2011

Comparative Analysis of Stress Testing in the United States and Europe

Alexander Abramovich

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Available at: http://scholarship.law.unc.edu/ncbi/vol15/iss1/16

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I. INTRODUCTION

Everyone knows who to call to deal with ghosts, but when it comes to a financial crisis, "who ya gonna call?" – the bank regulators. When the economic crisis threatened to crash the world banking system, stress testing of financial institutions was one method used by regulators to prevent disaster by making sure that banks had sufficient capital. Regulators’ stress test program according to Ben Bernanke, Chairman of the Federal Reserve Board of Governors, "help[ed] restore confidence in the banking system" and it “was an important step toward quelling the crisis.”

This Note will analyze stress tests of financial institutions in the United States and Europe that occurred in response to the economic crises. Part II will provide a brief background of the financial crisis in both the United States and Europe. Part III will discuss American stress testing, while Part IV will introduce the European method. Part V will compare the two systems and analyze their relative effectiveness. This Note will demonstrate that the design used in the United States offers the most effective

1. See GHOSTBUSTERS (Columbia Pictures 1984).
2. Id.
4. See id.
5. Id.
6. See infra Part II.
7. See infra Part III.
8. See infra Part IV.
9. See infra Part V.
option for stress testing because it only requires coordination within one country and provides for ongoing future stress testing. This becomes apparent when compared to the European tests and their failure to properly address factors relevant to its crisis (i.e. sovereign debt default).  

II. THE FINANCIAL CRISIS  

The current economic crisis has been described as “the worst financial crisis since the Great Depression.” Between 2002 and 2006, American households and financial institutions acquired enormous amounts of debt, exceeding economic expansion, as the price of real estate plummeted. The United States’ economic crisis peaked in 2008 with the purchase of the collapsed Bear Stearns by JP Morgan in March, and continued with the fall of Lehman Brothers and the bailout of AIG in September of that year. In its examination of the U.S. financial system the International Monetary Fund (IMF) describes what led to the financial crisis in the United States:

In the years prior, the U.S. economy experienced an unsustainable lending boom, fueled by low interest rates and capital inflows from abroad; a housing bubble; the rapid rise of a “shadow banking system;” a decline in underwriting standards; weakness in risk management, governance, and compensation structures in the financial sector; and the growing use of complex derivative and structured credit instruments whose risk properties

10. See infra Part V.  
12. Id.  
and contribution to systemic fragility were poorly understood. These vulnerabilities were allowed to build as a result of insufficient market discipline but also because of critical shortcomings and gaps in the supervisory and regulatory framework, both at a micro- and macro-prudential level.14

Europe was not immune from the crisis and saw its financial institutions suffer like their American counterparts. In England, Northern Rock PLC experienced the first run on a bank in more than 100 years in September 2007, forcing it to be nationalized.15 After Northern Rock PLC’s nationalization, Barclays PLC, Royal Bank of Scotland, and Lloyds also suffered large losses.16 The crisis hit Germany as well, with the government injecting funds into financial institutions, including Germany’s second-largest bank.17 By December 2007, the European Central Bank was forced to inject approximately $500 billion into banks that invested in U.S. subprime mortgages.18 After those measures were taken, the economic crisis continued with concern over Greece’s fiscal health because the country held large amounts of debt relative to economic development.19 Subsequently, Italy, Portugal, Ireland, and Spain all added to the concern with a similar imbalance of debt relative to expansion.20 Apprehension over government bonds fueled the economic crisis in Europe,21 and was responsible for the Euro falling to $1.19 in June 2010, a four year low against the Dollar.22


16. Id. at 987.

17. Id. at 994.

18. Id. at 998.


20. Id.


Although many issues led to the worldwide economic crisis, deficient bank capital was a significant cause. Stress testing is one way to confirm that financial institutions are sufficiently capitalized, and if undercapitalized, provisions may be made to assure institutions can withstand downturns.

III. STRESS TESTS IN THE UNITED STATES

The United States' campaign to combat the financial crisis included the passing of the Emergency Economic Stabilization Act, enacted on October 3, 2008, which authorized the Secretary of the Treasury to create programs under the Troubled Assets Relief Program (TARP) to buy troubled assets from financial institutions. One such program under TARP was the Capital Purchase Program (CPP) where the Treasury provided $205 billion in capital to financial institutions in exchange for senior preferred shares and warrants for common stock. In addition to the CPP, the Treasury implemented the Supervisory Capital Assessment Program (SCAP) and the Capital Assistance Program (CAP). SCAP, as a part of CAP, required the largest

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24. Id.


