US bank stress tests

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The stress testing of 19 US banks has been used as a means of assessing their current financial position, and the level of their exposure to future losses. Examining an adverse "stress" scenario, the tests were designed to determine how much capital banks would need to survive potential losses and continue lending. Consequently, the results have been used to inform recapitalisation plans.

This Standard Note provides an overview of the bank stress tests completed by the US federal authorities in May 2009. Having provided a brief overview of the context under which these banks were being assessed, this paper examines the methods underlying the stress tests as well as providing an overview of the results. The Note explores the immediate responses by the banks, in addition to the criticisms levelled at the stress testing procedure. Finally, the Note provides detail of the plans of ten banks to repay Treasury investments.

Contents

1 Introduction **2**

2 Stress testing **3**

3 US stress tests 2009 **3**

3.1 Methodology 4

3.2 Results 6

3.3 Immediate responses 9

3.4 Criticisms 9

Initial reception 9

Congressional Oversight Panel 11

4 Repayment of TARP funds **13**

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1 Introduction

The US is currently experiencing a severe financial crisis. The financial dislocation started in the US housing market in mid-2007 before progressing to ensure a significant contraction in the availability of credit across financial markets more broadly. The crisis then spread across the world and severely damaged the economies of many countries. It reached a new level in September 2008 as a number of prominent US-based financial institutions, including AIG and Lehman Brothers, collapsed.

Amidst runs on bank deposits, losses emanating from asset write-downs, spikes in the interest rates facing financial institutions seeking to borrow, and widespread uncertainty regarding counterparty risk, a large number of US financial institutions faced severe problems by late 2008. In particular, banks suffered from an acute liquidity crisis and a significant decline in their capital ratios. This, in turn, caused credit markets – most pertinently the interbank and commercial paper markets – to freeze up as banks became unwilling to lend for fear of default and the implications of running up further liabilities on their already weakened balance sheets.

Credit restrictions on both firms and consumers had serious repercussions for the real economy. The Bureau of Economic Analysis has found that (seasonally-adjusted) quarter-on-quarter gross domestic product declined by 6.3% in the final quarter of 2008 and a further 6.1% in the first quarter of 2009.[1] Quarter-to-quarter gross private investment has declined particularly significantly: 23.0% in the final quarter of 2008 and a further 51.8% in the first quarter of 2009.[2]

The US response has come from a number of federal bodies, most notably the Federal Reserve (Fed) and the US Treasury. The Fed has played a major role in addressing liquidity problems by providing a number of avenues for financial institutions to receive short term loans using collateral that the market would not otherwise accept. The Fed has also significantly expanded its balance sheet as part of a policy known as 'credit easing'.[3]

Since October 2008 – when the US Congress passed the $700bn Emergency Economic Stabilization Act of 2008, which enabled the Troubled Asset Guarantee Program (TARP) – the Treasury has used $199.4bn (as of 11 June 2009) of TARP funds to recapitalise US banks under the Capital Purchase Program.[4] The Treasury has also invested $20bn in both Bank of America and Citibank as part of its Targeted Investment Program.[5] In addition, among other uses of TARP monies, the Treasury has invested $69.8bn in ailing insurance giant American International group (AIG), $80.3bn in US automotive manufacturers and $15.2bn in mortgage loan modification.[6]

For further detail on the key events, causes and responses to the financial crisis in the US, please see Research Paper entitled "The financial crisis in the US: key events, causes and responses".[7]

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1 Bureau of Economic Analysis, GDP data, 29 April 2009

2 Bureau of Economic Analysis, GDP data, 29 April 2009

3 This is similar to the UK policy of quantitative easing, and involves the Fed electronically "printing" money to fund the purchase of a wide range of assets including US Treasury securities, mortgage-backed assets and commercial paper.

4 US Treasury, TARP Transactions Report, 11 June 2009

5 Ibid.

6 Ibid.

7 House of Commons Library, The financial crisis in the US: key events, causes and responses, 22 April 2009

On 10 February 2009, the US Treasury announced its intention to conduct stress tests on 19 large US banks. As part of Treasury Secretary Tim Geithner's broader Financial Stability Plan, the tests were devised as a means of assessing the financial position of important US banks, with a view to ensuring that they retained adequate capital to maintain lending and remain solvent in the event of further financial losses.

