

# BANK CAPITAL AND LIQUIDITY REGULATION

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HEARING  
BEFORE THE  
COMMITTEE ON  
BANKING, HOUSING, AND URBAN AFFAIRS  
UNITED STATES SENATE  
ONE HUNDRED FOURTEENTH CONGRESS  
SECOND SESSION  
ON  
DISCUSSING THE STATE OF THE CURRENT CAPITAL AND LIQUIDITY  
REGIME IN THE UNITED STATES AND THE EFFECTS OF CAPITAL AND  
LIQUIDITY RULES ON THE BANKING SYSTEM

JUNE 7, 2016

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# **BANK CAPITAL AND LIQUIDITY REGULATION**

**TUESDAY, JUNE 7, 2016**

U.S. SENATE,  
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,  
*Washington, DC.*

The Committee met at 10:02 a.m., in room SD-538, Dirksen Senate Office Building, Hon. Richard Shelby, Chairman of the Committee, presiding.

## **OPENING STATEMENT OF CHAIRMAN RICHARD C. SHELBY**

Chairman SHELBY. The Committee will come to order.

Today we will hear testimony regarding one of the most critical areas of this Committee's jurisdiction: the regulation of the U.S. banking system. In particular, the panel of experts before us will discuss the appropriateness and effects of recent capital and liquidity rules.

For years, I have urged regulators to implement strong capital requirements. I believe they are essential for a safe and sound banking system and also to avoid taxpayer bailouts.

In 2006, when this Committee held a hearing on the Basel II Capital Accord, right here I remarked:

We only need to look at U.S. economic history to see how thinly capitalized banks have . . . made our financial system vulnerable to unanticipated economic shocks and how a crisis in the banking system quickly infects the rest of our economy.

Shortly thereafter, our economy experienced the worst financial crisis in a generation, and it became clear, even to the Federal Reserve and other banking regulators, that the amount of high-quality capital held by many banks was insufficient.

The question I think we must now ask ourselves is: Are banks in a position today to withstand another major financial crisis?

Both Dodd-Frank and Basel III as implemented by U.S. regulators increased significantly the number of capital and liquidity requirements for financial institutions. But they also significantly increased their complexity. History has demonstrated that excessive complexity can actually lead to a weakening of capital standards—the exact opposite effect of what is intended.

Recent studies have shown that simple capital ratios are better than complex risk-weighted ratios at predicting banks' asset risk and their probabilities of failure. These conclusions have been stated by experts from academic and governmental institutions such as New York University, the Bank of England, and the International Monetary Fund.

Unfortunately, when pressed to do further analysis on the effectiveness of our capital and liquidity rules, our banking regulators have balked. In 2012, right here, I urged the regulators to conduct a transparent process in implementing Basel III and asked for more quantitative data on its effectiveness and economic impact.

Regrettably, instead of performing their own rigorous analysis, they chose to outsource it to the Basel Committee. For example, the Federal Reserve relied on Basel analysis that included data from only 13 U.S. banks out of the 249 banks that were studied.

Now, as banks respond to Basel and Dodd-Frank capital and liquidity requirements, I worry that regulators are again employing a process that is not thorough and does not consider the cumulative impact. Instead, they appear to think that more is better—more regulation, more regulators, and more spending. None of these, however, will necessarily ensure that banks actually hold more capital. In fact, the reverse may be true.

If regulations are too complex to determine their cumulative impact or if they are even effective in the first place, then we must simplify them. Because unnecessary layers of complexity can create undue burdens for banks big and small, a more complex regulatory system could actually lead to an increase in systemic risk.

How can we be assured that regulators are focused on the right measures when there are so many overlapping, and even counter-intuitive, rules for capital and liquidity? I worry that they will be so focused on the details that they will, once again, be unable to see the forest for the trees.

With that in mind, I look forward to hearing from the experts before us today on the state of our current capital and liquidity regime, as well as any recommendations that they may have. At this time I will introduce our witnesses.

We will receive testimony from Professor Hal Scott, who is the Nomura Professor and Director of the Program on International Financial Systems at Harvard Law School, and he is no stranger to this Committee.

Next we will hear from Dr. Marvin Goodfriend, The Friends of Allan Meltzer Professor of Economics at the Tepper School of Business at Carnegie Mellon University.

Then we will hear from Professor Heidi Schooner, professor of law for the Columbus School of Law at The Catholic University of America.

And, finally, we will receive testimony from Dr. Paul Kupiec, resident scholar at the American Enterprise Institute.

We welcome all of you to the Committee. Your written testimony will be made part of the hearing record. We will start with Professor Scott.

