allowed to use exchange their existing TARP securities from the
74 CPP with securities from the CAP.

75 As was the case with other capital injection programs authorized as part of the
76 EESA, participants of the CAP were subject to the executive compensation require-
77 ments and subject to restrictions on paying quarterly common stock dividends, re-
78 purchasing shares, and pursuing cash acquisitions

79 The public reaction to government ownership of private companies was an im-
80 portant constraint on the various programs undertaken between 2008 and 2009 and
81 the CAP was no exception. In order to mitigate this concern, the Treasury noted
82 “The economy functions better when banking organizations are well managed in the
83 private sector. U.S. government ownership is not an objective of CAP.” (Treasury,
84 2009b). Therefore, authorities designed the CAP to encourage rapid repayment –
85 primarily through a relatively punitive dividend rate on the preferred security – and
86 Treasury also used a separate trust to administer any capital investments made by
87 the government with the trustees focused on protecting and creating valuing for the
88 government as a shareholder over time. (Treasury, 2009b).

89 QFIs were eligible to apply to the CAP. QFIs included BHCs, financial holding
90 companies, insured depository institutions, and savings and loan holding companies,
91 that were organized and operating in the United States, and deemed viable by the ap-
92 propriate federal banking agency. Financial institutions controlled by foreign entities
93 were ineligible. Holding company applications must have been submitted by January
94 15, the same date required by the CPP. Institutions did not need to participate in the
95 CPP in order to be eligible for the CAP. Further, any holding company participating
96 in the CAP must remain a holding company, and was not allowed to terminate its
97 status as a holding company. (Treasury, 2009b).

98 When a QFI participated in the CAP the firm would issue mandatorily convertible
99 preferred securities to the U.S. Treasury for between 1 and 2 percent of risk-weighted
100 assets plus an amount necessary to redeem investments made through the CPP or
101 the Targeted Investment Program (TIP), a program established in December 2008
102 to provide additional support to Citigroup and Bank of America. In the case an
103 institution required capital beyond this amount, the U.S. Treasury and the relevant
104 federal banking regulator would determine whether the QFI qualified for “exceptional
105 assistance” in which the Treasury could provide a bank-specific, negotiated agreement.
106 (Treasury, 2009b).

107 The CAP provided capital through mandatorily convertible preferred equity se-
108 curities. The securities carried a 9 percent dividend and came with warrants on the
109 QFI’s common stock.⁷ The security was redeemable at par at any time in the first
110 2 years following the capital injection, including any accrued and unpaid dividends.
111 Beyond 2 years, the security was redeemable but at a penalty rate equal to at least

⁷The QFI was required to call a meeting of its shareholders to obtain shareholder consent should the QFI have insufficient authorized common stock to reserve for issuance upon conversion of the CAP preferred shares and/or if stockholder consent was required for issuance under the relevant stock exchange rules. If shareholders delayed providing consent the dividend rate on the security increased 20 percent after 6 months. (Treasury, 2009a).

the cost of the conversion option. Importantly, the preferred shares could only be redeemed with the cash proceeds of common stock issuance. (Treasury, 2009b) and (Glasserman and Wang, 2011). The security was senior to any common shareholders and pari passu with other preferred shareholders except other preferred shares which by their terms rank junior to existing preferred shares. Options to redeem, convert or exercise warrants could be done either in part or in full. (Treasury, 2009a)

At any time within the first 7 years the QFI could convert the preferred shares to common shares at a price equal to 90 percent the average closing price for the common stock in the 20 trading days preceding February 9, 2009, the day before the CAP's announcement.⁸ (Treasury, 2009b) and (Glasserman and Wang, 2011).⁹ The conversion also includes a penalty in the case shareholders delay providing consent: each 6 months the QFI's shareholders delay consent the conversion price was reduced by 15 percent, up to a maximum reduction of 45 percent the conversion price.

After 7 years the preferred shares would convert to common equity at the same price as the conversion option: 90 percent the average closing price of the common stock before the announcement of the CAP. (Treasury, 2009b) and (Glasserman and Wang, 2011).