2 Stress testing

A financial a stress test is designed to test the stability of financial institutions in response to adverse conditions. This technique – which is widely used by regulators such as the UK's Financial Services Authority and internally within financial institutions as a means of determining likely profits and possible risks – examines how a portfolio of assets would respond to an adverse set of future circumstances. Many tests employ a number of different scenarios defined by the relative likelihood and severity, and seek to determine how well placed an institution is to respond to differing stress levels.

In the case of bank stress testing, a stress test is designed to determine whether a bank has a sufficient capital buffer to adequately cover losses arising from an adverse scenario. In the case where a regulator conducts a stress test, it is usually the case that consultations will occur before the results are publicly disclosed.

3 US stress tests 2009

As part of his Financial Stability Plan, US Secretary to the Treasury Tim Geithner announced on 10 February 2009 that he would conduct forward-looking stress tests of bank holding companies (BHCs) with more than $100bn in total assets. He proposed testing 19 large financial institutions to determine whether they required additional capital to buttress any possible losses on its portfolio of risky loans, assets and trades. The Fed subsequently noted that "These 19 firms collectively hold two-thirds of the assets and more than one-half of the loans in the U.S. banking system, and support a very significant portion of the credit intermediation done by the banking sector."[8]

These tests would serve to determine whether further capital investment was required:

> …we're going to require banking institutions to go through a carefully designed comprehensive stress test, to use the medical term. We want their balance sheets cleaner, and stronger. And we are going to help this process by providing a new program of capital support for those institutions which need it.
>
> To do this, we are going to bring together the government agencies with authority over our nation's major banks and initiate a more consistent, realistic, and forward looking assessment about the risk on balance sheets, and we're going to introduce new measures to improve disclosure.
>
> Those institutions that need additional capital will be able to access a new funding mechanism that uses funds from the Treasury as a bridge to private capital. The capital will come with conditions to help ensure that every dollar of assistance is used to generate a level of lending greater than what would have been possible in the absence of government support. And this assistance will come with terms that should

[8] Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Design and Implementation, 24 April 2009, p1

> encourage the institutions to replace public assistance with private capital as soon as that is possible.[9]

Further details of the stress tests are disclosed on the Treasury website.[10]

Maintaining a significant capital reserve is widely regarded as important both to a bank's lending capacities and its solvency where it has to accept losses. More precisely, the Fed has explained that:

> Capital reassures an institution's depositors, creditors and counterparties – and the institution itself – that an event such as an unexpected surge in losses or an unanticipated deterioration in earnings will not impair its ability to engage in lending to creditworthy borrowers and protect the savings of its depositors.[11]

The stress tests, formally included under the Supervisory Capital Assessment Program (SCAP), were conducted by the Fed, Federal Deposit Insurance Corporation (FDIC), Office of Thrift Supervision and the Treasury in concert with the banks over a two month period.

3.1 Methodology

A Federal Reserve paper released on 24 April 2009 provides details of the design and implementation of SCAP. The paper first clarifies the function of SCAP:

> The SCAP is a forward-looking exercise designed to estimate losses, revenues, and reserve needs for BHCs in 2009 and 2010 under two macroeconomic scenarios, including one that is more adverse than expected. Should the assessment indicate the need for a BHC to raise capital or improve the quality of its capital to better withstand losses that could occur under more stressful-than-expected conditions, supervisors will expect that firm to augment its capital to create a buffer.[12]

The calculation of the levels of bank stress is based upon projections of possible losses across an array of loans, assets and trades arising over 2009 and 2010, and how these relate to a bank's capital position. The banks themselves made evidentially-supported estimates based on flexible government guidelines:

> Firms were provided with a common set of indicative loss rate ranges for specific loan categories under conditions of the baseline and the more adverse economic scenarios. Firms were allowed to diverge from the indicative loss rates where they could provide evidence that their estimated loss rate were appropriate. In addition, firms with trading assets of $100 billion or more were asked to estimate potential trading-related market and counter-party credit losses under a market stress scenario provided by the supervisors, based on market shocks that occurred in the second half of 2008.[13]

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9 US Treasury, Secretary Geithner Introduces Financial Stability Plan, 10 February 2009
10 US Treasury, Factsheet – Financial Stability Plan, 10 February 2009
11 Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Overview of Results, 7 May 2009, p1
12 Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Design and Implementation, 24 April 2009, p1
13 Ibid., p4

The Fed added that,

> [federal] agencies also developed more detailed benchmarks for losses and resources incorporating granular, firm-specific information on factors such as past performance, portfolio composition, origination vintage, borrower characteristics, geographic distribution, international operations, and business mix.[14]

These losses do not include losses that were booked previously, and do not take account of possible losses arising after 2011. The banks were also asked to provide details of their existing and projected capital ratios – that is the proportion of capital that they hold relative to their assets.