27. CONG. OVERSIGHT PANEL, JULY OVERSIGHT REPORT: SMALL BANKS IN THE CAPITAL PURCHASE PROGRAM 6, 12-13 (2010), available at http://cop.senate.gov/documents/cop-071410-report.pdf (requiring financial institutions participating to pay for the first five years a five percent dividend and after five years a nine percent dividend).


bank holding companies to undergo stress testing.\textsuperscript{30} CAP was designed as a vehicle to inject additional capital or to convert investments made through the CPP to mandatorily convertible preferred shares if additional capital was required during SCAP stress tests.\textsuperscript{31}

CAP was enacted to "[r]estore confidence throughout the financial system that the nation's largest banking institutions have a sufficient capital cushion against larger than expected future losses, should they occur due to a more severe economic environment, and to support lending to creditworthy borrowers."\textsuperscript{32} Similarly, Ben Bernanke stated that there were two purposes for SCAP; first, to make sure financial institutions had sufficient capital for losses, and second, to "reduce the uncertainty about potential losses and earning prospects."\textsuperscript{33}

A. Provisions

The U.S. programs provided for both the testing of financial institutions by federal bank regulators\textsuperscript{34} and the funding by the U.S. Treasury Department of those institutions unable to raise necessary capital in the private market.\textsuperscript{35} Regulators conducted stress tests for the nineteen bank holding companies with assets over $100 billion.\textsuperscript{36} The $100 billion threshold was most


\textsuperscript{31} See id. at 53 (explaining CAP and defining MCP as required to be changed into common stock at a particular time).


\textsuperscript{33} Bernanke May 2010 Speech, supra note 3.

\textsuperscript{34} See SCAP Design and Implementation, supra note 28, at 1 n.1, 2 ("The federal bank regulatory agencies that participated in the SCAP are the Board of Governors of the Federal Reserve Board System, the Federal Reserve Banks, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency.").

\textsuperscript{35} Treasury White Paper, supra note 29, at 2.

\textsuperscript{36} SCAP Design and Implementation, supra note 28, at 1. Ben Bernanke stated that smaller banks would have capital analyzed as well but not as part of the
likely chosen because it included nineteen firms that represented two-thirds of the country's banking assets and half the loans, and regulators believed that smaller institutions often have more than enough common equity. The tests included two different economic conditions used by the firms to approximate possible losses and reserves. The two conditions were referred to as the "baseline," which emulated current projections for the economy, and the "more adverse," which assumed a more severe economic recession. Teams of regulators with specific expertise about the firm or asset class then reviewed the projections and compared them across firms.

The stress tests analyzed the capital positions of the financial institutions, determined whether they would be able to absorb any further economic decline, and placed a particular focus on the makeup of an institution's Tier 1 capital. CAP was available to offer preferred security capital to those institutions that had participated in the stress test as well as smaller, non-participating institutions that were unable to raise capital in the private market. An institution that required additional capital stress test for "logistical reasons." Bernanke May 2010 Speech, supra note 3.

37. See SCAP DESIGN AND IMPLEMENTATION, supra note 28, at 1.


39. SCAP DESIGN AND IMPLEMENTATION, supra note 28, at 4 (stating that institutions were asked to estimate loses 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 (ALLL)").

40. BD. OF GOVERNORS OF THE FED. RESERVE SYS., THE SUPERVISORY CAPITAL ASSESSMENT PROGRAM: OVERVIEW OF RESULTS 1, 2 (2009), available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090507a1.pdf [hereinafter SCAP OVERVIEW OF RESULTS] (stating that both conditions were meant to portray a possibility and unlikely for either to be the exact path of the economy).

41. See SCAP DESIGN AND IMPLEMENTATION, supra note 28, at 4, 10 (stating that 150 people reviewed the bank submissions including senior examiners, economists, and financial analysts).

42. See Press Release, U.S. Treasury Feb. 2009, supra note 32 (stating that the regulators will check financial institutions' capital needs).

43. SCAP OVERVIEW OF RESULTS, supra note 40, at 2. Tier 1 capital is defined as the core capital elements of stockholder's equity, noncumulative perpetual preferred stock, and minority interest in each minus "goodwill, other intangible assets, interest-only strips receivables, deferred tax assets, nonfinancial investments . . . ." 12 C.F.R. § 225 app. A (2011).

