

# The U.S. Supervisory Capital Assessment Program (SCAP) and Capital Assistance Program (CAP)

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## Abstract

Due to continued stress during the Global Financial Crisis, the U.S. Treasury released a series of additional measures in February of 2009 that included mandatory stress tests for major U.S. bank-holding companies (BHCs), as well as the creation of a capital backstop. The stress tests were known as the Supervisory Capital Assessment Program (SCAP), which tested the capital adequacy of the 19 U.S. BHCs that each held over \$100 billion in assets. A large interagency team of regulators and experts designed two hypothetical scenarios for the group of BHCs: a baseline that reflected the consensus belief about the course of the current recession, as well as a more adverse scenario that reflected a deeper recession. Total loan loss estimates were higher than any point in U.S. history. Of the 19 BHCs, ten were required to raise about \$75 billion in capital, nearly all in common equity. These ten BHCs had six months to obtain capital either in private markets or via a government backstop facility known as the Capital Assistance Program (CAP). Institutions, including non-SCAP ones, could also apply to CAP for the right to issue preferred shares, subject to certain restrictions. The shares were convertible to common equity, paid dividends of nine percent, and contained warrants that allowed Treasury to purchase additional common stock. Ultimately, no institutions needed to use this facility. Academics and policymakers praised both the Fed's controversial decision to be transparent in releasing the details and results of the SCAP, as well as the stringency of the capital requirements and harsh loss rates in the SCAP. The CAP was believed to be a valuable fallback option and general success as institutions obtained private capital elsewhere.

**Keywords:** Broad-based capital injections, stress tests, capital backstop, Global Financial Crisis, preferred stock, United States

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## The U.S. Supervisory Capital Assessment Program (SCAP) and Capital Assistance Program (CAP)

### At a Glance

The passage of the Emergency Economic Stabilization Act on October 3, 2008 marked the beginning of the government's aggressive intervention in the banking system. They did so through the Capital Purchase Program (CPP), in which the Treasury purchased nearly \$205 billion of preferred equity in 707 public and private banks, S-Corporations, and mutual banks.

Markets, however, continued to struggle through 2008 and into 2009. As part of a series of additional measures, Treasury released a plan in February of 2009 that included mandatory stress tests for major U.S. bank-holding companies (BHCs), as well as the creation of a capital backstop to provide government capital in lieu of private capital if these institutions were found to be undercapitalized.

**Purpose:** "To ensure the continued ability of U.S. financial institutions to lend to creditworthy borrowers in the face of a weaker than expected economic environment and larger than expected losses."

<b>Announcement Date</b>	February 10, 2009
<b>Operational Date</b>	February 25, 2009
<b>Sunset Date</b>	November 9, 2009
<b>Program Size</b>	Unlimited; unspecified
<b>Usage</b>	Not used
<b>Outcomes</b>	\$77 billion in common equity raised, over \$66 billion in government capital repaid.
<b>Key Features</b>	Mandatory conversion after 7 years, 20% step-up clause, initial stress-test component.

The stress tests were known as the Supervisory Capital Assessment Program (SCAP), which tested the capital adequacy of the 19 U.S. BHCs that each held over \$100 billion in assets. A team of over 150 regulators and experts from a variety of institutions (including the Fed, Treasury, and FDIC) designed two hypothetical scenarios for the group of BHCs: a baseline scenario, which reflected the consensus expectation of professional forecasters about the depth and duration of the current recession, and a more adverse scenario, which characterized a longer and more severe recession. The scenarios were based on estimates of real GDP, unemployment, and house prices, as well as loss rates on seven different categories of loans. Total loan loss estimates were higher than any point in U.S. history, including during the Great Depression. In particular, the SCAP focused both on the quantity, as well as the quality (measured by the amount of common equity) of Tier 1 capital held. The Federal Reserve released the results in May of 2009. Ten of the 19 BHCs were required to raise about \$75 billion in capital, with nearly all the deficit in the form of common equity.

The ten BHCs that needed additional capital had six months to obtain capital either in private markets or via a government backstop facility known as the Capital Assistance Program (CAP). Any institution, including those that did not undergo the stress tests, could apply to CAP for the right to issue preferred shares in an amount between one and two percent of risk-weighted assets. The shares were convertible to common equity at a slight discount from the participant's average stock price, paid dividends of nine percent, included substantial executive compensation and corporate governance restrictions, and also contained 10-year warrants that allowed Treasury to purchase additional common stock, though they pledged not to exercise voting rights with respect to this stock. Ultimately, no institutions used this facility.

### Summary Evaluation

Despite running counter to general supervisory sentiment, the contentious decision by the Fed to be transparent in releasing the details and results of the tests boosted confidence and helped stabilize still-troubled financial markets. The stringency of the capital requirements and harsh loss rates in the SCAP were also praised. The CAP, despite not being used, was attributed as a valuable fallback option and general success since no institutions had to tap it for funding, as they were able to obtain private capital elsewhere. Stress testing became a regular part of bank supervision following the passage of the Dodd-Frank Act.

## Context

Category	Value (As of 2009)	Data Source
<b>GDP</b>	\$14,448,932,500,000	<a href="#">IMF International Financial Statistics</a>
<b>GDP Per Capita</b>	\$ 47,008 per capita	<a href="#">IMF WEO (2019)</a>
<b>Sovereign Credit Rating (5-year senior Debt)</b>		
<b>Size of banking system</b>	\$9,368,926,000,000	<a href="#">World Bank – Global Financial Development Database</a>
<b>Size of banking system (% of GDP)</b>	66.9%	Ibid.
<b>Size of banking system (% of financial system)</b>	30.2%	Ibid.
<b>5-bank concentration of banking system</b>	44.3%	Ibid.
<b>Foreign involvement in banking system</b>	19%	Ibid.
<b>Government ownership of banking system</b>	0%	<a href="#">World Bank – Bank Regulation and Supervision Survey (2019 Database)</a>
<b>Existence of Deposit Insurance</b>	100% insurance on deposits up to \$250,000 <sup>2</sup>	<a href="#">World Bank – Deposit Insurance Dataset (2013 Database)</a>

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<sup>2</sup> The passage of the Emergency Economic Stabilization Act in October of 2008 authorized a temporary increase of the deposit insurance threshold up to \$250,000 (P.L. 110-343 – pp. 3799). This was made permanent on July 21, 2010 with the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act ([FDIC PR, 07/21/2010](#)).

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## I. Overview

### Background

On October 3, 2008, the Emergency Economic Stabilization Act (EESA) was passed as a response to the Global Financial Crisis in the U.S. (P.L. 110-343). The primary component of this Act, called the Troubled Asset Relief Program (TARP), authorized Treasury to create a variety of programs to alleviate stress in several areas, such as the housing and automobile industries, as well as the financial sector (UST – TARP Programs, P.L. 110-343 - pp. 3767). The largest of these programs was the Capital Purchase Program (CPP): a \$250 billion program in which the U.S. Treasury bought an unprecedented amount of preferred equity from a variety of banks (public and private), S-Corporations, and mutual banks. See Lawson (2020) for more information on the Capital Purchase Program.

Most notably, nine of the largest U.S. Bank Holding Companies (BHC's) agreed to participate at the outset of the program, which began accepting applications on October 14, 2008.<sup>3</sup> Participation by these nine institutions was publicly announced to “collectively signal the importance of the program for the system” (UST PR, 10/14/2008). Approximately \$205 billion would be disbursed to 707 banks and trusts through the CPP, with the U.S. government realizing a net income of about \$21.5 billion (CPP Transaction Data, Monthly TARP Update, October 2019).

Treasury's financial market assistance continued with its creation of the Systemically Significant Failing Institutions (SSFI) program, which it used to inject \$40 billion in additional capital to the massive, struggling insurer AIG (UST Report December 2008 - pp. 3). The company would authorized another \$30 billion from Treasury in March of 2009 as part of an equity capital facility due to continued market stress (AIG Financial Supplement (Q3 2010) - pp. 10 - 11). For more information on the AIG Investment Program, see Buchholtz and Lawson (2020) – Module C: The AIG Investment Program. Additionally, two of the CPP's largest beneficiaries, Bank of America and Citigroup, also received \$20 billion each as part of the Targeted Investment Program (UST: TIP).

Despite these significant efforts markets continued to struggle through 2008 and into the beginning of 2009, so much so that, in February of 2009, two more key policy decisions were made. The first was the passage of the American Recovery and Reinvestment Act (ARRA) on February 17, 2009. ARRA was a massive fiscal stimulus plan designed to be “speedy, substantial, and sustained” and provided about half of the \$1.537 trillion stimulus (Geithner, Bernanke, Paulson (2020) – pp. 457, 462).<sup>4</sup>

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<sup>3</sup> The nine BHCs were Citigroup (\$25 billion), JP Morgan (\$25 billion), Wells Fargo (\$25 billion), Bank of America (\$15 billion), Morgan Stanley (\$10 billion), Goldman Sachs (\$10 billion), Merrill Lynch (\$10 billion), State Street (\$3 billion), and Bank of New York Mellon (\$2 billion) (SIGTARP 10/09/2009 – pp. 20, CPP Transaction Data).

<sup>4</sup> This \$1.537 trillion in stimulus figure is as of the end of 2012.

The second was the announcement of the government’s Financial Stability Plan (The Plan) on February 10, 2009 as part of a broad deployment of the government’s strategy to “attack our crisis on all fronts with [its] full arsenal of financial tools” (UST PR, 02/10/2009). The Plan, which included public-private capital programs, consumer and business lending initiatives, and increased transparency and accountability for firms obtaining TARP funds, also featured mandatory stress tests for some of the largest financial institutions, as well as the creation of a capital backstop facility to provide government capital in lieu of private capital (UST PR, 02/10/2009). The stress tests and capital backstop would come to be known as the Supervisory Capital Assessment Program (SCAP) and the Capital Assistance Program (CAP), respectively.

### **Program Description**

The U.S. Department of the Treasury released details of the Capital Assistance Program on February 25, 2009, about two weeks after its announcement. The stress tests, which the Fed used “to evaluate the capital needs of the major U.S. banking institutions under a more challenging economic environment” began on this date (SCAP: Design and Implementation – pp. 1, UST PR, 02/25/2009).

### **Supervisory Capital Assessment Program (SCAP)**

The first stage of the program, called the Supervisory Capital Assessment Program (SCAP) was a series of stress tests for the largest U.S. bank holding companies (BHCs) in which teams of examiners “appl[ied] a consistent and systematic approach across the group to evaluate the projected loss and resource estimates submitted by [the BHCs]” (SCAP: Design and Implementation – pp. 2). SCAP was born out of the rationale that credit intermediation had slowed dramatically due to a widespread loss of confidence in the banking system. Therefore, many of the largest institutions had far less capital, and thus were less able to absorb losses should the turmoil grow further. To combat this, the Federal Reserve felt that the largest companies ought “to hold additional capital to provide a buffer against higher losses than generally expected” (SCAP: Design and Implementation – pp. 1).

The Federal Reserve released two papers on the SCAP in the spring of 2009. The first, released on April 24, 2009, went in detail about the design of the recently concluded stress tests, while the second, released on May 7, 2009, explained the results of the tests. Over 150 people from a variety of supervisory agencies, were organized into teams tasked with “examining a distinct aspect of the loss and resource projections across all 19 participating BHCs” (SCAP: Design and Implementation – pp. 10).

Any U.S. bank holding company that had over \$100 billion in risk-weighted assets on a consolidated basis were required to participate and provide projections of “their credit losses and revenues for the two years 2009 and 2010, including the level of reserves that would be needed at the end of 2010 to cover expected losses in 2011, under two alternative economic scenarios” (SCAP: Design and Implementation – pp. 1).<sup>5</sup> The first scenario, called the *baseline*, “reflected the consensus expectation in February 2009 among professional

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<sup>5</sup> All BHCs with over \$100 billion in assets at *year-end 2008* were required to participate.

forecasters on the depth and duration of the recession.” The *more adverse scenario*, on the other hand, “characterize[d] a recession that [was] longer and more severe than the consensus expectation” (SCAP: Design and Implementation – pp. 1). However, the more adverse scenario was not a “worst-case” scenario, as the Fed felt that the conditions of the stress test ought to be “severe but plausible” (SCAP: Design and Implementation – pp. 5). See Table 1 below for a list of these institutions, which held about “two-thirds of the assets and more than half the loans in the U.S. banking system” (FRB PR, 04/24/2009).

Table 1: Description of 19 SCAP Bank Holding Companies

Bank Holding Company	Risk-weighted Assets (Year-end 2008, \$ billions)	Tier 1 Capital (\$ billions)
American Express Company	\$104.4	\$10.1
Bank of America	\$1,633.8	\$173.2
BB&T	\$109.8	\$13.4
Bank of New York Mellon	\$115.8	\$15.4
Capital One	\$131.8	\$16.8
Citigroup	\$996.2	\$118.8
Fifth Third	\$112.6	\$11.9
GMAC	\$172.7	\$17.4
Goldman Sachs	\$444.8	\$55.9
JPMorgan Chase	\$1,337.5	\$136.2
KeyCorp	\$106.7	\$11.6
MetLife	\$326.4	\$30.1
Morgan Stanley	\$310.6	\$47.2
PNC	\$250.9	\$24.1
Regions	\$116.3	\$12.1
State Street	\$69.6	\$14.1
SunTrust	\$162	\$17.6
U.S. Bancorp	\$230.6	\$24.4
Wells Fargo	\$1,082.3	\$86.4

Source: Supervisory Capital Assessment Program: Overview of Results

This was an unprecedented move because, at the time, “U.S. bank supervisors had never used a scenario-based stress test to assess the capital adequacy of banks and then required capital increases based on what those results showed was needed” (Geithner, Bernanke, Paulson (2020) – pp. 268). Despite SCAP being announced by Treasury, the Federal Reserve and other federal banking agencies were the ones who administered the program to ensure that markets would believe that the results were credible (Geithner, Bernanke, Paulson (2020) – pp. 267 - 268). The difficulty in accurately projecting and assessing losses and revenues for the BHCs was “amplified in the current period of increased macroeconomic activity”, but this was precisely the reason that the Fed felt the tests were appropriate (SCAP: Design and Implementation – pp. 10). They felt that BHCs needed to “have sufficient resources to continue to lend to creditworthy borrowers across a wide range of macroeconomic outcomes” (SCAP: Design and Implementation – pp. 10).

After the stress tests had been conducted, federal banking regulators would assess the vulnerabilities of each BHC under their loss estimates for each scenario and then recommend an amount of capital to ensure that, even in the case of the more adverse scenario, the participating institutions would remain appropriately capitalized (SCAP: Design and Implementation – pp. 17). To help make this determination, each BHC was required to “[report] projections of Tier 1 capital and common stockholders’ equity for the end of 2009 and 2010”, which served as a baseline for the recommendations that the government assessors would ultimately make to the institutions (SCAP: Design and Implementation – pp. 16). In making their recommendations, the supervisors looked at the composition of the BHCs’ Tier 1 capital and paid close attention to the amount of common equity each firm had, as common equity “generally should be the dominant element within Tier 1 capital” (SCAP: Design and Implementation – pp. 17).

The BHCs that needed to increase their capital levels as a result of the stress tests had 30 days to develop a plan that, “wherever possible, actively seek(s) to raise new capital from private sources” (SCAP: Overview of Results – pp. 4). These plans would be approved by their federal banking regulator, and the BHCs would have six months to implement them. While the ultimate goal of the SCAP was to “ensure the strength of the U.S. banking sector” and reduce uncertainty to restore normal market functionality, the U.S. government also had the CAP backstop as a source of government capital if they were unable to obtain private capital (SCAP: Overview of Results – pp. 4).