To calculate possible losses, assumptions about significant economic variables – rates of unemployment and house prices, for example, had to be made. These strongly affect the ability of individuals to repay their mortgage or credit card debts for example. Accordingly, in late February 2009, two scenarios – "baseline" and "more adverse" – were defined by the assumptions highlighted in Table 1; the chance of the more adverse scenario occurring was estimated at 10-15%. The Fed also published indicative default rates estimates for a range of loan categories, which are derived from historical loss experiences and quantitative models examining loan performance.[15] The Fed's explanatory paper explains that "the more adverse alternative is not, and is not intended to be a "worst case" scenario. To be most useful, stress tests should reflect conditions that are severe but plausible."[16]

Table 1

Economic scenarios: baseline and more adverse alternatives
%

	2009	2010
Real GDP growth		
Average Baseline	-2.0	2.1
More Adverse	-3.3	0.5
Current level (2009Q1 annual rate)	-2.6	-
Civilian unemployment rate		
Average Baseline	8.4	8.8
More Adverse	8.9	10.3
Current level (May 2009) (current yearly average in parentheses)	9.4 (8.5)	-
House price growth		
Baseline	-14	-4
More Adverse	-22	-7
Current level (seasonally adjusted annual change, 2008)	-19	-

Source: Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Design and Implementation, 24 April 2009, p5; Bureau of Economic Analysis, GDP data, 29 April 2009; Bureau of Labor Statistics, Unemployment Rate – Historical Data, retrieved 15 June 2009; Standard and Poor's, S&P/Case-Shiller Home Price Index, 29 May 2009

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[14] Ibid., p11

[15] Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Overview of Results, 7 May 2009, p5

[16] Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Design and Implementation, 24 April 2009, p5

It was also assumed that the regulatory and accounting framework in place at the end of 2008 would continue (in large part it has, although significant changes in accounting impairments in the case of assets illiquid have subsequently); however, some assets that are likely to be held to maturity are evaluated using accrual accounting.

Expected losses were calculated using the same quantitative model across each firm, while capital requirements took into account a range of capital types. Specialists from the relevant federal institutions individually examined losses on eight different groups of asset, and applied the same procedure across each of the banks. More specifically, the Federal Reserve explains that:

> To conclude the process, projected losses, revenues, and changes in reserves were combined to evaluate the amount and quality of capital that each firm should have at the end of 2010. Calculations were done on a post-purchase accounting basis and considered taxes, including deferred tax assets, and dividends on preferred stock.[17]

This analysis enabled the stress tests to estimate a safe level of Tier 1 capital[18] for each firm.

3.2 Results

The calculation of losses, and the required level of capital to be used as a buffer against potential losses, focused on the "more adverse" scenario. The Fed's final report detailing the results of the stress tests suggests that total losses in 2009 and 2010 across the 19 banks could reach $599bn under the more adverse scenario:

> The results of the SCAP suggest that if the economy were to track the more adverse scenario, losses at the 19 firms during 2009 and 2010 could be $600 billion. The bulk of the estimated losses – approximately $455 billion – come from losses on the BHCs' accrual loan portfolios, particularly from residential mortgages and other consumer-related loans. The estimated two-year cumulative losses on total loans under the more adverse scenario is 9.1 percent at the 19 participating BHCs; for comparison, this two-year rate is higher than during the historical peak loss years of the 1930s. Estimated possible losses from trading-related exposures and securities held in investment portfolios totaled $135 billion. In combination with the losses already recognized by these firms since mid-2007, largely from charge-offs and write-downs on the values of securities, the SCAP results suggest financial crisis-related losses at these firms, if the economy were to follow the more adverse scenario, could total nearly $950 billion by the end of 2010.[19]

The highest loss rates, as a proportion of loan exposures, are likely to occur for (second lien) mortgage, commercial real estate and credit card loans. Respectively, these areas may realise median loss rates of 13.3%, 10.6% and 22.3% in the more adverse scenario. It is estimated that trading losses could reach $99bn in total.[20]

It is worth noting that these banks were not very highly exposed to the toxic structured financial products, which are widely regarded as the key to spreading the financial crisis to all

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[17] Ibid., p5

[18] This is the core capital of a company. Tier 1 capital generally includes equity (common and some forms of preferred stock) and cash reserves.