44. See TREASURY WHITE PAPER, supra note 29, at 2 & n.2 (allowing those
after testing had six months to obtain sufficient capital from either the private market or through CAP funding.45 If unable to obtain capital through the private market, an institution would apply to its federal regulator for access to CAP funds.46

B. Results

Results from the stress tests were better than expected.47 Of the nineteen firms tested, nine were found to be sufficiently capitalized and required no additional capital.48 The remaining ten firms required additional capital totaling $185 billion at the end of 2008, but after taking into account the companies’ financing activities in the first quarter of 2009, the increase in capital required was only $75 billion.49 Most of the firms had sufficient Tier 1 capital but required additional Tier 1 common capital.50 The firms requiring additional capital were: Bank of America, Citigroup, Fifth Third Bancorp, GMAC, KeyCorp, Morgan Stanley, PNC, Regions Financial Corporation, SunTrust, and Wells Fargo & Company.51 The losses of all the firms from the institutions not taking part in the stress test, because they did not have assets more than $100 billion, to nevertheless increase capital through CAP).

45. TREASURY WHITE PAPER, supra note 29, at 2.
47. See David Enrich et al., Fed Sees Up to $599 Billion in Bank Losses, WALL ST. J., May 8, 2009, http://online.wsj.com/article/SB124172137962697121.html (stating that results of capital needs were less than some had expected).
48. Id. The nine firms that passed the test without needing additional capital were: American Express, Branch Banking & Trust, Bank of New York Mellon, Capital One, Goldman Sachs, J.P. Morgan Chase, MetLife, State Street, and U.S. Bancorp. See SCAP OVERVIEW OF RESULTS, supra note 40, at 9 (listing firms that did not require any additional capital in Table 3: Supervisory Capital Assessment Program Estimates for 19 Participating Bank Holding Companies).
49. SCAP OVERVIEW OF RESULTS, supra note 40, at 3.
50. Id. at 3 (suggesting that the firms required additional common stockholder equity); SIGTARP REPORT, supra note 30, at 55 (“T[ier] 1 Common [Capital] . . . is calculated by removing all non-common elements from T[ier]1, e.g., preferred equity, minority interests, and trust preferred securities.”).
51. Id. at 9 (stating total required addition to capital was $75 billion and by firm in billions: Bank of America $33.9; Citigroup $5.5; Fifth Third Bancorp $1.1; GMAC $11.5; KeyCorp $1.8; Morgan Stanley $1.8; PNC $0.6; Regions Financial Corporation $2.5; Sun Trust $2.2; and Wells Fargo & Company $13.7).
“adverse” scenario were estimated at $600 billion and mostly attributable to losses from consumer loans. This loss corresponds to a loan loss rate greater than experienced during the Great Depression.

On November 9, 2009, six months after the SCAP results were released, the U.S. Treasury announced that the second provision of CAP, providing preferred security capital, would be closed without any investments being made because financial institutions were able to gain private financing. However, one company that could not privately raise capital, GMAC, did not tap into CAP funds but did receive assistance from the government through TARP Automotive Industry Financing.

C. Economic Reaction

Stress tests, as the purpose suggests, were designed to increase confidence in the banking system by determining if there was sufficient capital in the system to absorb expected losses or if more needed to be raised. To determine whether the tests accomplished this purpose, the market reaction to the testing must be analyzed.

Treasury Secretary Timothy Geithner made statements the day before the release of the tests that the results were “reassuring,” and the Dow Jones Industrial Average increased 102 points. The next day, when the results were released,
however, the Dow Jones Industrial Average closed down 102 points awaiting the results of the stress tests given after the market closed.\textsuperscript{59} Since the tests were completed, the capital positions of the firms tested have improved by raising additional capital in excess of that required by the tests while also enjoying increases in stock prices.\textsuperscript{60} Similarly, of the nine institutions found not to need additional capital, eight had been approved and repaid the CPP funds just over a year after the stress test results were announced.\textsuperscript{61}

\section*{D. Criticism}

Following the release of the SCAP stress test results in the United States, critics attacked the economic presumptions of the scenarios.\textsuperscript{62} Some believe the presumptions, which were designed to demonstrate a worsening economy, were not sufficiently severe.\textsuperscript{63} Although the assumptions projected more severe conditions than anything since the Great Depression,\textsuperscript{64} critics felt that the adverse presumptions were not much more severe than current economic conditions.\textsuperscript{65}

One such criticism was the unemployment rate assumed in the adverse test of 10.3\% was not much worse than the 8.9\% actual unemployment rate in April 2009.\textsuperscript{66} A little over a year


\textsuperscript{60} See Bernanke May 2010 Speech, supra note 3 (discussing the institutions tested a year later).

\textsuperscript{61} SIGTARP REPORT, supra note 30, at 53.


\textsuperscript{63} See id.

\textsuperscript{64} SCAP OVERVIEW OF RESULTS, supra note 40, at 6-7.