### **Capital Assistance Program (CAP)**

The Capital Assistance Program (CAP) was the second part of the two-phase bank assistance plan unveiled in the government’s February 2009 Financial Stability Plan. CAP functioned simply as an unlimited capital backstop, which helped banks absorb more immediate losses and while facilitating the raising of private capital (Geithner, Bernanke, Paulson (2020) – pp. 270 - 271, UST PR, 02/10/2009). All publicly traded institutions, not just those that had participated in the SCAP, were eligible to use CAP, as long as they were based in the U.S. (Term Sheet: CAP – pp. 1, UST PR, 02/10/2009). In the initial term sheet for public institutions, Treasury stated that they were working on developing applications for private institutions, as well as those that classified themselves as S-Corporations or mutual banks

(Term Sheet: CAP – pp. 1 – 2). Applications were submitted to the relevant federal banking regulator, such as the FDIC or the Fed, who would then submit recommendations to Treasury, who had the final say on which institutions were accepted (FAQ: CAP – pp. 2 – 3). The deadline for institutions to apply was May 25, 2009 (FAQ: CAP – pp. 2).

If accepted, Qualifying Financial Institutions, or QFI's, would then issue preferred equity with a face value of \$1,000 to Treasury, who would then transfer the instruments to an what they described as a "Financial Stability Trust" (CAP: Term Sheet – pp. 3, UST PR, 02/10/2009). The objective of this trust was to "protect and create value for the taxpayer as a shareholder over time" (FSOB Report, 03/31/2009 – pp. 41). QFI's were required to issue an amount of preferred stock equal to at least one percent but no more than two percent of its risk-weighted assets (Term Sheet: CAP – pp. 2). However, if a QFI required additional capital, it could submit a request to its federal banking regulator, who would then consult with Treasury, for the limit to be lifted. Any QFIs that did this would be categorized as needing "exceptional assistance" and would potentially be subject to additional terms and conditions (Term Sheet: CAP – pp. 2 – 3).

The names of applicants that were not approved for the program were not released publicly, but Treasury, per EESA guidelines, was required to publish the name and amount invested into any institution that actually issued preferred stock (FAQ: CAP – pp. 3). However, confidentiality could be obtained if a QFI was able to "specifically demonstrate the harm (for example, loss of competitive position, invasion of privacy) that would result from public release of information" (FAQ: CAP – pp. 3).

While much of the terms of the CAP were modeled after Treasury's Capital Purchase Program (CPP) that was created in October of 2008, one of the key differences was that CAP preferred equity was convertible to common stock ("Convertible Preferred"). The Convertible Preferred was voluntarily convertible either in part or whole by the QFI or Treasury any time after the investment, or would automatically do so after seven years (Term Sheet: CAP – pp. 3).<sup>6</sup> Some of the characteristics of the Convertible Preferred were subject to change based on the outcome of a shareholder vote conducted after the QFI issued the stock. They were required to call and pass a shareholder vote to authorize an increase in the number of common stock such that the conversion of the Convertible Preferred and exercise of the warrants (discussed below) could take place (Term Sheet: CAP – pp. 8).

Regardless of the method, the conversion price was "90% of the average closing price for the common stock for the 20 trading day period ending February 9, 2009" (Term Sheet: CAP – pp. 3). However, this price could be reduced by 15% every six months following the initial injection if the aforementioned stockholder vote to increase the number of authorized common stock was not met. The maximum price reduction was 45% (Term Sheet: CAP – pp. 3). If any stock remained outstanding after the mandatory conversion date (7 years), then

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<sup>6</sup> At the time of any conversion, the QFI was also required to pay "any accrued and unpaid dividends at its option in either cash or shares of common stock." These shares would be valued at the closing price on the second preceding trading day (Term Sheet: CAP – pp. 3). Treasury could also convert the preferred stock "upon specified corporate events, including certain sales, mergers or changes of control of the QFI" (Term Sheet: CAP – pp. 3).

the Treasury was required to make “reasonable efforts” to sell at least 20% of its current holdings of common equity every year until it owned no more equity ([Term Sheet: CAP – pp. 6](#)).

The Convertible Preferred paid out cumulative dividends of 9 percent, though this rate could increase to 20% six months after the original issue date if the stockholder vote explained above either failed or had not occurred yet ([Term Sheet: CAP – pp. 4](#)). So long as any Convertible Preferred or Treasury-owned common stock remained outstanding, dividends on non-Treasury common stock could be no more than \$0.01 nor could QFIs declare or pay dividends on any equivalently ranked or junior preferred shares ([Term Sheet: CAP – pp. 4 – 5](#)). This “dividend stopper” also prevented the repurchase of equivalently ranked or junior ranked shares ([Term Sheet: CAP – pp. 4](#)). If dividends on the Convertible Preferred were not paid for six quarters, consecutive or not, then Treasury would have the ability to elect two directors to the board of a QFI. This right ended after dividends had been paid for four consecutive quarters ([Term Sheet: CAP – pp. 5](#)).

QFIs were only able to redeem the Convertible Preferred through the issuance of new common equity so long as they 1) obtained approval from their federal banking regulator, and 2) the proceeds of the equity issuances equaled at least 25% of the issue price of the Convertible Preferred ([Term Sheet: CAP – pp. 4](#)). Redemption was done either at par value (plus accrued and unpaired dividends) if done within the first two years, or at the greater of par value plus accrued and unpaid dividends and the value if the stock had been converted ([Term Sheet: CAP – pp. 4](#)).<sup>7</sup>

Treasury could receive additional common stock by exercising the 10-year warrants issued with the Convertible preferred. These warrants, which were immediately exercisable, allowed the Treasury to purchase common stock equal to 20% of the amount of Convertible Preferred on the day of initial investment ([Term Sheet: CAP – pp. 7](#)). The exercise price was the same as the conversion price in both its original level and thresholds for reduction (15% decrease every 6 months, up to 45%) ([Term Sheet: CAP – pp. 7](#)). Treasury pledged not to exercise any voting power with respect to these shares ([Term Sheet: CAP – pp. 7](#)).

The Convertible Preferred also featured restrictions on executive compensation, which were originally specified in EESA and changed with the passage of the American Reinvestment and Recovery Act (ARRA) of February 2009 ([UST Report, 06/10/2009 – pp. 1](#)).

Senior executive officers (SEO’s), initially defined by EESA as the top five highest paid executives of companies that took TARP money, were the primary targets of these restrictions ([P.L. 110-343 - pp. 3777](#)). The number of SEO’s that were affected gradually increased as TARP developed, and the compensation restrictions expanded ([UST Interim Final Rule – 06/10/2009](#)). SEO’s of TARP recipients were generally unable to receive “golden parachute” payments, as well as bonuses and additional compensation, unless under specific circumstances. The legislation and subsequent interim final rules also required

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<sup>7</sup> Redemption of preferred stock issued under the Capital Purchase Program initially required it be done via the proceeds of a “Qualified Equity Offering”, or a raising of additional preferred or common equity. This requirement was removed after the passage of the American Recovery and Reinvestment Act of 2009 ([FAQ: CPP \(03/01/2012\)](#)).

compensation committees of QFI's to identify features that could "lead SEOs to take unnecessary and excessive risks" and meet with risk officers to discuss these features ([UST Report, 06/10/2009 – pp. 6-7](#)).

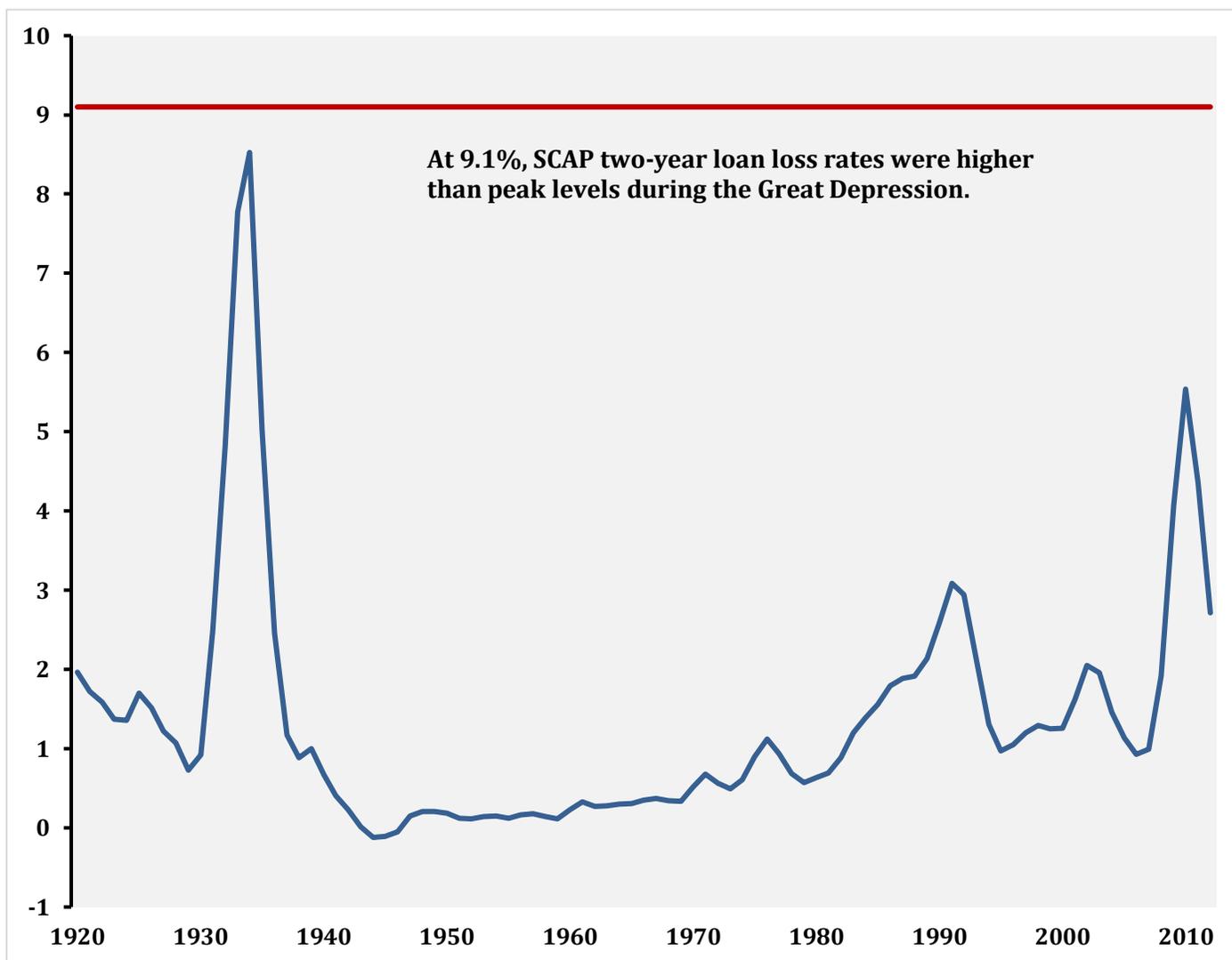
As mentioned above, institutions that were approved and could issue Convertible Preferred in excess of the two percent limit would be classified as needing "exceptional assistance" ([Term Sheet: CAP – pp. 2 – 3](#)). This distinction was first made when Treasury passed new interim guidance in February of 2009. These firms were subject to more strict executive compensation and corporate governance rules as a condition of receiving larger-than-normal levels of government assistance. Such restrictions came in the form of harsher limits on compensation, "clawback" provisions for any bonus or incentive payments, wider golden parachute bans, and broader publication requirements of expenditures that could be viewed as excessive or luxury ([UST PR, 02/04/2009](#)). Treasury issued its final guidance on executive compensation on June 10, 2009 ([UST PR, 06/10/2009](#)). See KDD #12 for more information.

## **Outcomes**

### **Supervisory Capital Assessment Program (SCAP)**

The SCAP was deliberately stringent, and loss estimates for the 19 BHCs that participated were quite high, with potential losses in the more adverse scenario as high as \$600 billion ([SCAP: Overview of Results – pp. 3](#)). Three quarters of these losses came from accrual loans, such as residential mortgages and consumer-related loans ([SCAP: Overview of Results – pp. 3](#)). Two-year total loan-loss estimates were at 9.1 percent, higher than any point in U.S. history, including during the height of the Great Depression ([SCAP: Overview of Results – pp. 3](#)). See *Figure 1* for a breakdown of historical two-year loan loss rates.

Figure 1: Historical two-year loan loss rates for commercial banks (%)



Source: International Monetary Fund, Federal Reserve, FDIC

The Federal Reserve pointed out that because of the two-year horizon of the SCAP, these were not full lifetime losses. Approximately \$400 billion in losses had already been realized by these firms from the 3<sup>rd</sup> quarter of 2007 to the end of 2008 ([SCAP: Design and Implementation – pp. 3](#)). However, the Fed felt that, despite these shortcomings, the SCAP captured “a large portion of losses from positions held as of the end of 2008” ([SCAP: Overview of Results – pp. 8](#)). Total loss absorbing capacity, measured by looking at PPNR less the change in the ALLL, was about \$362.9 billion ([SCAP: Overview of Results – pp. 6](#)).

The SCAP “capital buffer”, or the amount of capital needed to ensure that the participants would be adequately capitalized under the more adverse scenario, came out to \$185 billion for ten of the 19 BHCs. The other nine did not need to raise additional capital ([SCAP:](#)

Overview of Results – pp. 3).<sup>8</sup> However, this figure did not take into account capital that had been raised at the end of 2008, as well as other actions taken by many of the BHCs to preemptively strengthen their balance sheets prior to the results being released. When accounting for these reductions the original \$185 billion estimate, which was based on the firms’ balance sheets as of December 31, 2008, had been reduced to about \$75 billion (SCAP: Overview of Results – pp. 9). Almost all of the deficit was in the form of common equity, reflecting the Fed’s desire to change the composition, rather than the amount, of Tier 1 capital (SCAP: Overview of Results – pp. 16 – 17). See *Figure 5* for individual bank adjusted SCAP requirements.

After the results of the SCAP were published, CDS spreads for the largest commercial and investment banks fell considerably, with Citigroup’s peaking in April of 2009 before falling nearly 300 basis points after the SCAP results were released. See *Figure 4* for historical bank CDS spreads during this time.

### Capital Assistance Program (CAP)

Treasury closed the CAP program on November 9, 2009, six months after the SCAP results released. No investments were made under CAP, as all but one of the institutions tested under SCAP either already had enough capital, or had managed to successfully raise private capital (UST PR, 11/09/2009). The only institution that needed additional capital and failed to do so was GMAC, though its needs were moderate relative to its SCAP estimate and would ultimately use the Automotive Industry Financial Program (AIFP) to finance these (UST PR, 11/09/2009). See Nygaard 2020 for more information on GMAC and its usage of the AIFP.

The 10 SCAP BHCs were able to raise enough private capital to satisfy their SCAP requirements within six months (FRB PR, 11/09/2009). One unique feature of the CAP is that institutions could apply at the end of the stress testing period to guarantee they would have access, but defer funding for up to “six months in order to have the opportunity to raise as much private capital as possible” (CAP: White Paper – pp. 4). Most of the new capital was in the form of common equity commensurate with the SCAP recommendation to improve the quality of Tier 1 capital. Through conversions, exchanges, and additional raisings, over \$200 billion in common equity was raised throughout 2009 (GAO 10-861 – pp. 20 - 21). It is not clear if any institutions applied or were accepted into the program, since Treasury was only required to publish information if an institution actually issued capital under the facility (FAQ: CAP – pp. 3).