[19] Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Overview of Results, 7 May 2009, p3

[20] Ibid.

manner of financial institutions.[21] The report notes that only "about $200 billion was in non-agency mortgage-backed securities (MBS) and only a portion of these were recent vintage or were backed by riskier nonprime mortgages." This implies that significant losses may still exist in the broader financial system.

Ultimately, the stress tests suggested that more capital may be required for banks to survive the more adverse scenario. Given the differing size and structure of the existing capital in the 19 banking institutions, the need for additional buffer capital is not evenly spread. Accordingly, it is concluded that ten banks will require additional capital, while nine will not. More specifically,

> After taking account of losses, revenues and reserve build requirements, in the aggregate, these firms need to add $185 billion to capital buffers to reach the target SCAP capital buffer at the end of 2010 under the more adverse scenario. There are two important things to note about this estimate. First, the $185 billion accrues to 10 of the 19 firms, meaning 9 of the 19 firms already have capital buffers sufficient to get through the adverse scenario in excess of 6 percent Tier 1 capital and 4 percent Tier 1 Common capital. Second, the vast majority of this $185 billion comes from a shortfall in Tier 1 Common capital in the more adverse scenario, with virtually no shortfall in overall Tier 1 capital. This result means that while nearly all the firms have sufficient Tier 1 capital to absorb the unusually high losses of the more adverse scenario and still end 2010 with a Tier 1 risk-based ratio in excess of 6 percent, 10 of these firms had capital structures that are too strongly tilted toward capital other than common equity. Thus, each of the 10 firms needing to augment their capital as a result of this exercise must do so by increasing their Tier 1 Common capital.[22]

The Fed's result report is careful to provide caveats. It is argued that the results are not "forecasts or expected outcomes" but the results of a "stringent" hypothetical scenario.[23] The report also emphasises that the SCAP standards should not be perceived as permanent requirements applicable under normal conditions.

However, those banks that are currently short of their SCAP buffer will be required to increase their capital ratios. The results report explained that the banks requiring additional capital would have until 8 June 2009 to present the Treasury with plans detailing how these funds would be raised, and until 9 November 2009 actually raise the requisite capital:

> As mentioned above, any BHC needing to augment its capital buffer will be required to develop a detailed capital plan to be approved by its primary supervisor, after consultation with the FDIC and the Treasury, over the next 30 days, and to implement that plan in the next six months. BHCs are encouraged to design capital plans that, wherever possible, actively seek to raise new capital from private sources. These plans can also include actions such as restructuring current capital instruments, sales of assets, and restrictions on dividends and stock repurchases, and will have benchmarks for firms to achieve in specified time frames.
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> Some firms may choose to apply to the U.S. Treasury for Mandatory Convertible Preferred (MCP) under its Capital Assistance Program (CAP) as a

[21] House of Commons Library, The financial crisis in the US: key events, causes and responses, 22 April 2009

[22] Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Overview of Results, 7 May 2009, p3

[23] Ibid., p2

bridge to private capital in the future. MCP can serve as a source of contingent common capital for the firm, convertible into common equity when and if needed to meet supervisory expectations regarding the amount and composition of capital. In addition, the Treasury will consider requests to exchange outstanding preferred shares sold under the Capital Purchase Program (CPP) or Targeted Investment Program (TIP) for new MCP. The 19 firms have U.S. Treasury preferred equity securities of $216 billion.[24]

If an institution fails to raise the requisite capital to reach the SCAP buffer target within six months, the Treasury will convert its preferred stock investments – essentially a form of debt owed by the company to shareholders – into common equity.

Table 2 provides a summary of the results of the stress test for each of the 19 banks individually. A total for the 19 large banks is given at the bottom.