\textsuperscript{65} See Francis, supra note 62.

after the tests were conducted, the unemployment rate in October 2009 reached 10.1%, approaching the adverse assumption of the test. Although the actual unemployment rate neared the adverse assumption in 2009, the unemployment assumption was still higher than that ever seen in the United States.

Additionally, the adverse scenario included more cautious assumptions for the GDP growth rate in 2009 and unemployment in 2010 compared to the projections made by the IMF. In 2009 the stress test adverse scenario had GDP growth rate at -3.3% while the IMF projected a -2.8% GDP growth and unemployment in the adverse scenario for 2010 was 10.3% and the IMF prediction was 10.1%. However, the IMF was more conservative in its projection of 2010 GDP of 0% while the adverse scenario had a 0.5% GDP growth rate.

Observers also criticized potential loan loss presumptions, but upon review, it is apparent that the potential losses demonstrated sufficiently severe presumptions. The estimated loan loss of $600 billion resulted in a loan loss rate of 9.1% of total loans. This loan loss rate would be the largest seen since 1920. The stress tests also included new accounting rules not yet in effect requiring assets such as special-purpose vehicles to be included on the balance sheet yielding a more cautious result.

Additional suggestions arose when Eric Talley and Johan Walden, professors at the University of California at Berkeley,

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68. SCAP OVERVIEW OF RESULTS, supra note 40, at 7; see also U.S. Dep't of Labor Bureau of Labor Statistics, supra note 67 (showing that thankfully, the unemployment rate remained below 10% for 2010).
69. CONG. OVERSIGHT PANEL, supra note 38, at 18.
70. Id.
71. Id.
72. But see Andrews, supra note 66 (stating that the presumptions were intended to be “unlikely” but the present situation is only slightly better, while maintaining that the loan loss rate assumed in the test was the highest since 1921).
73. SCAP OVERVIEW OF RESULTS, supra note 40, at 6-7.
74. Id. at 7.
75. CONG. OVERSIGHT PANEL, supra note 38, at 16.
were asked by the Congressional Oversight Panel (COP) to analyze the stress tests.\textsuperscript{76} Although generally their report points out that they found the “risk modeling approach has, on the whole, been a reasonable and conservative one.”\textsuperscript{77} However, the professors were concerned about the inability to replicate the tests because of “a lack of transparency in the way the models were applied.”\textsuperscript{78} The COP also recommended more transparency and suggested the tests provide specific results for the baseline scenario.\textsuperscript{79} Another concern raised by the professors was specifying capital requirements over a two year period, which could have been improved by conducting a longer than two year stress test for non-liquid assets maturing in the long term or reexamining them as they are closer to maturity.\textsuperscript{80}

\textit{E. Additional Stress Testing}

Under the newly passed Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank),\textsuperscript{81} stress testing will be an integral part of banking regulation in the United States.\textsuperscript{82} Dodd-Frank requires that the Federal Reserve Board of Governors create regulations to govern future stress testing in the United States.\textsuperscript{83} These forthcoming regulations will be developed

\textsuperscript{76} Id. at 31 (identifying Professor Talley as a professor at the U.C. Berkeley School of Law and Professor Walden as a professor U.C. Berkeley Haas School of Business).

\textsuperscript{77} Id. at 31-32 (quoting Eric Talley & Johan Walden, \textit{The Supervisory Capital Assessment Program: An Appraisal} 2 (2009), \textit{available at} http://cop.senate.gov/documents/cop-060909-report.pdf (annex to section one of report)).

\textsuperscript{78} Id. at 33.

\textsuperscript{79} Id. at 5.

\textsuperscript{80} Id. at 36.


\textsuperscript{82} See id. § 165(i), (to be codified at 12 U.S.C. § 5365) (providing for stress tests of banks).

\textsuperscript{83} See \textsc{Mayer Brown LLP, Understanding the New Financial Reform Legislation: The Dodd-Frank Wall Street Reform and Consumer Protection Act} 22 (2010), \textit{available at} http://www.mayerbrown.com/dodd_frank_act/article.asp?id=9360&nid=13007 (suggesting that implementation of the bill will require input from regulatory agencies).
under the framework set out in Dodd-Frank.  

Some of the key provisions within this framework include annual tests of bank holding companies with assets greater than or equal to $50 billion and possible regulation of non-bank companies if they are "predominantly engaged in financial activities." A non-bank company is "predominantly engaged in financial activities" if 85% or more of its assets come from activities defined as "financial in nature" by the Bank Holding Company Act of 1956 or has ownership of "insured depository institutions" and is determined to be systemically significant by the Financial Stability Oversight Council established by Dodd-Frank. These provisions will result in an increase in the companies that will be tested compared to the number tested as part of SCAP, because the threshold of assets to be included in testing was cut in half and can include non-banking companies. Subsequent testing will consist of at least three different economic assumptions: "baseline, adverse, and severely adverse." Dodd-Frank also provides that the Board of Governors has the discretion to test non-bank financial companies and bank holding companies in addition to those with assets greater than $50 billion that are required to be tested. Finally, to reach the goal of increasing confidence in the system, summaries of the tests will be made public.