16 of the SCAP institutions issued preferred stock as a part of the government’s Capital Purchase Program (CPP). Nine of these repaid approximately \$66.7 billion in CPP investments on June 17, 2009, a little more than a month after the results had been released (CPP Transaction Data).<sup>9</sup> For a full recounting total capital actions from 2007 through 2010,

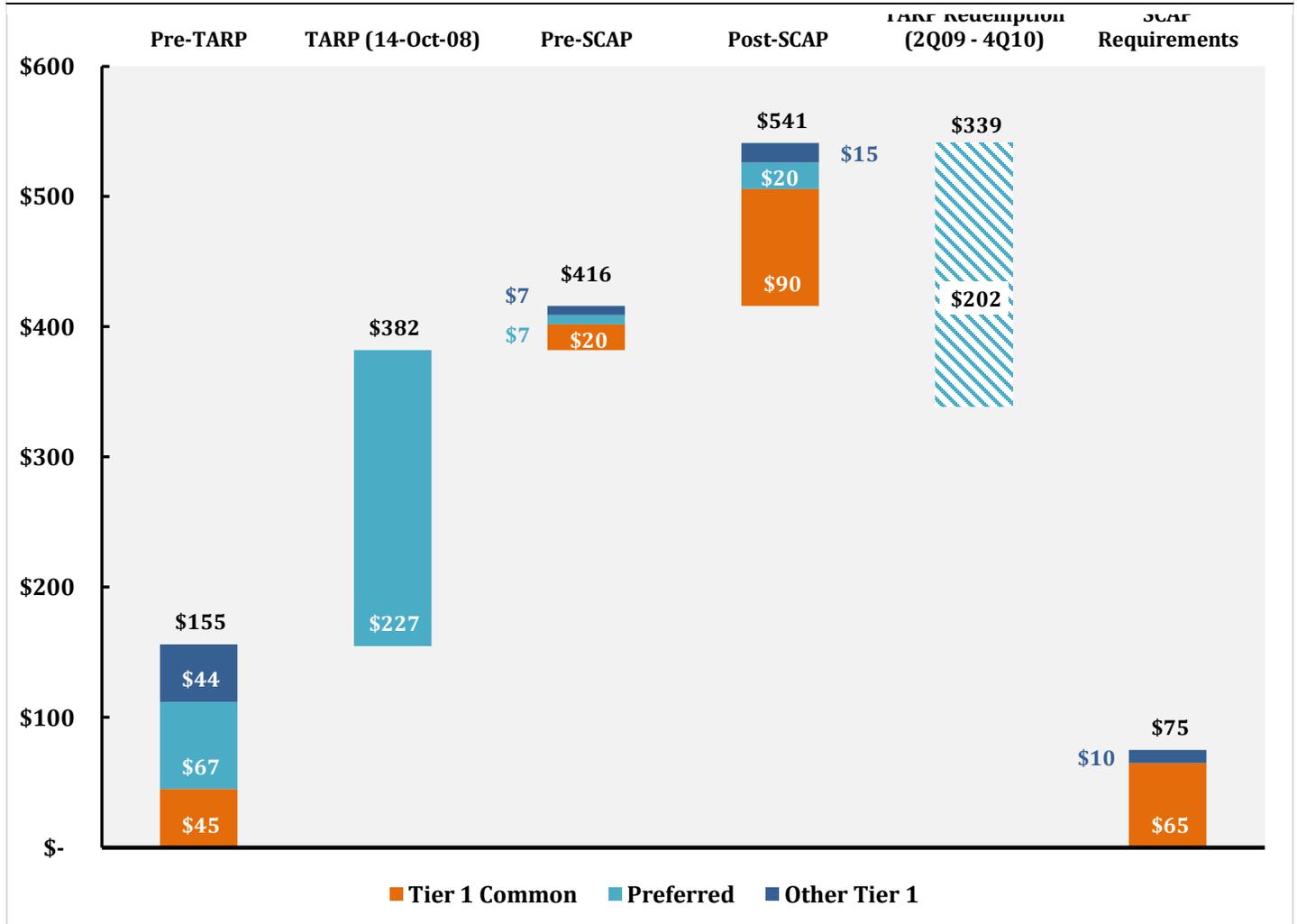
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<sup>8</sup> These firms were American Express, BB&T, Bank of New York Mellon, Capital One, Goldman Sachs, JP Morgan, MetLife, State Street, and US Bancorp (SCAP: Overview of Results – pp. 9)

<sup>9</sup> The nine SCAP BHCs that repaid their CPP investments were Bank of New York Mellon (\$3 billion), Goldman Sachs (\$10 billion), JP Morgan (\$25 billion), Morgan Stanley (\$10 billion), State Street (\$2 billion), BB&T (\$3.1 billion), Capital One (\$3.6 billion), American Express (\$3.4 billion), and US Bancorp (\$6.6 billion).

see *Figure 2*. For more information on private capital raises of individual SCAP banks after the stress tests, see *Figure 3*.

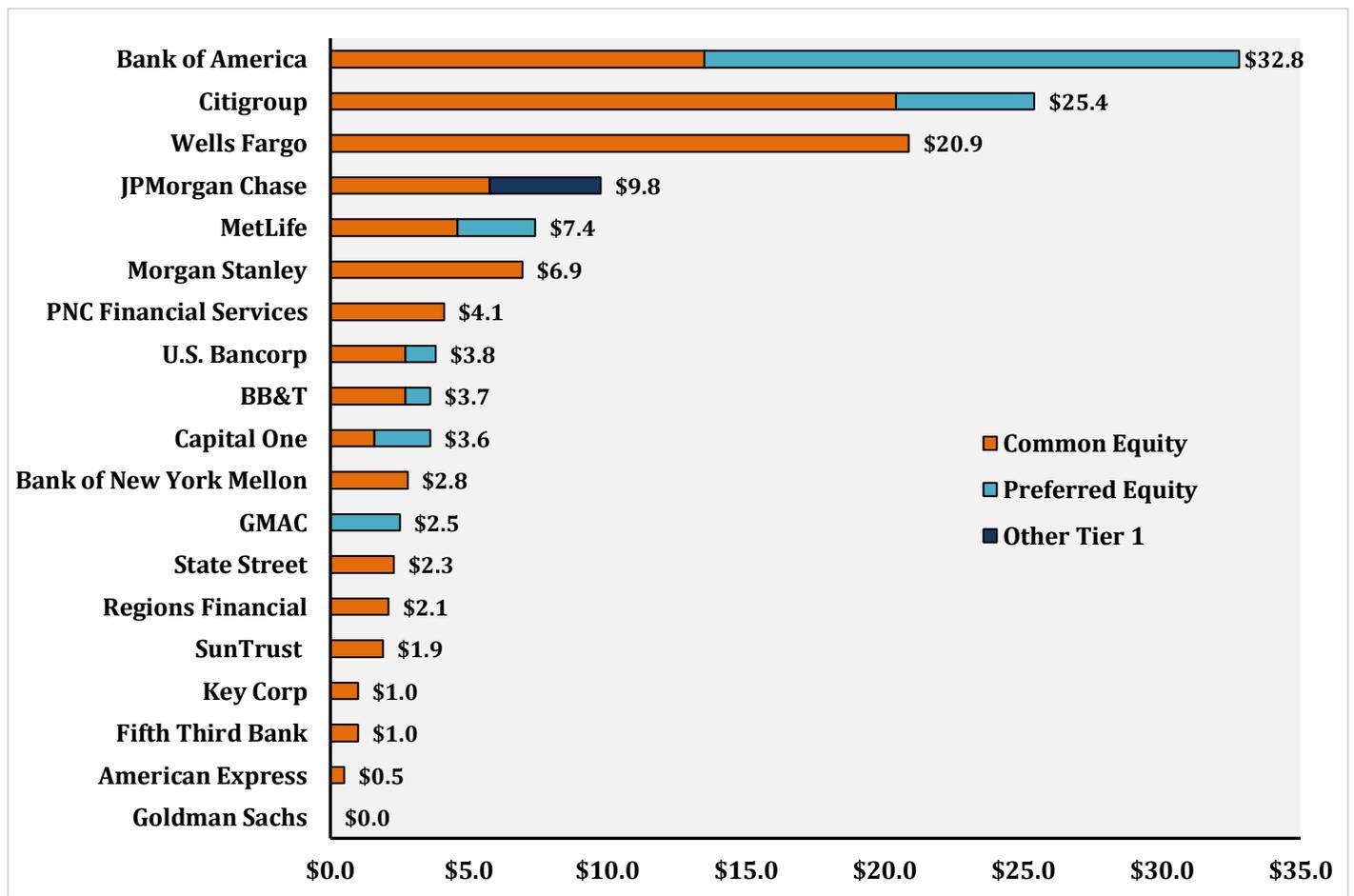
*Figure 2: SCAP Bank Capital Actions from Q1 2007 to Q4 2010 (\$ billions)*



Source: Goldman Sachs

Note: These calculations do not include capital raised by MetLife, Inc. or any conversions of preferred to common equity.

Figure 3: Post-SCAP Private Capital Raised by SCAP Banks (May 7, 2009 - December 31, 2009, \$ billions)



Source: Metlife: 2009 - 2010 Quarterly Reports. All others: Goldman Sachs

## II. Key Design Decisions

- 1. The SCAP and CAP were announced as a part of the government’s financial stability plan, which also included an expansion of consumer and business lending, a public-private investment fund and housing support and foreclosure prevention initiatives.**

The Financial Stability Plan (The Plan) was released on February 10, 2009 to “address the uncertainty, troubled assets and capital constraints of our financial institutions as well as the frozen secondary markets that have been the source of around half of our lending for everything from small business loans to auto loans” ([UST PR, 02/10/2009](#)). The Plan had several components:

- 1) The Financial Stability Trust. The series of comprehensive stress tests, which would later become the SCAP, as well as the Capital Assistance Program (CAP), were core features of this piece of the Plan. All investments made under CAP would have been placed into a separate Financial Stability Trust, which was specifically designed to manage the government’s investments ([UST PR, 02/10/2009](#)).
- 2) Public-Private Investment Fund. This fund was designed to purchase “legacy” assets from distressed institutions with the goal of soliciting private capital to do so. It included a public-private financing component of \$500 billion, with the potential to go up to \$1 trillion, and private-sector pricing of assets ([UST PR, 02/10/2009](#)).
- 3) Consumer & Business Lending Initiative. This was a joint venture with the Treasury and the Fed designed to unfreeze key secondary markets, specifically by expanding the capacity of the not-yet-implemented Term Asset-Backed Securities Loan Facility (TALF). Treasury and the Fed increased the size of TALF by five times, or up to \$1 trillion ([UST PR, 02/10/2009](#)).
- 4) A “new era” of Transparency, Accountability, Monitoring and Conditions. With this new plan, recipients of aid were expected to explain how they were going to use their funds and how this new aid would impact their ability to lend. Limits on executive compensation, as well as common stock dividends, repurchases, and cash mergers, were also a part of the Plan ([UST PR, 02/10/2009](#)).
- 5) Housing Support and Foreclosure Prevention. Treasury pledged \$50 billion to helping middle class homeowners reduce their monthly payments. Additionally, the government committed to “establishing loan modification guidelines and standards for government and private programs”, as well as mandating recipients to participate in foreclosure mitigation plans ([UST PR, 02/10/2009](#)).
- 6) Small Business and Community Lending. Finally, Small Business Administration (SBA) lending, which had declined by 57% from the first quarter of 2008, was addressed. The administration’s Small Business and Community Bank Lending Initiative financed the purchase of AAA-rated SBA loans, increased the guarantee of said loans to 90%, reduced SBA lending fees, and streamlined the application process to encourage lending ([UST PR, 02/10/2009](#)).

The announcement of the Plan was the first time that details about SCAP and CAP were released, though the terms and conditions of the program wouldn't be released until February 25 (UST PR, 02/10/2009, UST PR, 02/25/2009). The SCAP was widely publicized with the goal of reducing uncertainty and restoring confidence in the 19 BHCs that were tested, and the CAP was primarily created as a mechanism under which these large BHCs could finance themselves if they were unable to return to private capital markets within six months (SCAP: Design and Implementation – pp. 1, 3).

**2. Congress passed the Emergency Economic Stabilization Act on October 3, 2008, which gave the Secretary of the Treasury authority to purchase troubled assets “from any institution” and served as the legal basis for the CAP.**

Legal authority for the Supervisory Capital Assessment Program and Capital Assistance Program came from Section 101 of the Emergency Economic Stabilization Act (EESA) of 2008, which was passed on October 3, 2008. Section 101 states that, “The [Secretary of the Treasury] is authorized to establish the Troubled Asset Relief Program (or “TARP”) to purchase, and to make and fund commitments to purchase, troubled assets from any financial institution...”(P.L. 110-343 - pp. 3767). Treasury and the Federal Reserve ultimately decided to directly invest in the capital structure of banks rather than purchasing assets off their balance sheets first through the Capital Purchase Program in October (SIGTARP 10/05/2009 – pp. 12).

Treasury would later use this authority to make more targeted injections in firms such as AIG, Bank of America, and Citigroup (SIGTARP 10/05/2009 – pp. 17, UST PR, 11/10/2008). This same authority formed the legal basis for the CAP in February, which shared similar characteristics with the CPP (Glasserman and Wang (2011) – pp. 5). See *Table 2* for a comparison of capital instruments used in these two facilities.

*Table 2: Capital design elements of the Capital Purchase Program and the Capital Assistance Program*

	<b>Capital Purchase Program</b>	<b>Capital Assistance Program</b>
<b>Type</b>	Preferred Stock	Mandatorily Convertible Preferred Stock
<b>Term</b>	Perpetual Life	Mandatory conversion to common stock after 7 years. Optionally convertible by QFI or Treasury at price equal to 90% of avg. common stock price in 20 trading days ending on February 9, 2009.
<b>Total Size</b>	\$250 billion	Unlimited
<b>Individual Participation Limits</b>	Must issue an amount equal to not less than 1% of RWA, and not more than the lesser of \$25 billion or 3% of RWA.	Must issue an amount equal to not less than 1% of RWA, and not more than 2% of RWA.
<b>Dividends</b>	5% for first five years. 9% after first five years.	9% if shareholder consent received. 20% if consent not received.
<b>Redemption</b>	At par via proceeds of Qualified Equity Offering during first 3 years. No restrictions after 3 years. <sup>10</sup>	<i>Only</i> done via issuance of new common equity. At par for first 2 years. Redeemable at greater of par and as-converted value.
<b>Voting rights</b>	Right to elect two directors if dividends are not paid for six quarters.	Right to elect two directors if dividends are not paid for six quarters.
<b>Warrants<sup>11</sup></b>	10 year. Purchase of common stock equal to 15% of original gov. investment amount. Reduced by half if QFI had repaid Treasury by 12/31/09. Price reduced by 15% every six months (max of 45%) if shareholder consent not received.	10 year. Purchase of common stock equal to 20% of original gov. investment amount. Price reduced by 15% every six months (max of 45%) if shareholder consent not received.
<b>Usage</b>	\$205 billion to 707 banks and trusts	Not used.

*Source: Term Sheet: CPP, Term Sheet: CAP, UST - Capital Purchase Program*

<sup>10</sup> A Qualified Equity Offering was the sale by the holder of CPP capital of common stock or “qualifying perpetual preferred stock” for cash. This requirement was removed with the passage of ARRA in February of 2009, and redemptions could be done any time ([Term Sheet: CPP – pp. 2, FAQ: CPP \(03/01/2012\)](#)).

<sup>11</sup> “Shareholder Consent”, in the context of this table, is defined as a pre-emptive vote undertaken by the shareholders of a QFI after receiving either CPP or CAP assistance to authorize the an additional amount of common stock so that the exercise of the warrants and the conversion of the preferred equity (for CAP participants) can be done. If this consent is not obtained, then the terms generally become more harsh ([Term Sheet: CPP – pp. 5, Term Sheet: CAP – pp. 8](#)).

**3. The Treasury communicated that both the stress tests and government backstop were key parts of their financial stability plan, citing their desire to ensure the ability of institutions to continue lending at normal levels even during a more severe economic decline.**

Treasury framed CAP as a temporary facility in its original announcement on February 10, saying that the facility would be used “as a bridge to private capital until market conditions normalized” (UST PR, 02/10/2009(b)). Treasury emphasized this point by saying that the government capital instruments would be convertible to common equity, which would incentivize bank holding companies to replace them with private capital as soon as possible (UST PR, 02/10/2009). Finally, the announcement also stipulated that any investments made under CAP would be “placed in a separate entity set up to manage the government’s investments in US financial institutions” (UST PR, 02/10/2009). Treasury gave no additional details about the structure of this entity, but the subsection that gave details about the CAP was titled “Financial Stability Trust”, so it is possible that Treasury was considering a Trust structure for CAP investments.