CAP investments included warrants which allowed the Treasury to purchase shares in the QFI's common shares at any time in the 10 years following the CAP investment. These warrants provided the taxpayer the option to share in the upside of a QFI's recovery. The Treasury could exercise the warrants at a strike price equal to the conversion price that applied to the preferred shares, and the Treasury could exercise warrants up to 20 percent of the ratio of the preferred shares to the common shares. If Treasury were to exercise its warrants it would receive common in the amount equal to 20 percent the par value of the preferred shares. If the bank was no longer public or had insufficient authorized shares, Treasury would exchange the warrants for senior term debt or another appropriate instrument. The Treasury agreed to exercise no voting power with shares obtained through the warrants. (Treasury, 2009b) and (Glasserman and Wang, 2011). The preferred shares would be non-voting except for on market terms of similar securities. Upon conversion to common, Treasury would become a voting shareholder. (Morrison Foerster, 2009). Should the QFI fail to make dividend payments for 6 quarters, the Treasury had the option to appoint two directors, but this right would be terminated once the QFI made dividend payments for 4 consecutive quarters. (Morrison Foerster, 2009).

QFIs could apply to the CAP through their federal banking regulator. If the federal banking regulator believed the CAP was appropriate for the QFI, the federal banking regulator would forward the QFI's application and a recommendation for the QFI to the Treasury. Treasury would review and approve or reject the firm's application. Banks were required to submit capital plans as part of the CAP application and were required to use CAP funds to provide credit beyond the levels they would without government assistance. These plans would be made public by the Treasury

⁸Subject to to customary anti-dilution adjustments.

⁹Glasserman and Wang (2011) provide an explicit example: for a preferred share with par of \$100 and an average common stock price of \$5.56 in the days leading up to the CAP announcement, the preferred share would convert into $100/(0.90 \times 5.56) = 20$ shares of common equity.

153 after the QFI received its CAP investment. Taxpayers were able to monitor the
154 performance of banks receiving capital under the CAP by accessing online monthly
155 reports submitted by the banks to the Treasury showing the status of their lending.
156 (Press Release).

157 **1.3 Outcomes**

158 After the Fed released the results of the SCAP, 10 firms collectively needed to an
159 additional \$75 billion to reach their SCAP capital buffer targets. Table 1 provides
160 the bank specific estimates of capital shortfalls. (FRS May 2009). 9 of those banks
161 were able to fulfill their additional capital needs privately. Ultimately, the SCAP
162 along with the CAP was viewed as a “decisive turning point” in the financial crisis.
163 (Bernanke, 2015). Only one firm, GMAC (later known as Ally Financial), required
164 public capital to meet its SCAP requirements. GMAC was the only firm to issue
165 securities under the terms of the CAP, however, the firm received funding through the
166 Automotive Industry Financing Program and not through CAP. (Office of Financial
167 Stability, 2010) and (Glasserman and Wang, 2011). Additionally, the agreement
168 between GMAC and the Treasury provided the Treasury immediate exercise of the
169 warrants at a value of one penny per share. (Glasserman and Wang, 2011).

170 Ultimately, the Treasury did not receive any applications for the CAP, and the
171 program closed on November 9, 2009. The Office of Financial Stability (OFS) viewed
172 this as an indicator of the effectiveness of the SCAP and other government efforts in
173 responding to the financial crisis. (Office of Financial Stability, 2010). Although no
174 QFIs issued securities through the CAP, a handful of firms publicly announced their
175 intention to use the program only to later withdraw. Midwest Banc Holdings was
176 in negotiations with the Treasury through October and Citizens Republic Bancorp
177 withdrew its application in November 2009 noting ‘the lack of activity surrounding
178 CAP.’ (Glasserman and Wang, 2011), (PR Newswire, 2009a), and (PR Newswire,
179 2009b).

2 Key Design Decisions

2.1 The CAP existed as a public backstop if the SCAP stress test revealed capital holes the private sector was unwilling to fill.

The SCAP conducted a stress test between February 2009 and May 2009 and the regulators conducting the test pledged, before the results were known, to publicly disclose bank-by-bank results. Market analysts and bank examiners were concerned the results of the test would not be accepted as credible – the logic suggested that bank examiners would whitewash the test results knowing there was insufficient public capital to recapitalize the banking system. Indeed, Chairman Bernanke notes disagreement between Treasury Secretary Timothy F. Geithner and National Economic Council¹⁰ (NEC) Director Lawrence Summers in the early months of the stress test, a period of considerable uncertainty: “An ongoing question. . . was what to do if the test revealed a capital hold deeper than could be filled by the remaining TARP funds. . . [Director Summers] was pessimistic and presumed that, if the stress tests were to be credible, they would have to show catastrophic losses that would overwhelm TARP.” (Bernanke, 2015).