Institutions subject to stress testing by the Board of Governors will be required to test themselves twice a year and present the results to the Board of Governors and the institution's main federal regulator. Institutions with assets greater than $10

84. See Dodd-Frank Act § 165(i) (to be codified at 12 U.S.C. § 5365).
85. Id. § 165(i)(1)(A), (to be codified at 12 U.S.C. § 5365).
86. See id. at § 102, 124 Stat. at 1392 (to be codified as 12 U.S.C. §5311).
89. See id. §165, 124 Stat. at 1423 (to be codified at 12 U.S.C. § 5365) (stating a threshold of $50 billion).
90. Id. § 165(i)(1)(B) (to be codified at 12 U.S.C. § 5365).
91. Id.
92. Id.
93. Id. at § 165(i)(2) (to be codified as 12 U.S.C. § 5365); MAYER BROWN LLP, supra note 83, at 26. Shortly before the passing of Dodd-Frank, Ben Bernanke stated the importance of banks stress testing themselves in order to determine if they have sufficient capital. Bernanke May 2010 Speech, supra note 3.
billion that are overseen by a “primary Federal financial regulatory agency” will also carry out annual self-testing.\textsuperscript{94} Regulatory agencies will create many of the regulations of self-testing and must make a summary of results public.\textsuperscript{95} Much of the legislation for stress testing requires input from regulators to establish the structure going forward, which will take some time to implement.\textsuperscript{96}

In addition to requirements under Dodd-Frank, the Federal Reserve “encouraged” the nineteen participants of SCAP to file capital plans with it by January 7, 2011.\textsuperscript{97} A “comprehensive capital plan” should include a stress testing plan to approximate capital requirements based on what management foresees in terms of revenues and losses as well as the capital required to weather the predictions including a baseline and adverse scenarios.\textsuperscript{98} The Federal Reserve will evaluate a financial institution’s plan based on the “firm’s risk profile, the regulatory capital standards applicable today, and the reasonableness of the [bank holding company’s] plans to address anticipated future standards, including Basel III\textsuperscript{99} and relevant aspects of Dodd-Frank.”\textsuperscript{100} Firms are also required to check with the Federal Reserve before undertaking anything that “could result in a diminished capital base.”\textsuperscript{101}

\textsuperscript{94} Dodd-Frank Act § 165(i)(2)(A) (to be codified as 12 U.S.C. § 5365).
\textsuperscript{95} Id. § 165(i)(2)(C) (to be codified at 12 U.S.C. § 5365).
\textsuperscript{96} See Mayer Brown LLP, supra note 83, at 7.
\textsuperscript{98} Id. at 2.
\textsuperscript{100} Revised Temporary Addendum to SR Letter 09-4, supra note 97, at 3.
\textsuperscript{101} Id. at 1, 3 (stating examples of such activities to be issuing dividends and repurchasing stock and that none of these activities should be undertaken before repayment or replacement of government investments).
IV. STRESS TESTS IN EUROPE

Much like the United States, the European Union conducted stress testing of its financial institutions. In 2009, the Committee of European Banking Supervisors (CEBS) conducted stress tests to inform policy makers, with the outcomes kept confidential. CEBS was charged with conducting a second round of stress testing of European banks in coordination with their home countries in mid 2010. The purpose of the recent 2010 European tests was “to provide policy information for assessing the resilience of the EU Banking system to possible adverse economic developments and to assess the ability of banks in the exercise to absorb possible shocks on credit and market risks, including sovereign risks.”

A. Provisions

In mid-2010, CEBS conducted stress tests on ninety-one banks in twenty-seven countries with projections for the years 2010 and 2011. The criterion for selecting banks for testing was to have more than half of all banking assets of each country covered through the stress test. In total 65% of the European banking assets were covered by the tests. The testing included two sets of economic assumptions, “benchmark,” based on interim forecasts of the economy by the European Union Commission, and “adverse,” based on European Central Bank estimates with a


105. Id. at 2-3 (Testing was done in banks across twenty countries with seven additional counties having more than half of banking assets covered through subsidiaries of the original twenty countries).

106. Id. at 2.

107. Id.
separate "sovereign risk shock." The tests assumed that exposure to both market and credit risk would not increase over the stress test period. Banks found to be deficient were responsible for addressing the deficiency with their country's respective regulator "within a given period of time." In addition to the stress tests, the European Union created a fund, the European Financial Stability Facility (EFSF), to assist member countries experiencing trouble obtaining bond financing.