In its more detailed announcement on February 25, Treasury issued a 1) a white paper detailing the reasons for establishing such a facility as well as a broad overview of key elements, 2) the official term sheet that bank holding companies would use to apply to the program, and 3) a list of frequently asked questions (FAQs) to help increase understanding of the program (UST PR, 02/25/2009). Treasury’s description of the program on February 10 and 25 was expanded on in a few distinct ways.

The Plan did not specify what Treasury expected the banks that received CAP capital to do with it, only stating that “the CAP instrument should improve confidence and increase the willingness of financial institutions to lend” (UST PR, 02/10/2009). In the February 25 release, however, the expected usage was much clearer, with Treasury requiring any applicant to “submit a plan for how they intend to use this capital to preserve and strengthen their lending capacity” (UST PR, 02/25/2009). Specifically, Treasury desired applicants to increase their levels relative to what they would have been able to do without government capital (UST PR, 02/25/2009). These plans would be made public by Treasury once government equity under the CAP had been obtained (UST PR, 02/25/2009). Treasury also began publishing individual bank lending reports as well as “monthly lending and intermediation snapshots”, which were targeted at the largest banks and done so Treasury could provide public analysis of the situation by targeting a section of banks that represented the majority (about 75%) of bank holding company assets in the country (UST Lending Snapshot, Oct – Dec 2008 – pp. 2).

The “separate entity” that would hold the government’s investments was further explained in the white paper that Treasury released. Treasury stated that all investments made under CAP would be put in a separate trust that would manage the government’s investments, and that the trustees’ primary objective was to “protect and create value for the taxpayer as a shareholder over time” (CAP: White Paper – pp. 3). This was done to reinforce Treasury’s goal of keeping any period of government investment “as temporary as possible” (CAP: White Paper – pp. 3).

The names of any applicants would not be published, regardless of if they were accepted or not. However, any completed transactions would have the name of the bank and the amount invested published within 48 hours of the investment (FAQ: CAP – pp. 3). However, applicants could request portions of the application be treated confidentially if they could “specifically demonstrate the harm (for example, loss of competitive position, invasion of privacy) that would result from public release of information” (FAQ: CAP – pp. 3).

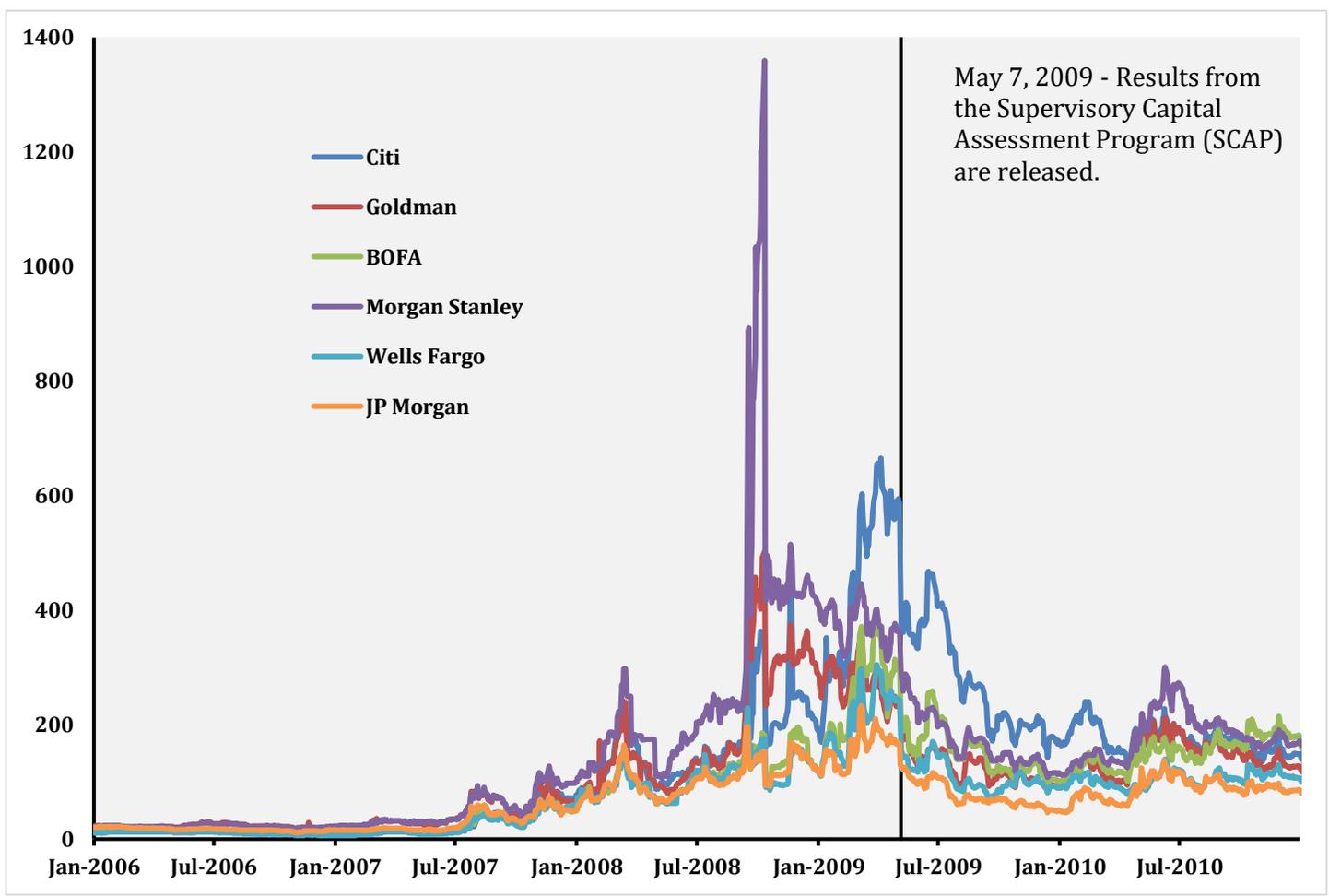
In the case of the SCAP, the Federal Reserve released a detailed report on April 24, 2009 on the design of the stress tests to the public, which they said was to “assist analysts and other interested members of the public in understanding the results of the [SCAP]” (FRB PR, 4/24/2009). This report was released shortly after the tests had concluded, and the results were released on May 7 (SCAP: Overview of Results).

In a speech on May 11, 2009 at the Federal Reserve Bank of Atlanta, Ben Bernanke stated that all agencies involved aimed to be as transparent as possible (Bernanke, 05/11/2009 – pp. 3). This was, however, the product of much internal debate amongst officials about how transparent the government ought to be about communicating the results of the stress tests. While there were regulators that wished to make many details of the tests public, doing so “ran counter to decades of a banking supervision philosophy that extolled the virtues of confidentiality” (Geithner, Bernanke, Paulson (2020) – pp. 268). Some regulators believed that too much transparency could be destabilizing by singling out “weaker” banks, which could lead to the very bank runs the SCAP was trying to prevent (Geithner, Bernanke, Paulson (2020) – pp. 268). After much debate, however, the Federal Reserve agreed to a policy of transparency, so the public could “decide for themselves [if the] stress test was sufficiently rigorous and credible (Geithner, Bernanke, Paulson (2020) – pp. 268).

On May 6, the day before the SCAP results were released, the Fed, Treasury, FDIC, and OCC released a joint statement that previewed the results of the SCAP. The agencies explained that the tests were not only about the quantity of Tier 1 capital, but the quality of it, as well (FRB PR, 05/06/2009). The SCAP, they said, was “by design” more stringent than a traditional solvency test (SCAP: Overview of Results – pp. 14). As a result, any additional capital that the BHCs would need as a result of the tests did not indicate inadequate capitalization, but an additional buffer in the event that a more pronounced recession occurred (FRB PR, 05/06/2009). The government also explained that any BHCs that needed additional capital would be required to submit a capital raising plan and have six months to implement it once submitted (SCAP: Overview of Results – pp. 4).

After the release of the SCAP results on May 7, CDS spreads for the six major bank holding companies, as well as the Libor-OIS spread, fell dramatically. Several of the largest participants in the Capital Purchase Program were also able to repay the government’s investment in June. See KDD #7 for more details on the impacts of the SCAP, and *Figure 4* for historical bank CDS spreads during this time.

Figure 4: Five-year CDS Spreads for 6 large bank holding companies (bps)



Source: Bloomberg

Despite extraordinary efforts prior to the SCAP by the FDIC, Treasury, and Fed to restore confidence in the banking system, concerns still remained. These concerns largely stemmed from more traditional credit risks, such as “rising delinquencies on prime as well as subprime mortgages, unpaid credit card and auto loans, worsening conditions in commercial real estate markets, and increased rates of corporate bankruptcy” (Bernanke, 5/11/2009 – pp. 1). According to Bernanke, the SCAP was designed to measure the impact of high expected loan loss rates, as well as address the uncertainty around the extent to these expected loss rates, instead of mitigate the damage caused by traditional credit risks (Bernanke, 5/11/2009 – pp. 1 - 2).

**4. Section 104 of EESA established the Financial Stability Oversight board, which monitored the activities of the CAP and other TARP programs, as well as the Special Inspector General for the Troubled Asset Relief Program, which was the principal oversight authority.**

Section 104 of EESA established the Financial Stability Oversight Board (FSOB) to review the policies implemented under section 101 (P.L. 110-343 – pp. 3770 – 3771). Those policies included reviewing “the appointment of financial agents, the designation of asset classes to be purchased, and plans for the structure of vehicles used to purchase troubled assets...” (P.L. 110-343 - pp. 3770). The FSOB was also responsible for examining the effects that programs made under section 101 had on “assisting American families in preserving home ownership, stabilizing financial markets, and protecting taxpayers” (P.L. 110-343 - pp. 3771).

The Board had the following members:

- 1) The Chairman of the Board of Governors of the Federal Reserve System
- 2) The Secretary of the Treasury
- 3) The Director of the Federal Housing Finance Agency (FHFA)
- 4) The Chairman of the Securities Exchange Commission (SEC), and
- 5) The Secretary of Housing and Urban Development (HUD).

Additionally, the Board was required to report to Congress, as well as the Congressional Oversight Panel at least quarterly to discuss the matters described above (P.L. 110-343 - pp. 3771).

The Special Inspector General for the Troubled Asset Relief Program, or SIGTARP, was established through section 121 of EESA (P.L. 110-343 - pp. 3788 - 3789). The Special Inspector General was to be appointed by the President and confirmed by the Senate, and was responsible for “coordinat[ing] audits and investigations of the purchase, management, and sale of assets by the Secretary of the Treasury...” (P.L. 110-343 – pp. 3788). SIGTARP did this by collecting the following information:

- 1) Descriptions of categories of troubled assets purchased
- 2) Listings of assets that fell into the aforementioned categories
- 3) Explanations of the reasons for purchasing said assets from the Secretary of the Treasury.
- 4) Listings of the financial institutions that the troubled assets were purchased from.
- 5) Listings of, and “detailed biographical information” on the people hired to manage these troubled assets.
- 6) Estimates on the total number and value of troubled assets, how much remained with the Treasury, how much had been sold, and the profit or loss incurred from said sales (P.L. 110-343 – pp. 3788 – 3789).

According to its mission statement, SIGTARP “is a federal law enforcement agency and is an independent watchdog protecting taxpayer dollars that fund TARP” (SIGTARP Annual

[Report – FY 2018 – pp. 3](#)). SIGTARP reported to Congress about its supervisory activities twice a year, audited various TARP programs, and conducted and reported on investigations of misconduct for TARP recipients ([SIGTARP – Official Website](#)). SIGTARP's quarterly reports generally consisted of assessments of various components of the program, such as the CPP, as well as auto and housing industry support programs ([SIGTARP April 2010 – Table of Contents](#)). SIGTARP reports included detailed recommendation sections, informed by the audits and investigations it conducted, and also provided detailed tables of the implementation status of each of these recommendations ([SIGTARP July 2014 – pp. 313 – 336](#)).

The Senate's Congressional Oversight Panel (COP) was another crucial component of TARP oversight. Created on the same day that TARP was passed, COP's primary functions were to:

- 1) "Oversee Treasury's actions
- 2) Assess the impact of spending to stabilize the economy
- 3) Evaluate market transparency
- 4) Ensure effective foreclosure mitigation efforts
- 5) And guarantee that Treasury's actions are in the best interest of the American people" ([COP – About Us](#)).

In its approximately two and a half years of operation, the COP held hearings and collected testimony from high-level officials, such as Treasury Secretary Tim Geithner and Senator Elizabeth Warren, and published 30 reports on the impacts of key TARP initiatives. Much of COP's analysis was informed by the functions listed above, with the Panel asking questions about the more immediate, stabilizing effects of TARP, as well as longer-form impacts, such as how TARP recipients were structuring their business and policies after receiving aid ([COP December 2008 – pp. 3](#)). Other reports, such as those about specific firms like GMAC and AIG, as well as the effectiveness of the SCAP stress testing methodology, were also published ([COP – Reports](#)). In this way, Congress was able to provide another layer of feedback to Treasury in how they managed still-outstanding investments, while providing guidance on what to do for future initiatives.

The COP was disbanded on April 3, 2011 after releasing its final report. In it, the Panel explained that, while TARP alone was not responsible for the economic recovery, "TARP quelled the immediate panic and helped to avert an even more severe crisis" ([COP March 2011 – pp. 182](#)). However, this report had minimal comments on both SCAP and CAP.

#### **5. CAP was intended to be an unlimited capital backstop, but with specified minimums and maximums for individual participating institutions.**

CAP was intended to be an unlimited capital backstop for any qualifying institutions that felt that they needed additional government capital, not just those that participated in the stress tests (Geithner, Bernanke, Paulson (2020) – pp. 270). Despite this unlimited authority, Treasury designed the capital to encourage participants to replace it with private capital as soon as possible ([CAP: White Paper – pp. 3](#)). Additionally, they were clear in stating that capital raised due to SCAP results, as well as CAP capital "does not represent a new capital

standard and [is] not expected to be maintained on an ongoing basis” ([CAP: White Paper – pp. 2](#)). See KDD #10 for more information on the design of CAP securities.

Institutions that were accepted into the program could issue convertible preferred stock in an amount no less than one percent of its risk-weighted assets, up to a maximum of two percent ([Term Sheet: CAP](#)).<sup>12</sup> They could submit a request for capital in excess of this amount to its federal banking regulator, who would then consult with Treasury. If this was successful, the institution would be categorized as needing “exceptional assistance” and would potentially be subject to additional terms and conditions ([Term Sheet: CAP – pp. 2 – 3](#)).

#### **6. The CAP was funded via Congressional appropriations authorized for Treasury’s use under the Troubled Asset Relief Program.**

Congress authorized a total of \$700 billion of TARP funds that could be “outstanding at any one time”. However, only \$250 billion was originally allowed to be outstanding, and the president was required to return to Congress with a report asking to disburse the remaining funds, should they be necessary ([P.L. 110-343 – pp. 3780](#)).<sup>13</sup> This authority lasted until October 3, 2010, or two years after the date of the passage of EESA. After this point, Treasury was not able to make new commitments under TARP ([TARP Two Year Retrospective – pp. 14](#)). The Dodd-Frank Wall Street Reform and Consumer Protection Act, passed on July 21, 2010, reduced this original commitment from \$700 billion to \$475 billion ([P.L. 111-203 – pp. 2133](#)). See KDD #15 for more information on Dodd-Frank.