**STATEMENT OF HAL S. SCOTT, NOMURA PROFESSOR AND  
DIRECTOR OF THE PROGRAM ON INTERNATIONAL FINAN-  
CIAL SYSTEMS, HARVARD LAW SCHOOL AND DIRECTOR,  
COMMITTEE ON CAPITAL MARKETS REGULATION**

Mr. SCOTT. Thank you, Chairman Shelby, Ranking Member Brown, and Members of the Committee, for inviting me to testify before you today. I am testifying in my own capacity and do not

purport to represent the views of any organizations with which I am affiliated.

We have substantially increased capital requirements following the crisis. The largest U.S. banking organizations now face a total capital requirement of 15 percent of common equity on a risk-weighted basis and an overall leverage ratio of 5 percent for the holding companies and 6 percent for their insured depository institutions, and these increases are good.

Although capital requirements can reduce the possibility of bank failures and moral hazard—a big plus—we should be aware that at any realistic level they cannot prevent the financial contagion that we experienced in 2008. In a financial panic, short-term debt holders run, regardless of any reasonable capital buffer, and these runs force banks to sell assets at fire-sale prices. The only way to stop financial contagion, in my view, is through central bank use of lender of last resort liquidity authority and expanded guarantees of short-term debt—powers, unfortunately, pared back by Dodd-Frank.

Devising the content of capital requirements is a daunting task. The main problem with the leverage ratio is that it requires precisely the same amount of capital for all asset classes, irrespective of their various risks. As a result, the regulatory cost of capital is the same for both high- and low-risk assets, giving bank management an incentive to increase return on equity by investing in high-risk assets with higher returns. Such incentives are inconsistent with prudent risk management.

I would observe that, before 1986, when we joined the Basel process, the United States relied exclusively on a leverage ratio, and it was the weakness of this approach which spawned the risk weighting through the Basel Accords.

However, risk-weighted measures themselves are also flawed, primarily due to the difficulty of assigning appropriate risk weights, whether that is done through standardized procedures or through bank models.

In thinking about Basel capital and liquidity requirements, one very fundamental point must be kept in mind: They only apply to banks. This is significant in a financial system where nonbank financial institutions are of ever increasing importance. The costs to banks of meeting capital and liquidity requirements will undoubtedly spur even more growth of the nonbank financial sector.

Finally, a few thoughts about the Fed's stress tests. I am concerned that the rationale for the assumptions underlying the stress tests as well as the Fed's model to predict losses are not open to public evaluation. While I share the Fed's concern that disclosure of the models could allow banks to game the system, more transparency is still needed.

The Fed does subject its models to review by a Fed-established Model Validation Council. However, the Fed chooses the experts, and no disclosure is provided about the actual evaluations of these experts. This could be done without disclosing the models themselves. Submitting the other components of the stress test, apart from the models, to public notice and comment, full rulemaking, would result in better decisionmaking and may in any event be legally required.

Thank you, and I look forward to your questions.  
Chairman SHELBY. Dr. Goodfriend.

**STATEMENT OF MARVIN GOODFRIEND, THE FRIENDS OF  
ALLAN MELTZER PROFESSOR OF ECONOMICS, TEPPER  
SCHOOL OF BUSINESS, CARNEGIE MELLON UNIVERSITY**

Mr. GOODFRIEND. Thank you, Mr. Chairman. I would like to speak today about the recently adopted liquidity coverage ratio requirement. It is an example of the complexity that you were talking about. I believe this is a particularly ill-conceived means to facilitate liquidity in the banking system, especially relative to the alternatives, which I will describe.

The liquidity coverage ratio requirement mandates that a bank hold a stock of so-called high-quality liquid assets on its balance sheet sufficient to meet projected net cash-flows over a 30-day period. Sounds simple enough, but the rules for calculating the qualifying liquid asset numerator and the net cash outflow denominator are extraordinarily complex. The complexity may be appreciated by the length of the notice on the final LCR rule published in the Federal Register, which takes over 100 pages to respond to around 300 comments on the initial proposal.

A presentation produced by Davis Polk to help its clients comply with the LCR takes remarkably 100 slides of such detail that it was hard for me to figure out what they were doing. I refer you to my testimony and the references therein for a convoluted discussion of what this means.

There are two serious operational problems in employing the LCR, as it is called. The first problem is how high to set the overall required liquidity coverage ratio itself. Set too high, the requirement may bind too often, creating destabilizing scarcities of liquidity. Set too low, the requirement may bind too loosely, in which case the burdensome enforcement and compliance costs count for little.

A second and equally important problem is that the LCR requirements encumber—they actually encumber the liquid assets that banks would otherwise have available to use in times of stress. Regulators acknowledge this encumbrance problem and intend to employ appropriate supervisory flexibility to grant allowances for LCR requirement shortfalls—that is their language—in periods of financial distress. Such discretion is likely to sow confusion. Will regulators be lenient or reluctant to grant such allowances? Banks will find it difficult to predict regulatory inclinations. Regulators, therefore, will find it more difficult to understand what banks are doing in terms of their liquidity. And if inadvertently made public, allowing these regulatory shortfalls could signal a bank's weakness.