Table 2

Stress test results for 19 US banks
$bn, unless otherwise stated

Bank	Risk-weighted assets (end of 2008)	Tier 1 risk-weighted capital ratio (end of 2008), %	Total estimated losses (for 2009 and 2010 in adverse scenario)	Total estimated losses relative to risk-weighted assets, %	Additional capital required to achieve SCAP buffer target
American Express	104.4	9.7	11.2	10.7	0
Bank of America	1,663.8	10.6	136.6	8.2	33.9
BB&T	109.8	12.3	8.7	7.9	0
Bank of New York Mellon	115.8	13.3	5.4	4.7	0
Capital One	131.8	12.7	13.4	10.2	0
Citigroup	996.2	11.9	104.7	10.5	5.5
Fifth Third Bancorp	112.6	10.6	9.1	8.1	1.1
GMAC	172.7	10.1	9.2	5.3	11.5
Goldman Sachs	444.8	12.6	17.8	4.0	0
JPMorgan Chase	1,337.5	12.2	97.4	7.3	0
KeyCorp	106.7	10.9	6.7	6.3	1.8
MetLife	326.4	9.2	9.6	2.9	0
Morgan Stanley	310.6	15.2	19.7	6.3	1.8
PNC Financial Services	250.9	9.6	18.8	7.5	0.6
Regions Financial	116.3	10.4	9.2	7.9	2.5
State Street	69.6	20.2	8.2	11.8	0
SunTrust Banks	162.0	10.9	11.8	7.3	2.2
US Bancorp	230.6	10.6	15.7	6.8	0
Wells Fargo	1,082.3	8.0	86.1	8.0	13.7
Total	**7,814.8**	**-**	**599.2**	**7.7**	**74.6**

Source: Board of Governors of the Federal Reserve System, The Supervisory Capital Assessment Program: Overview of Results, 7 May 2009

[24] Ibid., p4

3.3 Immediate responses

The publication of the stress tests saw a flurry of activity amongst the banks that required additional capital.[25] Citigroup, for example, almost immediately unveiled plans to convert preferred shares in common equity. Bank of America announced its plans to raise $17bn in equity through a share sale and the conversion of privately-held preferred stock, while the rest of their $33.9bn could be raised from earnings and the sale of existing assets. Wells Fargo launched a $6bn equity issuance an hour before the publication of the stress test results. Morgan Stanley announced that it would sell $2bn in shares and $3bn in non-government-backed debt in its efforts to raise the required $1.8bn.

Although the largest banks announced their plans to raise the capital that they require on the open market, the *Financial Times* suggests that a number of the smaller banks may be forced to take advantage of the government's offer to convert preferred stock.[26] In particular, KeyCorp, Regions Financial and SunTrust may follow this route given that they lack substantial private preferred share holdings and the same level of access to public equity markets.

On Friday 8 May, the financial markets rose sharply as both Morgan Stanley and Wells Fargo had managed to raise $15.5bn in additional capital.[27]

3.4 Criticisms

Initial reception

The results of the stress tests have received a number of different criticisms, even if the consensus has been relatively positive. As the *Wall Street Journal* notes, devising the stress tests was always going to be a difficult balancing act: "With the stress tests, government officials were walking a fine line. If the regulators were too tough on banks, they risked angering their constituents and spooking markets. But if they were too soft, the tests could have lost credibility, defeating their basic confidence-building purpose."[28]

First, the *Wall Street Journal* alleges that the Fed "significantly scaled back the size of the capital hole facing some of the nation's biggest banks shortly before concluding its stress tests."[29] It suggests that capital demands were partly revised after consultation with incredulous banks:

> When the Fed last month informed banks of its preliminary stress-test findings, executives at corporations including Bank of America Corp., Citigroup Inc. and Wells Fargo & Co. were furious with what they viewed as the Fed's exaggerated capital holes. A senior executive at one bank fumed that the Fed's initial estimate was "mind-numbingly" large. Bank of America was "shocked" when it saw its initial figure, which was more than $50 billion, according to a person familiar with the negotiations.
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> At least half of the banks pushed back, according to people with direct knowledge of the process. Some argued the Fed was underestimating the banks' ability to cover anticipated losses with revenue growth and aggressive cost-cutting. Others urged

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25 *Financial Times*, Stress tests show $75bn buffer needed, 8 May 2009; *Financial Times*, Banks turn to markets in effort to plug holes, 8 May 2009; *New York Times*, Stress Test Results Split Financial Landscape, 8 May 2009

26 Ibid.

27 *New York Times*, 2 Banks Cited in Stress Tests Find Ready Investors, 9 May 2009

28 *Wall Street Journal*, Banks Won Concessions on Tests, 9 May 2009

29 Ibid.

regulators to give them more credit for pending transactions that would thicken their capital cushions.[30]

Secondly, the *Wall Street Journal* finds that the Fed used different measures of capital levels to that which investors had originally envisaged.[31] The result of the measurement choice – choosing Tier 1 capital, as opposed to tangible common equity – was that capital deficits were reduced by approximately $68bn.