As discussed in Ross (2016a), market participants ultimately viewed the SCAP as credible. The test scenario was particularly adverse, projecting a two-year commercial loan-loss rate in excess of 9 percent – higher than any two-year period since 1920. Chairman Bernanke credits the CAP capital backstop as an important component of the test’s perceived credibility:

The availability of backstop capital gave the regulators the right incentives: Without it, we might have been suspected of going easy on weaker banks, for fear of inducing runs. With the backstop, investors could see that we had every reason to be rough, to ensure that troubled banks would be forced to take all the capital they needed to remain stable. (Bernanke, 2015).

The test made clear, however, that the level of capital shortfall could have been replenished with TARP funds. It is unclear how the CAP capital backstop would have been used had the capital shortfall exceeded the remaining TARP funds.

2.2 The CAP securities carried a higher dividend than the CPP but included the option to convert to equity at any time (and mandatorily after 7 years).

The CPP carried a 5 percent dividend for the first 5 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 –

¹⁰The NEC is a small organization in the Executive Office of the President focused on implementing economic policy.

217 at a 10 percent discount to the share price in the 20 days leading up to the CAP's
218 announcement. It is clear this conversion option was a key component of the program,
219 as the CAP allowed banks to exchange their CPP shares to CAP shares beyond the
220 maximum injection in terms of percent of risk-weighted assets. While the conversion
221 option may have been worth the increased dividend to some banks, there was possibly
222 an expectation of implicit convertibility in the CPP shares – Citi converted its CPP
223 shares in the weeks immediately following the CAP announcement. Therefore, many
224 banks may have felt the increased dividend was not worth the explicit convertibility
225 option. (Glasserman and Wang, 2011).

226 **2.3 The CAP allowed firms to convert their preferred CAP** 227 **securities to common equity.**

228 The CAP allowed conversion of the preferred shares to common equity at any point,
229 although conversion was mandatory after 7 years. The predecessor program, CPP,
230 had no such feature. Conversion was available to QFIs at 90 percent of the equity
231 price of the bank in the days leading up to the February 23, 2009 announcement of
232 the CAP. This feature of the program addressed the concern that market analysts had
233 surrounding bank's capital adequacy; while most banks had sufficient Tier 1 Capital,
234 many analysts felt there was insufficient capital of the highest form. Therefore, the
235 conversion option allowed banks to convert the preferred shares to common, thereby
236 changing the composition of their Tier 1 capital and boosting their TCE, a form
237 of higher quality capital available permanently to absorb losses with no debt-like
238 characteristics. (Treasury, 2009b).

239 **2.4 Banks, not the government, initiated conversion to com-** 240 **mon equity.**

241 The program allowed banks to initiate the conversion to common either due to ad-
242 ditional losses or to bolster confidence in the bank. Regulators designed the CAP to
243 reduce the likelihood Treasury became an active shareholder due to political concerns
244 about nationalization of the banking system and the government's lack of expertise
245 in running financial institutions. Under certain circumstances – if the bank missed
246 dividend payments for 6 quarters, for example – the Treasury would take a more
247 active role, but the program was designed to restrain Treasury's involvement as a
248 shareholder. (Glasserman and Wang, 2011).

249 **2.5 Foreign financial institutions were ineligible for the CAP.**

250 The CAP, consistent with the SCAP, used the same definition of QFI defined for
251 the purposes of the CPP as unveiled in the fall of 2008. Notably, this excluded
252 foreign institutions and U.S. branches or agencies of foreign institutions. This is
253 partly because 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 was not possible to stress test their capital adequacy.¹¹

3 Evaluation

The CAP followed the CPP by 4 months and affected a similar set of financial institutions. The dividend rate was an important difference between the two program’s designs as CAP securities carried a 9 percent dividend, compared to the CPP’s 5 percent dividend for the first 5 years which subsequently ratcheted to 9 percent afterwards. The CPP also provided no time deadline for redemption¹² and also incentivized repayment by canceling a portion of Treasury’s warrants if the QFI issued equity. (Glasserman and Wang, 2011). The CPP had no conversion to common option, whereas CAP did. Why did the U.S. banking system need the CAP as the CPP focused on the the same issue for the same set of institutions, especially considering the higher dividend rate required on CAP securities? The deadline for QFIs to apply to the CPP was November 14, 2008 and QFIs with uncertain capital adequacy after that date needed the CAP for assistance. (Treasury, 2008b).