Now, one of the alternatives I want to talk about is monetary policy. Monetary policy remains the undisputed and most efficient provider of ultimate liquidity to the banking system in the form of reserve balances at the central bank. Monetary policy has long stabilized interest rates by accommodating the demand for required and excess reserves in periods of banking stress. Now for the first time in the United States, the Federal Reserve has the power to pay interest on reserves as acquired in 2008. That power enables the Fed to pre-position fully unencumbered excess reserves on bank

balance sheets in large quantity at market interest without reserve requirements or regulations of any kind, even as the Fed targets interest rates for other monetary policy purposes.

The Fed will no doubt shrink its balance sheet from the current \$3 trillion outstanding to something more normal. My point is that, going forward, monetary policy utilizing interest on reserves would be a far less—a far, far less burdensome means of efficient pre-positioning liquidity on bank balance sheets than the liquidity coverage ratio.

My last point is that the liquidity coverage ratio is also designed in part to deter liquidity funding risks that banks incur due to the use of uninsured, potentially unstable, short-term wholesale liabilities. In aggregate, short-term wholesale funding comes from money markets which are funded in part by attracting retail deposits away from banking in the first place, so retail deposits can be repackaged for higher-interest, wholesale funding at banks. In effect, the recycling of funds from retail to wholesale funding via money markets is a regulatory arbitrage. Banks readily pass intermediation and regulatory costs to retail depositors and lower retail deposit rates, but must pay higher interest when competing for institutional wholesale funding from money markets.

Since institutional deposits are uninsured for the most part and managed professionally, they are more prone to being withdrawn at any sign of trouble. As a consequence, the banking system incurs ever greater liquidity funding risk.

The question is: What is the best way to handle the growing funding liquidity risk in the banking system? One option is the liquidity coverage ratio, which is to cover and deter this kind of high-run prone, institutional, wholesale funding. But as I just said, the liquidity coverage requirements have tremendous enforcement and compliance costs and regulatory discretion complications.

What is the second option? The second option is to internalize bank balance sheet risks with simple, sufficiently elevated bank capital leverage requirements. With enough of a bank's owners' capital at stake, a bank has the incentive to manage prudently not only its credit and market risks but its liquidity risks so as not to jeopardize its solvency due to a temporary shortfall of funding.

Sufficiently elevated leverage would obviate the need for more burdensome LCR regulations and requirements. Regulation costs would be contained, as would the regulatory arbitrage that helps perpetuate the growth of wholesale funding in the first place.

Thank you.

Chairman SHELBY. Professor Schooner.

**STATEMENT OF HEIDI MANDANIS SCHOONER, PROFESSOR OF LAW, COLUMBUS SCHOOL OF LAW, THE CATHOLIC UNIVERSITY OF AMERICA**

Ms. SCHOONER. Chairman Shelby, Ranking Member Brown, and Members of the Committee, thank you for inviting me to today's hearing. I will raise two related concerns regarding bank capital.

First, sufficient equity capital is vital to safety and soundness of financial institutions, and yet current capital regulations are insufficient to provide such safeguards.

Second, current supervision by the regulators and the Federal Reserve in particular do not make up for such deficiencies. Equity capital remains extremely low.

Financial institutions rely much more on borrowed money than other firms, yet banks that borrow less money to fund their operations are more resilient and less likely in a crisis to become distressed, to stop lending, or require Government assistance. For this reason, capital regulation, the set of rules that restricts the banks' borrowing, has emerged as the cornerstone of modern bank regulation.

Despite the significant benefits of capital regulation, it has its limitations. While current regulations require banks to fund their operations with less debt than in the years prior to the financial crisis, these new capital ratios remain much lower than many experts believe are adequate for safe operations.

Also, challenges persist regarding the inputs to those ratios, which make a big difference with respect to their effectiveness. For example, as Professor Scott noted, there continues to be debate regarding the use of risk-weighted ratios versus unweighted capital ratios. If I could use a teacher's analogy, I think of this as a little bit like comparing a grading curve that is weighted so that pretty much everybody gets a B to an unweighted grading curve which does not make such adjustments. We can all guess which system my students prefer, and I think I know which system banks prefer as well.

While few would deny the significant benefits of equity capital, the industry complains that equity is costly. Yet the cost to financial institutions must be balanced against the social benefits of a more resilient financial system. Unfortunately, current capital regulations were not derived from an analysis of the social costs and benefits.

The rules that govern bank capital are often referred to as "minimum capital ratios." This is because institutions that comply with current capital ratios are not necessarily safe or unlikely to fail in a crisis. In fact, we know that minimum capital ratios are a lagging indicator of banks' financial stability. During the financial crisis, banks that failed or required Government support appeared adequately capitalized under the then current rules.