Thirdly, many commentators have argued that the level of stress ascribed to the "more adverse" scenario may not be sufficiently severe. For example, economist Dean Baker argues that the 10.3% rate of unemployment forecast for the adverse situation in 2010 is overly optimistic – instead he predicts it could reach 10.5%. The rate was 8.9% on 8 May 2009.[32] Furthermore, Baker points out that house price trends suggest a more substantial fall than predicted, while the large incidence of mortgage fraud may cause further defaults and unexpectedly low recovery rates. Baker instead proposes a larger capital shortfall:

> So, if my somewhat more negative numbers prove accurate let's assume that it increases losses by about 20 percent. That comes to an additional $120 billion in losses. That would mean that instead of having to raise $75 billion, these banks would have to raise $195 billion. That's a qualitatively different picture.[33]

Baker concludes:

> Still, it is hard not to conclude that these stress tests and certainly the PR campaign around them, were intended to paint as positive a picture as possible of the banks' financial condition. If this picture proves to be wrong, then it means that we will have unnecessarily delayed the clean-up of the financial system.[34]

Early losses on mortgages reported by government-sponsored mortgage bank Fannie Mae suggest that mortgage-related losses may dramatically exceed the estimates of the more adverse scenario.[35]

However, the *Financial Times* notes that a number of banks – including Bank of America, Citigroup and Wells Fargo – thought that the assumptions underlying the tests were in fact too conservative.[36] Prospective earnings were estimated on the basis of depressed 2008 figures; banks instead point to their substantial upturn in first quarter earnings for 2009.

Douglas Elliot of the Brookings Institute conducts a comparison of the assumptions underpinning the stress tests with those of the IMF's base situation and pessimistic economist Nouriel Roubini's highly adverse scenario. Elliot concludes that:

> The [Federal Reserve's] test appears to be somewhat tougher than the base case of the International Monetary Fund (IMF), but not nearly as harsh as the most pessimistic analyses. This implies that while we may well have turned the corner, we can be far from certain that the solvency crisis in banking is over.[37]

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30 Ibid.
31 Ibid.
32 *New York Times*, U.S. Jobless Rate Hits 8.9%, but Pace Eases, 9 May 2009
33 Dean Baker, Background on the Stress Tests: Anyone Got an Extra $120 Billion?, Beat the Press Blog, The American Prospect, 8 May 2009
34 Ibid.
35 *New York Times*, Stress Tests Are Over: The Stress Isn't, 10 May 2009
36 *Financial Times*, Stress tests show $75bn buffer needed, 8 May 2009
37 Douglas Elliot, Brookings Institute, Implications of the Bank Stress Tests, 11 May 2009, p7

In a paper released before the results of the stress test were published, Elliot uses the IMF's and Roubini's estimates to calculate possible capital shortfalls in their scenarios. Assuming that current capital requirement rules are maintained, an additional $18bn in common equity will be required from the end of 2008 under the IMF's assumptions; under Roubini's more pessimistic outlook, $663bn of additional common equity will be required from the end of 2008.[38]

The *New York Times* has described the estimates as being in line with market consensus, although it concedes that predictions vary widely.[39] However, this may itself represent a failure of the test to unequivocally raise confidence in banking institutions: "They were supposed to supply clarity, a foundation for renewed confidence in the banks to function normally. Instead, investors, consumers and taxpayers alike must wait and see." Moreover, for those banks that did not require additional capital, there is a risk that with the repayment of government stakes, the previous financial system may simply return.

Fourth, economist Paul Krugman has challenged the comprehensiveness of the tests. Krugman states: "the regulators didn't have the resources to make a really careful assessment of the banks' assets, and in any case they allowed the banks to bargain over what the results would say. A rigorous audit it wasn't."[40] On a similar theme, investor Warren Buffett has argued that the tests' homogeneity ignores the different business models underlying the different banks.[41]

A fifth criticism is that despite conducting the stress tests, it is unlikely that banks will start to increase their lending.[42] Krugman has endorsed this perspective, suggesting that banks "won't be expanding credit any time soon."[43] Martin Wolf, of the *Financial Times*, also points out much lending is not attributable to the banks directly:

> Commercial banks provide only a quarter of financial sector credit in the US, down from close to 40 per cent in the mid-1970s (see chart). Much of the rest came from various forms of securitisation. Unless and until the latter markets reopen fully, private sector credit is likely to be constrained.[44]

Finally, Martin Wolf has suggested that the stress tests reflect any attempt to stimulate confidence in the system going forward. Wolf argues that the tests "impose enough pain to appear credible, but not enough to be disruptive."[45] Although Wolf suggests that simply instilling confidence may be sufficient to reinvigorate the banking sector in the short-term, a resultant problem may be that this prevents the industry from facing the regulatory reforms needed to ensure the financial system operates effectively in the long-run.