It was not the case that all QFIs had shored up their balance sheets after November 14, and therefore had no use for the CAP. It is unclear why the CAP was not used further. Glasserman and Wang (2011) use a contingent claims framework to value the CAP securities and find the CAP securities had a net value of approximately 30 percent of the capital invested for the banks participating with the maximum investment relative to risk-weighted assets. They also perform an event study of the banks included in the SCAP and find close correlation between the announcement of the terms of the CAP and abnormal price returns for the banks. (Glasserman and Wang, 2011).

A handful of hypotheses have emerged to address why the CAP – although valuable to banks – went unused.

First, it is possible TARP limits on executive compensation and hiring of foreign workers could put the firm at a competitive disadvantage, or that partial public ownership could reduce a firm’s ability to continue profitable business lines in the face of public resistance. For example, Citigroup sold Phibro, a profitable energy trading subsidiary, to avoid a particularly large contractual bonus payment. (Glasserman and Wang, 2011) and (Dash and Healy, 2009). TARP limits also required senior management reviews which could have led to agency issues in which management – concerned about compensation limits and reviews – refrained from joining CAP. Glasserman and Wang (2011) find that this was a constraint for many other TARP programs, including the CPP, and therefore cannot explain the disuse of the CAP alone.

¹¹For further discussion of Federal Reserve regulation of foreign institutions, see <https://www.newyorkfed.org/aboutthefed/fedpoint/fed26.html>.

¹²As initially designed in late 2008, the CPP required firms to redeem through equity issuance within three years. The American Recovery and Reinvestment Act of 2009 (ARRA, also called “The Stimulus”) removed this time requirement. (Glasserman and Wang, 2011).

291 Second, participation in the CAP may have been discouraged by a fear of stigma.
292 [Glasserman and Wang \(2011\)](#)’s analysis finds the most valuable aspect of the CAP
293 is the optionality of converting the preferred shares to common equity at a favorable
294 ratio. QFIs – with material nonpublic information to the downside – which would
295 benefit most from the CAP feared that participation in the CAP would give a negative
296 signal to the market, thereby increasing the cost of raising private capital in the
297 future. As [Glasserman and Wang \(2011\)](#) say, “[a] value-maximizing firm may pass
298 up an opportunity to participate in a positive [net present value] program if doing so
299 lowers its cost of raising private capital.”

300 Third, the terms of the preferred CAP shares required repayment with the cash
301 proceeds of common equity issuance. If the cost of issuing new equity was sufficiently
302 high a firm which could not pay back the CAP shares in the medium-term would
303 have to pay a 9 percent dividend and then convert to common. Therefore, firms with
304 a high cost of issuing new equity would have to choose between not participating
305 and participating in the program and either paying a high dividend or dilute existing
306 shareholders. ([Glasserman and Wang, 2011](#)).

307 Fourth, [Caballero \(2009\)](#) sees dilution as a primary concern for many QFIs. The
308 KBW Bank Index, an index of the 24 largest U.S. publicly traded U.S. banks, had
309 fallen 64 percent from January 2008, implying a CAP conversion price of about 32
310 percent the prior valuation. Figure 2 shows the pressure bank stocks faced through
311 2008 and 2009. CAP capital provided at January and early February 2009 valuations
312 could prove especially dilutive. Caballero instead suggested the creation of an equity
313 price guarantee 5 years later for all new private equity injections. Banks requiring
314 additional capital – either those identified through the SCAP or otherwise – could
315 raise private capital in the near term with a government guarantee on equity prices
316 5 years later. The proposal aimed at removing the possibility of a dilution extreme
317 enough to be rejected by management, and instead “transforms heavily discounted
318 equity into a Treasury bond with a call option on the upside of the bank.” ([Caballero,](#)
319 [2009](#)).