Because current minimum rules are insufficient, bank regulators examine banks individually to determine, among other things, the sufficiency of their capital. This firm-specific supervisory process effectively imposes higher capital requirements on banks through administrative enforcement actions brought against smaller banks and through the Federal Reserve's Comprehensive Capital Analysis and Review, or the CCAR, process. CCAR assesses a bank's ability to maintain minimum capital ratios under hypothetical stressed scenarios. Banks failing these capital stress tests are prohibited from paying dividends to their shareholders. CCAR, in effect, results in higher minimum capital requirements for large bank-holding companies.

While higher capital requirements through CCAR sound like a great idea, sound promising, this system is actually at odds with what we call "prudential regulation" in that the supervisory process builds only on weak minimum capital rules. Also, consider the

fact that CCAR relies heavily on modeling of future events, and one thing we learned in the financial crisis is the folly of relying on such predictions.

Our combined rulemaking and supervisory process would be more effective if capital ratios applied to all banks were set high—high enough so that the risk of serious undercapitalization, distress, or insolvency was small. This would mean that capital ratios would be consistent with a precautionary approach, erring on the side of more capital. In addition, the supervisory approach would continue to be engaged dynamically for assessment of firm-specific risks and, when appropriate, to trigger prompt corrective action well in advance of insolvency to build equity back to precautionary levels through retained earnings or other actions.

Prudent capital regulation would shift the downside risk from the public to equity investors. These are the people who enjoy the upside of bank profits and, thus, are the most natural candidates to bear the downside risk. Strong equity capital would correct the current distortion and establish safer banks and a more resilient financial system.

Thank you.

Chairman SHELBY. Dr. Kupiec.

**STATEMENT OF PAUL H. KUPIEC, RESIDENT SCHOLAR,  
AMERICAN ENTERPRISE INSTITUTE**

Mr. KUPIEC. Thank you. Chairman Shelby, Ranking Member Brown, and distinguished Members of the Committee, thank you for convening today's hearing. I have submitted detailed written testimony which I will summarize in my oral remarks.

Complex regulations are justified when complexity is necessary to do the job. Crafting simple and effective regulation is difficult. Today's subject reminds me of a favorite idiom: "I did not have time to write a short memo, so I wrote a long one." The bank regulators have been writing a lot of long memos lately, and it is time to require them to make them shorter.

U.S. regulators, in cooperation with the Basel Committee and more recently the Financial Stability Board, are busy writing complex new rules, but there are serious concerns that those rules will not satisfy the goals set by Congress. In some cases, the complex rules are not achieving the goals articulated in legislation. In other cases, hastily drafted legislation directs regulators to pursue a single-minded goal without regard to the costs involved for banks, consumers, or the vitality of the economy. This needs to change.

Back in the early 1990s, Congress passed FDICIA and Prompt Corrective Action, or PCA. PCA requires regulators to impose remedial measures on weak banks and to close failing banks quickly before they can generate losses for the Deposit Insurance Fund.

Basel capital ratios are used in the prompt corrective action rules, but they have a terrible record of performance. In the past financial crisis, on average regulators closed banks when their Basel capital ratios were positive, but the closed banks still generated large insurance fund losses. In fact, the loss rates in the recent crisis were larger than loss rates in the crisis periods before PCA and Basel capital ratios were in place.

Basel capital ratios overstate the true liquidation value of an institution. Analysis by myself and others showed that simple transparent measures of a bank's solvency condition—for example, the so-called nonperforming asset coverage ratio—identify weak and failing institutions far more efficiently than the Basel capital ratios.

Researchers have estimated that the Deposit Insurance Fund losses would have been reduced substantially had the nonperforming asset coverage ratio been used in place of the Basel capital ratios in prompt corrective action rules. So on the most basic level, the complex Basel capital rules are not doing their job.

When you hear from bank regulators, I am sure they will tell you that this is no longer a problem as Basel III fixed the holes in the rules. But this is not true. Basel III improvements do not fix the underlying problem that made Basel capital ratios perform so poorly. It is the lack of timely reserves for nonperforming assets.

Another example of unnecessary complexity is the total loss-absorbing capacity, or TLAC, rules formulated by the Basel and the Financial Stability Board. In the United States, the final Federal Reserve Board TLAC regulations have yet to be issued. As you may know, TLAC requires the largest bank-holding companies to have not only a higher minimum level of regulatory capital, but also to maintain minimum amounts of long-term subordinated debt. The sole purpose for TLAC holding company debt is to give regulators a slush fund so that they can recapitalize large banks owned by the large bank-holding companies. My analysis has convinced me that the TLAC regulations will not solve the too-big-to-fail problem. The TLAC regulations will work when the Secretary of the Treasury can invoke a Title II resolution. If the Secretary cannot invoke Title II, parent-holding company TLAC resources are not available to regulators. And there are many plausible scenarios in which a bank subsidiary might fail without Title II as an option.