However, the unlimited nature of the CAP meant there was some uncertainty around how much, if any, capital the government would need to provide. In hindsight, the level that the government had committed “was sobering – we were committing the government to buy an indeterminate amount of common stock in the banking system at a fixed price” (Geithner, Bernanke, Paulson (2020) – pp. 270 - 271). However, even the most extreme scenarios under SCAP determined the capital buffer to be far less than the remaining amount of TARP funds available. Assuming the 19 BHCs needed to draw all of the \$185 billion in additional capital that SCAP found from the CAP, they would have been able to do so.<sup>14</sup>

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<sup>12</sup> This was in addition to other Convertible Preferred stock that was to be used to redeem shares under either the CPP, Targeted Investment Program (TIP), or both.

<sup>13</sup> The phrase “outstanding at any one time”, which implicitly allowed the government to re-use TARP funds, was removed with the passage of The Dodd-Frank Wall Street Reform and Consumer Protection Act in July of 2010.

<sup>14</sup> Total disbursements under TARP were approximately \$441.8 billion, which was far under the initial \$700 billion appropriated in the original Emergency Economic Stabilization Act ([UST – TARP Tracker](#)).

**7. Federal banking regulators required all bank holding companies (BHCs) with risk-weighted assets of over \$100 billion to perform forward-looking “stress-tests” under the Supervisory Capital Assessment Program (SCAP) to determine their capital needs.**

The U.S. government assessed the capital needs of the banking system through the Supervisory Capital Assessment Program (SCAP), a forward-looking stress test of the 19 largest bank holding companies (BHCs) under a set of stringent economic scenarios. Each of the BHCs had risk-weighted assets of over \$100 billion (SCAP: Design and Implementation – pp. 1).<sup>15</sup> These firms were picked because of their significance in the credit intermediation process, and the fact that they collectively held “two-thirds of the assets and more than one-half of the loans in the U.S. banking system” (SCAP: Design and Implementation – pp. 3). Teams of examiners, led by those at the Federal Reserve “appl[ied] a consistent and systematic approach across the group to evaluate the projected loss and resource estimates submitted by the firms” (SCAP: Design and Implementation – pp. 2).

The SCAP was deliberately stringent, and designing it in this way allowed the Fed to “[counter] the risk that uncertainty itself exerts contractionary pressures on the banking system and the economy” (SCAP: Overview of Results – pp. 2). The goal of the tests was to ensure that, even in the event of a significant deterioration in the U.S. economy, these critically important BHCs would remain adequately capitalized and able to lend at their normal levels (FRB PR, 05/06/2009). In order to do assess these needs, federal regulators assessed losses on a variety of securities and loans for 2009 and 2010, as well as loan loss reserves at the end of 2010, which the regulators believed “captur[ed] expected losses in 2011” (SCAP: Design and Implementation – pp. 3).

In order to measure the “significant deterioration” mentioned above, the Federal Reserve crafted two scenarios, which were called the “baseline” and “more adverse”. In both cases, the Fed projected changes in real GDP, Civilian Unemployment Rate, and House Prices over two years from 2009 through 2010 (SCAP: Design and Implementation – pp. 2, 6). “The baseline scenario was intended to represent a consensus view about the depth and duration of the recession”, and was based on the average of economic projections published by the February releases of forecasts from three major economic forecasting surveys: Consensus Forecasts, the Blue Chip survey, and the Survey of Professional Forecasters (SCAP: Design and Implementation – pp. 5).<sup>16</sup>

The more adverse scenario did not average the consensus expectations of a variety of forecasters. Rather, it “was constructed from the historical track record of private forecasters as well as their current assessments of uncertainty” (SCAP: Design and Implementation – pp. 5). The Fed focused specifically on “subjective probability assessments” from these organizations to gauge the probability that the aforementioned

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<sup>15</sup> Despite this being one of the criteria for BHCs under SCAP, one of the firms – State Street – only had \$69.6 billion in risk-weighted assets. See *Table 1* for more information on SCAP BHCs.

<sup>16</sup> House prices were measured by the fourth quarter year-over-year change of the Case-Shiller 10-City Composite Index (SCAP: Design and Implementation – pp. 6).

inputs (GDP growth, unemployment, house prices) would be even more affected than the general consensus used in the baseline scenario ([SCAP: Design and Implementation – pp. 5](#)). Despite the dramatic differences from the baseline, the more adverse scenario was not a “worst-case” scenario, as the Fed felt that the conditions of the stress test ought to be “severe but plausible” ([SCAP: Design and Implementation – pp. 5](#)). See *Table 3* below for the estimates associated with both the baseline and more adverse scenarios.

*Table 3: SCAP Baseline and More Adverse Economic Scenarios (%)*

	<b>2008 - 2009</b>	<b>2009 - 2010</b>
<b>Real GDP</b>		
Average Baseline	-2.0	2.1
More Adverse	-3.3	0.5
<b>Civilian Unemployment Rate</b>		
Average Baseline	8.4	8.8
More Adverse	8.9	10.3
<b>House Prices</b>		
Baseline	-14	-4
More Adverse	-22	-7

*Source: Supervisory Capital Assessment Program: Design and Implementation - pp. 6*

The BHCs were instructed to estimate losses that were due to failure to pay obligations rather than those due to mark-to-market accounting ([SCAP: Design and Implementation – pp. 8](#)). This philosophy alluded to a theory circulating internally in the Treasury at the time called the Theory of Special Bank Relativity. This theory pushed back on the general standard of mark-to-market by suggesting that banks exist through time and shouldn’t be judged based on how they stand during the lowest point in a cycle. Forcing the banks to do this, some argued, “undermine[d] a key reason [why] they are so important for supporting economic activity in the first place” (Geithner, Bernanke, Paulson (2020) – pp. 269).

Each BHC was “asked to estimate their potential losses on loans, securities, and trading positions, as well as pre-provision net revenue (PPNR) and the resources available from the allowance for loan and lease losses” ([SCAP: Design and Implementation – pp. 4](#)). BHCs with large enough trading accounts (\$100 billion in assets or more), were required to provide additional loss estimates that factored in counterparty credit risk, whereas the baseline

scenario assumed no additional losses (SCAP: Design and Implementation – pp. 9).<sup>17</sup> These loss estimates on their trading book and counterparty exposures were calculated via internal stress testing and evaluation from the BHCs as of market close on February 20, 2009 (SCAP: Design and Implementation – pp. 9).

These projections were made over two years, with the Federal Bank of New York (FRBNY) providing loss ranges for 12 different types of loans and securities, such as first and second-lien mortgages, Commercial and Industrial (C&I) loans, and credit card loans. Banks could provide alternative loss estimates than what they were given by the FRBNY, but were required to provide “strong supporting evidence, especially if they fell below the range minimum” (SCAP: Design and Implementation – pp. 8, 12-13). To ensure more accuracy, the BHCs were encouraged to provide additional information, such as loss projections on subcategories within the 12 that the Fed selected (SCAP: Design and Implementation – pp. 8). The categories of loans were chosen to make the results easier to compare across firms, as well as with what the BHCs had filed with their federal regulator (SCAP: Design and Implementation – pp. 8). The categories of loans, as well as some of the variables that the examiners used when conducting the evaluations can be found in *Table 4* below.

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<sup>17</sup> Counterparty credit risk was measured by assessing the risk of counterparties defaulting, as well as potential credit valuation adjustments that would be made against exposures to counterparties who were more likely to default under the more adverse scenario.

*Table 4: Description of SCAP Loan types and Variables Evaluated by Assessors*

<b>Loans</b>	<b>Variables Evaluated</b>
First Lien Mortgages	
Prime	1) Type of Product
Alt A	2) Loan-to-value (LTV) ratio
Subprime	3) FICO Score
	4) Geography
Second/Junior Lien Mortgages	5) Level of documentation
Closed-end Junior Liens	6) Year of origination
HELOCs	7) Other variables
C&I Loans	1) Distribution of exposures, by industry
	2) Internal ratings provided by the BHCs
	3) Expected default rates from third parties
CRE Loans	
Construction	1) Property type
Multifamily	2) Loan-to-value (LTV) ratio
Nonfarm, Non-residential	3) Debt service coverage ratio (DSCR)
	4) Geography
	5) Loan maturity
Credit Cards	1) FICO Score
	2) Payment & Utilization Rates
	3) Geographic Concentration
Other Consumer	1) FICO Score
	2) Loan-to value (LTV) ratio
	3) Term and vehicle age
	4) Geographic Concentration
Other Loans	1) Loss record over the previous 5 years

*Source: Supervisory Capital Assessment Program: Design and Implementation - pp. 12 - 13, 18*

Estimated loss rates were calculated using a variety of methods. These ranged from analysis of individual and regional loan portfolios and mortgages, to regressions of historical default data against several macroeconomic variables, such as the unemployment rate ([SCAP: Design and Implementation - pp. 11](#)). The need to compare results across widely different BHCs, however, required regulators to address the heterogeneity across firms that would affect their performance in these tests. To this end, they collected additional firm-specific

data, such as “past performance, portfolio composition, origination vintage, borrower characteristics, geographic distribution, international operations, and business mix” ([SCAP: Design and Implementation – pp. 11](#)). Cumulative loan loss rates under the more adverse scenario were 9.1 percent, which was higher than any other period in U.S. history, including at the height of the Great Depression ([SCAP: Overview of results – pp. 6 – 7](#)). Loan loss rates for both the baseline and more adverse scenario, as well as actual loss rates for the industry can be found in *Table 5*.

*Table 5: Two-year loss rates for SCAP scenarios and 2009 actual loss rates (%)*

Assets	SCAP Loss range Estimates		2009 Actual Loss Rates	
	Baseline	More Adverse	SCAP BHC Avg.	Industry Avg.
First Lien Mortgages	5 – 6	7 – 8.5	1.9	1.7
<i>Prime</i>	1.5 – 2.5	3 – 4	N/A	0.5
<i>Alt-A</i>	7.5 – 9.5	9.5 – 13	N/A	3.6
<i>Subprime</i>	15 – 20	21 – 28	N/A	6.2
Second/Junior Lien Mortgages	9 – 12	12 – 16	4.4	3.9
<i>Closed-end Junior Liens</i>	18 – 20	22 – 25	7.5	6.6
<i>HELOCs</i>	6 – 8	8 – 11	3.6	3.1
C&I Loans	3 – 4	5 – 8	2.5	2.3
CRE	5 – 7.5	9 – 12	2.3	2.4
<i>Construction</i>	8 – 12	15 – 18	5.8	6.1
<i>Multifamily</i>	3.5 – 6.5	10 – 11	1.1	1.1
<i>Nonfarm, Non-residential</i>	4 – 5	7 – 9	0.9	0.8
Credit Cards	12 – 17	18 – 20	10.1	10.2
Other Consumer	4 – 6	8 – 12	4.1	4.4
Other Loans	2 – 4	4 – 10	1.4	1.1

*Source: Supervisory Capital Assessment Program: Overview of Results - pp. 5, GAO 10-861 - pp. 17*

In addition to providing loss estimates, BHCs were also required to provide projections of their resources to absorb losses, including their PPNR and allowance for loan losses over the same horizon. In the case of SCAP, PPNR was defined as “the income after non-credit-related expenses that would flow into firms before they take provisions or other write-downs or losses” ([SCAP: Design and Implementation – pp. 9](#)). The Fed measured loss absorbing capacity of the 19 BHCs by using PPNR, as well as their allowance for loan and lease losses (ALLL), which represented an estimate of the amount of loans that a BHC felt it would be

unable to collect (SCAP: Design and Implementation – pp. 9, FRB: Allowance for Loan and Lease Losses (ALLL)). All told, over 150 federal regulators were involved in the creation, organization, and administration of the SCAP (SCAP: Design and Implementation – pp. 10).

When determining a BHC’s capital needs, the regulators didn’t just look at the amount of Tier 1 capital, but the composition of Tier 1 capital, as well. Tier 1 common equity was seen by the Fed as what should be “the dominant component” of Tier 1 capital (SCAP: Design and Implementation – pp. 17). Common equity, which was the first element of Tier 1 capital to absorb losses, “gives a BHC greater permanent loss absorption capacity and a greater ability to conserve resources under stress by changing the amount and timing of dividends and other distributions” (SCAP: Overview of Results – pp. 2). This justification led the Fed to have two key questions in mind when evaluating the capital needs of each of the BHCs under the more adverse scenario.

- 1) How much additional Tier 1 capital would a BHC need today in order to have a Tier 1 ratio of over 6 percent at the end of 2010?
- 2) How much additional Tier 1 Common capital would a BHC need today in order to have a Tier 1 Common capital ratio of over 4 percent at the end of 2010?

With these questions, known henceforth as the “6-4 rule”, in mind, the teams of regulators determined that the “SCAP Buffer”, or the amount of capital needed for the BHCs to survive under the more adverse scenario, was \$185 billion (SCAP: Overview of Results – pp. 6, 14). However, nine of the firms already had capital levels that met the requirements of the 6-4 rule.<sup>18</sup> The other ten firms had varying levels of SCAP buffers, ranging from \$92.6 billion in the case of Citigroup, to \$2.3 billion, in the case of PNC (SCAP: Overview of Results – pp. 9). Most of the SCAP Buffer was due to a lack of common equity, while overall Tier 1 capital numbers were within acceptable limits for the more adverse scenario (SCAP: Overview of Results – pp. 16 – 17). Due to the emphasis on common equity, however, the ten firms that needed to raise additional equity “had capital structures that [were] too strongly tilted toward capital other than common equity” (SCAP: Overview of Results – pp. 3).

However, the \$185 billion figure did not consider capital that had been raised at the end of 2008, as well as other actions taken by many of the BHCs to pre-emptively shore up their balance sheets prior to the results being released (SCAP: Overview of Results – pp. 3). The most noteworthy of these was Citigroup, who reduced their SCAP buffer by \$87.1 billion through preferred stock exchanges and other actions (SCAP: Overview of Results – pp. 24).<sup>19</sup> Similar reductions in this period also occurred the other banks that needed additional capital, and, by the time the results had been released, the original \$185 billion, which was

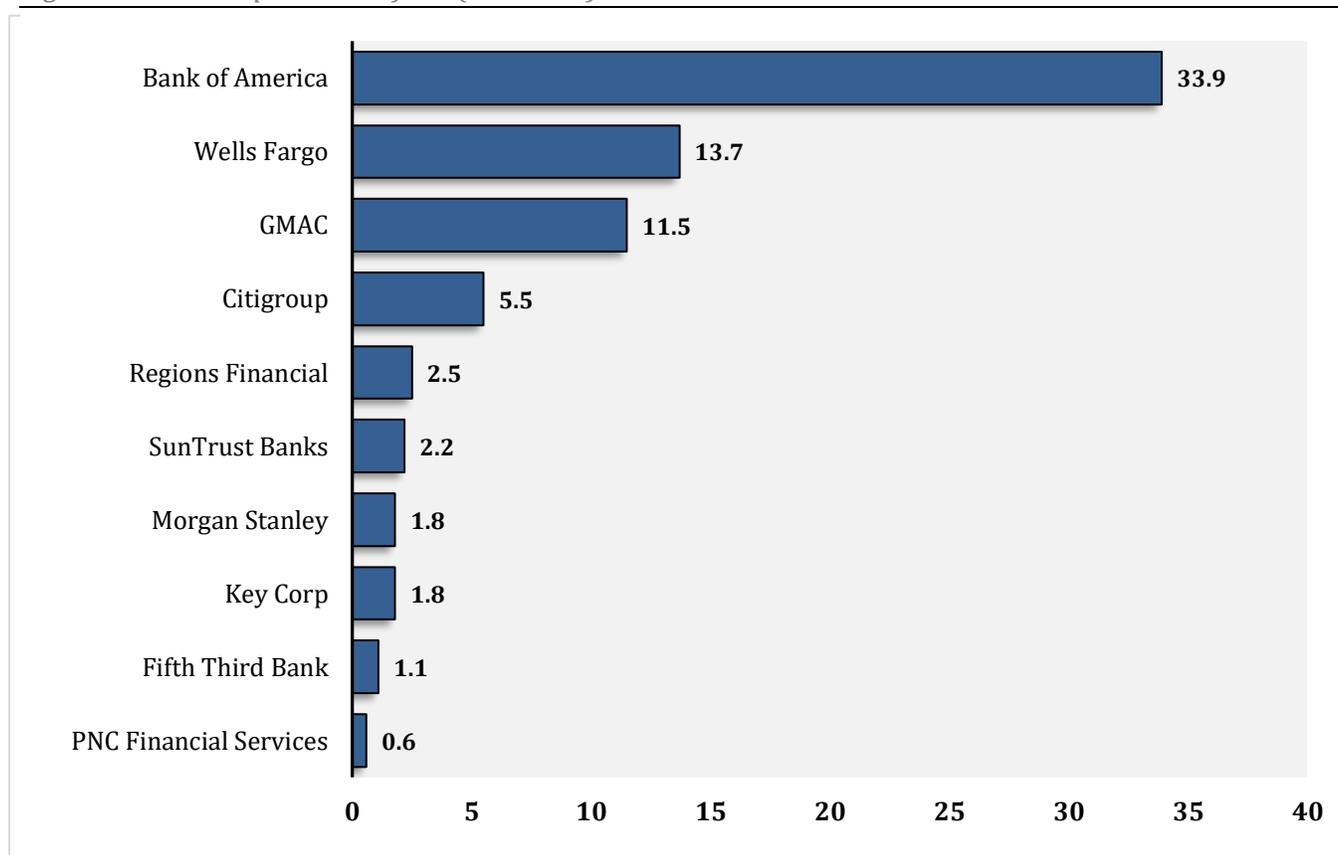
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<sup>18</sup> The firms that did not need additional capital were American Express, BB&T, Bank of New York Mellon, Capital One, Goldman Sachs, JP Morgan, MetLife, State Street, and US Bancorp.