320 Fifth, [Glasserman and Wang \(2011\)](#) see the ability to convert to common as one
321 of the most enticing aspects of the CAP, as the CPP had no such feature: “this
322 appears to be the intention of regulators because they included a provision allowing
323 banks to use CAP funds to repay CPP funds.” ([Glasserman and Wang, 2011](#)). The
324 CAP provided banks the option to exchange their 5 percent CPP preferred shares
325 with the 9 percent CAP preferred shares with a conversion option. If the option
326 to convert exceed the 4 percent difference in the preferred dividend, then QFIs may
327 have chosen to use the CAP. However, it is likely QFIs felt CPP preferred shares were
328 implicitly convertible in the scenario tangible common equity fell to sufficiently low
329 levels. Notably, Citigroup boosted its tangible common equity by converting its CPP
330 preferred shares to common equity on February 27 after negotiations with Treasury.
331 [Glasserman and Wang \(2011\)](#) note there were also reports of similar agreements
332 between the Treasury and other banks.¹³ With this precedent of conversion¹⁴, some

¹³For example, “US May Convert Banks’ Bailouts to Equity Share,” ([Andrews, 2009](#)) and ([Glasserman and Wang, 2011](#)).

¹⁴[Glasserman and Wang \(2011\)](#) also note PNC Financial announced it had decided not to convert

333 QFIs were likely unwilling to pay the steeper dividend rate in exchange for the explicit
334 option to convert.

335 Finally, the firms found to have inadequate capital by the SCAP had until June 8,
336 2009 to submit plans to raise private capital. Average equity prices of the 18 BHCs
337 tested in the SCAP had increased on average 65 percent from the low in February.
338 [Glasserman and Wang \(2011\)](#)’s valuation of the CAP falls from 30 percent of the
339 net capital invested in the tested banks to about 3 percent on June 5 as a result of
340 higher equity prices.¹⁵ In evaluating the CAP’s design, they note that the CAP had
341 a sort of automatic exit strategy: “As bank stock prices increased, the net value to
342 banks of the CAP securities decreased, creating an almost automatic termination of
343 the program.” ([Glasserman and Wang, 2011](#)).

344 Although the CAP ultimately went unused, many have pointed to the CAP as a
345 useful tool in conjunction with the SCAP. ([Bernanke, 2015](#)).

its CPP shares, implying it had indeed considering converting them.

¹⁵However, [Glasserman and Wang \(2011\)](#) point out some banks still had much to gain from the CAP, mainly Citi and Keycorp.

References

- Edmund L. Andrews. U.S. May Convert Banks' Bailouts to Equity Share. 2009. URL http://www.nytimes.com/2009/04/20/business/20bailout.html?_r=1.
- Ben S Bernanke. *The Courage to Act: A Memoir of a Crisis and its Aftermath*. WW Norton & Company, 2015.
- Ricardo Caballero. A (Mostly) Private Capital Assistance Programme (CAP). *VoxEU*, 2009. URL <http://voxeu.org/article/recapitalising-banks-caballero-plan>.
- Eric Dash and Jack Healy. Citigroup Sheds Energy Unit and Its \$100 Million Trader. 2009. URL http://www.nytimes.com/2009/10/10/business/10citi.html?_r=1.
- Federal Reserve. The Supervisory Capital Assessment Program: Overview of Results. 2009. URL <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090507a1.pdf>.
- Timothy F Geithner. *Stress Test: Reflections on Financial Crises*. Crown, 2014.
- Paul Glasserman and Zhenyu Wang. Valuing the Treasury's Capital Assistance Program. *Management Science*, 57(7):1195–1211, 2011. URL https://www.newyorkfed.org/research/staff_reports/sr413.html.
- Morrison Foerster. Capital Assistance Program Public (CAP) Cheat Sheet. 2009. URL <http://media.mofo.com/docs/pdf/090310CAPPublicCheatSheet.pdf>.
- Office of Financial Stability. Troubled Asset Relief Program: Two Year Retrospective. 2010. URL https://www.treasury.gov/press-center/news/Documents/TARP%20Two%20Year%20Retrospective_10%2005%2010_transmittal%20letter.pdf.
- Hank Paulson. October 14, 2008 Speech, 2008. URL <http://ftalphaville.ft.com/2008/10/14/17036/paulsons-nine-strong-posse/>.
- PR Newswire. Citizens Republic Bancorp Withdraws Its CAP Application. 2009a.
- PR Newswire. Midwest Banc Holdings, Inc. Reports Q3 Results. 2009b.
- Chase P. Ross. The Supervisory Capital Assessment Program. *Yale Program on Financial Stability Intervention Case*, 2016a. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2722712.
- Chase P. Ross. The Capital Purchase Program. *Yale Program on Financial Stability Intervention Case*, 2016b.