Indeed, the clean holding company requirements in the proposed TLAC rule will make it less likely that the Secretary can use Title II. But if the situation does allow regulators to use TLAC, the outcome is even more disturbing. The proposed TLAC strategy will extend new Government guarantees to more than \$4.3 trillion in liabilities issued by the subsidiary banks of TLAC holding companies. Without TLAC, these liabilities would suffer a loss in a bank failure.

With more Government guarantees, TLAC will make the too-big-to-fail problem worse not better, and because TLAC imposes no constraints on how the holding company can use TLAC funds, there is no guarantee that TLAC will reduce the too-big-to-fail interest rate subsidiary.

TLAC is a clear case where regulators should be asked to go back and write a much shorter memo because there is a much simpler fix. All TLAC goals can be achieved by raising the capital requirements on too-big-to-fail bank subsidiaries.

My written testimony also includes a discussion of the liquidity regulations, but as my time is short, I cannot cover these in my oral remarks. Thank you, and I look forward to your questions.

Chairman SHELBY. At this time, before we ask questions, I want to recognize Senator Brown for his opening statement.

# STATEMENT OF SENATOR SHERROD BROWN

Senator BROWN. Thank you. Thank you, Mr. Chairman, and thanks for the unorthodox way that you are doing that. I appreciate it. And I also appreciate that this Committee almost always starts exactly on time. I appreciate your punctuality. It did not serve me today, and I apologize for being late.

And I also ask, Mr. Chairman, that at the conclusion of my remarks, when the questions begin, that on the Democratic side Senator Warren be called on and then Senator Merkley and then me, in that order.

Chairman SHELBY. So ordered.

Senator BROWN. Thank you.

In the lead-up to the recent crisis, it appeared that large financial institutions were meeting or exceeding their capital requirements, but in reality, they were allowed to use leverage that exceeded 30 times their capital due to hidden off-balance-sheet exposures and a weak definition of what counted as core capital. To make matters worse, these institutions had invested in too many risky and opaque assets that lost value quickly, funded by short-term liabilities that could be called at a moment's notice.

American taxpayers paid the price for this reckless behavior. The American people paid the price in lost homes and jobs and billions of bailout dollars. Whenever we talk about the millions of jobs lost and the billions in household wealth erased, we sometimes grow numb to these statistics. We have to remember that there are people behind these numbers. That is why we passed Wall Street reform. We have seen the millions of homes foreclosed on. We have seen the wealth that retirees lost. We have seen the jobs lost, and these are hundreds of thousands and millions of Americans whose lives got worse as a result of regulators' and this body's failure on financial reform issues.

To have a healthy economy and safe financial system, we need to have a strong regulatory framework. In its 5-year anniversary report on Wall Street reform, the ratings agency S&P credited capital and liquidity rules, as well as stress tests and living wills, with enhancing the safety of the U.S. banking system. To their credit, the Fed, the FDIC, and OCC have gone above and beyond the international Basel capital agreement through rules like a higher leverage ratio and a capital surcharge.

Last week, Fed Governor Jay Powell suggested the capital requirement should increase for institutions as they become larger and more complex, forcing them to rethink their activities and their business models.

Last week's announcement that the Fed will raise the capital levels for the largest banks to pass its stress test indicates that the Fed as a whole thinks there is more work to be done. Experts on the left and on the right agree that capital is a vital element of financial stability. Capital lessens the likelihood that an institution will fail. It lowers the cost of the financial system and, most importantly, to the economy if it does. Requiring the largest banks to fund themselves with more equity will provide them with a simple choice: they can either fully internalize the risk that they pose to the economy—Governor Powell's words. They can either "fully internalize the risk," or they can become smaller and simpler.

Banks have argued and banks will continue to argue that making them have more equity will reduce lending and will cause the economy to contract. But banks have a range of options to meet the new standards in ways that do not limit lending, including seeking out equity investments, retaining earnings, limiting dividends and stock repurchases, and curtailing bonuses.

We have heard arguments that stronger capital requirements put our institutions at a competitive disadvantage, but there is evidence that U.S. banks' higher capital has been a competitive advantage.

For example, the president of one of the largest U.S. banks said in February that our banks benefited from moving quickly to raise more capital.

Still, the recent living wills results show that several of our Nation's banks still have deficiencies and shortcomings in their capital and in their liquidity, and most of them could not fail without threatening our financial system.

That is why we have these regulations; it is why we should not merely fight to preserve the status quo. We also need to move forward. We need stronger, simpler rules that cannot be gamed by Wall Street economists or watered down by Wall Street lobbying.

Unfortunately, too many of the efforts we see in Congress right now are intended to undermine and roll back regulation—ultimately putting Americans back at risk, as if we forgot what happened in 2007 and 2008.

The financial crisis has had a real and deep impact on working families. We are still trying to undo the damage, putting strong safeguards in place to make sure it never happens again.