Congressional Oversight Panel

The Congressional Oversight Panel, which is legally designated to oversee the TARP, published its report examining the results of the stress tests on 9 June 2009. Although the report "found that the Federal Reserve used a conservative and reasonable model to test the

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[38] Douglas Elliot, Brookings Institute, Interpreting the Bank Stress Tests, 4 May 2009

[39] *New York Times*, After the Stress Tests, 10 May 2009

[40] Paul Krugman, *New York Times,* Stressing the Positive, 8 May 2009

[41] *Washington Post*, Buffett attacks bank tests, eyes flu pandemic, 5 May 2009

42 CNN Money, Stress tests: What they mean for lending, 8 May 2009

[43] Paul Krugman, *New York Times,* Stressing the Positive, 8 May 2009

[44] Martin Wolf, Financial Times, Obama's conservatism may not prove good enough, 12 May 2009

[45] Ibid.

banks, and that the model provides helpful information about the possible risks faced by BHCs and a constructive way to address those risks", it also raised a number of "serious" concerns.[46] Employing two experts to examine the methodology employed by the stress tests, the Panel identified several concerns;

> The professors also raised some serious concerns. They noted that there remain unanswered questions about the details of the stress tests. Without this information, it is not possible for anyone to replicate the tests to determine how robust they are or to vary the assumptions to see whether different projections might yield very different results. There are key questions surrounding how the calculations were tailored for each institution and questions about the quality of the self-reported data. It is also important to note that the stress test scenarios made projections only through 2010. While this time frame avoids the greater uncertainty associated with any projection further in the future, it may fail to capture substantial risks further out on the horizon. Based on the testimony by an analyst at Deutsche Bank at the Panel's May field hearing, the projected rise in the defaults of commercial real estate loans after 2010 raise concerns.[47]

The report added:

> All the same, the stress tests should not be taken for more than they are. As indicated above, they were conducted within the present supervisory context only, and they are a temporary two-year projection of a one-time capital buffer that need not be rebuilt. They do not model BHC performance under "worst case" scenarios, and as a result they do not project the capital necessary to prevent banks from being stressed to near the breaking point. Most important, for some observers, they do not address the question whether the values shown on bank balance sheets for certain classes of assets are too high; by restricting themselves to a two-year time frame, their conclusions thus do not take into account the possibility that the asset values assumed (particularly for so-called toxic assets) may undervalue bank liabilities to the extent that those liabilities result in losses after 2010.[48]

The Panel concluded by making specific recommendations pertaining to the stress tests:

> In evaluating the useful information provided by the stress tests, as well as the remaining questions, the Panel offers several recommendations for consideration moving forward:
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> • The unemployment rate climbed to 9.4 percent in May, bringing the average unemployment rate for 2009 to 8.5 percent. If the monthly rate continues to increase during the remainder of this year, it will likely exceed the 2009 average of 8.9 percent assumed under the more adverse scenario, suggesting that the stress tests should be repeated should that occur.
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> • Stress testing should also be repeated so long as banks continue to hold large amounts of toxic assets on their books.
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> • Between formal tests conducted by the regulators, banks should be required to run internal stress tests and should share the results with regulators.

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[46] Congressional Oversight Panel, June Oversight Report: Stress Testing and Shoring Up Bank Capital, 9 June 2009, p4
[47] Ibid., p4
[48] Ibid., p50

• Regulators should have the ability to use stress tests in the future when they believe that doing so would help to promote a healthy banking system.