B. Results

Of the ninety-one banks tested only seven were classified as deficient under the "adverse" scenario, requiring an increase in reserves of €3.5 billion. A failure was defined as having Tier 1 capital fall below 6%. Five Spanish banks, one German bank, and one Greek bank failed the "adverse" scenario with "sovereign shock." The German and Greek banks were both nationalized, and one of the five Spanish banks was taken over by the Bank of Spain. The four remaining Spanish banks, if unable to raise capital in the private sector, have the ability to receive financing from the government.

Total loss under the "adverse" scenario with "sovereign shock" would amount to €565.9 billion, which is a loss rate of

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108. Id. at 3. Sovereign risk was treated differently in each country based on the individual country's circumstances. Id. at 16.
110. Id.
113. CEBS AGGREGATE OUTCOME, supra note 104, at 6, 35 (stating that this standard differs from most countries' regulatory requirement for Tier 1 capital).
114. Country by Country: EU Bank Stress Test Results, WALL ST. J., (July 23, 2010, 12:58 PM), http://blogs.wsj.com/dispatch/2010/07/23/country-by-country-eu-bank-stress-test-results/ (noting the banks that failed were: Hypo Real Estate Group (Germany), ATEBank (Greece), Unnim (Spain), Diada (Spain), Espiga (Spain), Banca Civica (Spain) and Cajasur (Spain)).
115. Enrich, supra note 21.
116. Id.
Under this most severe scenario, seven banks were found not to have sufficient capital in 2011, measured by the 6% target. Without taking “sovereign shock” into account five banks would fall below the test threshold by 2011, and only one falling below in 2010. No banks fell under the 6% threshold under the “benchmark” scenario.

In contrast to the 2009 tests, the results were released for the 2010 tests. The results of the 2009 tests were only shared on an aggregated basis and reported that no bank required additional capital in either of the two scenarios, “baseline” and “more adverse,” and that total losses over 2009 and 2010 could be approximately €400 billion. In addition to the losses predicted in the testing, the EFSF in November 2010 agreed to grant Ireland €17.7 billion as part of a total financing package made available to Ireland of €85 billion from the EFSF, EU, and IMF.

C. Economic Reaction

When the results of the stress tests were initially released, the Euro fluctuated against the Dollar and the Dow Jones Industrial Average declined. However, upon analyzing the monetary and market indicators, the response by the market was

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118. CEBS AGGREGATE OUTCOME, supra note 104, at 24.

119. Id.

120. Id.

121. See Press Release, CEBS May 2009, supra note 102 (stating that the 2009 tests would not be shared).


positive with the euro appreciating and the Dow Jones Industrial Average increasing 102 points.\textsuperscript{125} On Monday, July 26, 2010, European markets reacted positively.\textsuperscript{126} The UK FTSE index gained thirty-nine points,\textsuperscript{127} and the German Stock Market DAX index lost seven points.\textsuperscript{128} Because of the limited effect, the news release was described by analysts as a "non-event."\textsuperscript{129} With respect to the EFSF, all three major credit rating agencies gave it the highest possible rating in September 2010, demonstrating their confidence.\textsuperscript{130}

D. Criticism

Much of the criticism of the European Union test focuses on the structure of the tests with respect to sovereign debt and excluding government debt that institutions planned to keep until maturity.\textsuperscript{131} This criticism arose even though the European tests had a specific scenario addressing "sovereign risk shock."\textsuperscript{132} The European tests analyzed the effects sovereign risk had on a bank's trading of government bonds in the market from their decreased value without analyzing bonds that a bank planned to hold to maturity.\textsuperscript{133} This is especially troubling because uncertainty as to

\begin{itemize}
\item \textsuperscript{125} Id.
\item \textsuperscript{127} \textsc{Yahoo! Finance},
\item \textsuperscript{128} \textsc{Yahoo! Finance},
\item \textsuperscript{129} See Shah, \textit{supra} note 126 (describing the European market reaction to the stress tests).
\item \textsuperscript{130} Press Release, \textsc{European Fin. Stability Facility}, \textsc{Rating Agencies Assign Top Credit Rating to EFSF} (Sept. 20, 2010), available at http://www.efsf.europa.eu/mediacentre/news/2010/2010-003-rating-agencies-assign-top-credit-rating-to-efsf.htm (stating that Standard & Poor's, Moody's, and Fitch give the EFSF their highest ratings).
\item \textsuperscript{131} See, e.g., Enrich, \textit{supra} note 21 (raising the issue that the tests did not take into account country defaults on debt).
\item \textsuperscript{132} See \textsc{CEBS Aggregate Outcome}, \textit{supra} note 104, at 3 (describing the different scenarios of the test including sovereign risk).
\item \textsuperscript{133} Enrich, \textit{supra} note 21 (explaining "sovereign shock" in the test with country default); \textit{see also} Hao Li, \textit{Only 7 Banks Fail EU Stress-Test, but Criteria Lacks Vigor},
whether Greece would be able to meet its debt obligations aggravated the financial crisis in Europe.\textsuperscript{134} Many have criticized the failure of the European tests to fully take sovereign debt default into consideration.\textsuperscript{135}