<sup>19</sup> Citi announced a plan to convert up to \$27.5 billion of its existing preferred stock into common stock on February 27, 2009, as well as an agreement with the U.S. government wherein Treasury would match this exchange at up to \$25 billion of its own preferred stock. By the time the offers closed at the end of July 2009, Citi had raised approximately \$58 billion in capital (Citi PR, 02/27/2009, Citi PR, 07/26/2009, SCAP: Overview of Results – pp. 24). Additional capital actions, characterized as those transactions that were completed or contracted as of the end of 2008, were \$29 billion (SCAP: Overview of Results – pp. 24).

based on the firms' balance sheets as of December 31, 2008, had been reduced to \$74.6 billion ([SCAP: Overview of Results – pp. 9](#)). See *Figure 5* for individual bank adjusted SCAP requirements.

*Figure 5: SCAP Capital Shortfalls (\$ billions)*



*Source: Supervisory Capital Assessment Program: Overview of Results - pp. 9*

BHCs that had SCAP Buffers were required to submit capital plans to their primary regulator within 30 days ([SCAP: Overview of Results – pp. 4](#)). BHCs would have six months to implement these plans and were “encouraged to design capital plans that, wherever possible, actively seek to raise new capital from private sources” ([SCAP: Overview of Results – pp. 4](#)). These could include “restructuring current capital instruments, sales of assets, and restrictions on dividends and stock repurchases” ([SCAP: Overview of Results – pp. 4](#)). The plans, however, normally had the following elements:

- 1) A description of the specific actions the institution will take to increase the level or quality of its capital consistent with the results of the SCAP.
- 2) A list of steps to address any weaknesses for the BHC’s internal evaluations of its capital needs and capital planning.
- 3) An outline of the steps the BHC was planning on taking to repay all government investments received, as well as to reduce reliance on guaranteed debt issued under the TLGP ([FSOB Report, 06/30/2009 – pp. 30](#)).

BHCs were also able to apply to the CAP and defer issuing convertible preferred stock to the government via the facility for up to six months while they searched for private capital ([CAP: White Paper – pp. 4](#)). This echoes Treasury’s messaging about the CAP backstop being a temporary bridge to private capital. Treasury felt that, in asking the largest BHCs to hold more capital, coupled with the availability of an unlimited backstop in the CAP, institutions would be more willing to lend ([CAP: White Paper – pp. 4](#)). This would, in turn “stimulate economic activity and restore [the] U.S. economy to a path of robust economic growth” ([CAP: White Paper – pp. 4](#)).

In the six month period following the release of results, the ten BHCs managed to raise over \$77 billion in Tier 1 common equity by November 9, the end of the six month deadline ([FRB PR, 11/09/2008](#)). The only institution that needed additional capital and failed to do so was GMAC, though its needs were moderate relative to its SCAP estimate and would ultimately use the Automotive Industry Financial Program (AIFP) to finance these ([UST PR, 11/09/2009](#)). See Nygaard 2020 for more information on GMAC and its usage of the AIFP. Thus, no SCAP BHCs drew on the CAP for government capital. See *Table 6* for a breakdown of the Tier 1 ratios of the SCAP BHCs at the end of 2009.

Table 6: Change in Tier 1 Capital Ratios for SCAP Banks, December 31, 2008 to December 31, 2009

Bank Holding Company	Tier 1 Common Capital Ratio		Tier 1 risk-based capital ratio	
	2009 (%)	Change from 2008 (bps)	2009 (%)	Change from 2008 (bps)
American Express	9.83	13	9.84	14
Bank of America	7.82	322	10.41	-19
BB&T	8.50	140	11.48	-82
Bank of New York Mellon	10.53	103	12.12	-118
Capital One	10.62	152	13.75	105
Citigroup	9.77	747	11.67	-23
Fifth Third	7.00	260	13.31	271
GMAC	4.85	-155	14.15	405
Goldman Sachs	12.20	450	14.97	237
JPMorgan Chase	8.79	229	11.10	90
KeyCorp	7.50	190	12.75	185
MetLife	8.17	-33	8.91	-29
Morgan Stanley	6.71	101	15.30	10
PNC	6.00	130	11.42	182
Regions	7.15	55	11.54	114
State Street	15.59	9	17.74	-246
SunTrust	7.67	187	12.96	206
U.S. Bancorp	6.76	166	9.61	-99
Wells Fargo	6.46	336	9.25	125
<b>Weighted Average</b>	<b>8.31</b>	<b>303</b>	<b>11.31</b>	<b>60</b>

Source: GAO 10-861 - pp. 22 - 23

**8. Publicly traded bank holding companies, financial holding companies, insured depository institutions, and savings and loan holding companies were eligible for the CAP.**

Application for the CAP was voluntary, even amongst the BHCs that were found to need additional capital through the SCAP (FRB PR, 05/06/2009). Institutions had until May 25, 2009 to apply, though any company applying to become a bank holding company had to do so by January 15, 2009 in order to retain CAP eligibility (FAQ: CAP – pp. 1-2).

Qualifying Financial Institutions (QFIs) which were eligible for the CAP included any publicly traded U.S. bank or savings association not controlled by a bank holding company or a savings and loan company, “top-tier” U.S. Bank Holding Companies, and “top-tier” U.S. Savings and Loan Companies that “[engage] solely and predominately in activities that are

permitted for financial holding companies under relevant law” (Term Sheet: CAP – pp. 1). Banks or BHCs that were foreign-owned, or subsidiaries of foreign companies, were not allowed to participate (Term Sheet: CAP – pp. 1). While the term sheet stated that CAP term sheets for privately held banks, S-corporations, and mutual banks were “expected to be made available”, they never were (Term Sheet: CAP – pp. 1-2).

**9. Institutions participating in the program would issue Mandatorily Convertible Preferred Shares, with a mandatory conversion to common equity after seven years if the capital had not been repaid.**

In addition to the minimums and maximums outlined in KDD #5, QFIs that were accepted into the CAP were required to issue equity, henceforth referred to as “Convertible Preferred”, worth \$1,000 per share, though this could be increased depending on how many preferred shares a QFI had available and authorized (Term Sheet: CAP – pp. 3). It is likely that institutions higher priced preferred shares available and authorized would have their Convertible Preferred be worth more than \$1,000. Cash received from the issuance of the Convertible Preferred could be used to redeem shares under other government investment programs, such as the Capital Purchase Program or the Targeted Investment Program (Term Sheet: CAP – pp. 2). Additionally, government investments made under these programs could be converted into Convertible Preferred (CAP: White Paper – pp. 3). While Treasury would be the one who made all investments under CAP, the investments themselves would be managed by a trust set up “to protect and create value for the taxpayer as a shareholder over time” (CAP: White Paper – pp. 3).

**Stockholder Consent.** After receiving the Convertible Preferred, QFIs that did not have enough common stock authorized to reserve for the conversion and exercise of the warrants were required to call a shareholder vote to authorize an increase of the number of common shares so that the conversion and exercise, should they need to happen, could take place. The terms of the capital could change in several ways (see below) if this authorization was not obtained in a timely manner or at all (Term Sheet: CAP – pp. 8).

**Conversion.** The Convertible Preferred had both mandatory and optional conversion clauses as part of its structure. The optional conversion gave the *issuer* of the equity the right to convert any amount of the preferred equity to common stock at any time, provided they received approval from their federal regulator (Term Sheet: CAP – pp. 3). However, the holder of the Convertible Preferred, in this case the Trust created by Treasury, could also convert it “upon specified corporate events, including certain sales, mergers or changes of control of the QFI” (Term Sheet: CAP – pp. 3). If a QFI held the Convertible Preferred for longer than 7 years, then it would automatically convert to common stock (Term Sheet: CAP – pp. 3). The price for conversion was unspecified in the initial Financial Stability Plan, with Treasury saying that it would be “set at a modest discount from the prevailing level of the institution’s stock price as of February 9, 2009” (UST PR, 02/10/2009). This was further specified in the term sheet, which detailed that the discount would be 90% of the average of the closing price of the QFI’s common stock over the 20 trading day period ending on February 9, 2009 (Term Sheet: CAP – pp. 3). This price, however, would be reduced by 15% every six months after the initial injection if the aforementioned stockholder vote to increase the number of common stock did not happen, to a maximum of 45% (Term Sheet: CAP – pp.

3). Conversion would be accompanied by the repayment of any accrued or unpaid dividends, either with cash or common stock ([Term Sheet: CAP – pp. 3](#)).<sup>20</sup>

**Mandatory Sale.** After the mandatory conversion date, even if the conversion to common equity had already taken place, the Treasury was required to “make reasonable efforts” to sell at least 20% of its outstanding common stock annually. At any point after either a mandatory or optional conversion, the QFI had the option to repurchase the common stock held by the government via the proceeds of issuances of new common stock or using retained earnings. The price of repurchase was equal to the greater of:

- 1) The conversion price.
- 2) The market price, calculated based on the average closing price during the 20 trading day period following the notice of repurchase ([Term Sheet: CAP – pp. 6](#)).

This was because Treasury made it clear that, despite the potential for the government to acquire a large interest in an institution, “U.S. government ownership is not an objective of the CAP” ([FSOB Report, 03/31/2009 – pp. 40](#)). The mandatory sale clause in the term sheet, as well as the trust created to manage any investments, emphasized the intentions of the Treasury to keep the period of government investment “as temporary as possible” ([CAP: White Paper – pp. 3](#)).

**Dividends.** The Convertible Preferred paid out cumulative dividends of 9 percent, which compounded quarterly. This rate would increase to, and remain at, 20% six months after the original issue date if the stockholder consent explained above was not given ([Term Sheet: CAP – pp. 4](#) ). So long as any Convertible Preferred or Treasury-owned common stock remained outstanding, dividends on any common stock not held by Treasury were required to be at no greater than \$0.01, and were required to remain at that level ([Term Sheet: CAP – pp. 4 – 5](#)). An additional “dividend stopper” was included in the term sheet, as well. The stopper prevented QFIs from declaring or paying dividends on any shares, whether they were *pari passu* preferred, junior preferred, or common, if any dividends on the Convertible Preferred remained outstanding ([Term Sheet: CAP – pp. 4](#) ).

**Repurchases.** Repurchases of other securities, such as junior preferred, *pari passu* preferred shares, or common shares, were affected by the “dividend stopper” and thus prohibited if any dividends on the Convertible Preferred remained outstanding ([Term Sheet: CAP – pp. 5](#)).

**Warrants.** The Convertible Preferred also included 10-year warrants. These warrants, which were immediately exercisable, allowed the Treasury to purchase common stock equal to 20% of the amount of Convertible Preferred on the day of initial investment ([Term Sheet: CAP – pp. 7](#)). The price to exercise the warrants was the same as the conversion price (explained above). The exercise price would also be reduced in 15% increments every six months after the initial injection, to a maximum of 45% if shareholder consent is not gained ([Term Sheet: CAP – pp. 7](#)). While Treasury would gain a larger voting interest in the QFI after

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<sup>20</sup> If common stock was used to repay accrued and unpaid dividends, then they would be valued “at the closing price on the second preceding trading day” ([Term Sheet: CAP – pp. 3](#)).

exercising the warrants, they pledged not to exercise any voting power with respect to these shares ([Term Sheet: CAP – pp. 7](#)).

**10. Preferred equity issued under the CAP could only be redeemed via the proceeds of the issuance of new common equity.**

QFIs were able to redeem the Convertible Preferred “at any time solely with the proceeds of one or more issuances of common stock for cash” so long as they 1) obtained approval from their federal banking regulator, and 2) the proceeds of the equity issuances equaled at least 25% of the issue price of the Convertible Preferred ([Term Sheet: CAP – pp. 4](#)). Redemption was done either at par value (plus accrued and unpaid dividends) if done within the first two years, and at the greater of par value plus accrued and unpaid dividends and the as-converted value if done after two years ([Term Sheet: CAP – pp. 4](#)).

This meant that QFIs that issued Convertible Preferred had an implicit time limit on redeeming the shares because, after two years, the cost of redemption could increase dramatically if the QFIs stock price had increased. The as-converted value of the preferred investment would become greater than the par value of the investment, and the QFI would have to choose between raising enough common equity to satisfy this increased redemption price, continue to pay nine percent in dividends on the preferred, or convert it to common stock. Repurchases of converted stock had to be done via the issuance of new common equity or using retained earnings ([Term Sheet: CAP – pp. 6](#)).

**11. The CAP did not outline any debt restructuring agreements or losses to existing shareholders, though conversion, redemption, and warrants had the possibility to dilute existing shareholders.**

No formal debt restructuring agreements or guidelines were discussed by those at Treasury for those that could potentially participate in the program. Even in the case of the more adverse scenario discussed in the SCAP, there were no mentions of potential restructuring. In a joint statement released the day before the SCAP results were released, the Fed, Treasury, FDIC, and OCC did mention that “restructuring current capital instruments” was one of the ways that SCAP BHCs that needed additional or more quality capital could obtain it ([FRB PR, 05/06/2009](#)). Treasury officials internally called the program “open bank resolution” and felt that raising new capital was not the only way the BHCs could reduce their SCAP buffer. Converting junior creditors to equity holders through debt-for-equity exchanges and other tools “was the preferred path before [the BHCs] sought government capital” (Geithner, Bernanke, Paulson (2020) – pp. 271). Treasury had even made clear to any junior creditors, such as those that held subordinated debt and other preferred securities, that they “should expect to bear losses” (Geithner, Bernanke, Paulson (2020) – pp. 271). The SCAP BHCs already held about \$300 billion in these instruments, which suggested to regulators that the SCAP buffers could have been met without needing to raise any new equity (Geithner, Bernanke, Paulson (2020) – pp. 271).

**12. Treasury had the ability to appoint two directors to institutions that did not pay interest or dividends for six quarters.**

If dividends on the Convertible Preferred stock were not paid for six quarters, consecutive or not, then Treasury would have the ability to elect two directors to the board. This right ended after dividends had been paid for four consecutive quarters ([Term Sheet: CAP – pp. 5](#)). Treasury only exercised the voting rights under the Convertible Preferred only in the cases of:

- 1) an authorization or issuance of shares senior to the Convertible Preferred
- 2) any amendment to the rights of the Convertible Preferred, or
- 3) any merger, exchange or similar transaction which would adversely affect the rights of the Convertible Preferred ([Term Sheet: CAP – pp. 5](#)).