378 Treasury. Application Guidelines for TARP Capital Purchase Program, 2008a.
379 URL [https://www.treasury.gov/initiatives/financial-stability/TARP-](https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/cap/Documents/application-guidelines.pdf)
380 [Programs/bank-investment-programs/cap/Documents/application-](https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/cap/Documents/application-guidelines.pdf)
381 [guidelines.pdf](https://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/cap/Documents/application-guidelines.pdf).

382 U.S. Treasury. Process-Related FAQs for Capital Purchase Program. 2008b.
383 URL [https://www.treasury.gov/press-center/press-releases/Documents/](https://www.treasury.gov/press-center/press-releases/Documents/faqcpp.pdf)
384 [faqcpp.pdf](https://www.treasury.gov/press-center/press-releases/Documents/faqcpp.pdf).

385 U.S. Treasury. U.S. Treasury Releases Terms of Capital Assistance Program.
386 2009a. URL [https://www.treasury.gov/press-center/press-releases/](https://www.treasury.gov/press-center/press-releases/Pages/tg40.aspx)
387 [Pages/tg40.aspx](https://www.treasury.gov/press-center/press-releases/Pages/tg40.aspx).

388 U.S. Treasury. The Capital Assistance Program and its Role in the Financial Sta-
389 bility Plan. 2009b. URL [https://www.treasury.gov/press-center/press-](https://www.treasury.gov/press-center/press-releases/Documents/tg40_capwhitepaper.pdf)
390 [releases/Documents/tg40_capwhitepaper.pdf](https://www.treasury.gov/press-center/press-releases/Documents/tg40_capwhitepaper.pdf).

391 4 Appendix A - List of Resources

392 4.1 Summary of Program

- 393 • Treasury White Paper: The Capital Assistance Program and its Role in the
394 Financial Stability Plan, U.S. Treasury, February 2009 – *Treasury white paper*
395 *describing how the CAP fits within the broader financial stability plan, the con-*
396 *tingent capital framework, and the program’s specific design elements.* [https:](https://www.treasury.gov/press-center/press-releases/Pages/tg40.aspx)
397 [//www.treasury.gov/press-center/press-releases/Pages/tg40.aspx](https://www.treasury.gov/press-center/press-releases/Pages/tg40.aspx)

398 4.2 Implementation Documents

- 399 • Term Sheet for Capital Assistance Program, U.S. Treasury – *Treasury document*
400 *discussing terms of investments made via the CAP.* [http://www.treasury.](http://www.treasury.gov/press-center/press-releases/Documents/tg40_captermsheet.pdf)
401 [gov/press-center/press-releases/Documents/tg40_captermsheet.pdf](http://www.treasury.gov/press-center/press-releases/Documents/tg40_captermsheet.pdf)
- 402 • The Supervisory Capital Assessment Program: Design and Implementation,
403 Board of Governors of the Federal Reserve System, April 24, 2009 – *Federal Re-*
404 *serve document outlining design details of the SCAP.* [http://www.federalreserve.](http://www.federalreserve.gov/bankinfo/bcreg20090424a1.pdf)
405 [gov/bankinfo/bcreg20090424a1.pdf](http://www.federalreserve.gov/bankinfo/bcreg20090424a1.pdf)

406 4.3 Legal/Regulatory Guidance

- 407 • Recovery Plan’s Retroactive Restrictions and Say-on-Pay, Morrison Foerster,
408 March 2009 – *The American Recovery and Reinvestment Act of 2009 changed*
409 *executive compensation restrictions on firms participating in EESA programs;*
410 *this document outlines the relevant changes.* [http://media.mofo.com/files/](http://media.mofo.com/files/uploads/Images/090302NewEra.pdf)
411 [uploads/Images/090302NewEra.pdf](http://media.mofo.com/files/uploads/Images/090302NewEra.pdf)