I look forward to my colleagues' questions.

Chairman SHELBY. Thank you, Senator Brown.

I will start with you, Professor Scott. In your testimony you stated that, "A major problem with the stress tests . . . is that their design is largely secret and not open to public evaluation." In what ways could the Federal Reserve make the stress test process more transparent?

Mr. SCOTT. Thank you for the question, Senator Shelby. I think there are two parts to this.

One is that the stress test contains a lot of different assumptions about extreme scenarios—what the rate of GDP growth will be or decline will be, unemployment rates and so forth. These assumptions, which are critical to the outcome of the test, are never put out for notice and comment through a normal rulemaking procedure because I believe that the Fed regards these as supervisory measures. The whole stress test legally, therefore, is an adjudication aimed at specific banks rather than a general regulation. So my first advice would be for those components, the assumptions underlying the test, they be put out for notice and comment.

Second, the model. The Fed has a model by which they take the data that is supplied to them by the financial institutions based on their assumptions and predict loss rates, and those loss rates figure into whether the banks have adequate capital.

The Fed believes the disclosure of the model would allow banks to game the model. Now, maybe that is a legitimate concern. I am sympathetic to that. However, that does not excuse any

transparency around the model. They created a council of experts which is supposed to evaluate the model. The problem is we do not know anything about what the experts evaluate or what they say, so I think there should be more transparency around the models evaluation by the experts, which does not require the actual disclosure of the model itself.

Those would be my recommendations.

Chairman SHELBY. Dr. Kupiec, I will direct my next question to you. The chief economist of the Bank of England has argued that the complexity of the Basel system, and I will quote, “makes it close to impossible to account for differences across banks. It also provides near limitless scope for arbitrage.”

Do you agree? If so—

Mr. KUPIEC. Absolutely. The system—

Chairman SHELBY. Explain to the Committee.

Mr. KUPIEC. Well, just since 2011 and the Dodd-Frank Act, we had revisions, thousands of pages of revisions and new rules. We have trading book rules that are hundreds of pages thick and very complex, rule upon rule. We have now the basic capital rules to Basel III. We have G-SIB capital add-ons rules. We have liquidity rules, not just a short-term liquidity rule that Dr. Goodfriend talked about, but now we have a net stable funding ratio, which is a 1-year liquidity type rule in place.

How these rules interact and how they work on a bank and bank management I do not think anybody has worked out. Even the Federal Reserve, or the Chairman of the Federal Reserve herself said that, you know, they do not have a good handle on how all the rules interact.

When it comes to things like risk weights and modeling, markets are very creative about ways to turn an asset with a very high risk weight through some financial engineering process into something that has a lower risk weight. So how did they do that? Well, they turned mortgages that used to be held on bank balance sheets, even if they were private label and not guaranteed, they turned them into securities that were rated AAA, so they got a much lower risk capital weighting. And then they brought them into the trading book, which gave them an even lower risk capital weighting. All this was done in plain daylight under the regulatory—you know, regulators knew this was going on. We went into the banks. I was a regulator once. But all of this transpires over time. The more complexity, the more ways there are to change the way things look, to get them in through the bank, and the harder it is for anybody to assess, especially before there is a financial crisis, before something goes wrong, the harder it is to assess or win an argument that there really are problems here. Mortgages and mortgage-backed securities were considered incredibly safe, you know, all the way up to when they were not, and that is kind of the problem with these kind of very complex rules.

Chairman SHELBY. Thank you.

Dr. Goodfriend, since the financial crisis, U.S. regulators have put greater emphasis on what they call the “macroprudential regulations” that are aimed at reducing total risk in the banking system. Do you believe that macroprudential regulations can

effectively reduce systemic risk in the banking system? Why or why not?

Mr. GOODFRIEND. I think macroprudential regulations are a way of misdirecting attention from permanently higher capital in the form of leverage ratio requirements. Macroprudential regulations, when people talk about them, they are usually described as “countercyclical,” which means we will leave the capital ratios relatively low when we do not need them, and when the economy looks like it needs them, we will crank them up.

The dynamics, the dynamic management of macroprudential regulations is in my view a fool’s errand, and I come from central banking where we worry about managing the interest rate over the business cycle. It is very difficult to do that. I cannot imagine having macroprudential regulations dynamically managed over the business cycle in the way that interest rates are managed over the business cycle. You would have a whole slew of problems managing macroprudential regulations themselves, and you would also have this entanglement with the interest rate being managed over the cycle. I am very much against macroprudential regulations as a dynamic tool to keep the aggregate more persistent capital regulations lower on average. I think that is a misdirection and would be very dangerous.

Chairman SHELBY. Professor Scott, one more question for you. The Federal Reserve’s annual review of large and regional banks’ capital plans, known as CCAR, determines banks’ ability to withstand stress scenarios. Last week, Fed Governors Powell and Tarullo both made comments suggesting that the G-SIB surcharge will be incorporated into this review. Governor Tarullo said, “Effectively, this will be a significant increase in capital.”