**13. Treasury required participants to be subject to executive compensation and corporation governance restrictions modeled after those originally passed in EESA.**

Section 111 of EESA outlines executive compensation restrictions and corporate governance standards ([P.L. 110-343 – pp. 3776](#)). Specifically, Section 111(b) describes these standards as they apply to direct purchases or investments in financial institutions. Section 111(b)(2) specified that there would be:

- 1) “limits on compensation that exclude incentives for senior executive officers of a financial institution to take unnecessary and excessive risks that threaten the value of the financial institution during the period that the Secretary holds an equity or debt position in the financial institution;
- 2) a provision for the recovery by the financial institution of any bonus or incentive compensation paid to a senior executive officer based on statements of earnings, gains, or other criteria that are later proven to be materially inaccurate; and
- 3) a prohibition on the financial institution making any golden parachute payment to its senior executive officer during the period that the Secretary holds an equity or debt position in the financial institution” ([P.L. 110-343 - pp. 3777](#)).

Senior executive officers (SEOs) were initially defined by EESA as the top 5 highest paid executives of companies that took TARP money ([P.L. 110-343 - pp. 3777](#)). However, Treasury passed several interim final rules that provided additional guidance on executive compensation post-EESA, as well ([TARP Executive Compensation Rules and Guidance](#)).

Treasury released additional guidance in an announcement on February 4, 2009 by distinguishing between institutions that required “exceptional assistance”, such as AIG, and Bank of America and Citigroup, and institutions participating in “generally available capital access program[s]”, such as the CAP ([UST PR - 02/04/2009](#)).

Institutions that required exceptional assistance, such as those that theoretically applied (and succeeded) in issuing Convertible Preferred above the 2 percent of risk-weighted assets limit, were subject to stricter requirements. Total compensation was restricted to a maximum of \$500,000, with any amount in excess required to be in the form of restricted

stock that vested only after the government had been repaid (UST PR – 02/04/2009). This was to ensure that the incentives of executives at these institutions were “aligned with both the long-term interests of shareholders as well as minimizing the costs to taxpayers” (UST PR – 02/04/2009). Golden parachutes, which were defined as large severance agreements for CEOs, were completely prohibited for the ten highest compensated employees, and capped at one year’s compensation for the next 25 highest compensated, instead of three years(UST PR – 02/04/2009, UST Report, 10/20/2008 – pp. 9 - 10).

For institutions that participated in generally available capital access programs, CEO compensation was further limited to \$500,000 in total yearly compensation, though this could be waived with “full public disclosure and [a] shareholder vote” (UST PR - 02/04/2009). Golden parachute payments for the top five highest paid employees of these institutions were restricted to one year’s compensation, instead of three (UST PR – 02/04/2009).

For institutions participating in either exceptional or generally available capital programs, clawback provisions, which enabled the QFI to retake bonuses and incentive payments of CEOs that had earned them by knowingly engaging in deceptive practices, were expanded from the top five CEOs to the next twenty highest paid employees, as well (UST PR – 02/04/2009). Finally, the new guidance mandated participating institutions to more aggressively police any luxury expenditures, and would require the CEO’s sign-off on any expenditures that “could be viewed as excessive or luxury items” (UST PR – 02/04/2009). These guidelines, however, did not apply retroactively (UST Report, 06/10/2009 – pp. 11).

Treasury published its last Interim Final Rule on June 10, 2009. The final rule implemented and modified much of the expanded restrictions outlined in ARRA and the February 2009 guidance. Treasury further limited bonuses and incentive compensation paid to CEOs, as well as some of the most highly compensated employees, to one-third of total compensation, with the number of employees affected by this limit increasing based on the amount of aid given.<sup>21</sup> The \$500,000 limit specified in the February guidance was amended to “link compensation to long-term firm value” by allowing additional compensation over \$500,000, provided that it was in the form of long-term, restricted stock (UST PR, 06/10/2009). The stock-based compensation was still subject to the one-third of total compensation limit, however (UST Report, 06/10/2009 – pp. 89). Additionally, golden parachute payment restrictions were broadened to include any payments that were made as a result of a change in control of the company (UST PR, 06/10/2009). Institutions were required to exercise their clawback provisions if payments subject to them were found to be made on inaccurate criteria or data, whereas they were merely given the option to do so in the February guidance (UST PR, 06/10/2009). The guidance also mandated TARP recipients to hold an annual shareholder vote to approve executive compensation packages.

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<sup>21</sup> Institutions that received over \$500 million in assistance had their top 5 highest paid executives, as well as the 20 next highest paid affected by the one-third of total compensation limit.

The most notable change in the final rule was the creation of a Special Master for TARP Executive Compensation (UST PR, 06/10/2009).<sup>22</sup> The Special Master was responsible for reviewing compensation plans at firms receiving “exceptional” assistance a way that “maximize(s) long-term shareholder value and protect(s) taxpayer interests” (UST PR, 06/10/2009).<sup>23</sup> This authority went far beyond the threshold seen in previous guidance, as the Special Master was able to review and approve (or disapprove) the compensation structures of CEOs and the next 100 most highly paid employees, as well as executive officers that were not among the most highly paid employees and thus, not subject to the typical bonus and incentive payment restrictions (UST PR, 06/10/2009). Total annual compensation that was less than or equal to \$500,000, not including long-term restricted stock, would automatically be approved by the Special Master.<sup>24</sup> Some of these responsibilities were originally given to the Secretary of the Treasury as part of the American Reinvestment and Recovery Act (P.L. 111-5 – pp. 520).

Treasury specified that institutions that received exceptional assistance included AIG, Citigroup, Bank of America, as well as automakers such as GM and Chrysler (UST PR, 06/10/2009). Institutions that were accepted into the CAP did not immediately fall under this category, but would if they issued Convertible Preferred in excess of the 2 percent limit (Term Sheet: CAP - pp. 2). While the February guidelines did not apply retroactively, the Special Master had the power to evaluate payments, bonuses, or compensation made by any TARP recipient before February 17, 2009 “to determine whether any such payments were inconsistent with the purposes of Section 111 of EESA” (UST Report, 06/10/2009 – pp. 110). If the Special Master found any issues, they could negotiate reimbursements to the U.S. government.

**14. Treasury did not develop an explicit strategy for exiting its CAP investments since none were ultimately made, though the capital instruments contained built-in exit features.**

While no investments were made under the CAP, the design of the Convertible Preferred gave the government an indirect exit strategy if the backstop was used. Conversion would occur either automatically (after seven years), or at the discretion of the QFI, who could convert the preferred shares to common equity to boost market confidence or to meet supervisory requirements (CAP: Term Sheet – pp. 3, CAP: White Paper – pp. 2 – 3). As

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<sup>22</sup> A number of the provisions laid out in the June 10 Interim Final Rule, such as the one-thirds limit on total compensation, as well as the number of CEOs and employees affected by executive compensation restrictions based on total TARP aid received, were originally passed via Section 111 of the American Recovery and Reinvestment Act of 2009 (ARRA). The June 10 Interim Final Rule implemented and clarified these restrictions. See KDD #14 for more information on ARRA.

<sup>23</sup> In addition to approving compensation agreements, the Special Master was also responsible for reviewing compensation that was paid prior to the passage of ARRA, as well as negotiating reimbursements for these where relevant (UST PR, 06/10/2009).

<sup>24</sup> Equity-based compensation was included in this limit by using the fair market value on the day of compensation. Equity-based compensation for prior years would not be included (UST Report, 06/10/2009 - pp. 29).

explained above, Treasury was required to sell at least 20% of its total original amount of common stock in a given QFI every year once the conversion had taken place, which put a cap on the amount of time the government could remain as an investor (CAP: Term Sheet – pp. 6). The dividend rates, at 9 percent, also incentivized banks to replace any Convertible Preferred with private capital (Glasserman and Wang (2009) – pp. 5).

**15. The American Reinvestment and Recovery Act, as well as the Dodd-Frank Wall Street Reform and Consumer Protection Act, decreased TARP’s total size and broadened its restrictions on executive compensation.**

The American Reinvestment and Recovery Act (ARRA) was passed on February 17, 2009 and primarily broadened EESA’s executive compensation and corporate governance restrictions. Title VII of ARRA further restricted bonus payments made to CEOs based on information that was “materially inaccurate” from the 5 highest paid executives to 20, as well as increased the number of employees that golden parachute payment prohibitions applied to (P.L. 111-5 – pp. 517 – 518).

ARRA also restricted, “any bonus[es], retention award[s], or incentive compensation during the period in which any obligation arising from financial assistance provided under the TARP remains outstanding” (P.L. 111-5 – pp. 518). The number of CEO’s subject to this restriction increased with the amount of the Treasury’s TARP investment. The restrictions, however, did not apply to compensation that took the form of long-term restricted stock so long as it did not vest while TARP investments remained and that it did not exceed one-third of total annual compensation (P.L. 111-5 – pp. 518). Recipients were required to hold a shareholder vote every year to approve all executive compensation (P.L. 111-5 -pp. 519).

Despite these substantial restrictions on *any* bonuses and awards, they did not apply retroactively. Specifically, ARRA said that these prohibitions “shall not be construed to prohibit any bonus payment required to be paid pursuant to a written employment contract executed on or before February 11, 2009” (P.L. 111-5 – pp. 518). This portion of the legislation was highly controversial, and was what allowed AIG to pay out \$165 million in bonuses to its executives (Thatcher (2009) – pp. 25). See *Table 7* for more information on the executive compensation restriction thresholds.

*Table 7: Summary of ARRA TARP Thresholds for Executive Compensation Restrictions*

<b>TARP Aid Amount</b>	<b>Number of CEO's Restricted (ARRA)</b>
Less than \$25,000,000	Only the most highly compensated employee.
Between \$25,000,000 and \$250,000,000	5 most highly compensated employees, or more at the discretion of the Secretary of the Treasury.
Between \$250,000,000 and \$500,000,000	All senior executive officers and the 10 next most highly compensated employees, or more at the discretion of the Secretary of the Treasury.
More than \$500,000,000	All senior executive officers and the 20 next most highly compensated employees, or more at the discretion of the Secretary of the Treasury.

*Source: P.L. 111-5 - pp. 517 - 518*

In June of 2009, Treasury released a final rule on executive compensation that codified and implemented these provisions from ARRA, as well as earlier guidance issued on the subject of executive compensation and corporate governance ([UST PR, 06/10/2009](#)). See KDD #12 for details on Treasury's Final Rule on Executive Compensation.

The Dodd-Frank Wall Street Reform and Consumer Protection Act, passed on July 21, 2010, included the "Pay It Back Act". This act had three key features that affected TARP:

- 1) A decrease in the amount authorized under TARP from \$700 billion to \$475 billion ([P.L. 111-203 - pp. 2133](#)).
- 2) A removal of the phrase, "outstanding at any one time" from all subsections of Section 115(a), which removed the implicit authority that the Secretary of the Treasury to reuse TARP funds after assets were sold ([P.L. 110-343 - pp. 3780](#), [P.L. 111-203 - pp. 2133](#), [Webel 2013 - pp. 10](#)).
- 3) A limitation on the usage of TARP funds for programs that were initiated subsequent to June 25, 2010 ([P.L. 111-203 - pp. 2133](#)).

The temporary increase in the maximum deposit insurance amount to \$250,000 was made permanent in Section 355 of Dodd-Frank, as well ([P.L. 111-203 - pp. 1540](#)).

One of the most important pieces of the Dodd-Frank Act was the incorporation of stronger supervisory authority to large institutions, as well as annual stress testing for certain national banks and nonbank financial institutions (NBFIs). Section 165 refined and improved supervisory standards by which the Federal Reserve monitored large bank holding companies and NBFIs in the interest of "prevent[ing] or mitigat[ing] risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected financial institutions" ([P.L. 111-203 - pp.](#)

1423). In general, these restrictions applied to institutions that were greater than \$50 billion in size, though they could be tailored by the Federal Reserve based on factors such as “capital structure, riskiness, complexity, financial activities (including the financial activities of their subsidiaries), size, and any other risk related factors” (P.L. 111-203 – pp. 1424). See *Table 8* for additional information on the prudential standards that the Federal Reserve established for BHCs and NBFIs under its supervision.

*Table 8: Summary of Dodd-Frank Section 165 Prudential Standards for federal bank supervision*

<b>Standards that the Fed MUST apply, and can tailor</b>	
I.	Risk-based capital requirements and leverage limits
II.	Liquidity requirements
III.	Overall risk management requirements
IV.	Resolution plan and credit exposure report requirements
V.	Concentration limits
<b>Standards that the Fed MAY apply, and can tailor</b>	
I.	Contingent capital requirements
II.	Enhanced public disclosures
III.	Short-term debt limits
IV.	Such other prudential standards as the Federal Reserve deems appropriate
<b>Standards that the Fed may exempt certain banks above \$50 billion<sup>25</sup></b>	
I.	Contingent capital requirements
II.	Resolution plan and credit exposure report requirements
III.	Concentration limits
IV.	Enhanced public disclosures
V.	Short-term debt limits

*Source: P.L. 110-203 - pp. 1423 - 1429*

Section 165(i) of Dodd-Frank detailed the natural successor to SCAP: a series of annual stress tests for large NBFIs and BHCs with total assets of \$50 billion or more, as well as financial companies with total assets of more than \$10 billion that were regulated by a “primary Federal financial regulatory agency” (P.L. 111-203 – pp. 1430-1431). Just like the SCAP, the Dodd-Frank Act Stress Tests (“DFAST”) would subject these institutions to at least three macroeconomic scenarios, including baseline, adverse, and more adverse scenarios (P.L. 111-203 – pp. 1431). Participating institutions were required to estimate PPNR, losses, loan loss provisions, net income, ALLL for credit exposures, and general effects of capital actions on their capital levels over at least a nine-quarter period (Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61247).

In a press release on October 9, the Federal Reserve also published a file of historical data, which contained variables that were “likely to be used in the scenarios” (FRB PR,

<sup>25</sup> Section 165(a)(2)(B) states that, “The Board of Governors may, pursuant to a recommendation by [FSOC] in accordance with section 115, establish an asset threshold above [\$50 billion] for the application of any standard established under subsections (c) through (g) (P.L. 110-203 – pp. 1424). Subsections (c) through (g) are listed in the final entry of the table.

10/09/2012). The scenarios were released on November 15, containing 26 macroeconomic variables, including those used in the SCAP (FRB PR, 11/15/2012). Dodd-Frank provided a solid base for a continually evolving supervisory framework, and the Federal Reserve has continued its policy of transparency by annually releasing both the DFAST results and methodology to the public (FRB: Dodd-Frank Act Stress Tests). See Appendix II for additional regulatory guidance and information on the initial creation of the DFAST.

### III. Evaluation

Much of the analysis done on the SCAP and CAP was done on the former. As discussed in KDD #3, one of the primary concerns that regulators had when discussing the SCAP was how transparent the agencies ought to be when communicating the results. Former Fed Chair Ben Bernanke explained after the results had been released that “public disclosure was an important reason for [the SCAP’s] success” (Bernanke, 05/06/2010 – pp. 2). This was further corroborated by the fact that bank stock prices changed very little in response to the results being released, indicating that markets had already worked out which BHCs needed additional capital, though the size of the shortfall was useful information to the market (Peristian et al. (2010) – pp. 21 – 22). Others have cautioned against saying that transparency was the reason for the program’s success, and that the results themselves were broadly in-line with what markets had predicted (Hirtle, Schuermann and Stiroh (2009) – pp. 10 – 11). The CAP gave the participants a fallback option and thus reassured markets that any additional capital would be raised through private or public means (Hirtle, Schuermann and Stiroh (2009) – pp. 11).