Additional criticism of the European tests was the inability to predict future problems actually experienced by the banks tested.\textsuperscript{136} The European Commissioner for Economic and Financial Affairs, Olli Rehn, conceded that there were issues with the last set of tests saying "[t]here was some variety in terms of rigor and application of these tests."\textsuperscript{137} Although all of Ireland's banks passed the tests, they continue to struggle.\textsuperscript{138}

\textbf{E. Additional Stress Testing}

To ensure that financial institutions can withstand future economic decline, CEBS will periodically stress test banks in the European Union.\textsuperscript{139} In the future, CEBS will "test[] the resilience of the EU banking sector by means of periodic EU wide and thematic risk assessments and stress testing exercises, and will continue its work on improving convergence in supervisory practices across Europe by addressing the topics both from a policy and practical perspective."\textsuperscript{140} The new European Banking Authority (EBA) will conduct another round of stress testing in the first half of 2011.\textsuperscript{141} The results of the new tests will be made


\textsuperscript{135} \textit{E.g.}, Li, supra note 133.


\textsuperscript{137} \textit{Id.}

\textsuperscript{138} \textit{Id.}

\textsuperscript{139} CEBS AGGREGATE OUTCOME, supra note 104, at 7, 35 (providing no definite period for testing).

\textsuperscript{140} \textit{Id.} at 7.

\textsuperscript{141} Press Release, European Banking Authority, The European Authority Up
public and available in the middle of 2011. A difference from CEBS is that the EBA will have the power to create rules enforceable across the EU and will be able to arbitrate between regulators of various countries.

CEBS has also published guidelines to assist members in stress test methodology and expects them to be adopted by member country regulators by the end of 2010. These guidelines require self stress tests within an institution, with its management having “ultimate responsibility,” and regulators are to verify an institution’s adherence. The guidelines do not cover “supervisory stress testing,” rather they concentrate on individual firm tests.

V. COMPARING STRESS TESTS IN THE UNITED STATES AND EUROPE

There are many similarities between the United States and Europe in conducting stress tests of banks, but upon examining the differences, it is apparent that the United States, by not having to coordinate with various governments, had a much easier time performing stress testing than Europe. The United States also has a more definite future testing process enacted by Dodd-Frank.

The purposes of the stress tests in the United States and the European Union were similar; both emphasized the aim to weather further economic trouble. The ability to survive was accomplished by checking financial institutions’ capital level.

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142. Id.
143. Enrich & Fidler, supra note 136
145. Id. at 7.
146. Id. at 4-5.
149. Bernanke May 2010 Speech, supra note 3; COMM. OF EUROPEAN BANKING
The provisions for the tests were also similar, with both analyzing banks in light of hypothetical economic scenarios and both using a baseline and adverse scenario, so as to determine their ability to survive a downturn in the market. Both the United States and Europe tested a majority of their respective banking assets.

As previously discussed, the "sovereign risk" scenario in the European Union tests were highly criticized because of their failure to account for sovereign default, a major concern in the European Union. Although the EFSF provides some reassurance in terms of sovereign default risk, the stress tests should still account for the risk of holding sovereign debt to maturity. One explanation for excluding it is that "[r]egulators and political leaders sparred over whether to include a default scenario." Regulators chose not to include a default scenario "partly because they said that a sovereign default was unlikely and partly due to worries that it would send the wrong political message." This highlights the difficulty encountered in Europe because CEBS had to work with regulators in twenty countries to reach an agreement. Another example of the difficulty encountered in Europe was the disagreement among the nations on what time to release the stress tests results. In comparison, the United States had to coordinate with only one government.