To what extent has CCAR become the new standard for regulatory capital requirements? And what are some of the pros and cons of using annual stress tests as a mechanism to regulate capital? I know that is a lot of territory.

Mr. SCOTT. I will try to do my best.

Chairman SHELBY. Oh, you will do better than that.

[Laughter.]

Mr. SCOTT. I think the virtues of CCAR are important. They look to the future. It is a dynamic process. The question is: Given the banks’ plans, given what their business is, given how the economy evolves, will the bank have enough capital?

Basel is more of a static measure, a balance sheet static measure. So there are different ways of going about it.

Now, some people think we need both because they kind of look at different things, sort of static and future. I would say that most banks would manage to the future, and I think most of us would be concerned not what is going on today but what is going to go on in the future.

So I think the stress tests are a good thing and have a very big role to play. I think they are becoming the binding constraint; that is, many banks believe that when we come to the end and the question is how much capital do I really have to hold, and I look at what Basel says I have to hold, and then I look at what the stress test says I have to hold, the stress test says more.

So the effective level of capital that we look at when we talk 15 percent or 20 percent—really the stress tests are driving all this—those numbers are a little bit misleading because we really want to know what the stress tests dictate are the levels of capital.

In terms of raising the levels through the stress test, I think the Governors did indicate—and I would say this was a good thing—that they are going to put out for comment, notice and comment, this increase for G-SIB capital requirements part of the stress test. I commend that.

At the same time I think they should be taking all the assumptions that they are using in the stress test and also put those out for notice and comment.

Chairman SHELBY. Professor, would that actually be an increase or would it just be the way they would deem it to be an increase in—

Mr. SCOTT. As I understand it, it would basically further increase the capital requirement. That is my understanding—of the stress test. In other words, you would have to now have more capital as a G-SIB to pass a stress test than you would without this increase.

Chairman SHELBY. I will pose this to all of you, and then I will recognize Senator Warren. Do any of you know of any financial institution that has failed or been bailed out, you know, all of it, that has been well capitalized, well managed, and well regulated? I do not know of any, but you might, an institution that is well capitalized, well managed, and well regulated. Professor Scott, do you know of one?

Mr. SCOTT. I cannot think of one off the top of my head, Senator.

I would also like to elaborate further on my response to Chairman Shelby's question regarding the failure or bail out of any well-capitalized, well-managed and well-regulated financial institution. While there were no such institutions that failed or *required* a bailout during the financial crisis, JPMorgan and Wells Fargo were such institutions that received bail out funds through the Capital Purchase Program ("CCP"). As part of the CCP, the Government required healthy financial institutions that did not need support, along with the less healthy institutions that did need support, to take Government assistance. The reason to require healthy institutions, including JPMorgan and Wells Fargo, to receive assistance was to avoid publicly identifying any particular banks as troubled. However, since most analysts can typically distinguish the relative health of banks, I do not believe this practice should continue in the future.

Chairman SHELBY. What about you, Dr. Goodfriend?

Mr. GOODFRIEND. No, I do not.

Ms. SCHOONER. No, I do not.

Chairman SHELBY. We all want to avoid bailouts, and we want a strong banking system, and I think you start with capital and how you count it.

Senator WARREN.

Senator WARREN. Thank you, Mr. Chairman. Thank you, Senator Brown. And thank you all for being here today.

According to news reports, Congressman Hensarling, the Republican Chairman of the House Financial Services Committee, will soon be introducing a bill that repeals many of the financial reforms Congress put in place after the 2008 crisis. Now, we have only seen a summary of the bill so far, but even from that, it is clear that Congressman Hensarling and his fellow Republicans think that the poor Wall Street banks have suffered too much

under the new rules and it is time for them to return to the good old days before the 2008 crisis when these banks could run wild.

Now, I only have 5 minutes today, but let us take a look at some of the many problems with Congressman Hensarling's "wet kiss" for the Wall Street banks.

The first is the Congressman's claim that he can end too-big-to-fail by repealing the Financial Stability Oversight Council's ability to designate huge financial firms as too-big-to-fail and put some extra restrictions on them. Apparently, Congressman Hensarling thinks that you can end too-big-to-fail simply by stopping regulators from calling firms "too big to fail." I do not actually think that is how it works.

So, Professor Schooner, do you think that limiting the FSOC's ability to identify too-big-to-fail banks and subjecting them to additional controls will end too-big-to-fail?

Ms. SCHOONER. No, I do not. I think the one thing we learned from the financial crisis is that prior to 2008 we focused our prudential regulation basically on the solvency of commercial banks. And what we saw in the crisis was that our focus was too narrow, that there are other financial institutions that present risks, and there are risks outside of insolvency. And so the creation of the FSOC and the SIFI designation process was a major response to those views, to the lessons learned from the crisis. So eliminating the SIFI designation will not make those risks disappear, and it will only leave them unchecked and will now make our financial system safer.