Bridgewater Associates, which was the largest hedge fund in the world, released a report the day that the SCAP results were released titled “We Agree!” In it, they lauded the U.S. regulators on obtaining loss estimates that were “nearly the same” as the Fund’s (Geithner (2014) – pp. 349 – 350). They felt that the U.S. government “did an excellent job of explaining exactly what they did for this stress test, and showing the numbers that produced the results” (Geithner (2014) – pp. 349 – 350). They even remarked that the publication of the SCAP results was the first time in the last two years that they felt that financial regulators actually understood the scale and magnitude of the problems in the banking system (Bridgewater: Review of the 2008 Financial Crisis).

In the year since the results were released, the SCAP firms were able to raise over \$200 billion in common equity and repay approximately \$124.3 billion in CPP capital, as well as \$40 billion in TIP capital (Bernanke, 05/06/2010 – pp. 2, CPP Transaction Data, UST PR, 12/09/2009; UST PR, 12/23/2009). However, Bernanke did say that, despite the stabilizing impact of the SCAP, the designers of the program had hoped to “hasten the return to a better lending environment”, which had not happened in the year since the results had been released (Bernanke, 05/06/2010 – pp. 3).

A COP report released in June 2009 included an evaluation of the stress testing methods, written by Professors Eric Talley and Johan Walden, as an appendix. The analysis found that, based on the short time frame, as well as the extent of the stress in the banking system, the Federal Reserve’s risk modelling approach was “reasonable and conservative”, and that they

did a commendable job (COP, 06/09/2009, Appendix A – pp. 2). In particular, the authors praised the high levels of losses imposed in the more adverse scenario, as well as the large amount of capital required of those that needed it (COP, 06/09/2009, Appendix A – pp. 27, 31). They praised the use of survey and market-based estimates over historical data, use of a two-year time frame, the incorporation of heterogeneity across BHCs, and the usage of the 6-4 rule as “a defensible first approximation” (COP, 06/09/2009, Appendix A – pp. 22 - 31).

Talley and Walden’s report, however, also included some criticism. The robustness and transparency of the SCAP, while apparently enough to quell markets, was not enough for third parties to be able to replicate the loss rate projections (COP, 06/09/2009, Appendix A – pp. 28). The tailoring of loss rates based on heterogeneous elements amongst the various BHCs, while important, required “significant interaction” between regulators and BHCs, which could undermine the objectivity of the tests. The tailoring elements amplified the replicability problem explained above (COP, 06/09/2009, Appendix A – pp. 30). Finally, the usage of the holding company itself as the primary unit of analysis was a subject of debate. The authors felt that, even if a BHC was adequately capitalized on an aggregate level, the stress tests did not answer the question of how the resources should be distributed to address risk across its subsidiaries (COP, 06/09/2009, Appendix A – pp. 33).

The Government Accountability Office (GAO) released a report in September of 2010 detailing some of the lessons that could be learned from the SCAP. The multidisciplinary, interagency approach to the SCAP was a key component of the process, and allowed for “productive debate” with regards to some of the nuances of the tests, exemplified by the tailored accounting process done for each BHC (GAO 10-861 – pp. 11 - 13). Market participants generally believed the tests to be sufficiently transparent, though the concerns about assumptions underlying loan loss rates in the June 2009 COP report were echoed (GAO 10-861 – pp. 13-14). In its interviews with those that participated, as well as those at ratings agencies and other organizations, GAO found that the “unprecedented” release of results helped restore confidence and reduce uncertainty, indicated most clearly by the BHCs’ ability to raise all the capital required by the stress tests prior within the 6-month window (GAO 10-861 – pp. 23). Actual loan losses, as well as securities and trading losses at the end of 2009 were far less than GAO’s predictions, as well, indicating improved market conditions (GAO 10-861 – pp. 27, 34). Finally, GAO highlighted four lessons that were learned from the SCAP:

- 1) Transparency in disclosing the results helped boost confidence, but broader efforts to incorporate it into the supervisory process have not happened. While the Dodd-Frank Act required annual stress tests, as well as a public disclosure of results, there is still debate about being overly transparent in a normal market environment (GAO 10-861 – pp. 41 - 43).
- 2) Internal BHC stress tests, as well as regulator oversight of these tests, have historically been weak. Tests prior to the SCAP were generally not comprehensive nor conservative enough, and despite increasing emphasis on the importance of rigorous, regular stress testing, the Fed had not, at that time, released specific assessment criteria for bank examiners (GAO 10-861 – pp. 43 - 47).

3) Additional mechanisms for identifying risks for future stress tests needed to be put in place. In their discussions with GAO, the Federal Reserve mentioned the implementation of “a quantitative surveillance mechanism for large, complex financial institutions that will combine a more firmwide and multidisciplinary approach for bank supervision” (GAO 10-861 – pp. 47 - 50)

4) A need for greater interagency coordination and communication to better assess vulnerabilities on both institutional and market levels. To this end, regulators involved in the 2010 stress tests required participants to submit a list of shortcomings in incentive compensation, as well as risk management and corporate governance practices, as well as plans to address these issues (GAO 10-861 – pp. 50 - 53).

Despite improvements in these areas, both through legislation (such as Dodd-Frank) and necessity (in the case of SCAP), GAO pointed out that the most critical element of improvement was through “a sustained commitment by each of the banking regulators to enhance coordination and communication” by ensuring that relevant agencies were included in discussions and decision-making (GAO 10-861 – pp. 55). GAO recommended generally for the Fed and other regulators to increase transparency during the traditional supervisory process, issue more specific guidance for bank examiners and assessors, fully develop and disseminate among regulators the aforementioned surveillance plan to enhance bank supervision, and further increase coordination and communication amongst regulatory entities (GAO 10-861 – pp. 55 - 56).

Analysis of the CAP backstop itself was less common, as it was never drawn upon. However, its function as a backstop and its lack of use were precisely why some viewed it as successful. In fact, several officials who worked on the program stated that its lack of usage was “a strong indication of its success, as our objective in the first place was to recapitalize the system with private capital” (Geithner, Bernanke, Paulson (2020) – pp. 273). Glasserman and Wang (2009) found that, in conducting a valuation analysis of the Convertible Preferred, the terms were attractive to banks, yet none participated. The lack of participation, they stated, could have been due to more stringent rules on executive compensation and corporate governance, as well as signaling aspects that could negatively impact its ability to raise private capital (Glasserman and Wang (2009) – pp. 26 – 28). Convertible Preferred was redeemable, but the mechanics of this redemption drew some criticism from the authors, who cited it as a potential reason for the lack of participation. They explained that any redemption had to be made “solely with the proceeds of one or more issuances of common stock”, which meant that, if the cost of issuing new equity was high enough, the cost of redemption and, by extension, the cost of the Convertible Preferred, would rise (Glasserman and Wang (2009) – pp. 28). Thus, if a QFI participated, the cost of raising equity could prove to be too burdensome and they would be forced to either carry the expensive convertible preferred or convert it and dilute its existing shareholders (Glasserman and Wang (2009) – pp. 28). They contrast the CAP with the widely used CPP, which did not have such restrictions (Glasserman and Wang (2009) – pp. 28). See *Table 2* for additional information on the differences in security design between CAP and the CPP. However, the authors do acknowledge that “a case can be made” that the CAP was successful since the BHCs that

needed to raise capital did not draw on the backstop and were able to meet their needs in private markets ([Glasserman and Wang \(2009\) – pp. 29](#)).

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## VI. Appendices

### Appendix I: Timeline of Key Events

- September 15, 2008: Lehman Brothers files for bankruptcy. Bank of America purchases Merrill Lynch for \$50 billion.
- September 21, 2008: The Federal Reserve Board approves the applications of investment banks Goldman Sachs and Morgan Stanley to become bank holding companies, allowing them to access Federal Reserve liquidity facilities.
- September 29, 2008: The first vote on the Emergency Economic Stabilization Act (EESA) fails in the House of Representatives, with a vote of 205-228.
- October 3, 2008: EESA is signed into law. Work on the Troubled Asset Relief Program (TARP) begins, with the government having access to the first of two \$350 billion tranches of appropriated funds. Wells Fargo announces proposal to acquire Wachovia.
- October 14, 2008: Treasury announces proposal to use TARP funds to purchase preferred equity in financial institutions through the \$250 billion Capital Purchase Program (CPP). Nine large, systemically significant financial institutions pledged to subscribe to the program for \$125 billion. Deadline to apply was November 14, 2008.
- January 12, 2009: President Bush submits report to Congress requesting disbursement of the remaining \$350 billion in TARP funds to be used by the incoming Obama administration.
- February 10, 2009: Treasury announces the details of its Financial Stability Plan, which included stress tests, a capital backstop, as well as new lending initiatives and expansions of existing programs.
- February 17, 2009: February 17, 2009 – The American Recovery and Reinvestment Act of 2009 (ARRA) is passed. In addition to large amounts of stimulus spending and tax cuts, ARRA also broadened the original executive compensation restrictions for TARP recipients that came with EESA and gave the Secretary of the Treasury the

authority to review compensation plans of some of the highest paid executives of TARP recipients.

- February 25, 2009: Federal bank regulators, such as the FDIC, OCC, and Federal Reserve Board announce intent to begin stress testing U.S. bank holding companies with assets exceeding \$100 billion. Treasury announces the Capital Assistance Program, an unlimited capital backstop for banks to receive additional government capital in exchange for Convertible Preferred stock.
- April 24, 2009: The Federal Reserve publicly releases a paper about its stress testing program, called the Supervisory Capital Assessment Program (SCAP), which gave key details about the design of the tests, as well as how the Fed calculated losses across the firms that were tested.
- May 7, 2009: Results of the SCAP for 19 large financial institutions are released, which show a \$75 billion capital shortfall in 10 bank holding companies, largely in the form of common equity.
- June 10, 2009: Treasury releases its Interim Final Rule on TARP Standards for Compensation and Corporate Governance. The rule implemented and further expanded the restrictions laid out in ARRA, as well as appointed a Special Master for TARP Executive Compensation, which was responsible for reviewing compensation plans for institutions receiving “exceptional assistance”, among other things.
- November 9, 2009: The Capital Assistance Program closes after six months. No investments were made under the program and all of the bank holding companies that needed capital as a part of SCAP were able to raise it privately.
- July 21, 2010: The Dodd Frank Wall Street Reform and Consumer Protection Act of 2010 is passed. The Act established the Consumer Financial Protection Bureau and Financial Stability Oversight Council, removed Treasury’s ability to reuse TARP funds, more stringently regulated the activities of banks and bank-holding companies, and instituted mandatory annual stress tests for some of the largest bank holding companies and nonbank financial companies.

## Appendix II: Overview of initial DFAST regulatory guidance

The Federal Reserve, OCC, and Treasury released several Final Rules in October of 2012, which served as implementation and clerical guidelines for regulators and participating institutions.

The first, which was published in by the OCC and Treasury in the Federal Register on October 9, 2012, laid out the methodology and reporting requirements for participants in detail. Unlike in the initial legislation, the Final Rule categorized institutions as either “\$10 to \$50 billion covered” or “over \$50 billion covered”, based on their average total consolidated assets ([Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61246](#)).<sup>26</sup> Regulators gave smaller covered institutions (<\$50 billion) over a year longer to both conduct and report the results of their stress tests compared to over \$50 billion covered institutions.<sup>27</sup> However, there were cases in which institutions with less than \$50 billion in assets were affiliated with the over \$50 billion covered institutions, which meant that it could be “less burdensome and more appropriate” for these institutions to follow the requirements for over \$50 billion covered institutions, instead ([Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61242](#)).

Participating institutions were required to estimate PPNR, losses, loan loss provisions, net income, ALLL for credit exposures, and general effects of capital actions on their capital levels over the “planning horizon”, which had to be at least nine quarters ([Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61247](#)).

While the initial reports given to regulators were confidential, all participants were required to publish the results of the tests either between March 15 and 31 of the following calendar year for over \$50 billion covered institutions, or between June 15 and 30 of the following calendar year for \$10 to \$50 billion covered institutions ([Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61248](#)). For the first set of results, this would mean that over \$50 billion covered and \$10 to \$50 billion covered institutions would have had to publish their results between March 15 to 31, 2013 and June 15 to 30, 2014 ([Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61248](#)).

Two more Final Rules were issued on October 12, 2012 for each of the \$10 to \$50 billion covered and over \$50 billion covered groups. While the language was similar in the Rules for

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<sup>26</sup> Average total consolidated assets, for purposes of the Dodd-Frank stress tests was calculated by taking the average of an institution’s total consolidated assets found in its Consolidated Reports of Condition and Income for the four most recent consecutive quarters. If a report had not been filed in one or more of the four most recent quarters, it would be calculated as the average of the institution’s total consolidated assets “for the most recent one or more consecutive quarters ([Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61246](#)).

<sup>27</sup> \$10 to \$50 billion covered institutions were required to use financial statement data as of September 30, 2013 and report their test results on or before March 31, 2014, whereas \$50 billion covered institutions were required to use financial statement data as of September 30, 2012 and report their results on or before January 5, 2013 ([Federal Register, Vol. 77, No. 195, 10/09/2012 – pp. 61246](#)). In all cases, data as of September 30 of the current calendar year had to be used.

each of the two groups, and was akin to what was issued by the OCC and Treasury, it differed in the following ways:

- 1) A delay in the date that these companies were to begin and publicly report the results of their stress tests. A company that met the requirements at the end of 2013 would be tested in 2014, and report their results in 2015, for example ([Federal Register, Vol. 77, No. 198, 10/12/2012 – pp. 62399](#)).<sup>28</sup>
- 2) Further clarification of the definition of the three “scenarios” that the OCC and Treasury had outlined in their Final Rule. The baseline scenario was similar to the SCAP: a consensus view of the macroeconomic outlook as represented by forecasters, government agencies, and other organizations. The adverse scenario would likely “include the paths of economic variables that are generally consistent with mild to moderate recessions”, with the possibility of the approach varying from year-to-year based on current economic conditions. The more adverse scenario, on the other hand, was expected to follow the path that was consistent with “severe post-war U.S. recessions” ([Federal Register, Vol. 77, No. 198, 10/12/2012 – pp. 62403-62404](#)).
- 3) An increased emphasis on tailoring stress test elements to idiosyncratic elements amongst tested institutions. The board emphasized that, “depending on the systemic footprint and scope of operations” of a given institution, they could potentially require “additional components in its adverse and severely adverse scenarios or to use additional scenarios that are designed to capture salient risks stemming from specific lines of business” ([Federal Register, Vol. 77, No. 198, 10/12/2012 – pp. 62404](#)).
- 4) A more detailed list of assumptions about capital actions when analyzing the impact of the test over the planning horizon. These involved taking into account actual capital actions undertaken at the end of the first quarter, as well as payments on any instruments included in regulatory capital ratios (such as common stock dividends, interest, or principal payments), and an assumption of “no redemption” on any instrument that would be included in the institution’s regulatory capital ratios ([Federal Register, Vol. 77, No. 198, 10/12/2012 – pp. 62408](#)).
- 5) Additional stress tests conducted every six months by over \$50 billion covered institutions *only*. These would be completed by January 5, and June 5 every year, with the former following the same procedures and scenarios as the Fed’s tests, while the mid-year tests, which we based on asset values as of March 31, were conducted more independently. In particular, companies were expected to assess their own unique vulnerabilities and idiosyncratic risks as part of the adverse and more adverse

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<sup>28</sup> This included a delay for \$10 to \$50 billion covered institutions that were eligible for the stress tests as of the end of 2012. These institutions, despite being required to report in 2014, did not have to until June of 2015 ([Federal Register, Vol. 77, No. 198, 10/12/2012 – pp. 62399](#)). This delay also applied for over \$50 billion covered institutions that did not participate in SCAP, who would begin testing in September 2013 instead of November 2012 ([Federal Register, Vol. 77, No. 198, 10/12/2012 – pp. 62381](#)).

scenarios in the mid-year tests ([Federal Register, Vol. 77, No. 198, 10/12/2012 – pp. 62387](#)).

These Final Rules and related publications further built on the foundations that the SCAP created, and the Fed continues to release both the DFAST results and methodology to the public ([FRB: Dodd-Frank Act Stress Tests](#)).