4.4 Press Releases/Announcements

- U.S. Treasury Releases Terms of Capital Assistance Program, U.S. Treasury, February 25, 2009 – *Treasury press release describing how the Treasury and Federal banking agencies would test large bank holding companies with the SCAP and how the CAP would be used together with the SCAP.* <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090507a1.pdf>
- Treasury Announcement Regarding the Capital Assistance Program, November 9, 2009 – *Press release announcing the closure of the CAP after making no investments.* <https://www.treasury.gov/press-center/press-releases/Pages/tg359.aspx>
- SCAP Results, Federal Reserve, May 7, 2009 – *Press release which announces the results of the SCAP.* <http://www.federalreserve.gov/newsevents/press/bcreg/20090507a.htm>
- Statement by Timothy F. Geithner U. S. Secretary of the Treasury before the Senate Banking Committee, May 20, 2009 – *Secretary Geithner discusses the initial impact of and market response to the SCAP's results.* <https://www.treasury.gov/press-center/press-releases/Pages/tg139.aspx>

4.5 Media Stories

- U.S. May Convert Banks' Bailouts to Equity Share, New York Times, April 19, 2009 – *Article discussing the possibility of banks converting CPP shares to common equity.* <http://www.nytimes.com/2009/04/20/business/20bailout.html>
- Citigroup Sheds Energy Unit and Its \$100 Million Trader, New York Times, October 9, 2009 – *Article discussing the sale of Philbro by Citigroup.* <http://www.nytimes.com/2009/10/10/business/10citi.html>

4.6 Key Academic Papers

- A (Mostly) Private Capital Assistance Programme (CAP), Richard Caballero, 2009 – *Paper describing an alternative to the CAP which set a government guaranteed floor on bank stock prices.* <http://voxeu.org/article/recapitalising-banks-caballero-plan>
- Valuing the Treasury's Capital Assistance Program, Paul Glasserman and Zhenyu Wang, 2011 – *Paper which finds CAP as 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

4.7 Reports/Assessments

- Troubled Asset Relief Program: Two Year Retrospective, Office of Financial Stability, October 2010 – *Office of Financial Stability report discussing the program and its outcomes in the context of the wider swath of TARP*. http://www.treasury.gov/press-center/news/Documents/TARP%20Two%20Year%20Retrospective_10%2005%2010_transmittal%20letter.pdf

5 Appendix B - Road Map

The following is a list of the key design decisions that will likely have to be made in implementing a program similar to the Capital Assistance Program (CAP), a capital backstop program available to large bank holding companies deemed to have insufficient capital following a stress test.

5.1 Key Questions

1. Which agency or agencies have the authority and expertise to provide the capital backstop?
 - 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?
 - iv) Is any additional authority required in order to provide a capital backstop?
 - v) How long should firms be allowed to seek private capital before turning to the public backstop?
2. How should a public capital backstop be structured?
 - i) What sort of security should the public capital be provided through?
 - ii) 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?
 - iii) How can the backstop be structured to compel firms to first raise private capital and use the public capital as a less preferred option?
 - iv) Does the backstop 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) Is there mandatory conversion to common after a time period? If so, after how long?

- 480 vi) How does the taxpayer participate in the potential future profitability of
- 481 the involved firms? Does the public receive warrants, for example?
- 482 vii) How does the public exit its investment? Over what time frame?
- 483 viii) How can participating financial institutions redeem their capital injections?
- 484 With cash proceeds from equity issuance only, as in the CAP?
- 485 3. To what extent does the government participate ?
- 486 i) To what extent does the public influence management decision making?
- 487 ii) What other constraints will firms using public capital face? (E.g. executive
- 488 compensation caps, restrictions on common stock dividends, buybacks and
- 489 cash acquisitions, etc.)
- 490 iii) Are there sufficient authorized shares to meet the capital backstop's re-
- 491 quirements?
- 492 iv) Does the capital injection trigger any poison pill or covenants?
- 493 v) What is the relationship between the capital injection's preferred shares
- 494 and existing preferred shares?
- 495 4. Which firms are eligible for the capital backstop?
- 496 i) Are foreign institutions eligible?
- 497 ii) What tests are conducted to determine capital adequacy and the amount
- 498 of support the public should provide? (E.g., is there a stress test?)
- 499 iii) What metric or measure should regulators target to assess capital ade-
- 500 quacy?
- 501 I) Should the test focus on Tier 1 capital, Tier 1 Common capital, tan-
- 502 gible common equity, a combination of these or something else?
- 503 i) For example, should preferred equity, goodwill and intangible as-
- 504 sets be included in the equity component?
- 505 ii) Should the denominator be based on risk-weighted assets, tangible
- 506 assets or something else?