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150. See SCAP OVERVIEW OF RESULTS, supra note 40, at 1-2; CEBS AGGREGATE OUTCOME, supra note 104, at 1.
151. SCAP OVERVIEW OF RESULTS, supra note 40, at 1; CEBS AGGREGATE OUTCOME, supra note 104, at 2.
152. See Bradbery, supra note 134 (pointing out the failure to test for sovereign default with the effect Greece and other countries' instability had on the market).
153. See Sakoui, supra note 111 (noting that the EFSF is AAA rated showing the confidence in the fund).
154. See Enrich, supra note 21.
155. Id.
156. CEBS AGGREGATE OUTCOME, supra note 104, at 2 (stating that testing was done in banks across twenty countries with seven additional counties having more than half of banking assets covered through subsidiaries of the original twenty countries).
157. See Kansas & Enrich, supra note 103 (stating that nations disagreed about timing because stock markets outside of Europe would be able to trade).
Both the United States and Europe stress tests involved potential capital assistance but differed in their application and utilization.\textsuperscript{158} As part of the CAP, the United States had funding available for application if a bank needed capital and was unable to secure it in the private sector.\textsuperscript{159} Not one U.S. bank needed to take advantage of this funding source.\textsuperscript{160} The EFSF, however, operated independently from the CEBS that administered the stress tests.\textsuperscript{161} As an independent corporation, it could offer funding to member states by selling bonds rather than investing in banks.\textsuperscript{162} Although the funding structures differed, both systems aimed to address issues at the heart of their respective financial crises.\textsuperscript{163} The United States, which was shocked by weakened and failed financial institutions,\textsuperscript{164} provided for the recapitalization of banks\textsuperscript{165} while Europe's crisis, which was most recently exacerbated by the fear of instability in governments' ability to repay debt (sovereign default),\textsuperscript{166} would be corrected by issuing bonds for member countries.\textsuperscript{167}

Finally, the last major difference lies in the future of stress testing. According to the CEBS, the organization will periodically test banks throughout Europe.\textsuperscript{168} One future test has been announced by the EBA for the first half of 2011.\textsuperscript{169} The United States, on the other hand, has enacted comprehensive legislation requiring stress testing of banks by regulators as well as self-testing.\textsuperscript{170} Although the United States legislation has not yet been implemented, the statute offers a regulatory framework for future

\begin{flushleft}
\textsuperscript{158} See supra Parts III.A, IV.A.
\textsuperscript{160} Press Release, U.S. Treasury Nov. 2009, supra note 54.
\textsuperscript{162} See id.
\textsuperscript{163} See supra Part II.
\textsuperscript{164} See Tung, supra note 13, at 334.
\textsuperscript{165} See TREASURY WHITE PAPER, supra note 29, at 1.
\textsuperscript{166} Enrich, supra note 21.
\textsuperscript{167} See The European Financial Stability Facility – FAQ, supra note 161, at 1-2.
\textsuperscript{168} CEBS AGGREGATE OUTCOME, supra note 104, at 7, 35.
\textsuperscript{169} Press Release, European Banking Authority, supra note 141.
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stress testing. The United States has a legislative mandate with definite regularity in its application. This framework helps satisfy the purpose of the original CAP, to "restore confidence throughout the financial system that the nation’s largest banking institutions have a sufficient capital cushion against larger than expected future losses." Europe, having only one test scheduled in the future requires significant strides to assure that testing is conducted regularly in the future.

VI. CONCLUSION

Analyzing the provisions, results, economic reaction, criticism, and plans for future testing demonstrate that the United States had an easier time conducting stress tests of their financial institutions to address concerns of the U.S. financial crisis compared to the European tests that did not sufficiently address the issues at the forefront of the European crisis – risk of sovereign default. Both the United States and European stress tests were responses to the economic crisis that threatened the global economy. Comparing the experience of the United States and Europe in stress testing their financial institutions demonstrates the shortcomings of the EU test and provides recommendations for future testing in both systems. Europe’s attempt, albeit unsuccessful, to address sovereign risk through the use of a “sovereign risk shock” scenario can assist the development of future tests to incorporate that risk.

Although the tests results have aided policy makers, future testing is important to future stability. Europe has future guidelines for self-testing, and each country is “expect[ed]” to adopt them as part of their regulations by the end of 2010. Europe also has plans to implement new stress tests in the first part of 2011 administered by the new EBA, but there are still

171. See id.
173. See supra Parts II, IV.D.
175. See Dodd-Frank Act § 165(i), (to be codified at 12 U.S.C. § 5365).
176. CEBS GUIDELINES ON STRESS TESTING, supra note 144, at 6.
many unanswered questions about the tests and the future of the EBA.\textsuperscript{177} In the future, the creation of a more powerful European Union Bank Regulator will hopefully ease the difficulty in coordinating a multi-nation test of financial institutions, which the United States has not had to bear.

\textbf{ALEXANDER ABRAMOVICH}

\footnotesize\textsuperscript{177} See Enrich & Fidler, \textit{supra} note 136.