The Federal Reserve Board should be commended for releasing an unprecedented amount of bank supervisory information, but additional transparency would be helpful both to assess the strength of the banks and to restore confidence in the banking system. The Panel recommends that the Federal Reserve Board release more information on the results of the tests, including results under the baseline scenario. The Federal Reserve Board should also release more details about the test methodology so that analysts can replicate the tests under different economic assumptions or apply the tests to other financial institutions. Transparency will also be critical as financial institutions seek to repay their TARP loans, both to assess the strength of these institutions and to assure that the process by which these loans are repaid is fair.[49]

4 Repayment of TARP funds

On 9 June 2009, the Treasury announced that ten of the US's largest financial institutions would be eligible to repay government funds amounting to $68.3bn. The Treasury had specified that repayment could only be sanctioned once the firms satisfied federal banking supervisors that they were sufficiently capitalised to survive possible future losses and could access capital markets without recourse to government guarantees.[50] Eligible firms may now repay the preferred stock purchases made under the TARP. The Treasury also retains warrants to purchase stock at a predetermined price in many banks, although it is likely that the banks will seek to repurchase the warrants from the government.[51]

Of the ten banks that became eligible, and that are now actively seeking to repay the government, eight passed the stress tests without requiring additional capital, Morgan Stanley raised $5.4bn more than the $1.8bn that the stress test required, and Northern Trust was not included in the tests.[52] Although the Treasury did not specifically name the eligible banks, many banks themselves came forward to declare their intention. The ten banks thus include:[53]

- American Express
- Bank of New York Mellon
- BB&T Corp
- Capital One Financial
- Goldman Sachs
- JPMorgan Chase
- Morgan Stanley

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[49] Ibid., pp4-5

[50] US Treasury Press Release, Treasury Announces $68 Billion in Expected CPP Repayments, 9 June 2009; Congressional Oversight Panel, June Oversight Report: Stress Testing and Shoring Up Bank Capital, 9 June 2009, p134

[51] *Financial Times*, Ten US banks to repay Tarp funds, 10 June 2009; *Wall Street Journal*, Treasury Lets 10 Banks Repay $68bn in Bailout Cash, 10 June 2009

[52] *Financial Times*, Ten US banks to repay Tarp funds, 10 June 2009

[53] Reuters, 10 banks to repay TARP funds, 9 June 2009; *Wall Street Journal*, Treasury Lets 10 Banks Repay $68bn in Bailout Cash, 10 June 2009

- Northern Trust
- State Street
- US Bancorp

Among the nine initial recipients of TARP funds, only Bank of America, Citigroup and Wells Fargo have not been cleared to return their government investments.

The early repayment by these ten banks has caused consternation among some commentators. The Congressional Oversight Panel recommended that in the light of worsening economic conditions, the stress tests should be re-run under more challenging scenarios before allowing banks to begin the repayment of the capital they received from the Treasury.[54]

A key concern has been that those banks that are no longer supported by the government – and thus are no longer required to abide by TARP regulations including restrictions on the compensation of the 25 highest-paid individuals – may make significant market gains, while banks such as Citigroup could be stigmatised. The *New York Times* explained that,

> …after banks return the TARP money, the administration will forfeit much of its leverage over them. With that loss goes a rare opportunity to overhaul the industry. The administration's ability to push institutions to purge themselves quickly of bad assets and do more to help hard-pressed homeowners will be diminished.[55]

The *Financial Times* noted that:

> …it would have been better to establish some ground rules before unleashing this group to roam free. They will now inevitably wave large cheques at Tarp rivals' top talent. Moreover, banks will come under pressure to show that "normalised" earnings are robust.[56]

However, the *Wall Street Journal* cited an analyst who predicted that being free of the TARP rules will only have a limited and short-term benefit to bank competitiveness:

> "There may be some very short-term bragging rights for early repayers because you can advertise that you are no longer owned by the government," said Charles Peabody, a banking analyst at Portales Partners LLC, a New York research firm. "But I don't think the competitive advantage will be long-lasting."[57]

Furthermore, the *New York Times* pointed out that:

> Yet even banks that return taxpayers' money will remain dependent on other forms of government aid. Among them are enhanced deposit insurance, incentive payments to modify home mortgages and federal guarantees on bonds that banks sell to raise capital.[58]

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[54] CNBC, Repeat Bank Stress Tests 'Right Now': TARP Panel Chair, 9 June 2009
[55] *New York Times*, 10 Large Banks Allowed to Exit U.S. Aid Program, 9 June 2009
[56] *Financial Times*, Ten US banks to repay Tarp funds, 10 June 2009
[57] *Wall Street Journal*, Treasury Lets 10 Banks Repay $68bn in Bailout Cash, 10 June 2009
[58] *New York Times*, 10 Large Banks Allowed to Exit U.S. Aid Program, 9 June 2009