507 5.2 Implementation Steps

- 508 1. Develop the description of the capital backstop, including legal authority, pur-
- 509 pose, firm eligibility, a general timeline, et cetera and seek input from industry
- 510 and other stakeholders.
- 511 2. If necessary, seek approval for the program, funding et cetera.
- 512 3. Produce term sheet for the program.¹⁶

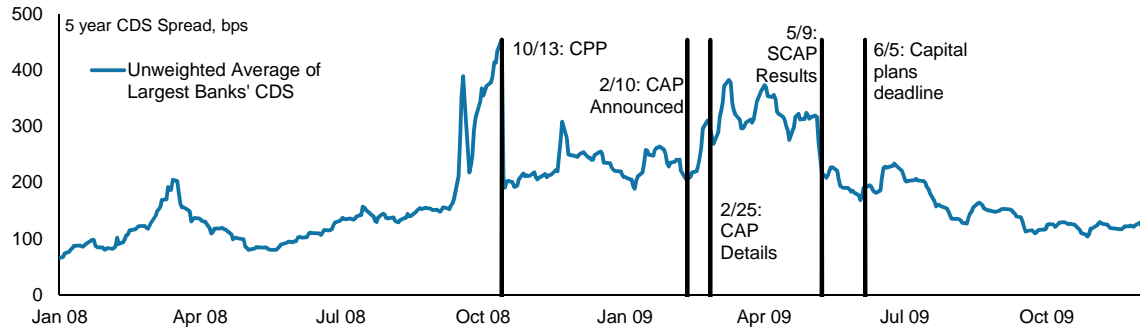
¹⁶CAP Example Term Sheet:

https://www.treasury.gov/press-center/press-releases/Documents/tg40_captermsheet.pdf

- 513 4. Develop application instructions for completing the documentation necessary
514 to participate in the capital back stop.
- 515 5. Produce capital adequacy targets with which to judge applications.
- 516 6. Find institution specific capital adequacy using supervisors and firms own' cap-
517 ital adequacy estimates.
- 518 7. Compare supervisors' capital adequacy estimates with firms' own estimates and
519 reconcile differences.
- 520 8. Provide capital to firms with inadequate capital.

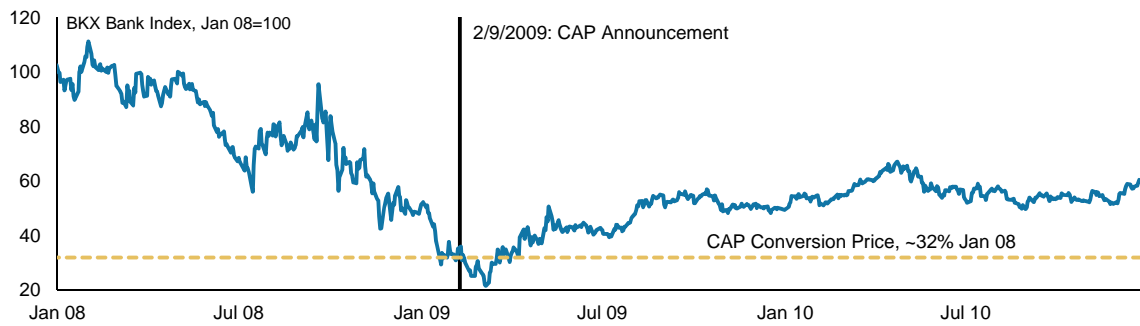
6 Figures and Tables

Figure 1: CPP, CAP and Large Banks' CDS Spreads



Source: Bloomberg.

Figure 2: Bank Valuations Around Time of CAP Announcement



Source: Bloomberg.

Table 1: SCAP Results

Firm	Additional Capital Required
Bank of America	\$33.9 billion
Wells Fargo	\$13.7 billion
GMAC	\$11.5 billion
Citigroup	\$5.5 billion
Regions Financial Corp.	\$2.5 billion
SunTrust Banks	\$2.2 billion
Morgan Stanley	\$1.8 billion
KeyCorp	\$1.8 billion
Fifth Third Bank	\$1.1 billion
PNC	\$0.6 billion
American Express	Adequate
Bank of New York Mellon	Adequate
BB&T	Adequate
Capital One	Adequate
Goldman Sachs	Adequate
JP Morgan Chase	Adequate
MetLife	Adequate
State Street	Adequate
U.S. Bancorp	Adequate

Source: Federal Reserve (May 7, 2009).