Senator WARREN. Thank you. So let us look at some of the other changes that the Congressman proposes. Financial regulators have been independently funded since they were created, in some cases dating as far back as the Civil War. The idea was to keep politicians from interfering by threatening to cutoff a regulator's budget when the regulator tried to clamp down on a politically powerful bank.

Congressman Hensarling wants to get rid of that protection so that the bank regulatory process will be subject to more political meddling. He also wants to subject any new major financial rule to a second vote in Congress, effectively giving congressional Republicans the ability to block any rule that they or their friends on Wall Street do not like.

Now, Professor Schooner, do you believe that these changes will make our financial system more secure or less secure?

Ms. SCHOONER. As this Committee is well aware, bank regulators are often not the most popular people in the world. They are the ones that tell banks to stiffen their lending requirements, *et cetera*, and that is often not popular, which is why independence of banking agencies is a key design feature around the world.

Another key design feature for bank agencies is their responsiveness. They need to be able to act quickly to threats and emerging changes in the markets. It sounds like this proposal would undermine both independence and responsiveness, and I do not think it would make our banks safer.

Senator WARREN. Well, thank you very much. You know, Congressman Hensarling is in New York today meeting with Donald Trump to discuss what we could call his "Wet Kiss for Wall Street

Act.” Now, while most Republicans in Congress are debating not whether to run away from Trump but how far and how fast, Congressman Hensarling is sprinting toward Trump Tower.

You know, I get that the Republicans want unity right now. They want to do well in the elections, and they think unity is how to get there. But if unity means a marriage between Donald Trump’s toxic racism and Jeb Hensarling’s Wall Street giveaways, then I think they would be better off with division. That is not what the American people are looking for, and it is a path to ruin both for our economic system and for our country.

Thank you, Mr. Chairman.

Chairman SHELBY. Senator Scott.

Senator COTTON. Thank you, Mr. Chairman.

Dr. Kupiec, last year, in the *Wall Street Journal*, you made a statement that the Basel Committee apparently never considered the possibility that interest rates would remain at or near zero for many years, and that in a zero rate environment, the new liquidity rule would make it uneconomic for banks to hold large institutional deposits unless they charged these customers negative interest rates.

The Basel liquidity rule was supposed to ensure that banks have adequate liquidity, but instead it is encouraging banks to reject liquid deposits.

If liquidity is still being forced out of the banking system—and it appears that it is—how will banks be affected if they are required to hold additional capital above current mandated levels?

Mr. KUPIEC. The issue with liquidity, the Basel Committee never considered that interest rates would go negative across the term structure. It is not such a—it is not as big of a problem in the United States. It is a huge problem in Europe. And the fact of banks charging people to hold their money in Europe is a much bigger problem than in the United States. But even in the United States, many of the large banks have sort of encouraged their clients that had a lot of deposits on board to maybe find somewhere else to put it.

So, I mean, if a banking system is not there to hold deposits, I do not know what a banking system is for. So this a fundamental problem with the rule.

When you come to liquidity rules and you go back in history—and some of my colleagues on the panel today know a lot about this stuff—the first thing historically that made a banker a banker was that he had to have liquidity. If in the olden days before there was regulation and insurance and a bank was not liquid, well, then, it was shut down. So having liquidity is the first-order thing that a banker has to do to be a banker. And now what we have done is we have introduced all these very complicated rules that tell bankers how to, in essence, be a banker. You cannot be a large bank unless you hold 30 days’ worth of assets that, if you have a depositor run, you could fire-sale your assets for 30 days and still fund yourself if you were totally locked out of the markets. That is the liquidity coverage rule. It pushes banks into Treasuries. It pushes you into things that in Europe have negative interest rates and in the United States have very low interest rates.

So you are going to have your balance sheets loaded up with a bunch of Government securities. You are going to try to buy the long-dated securities because they count the same in the liquidity coverage ratio as short-dated securities. But long-dated securities give the bank at least a little bit of yield where short-dated securities give the bank nothing. As soon as interest rates hike, when interest rates spike at the long end of the yield curve, I am going to be bankrupt. I am going to be looking at huge interest rate losses because I have to hold—when I have to mark my portfolio to market, I have got to hold all these long-dated Treasuries to meet the liquidity requirement. So the liquidity requirement itself introduces interest rate risk into the banking system.

Then the next rule you put on top of that is the net stable funding ratio, which says for a year I have got to construct my balance sheet so that I have enough equity and just the right people that take my debt so that I could run the bank down for an entire year without ever having to sell my high-quality liquid assets. So I have to structure my balance sheet in this way, and in some magical way, the regulators say this is a costless activity for banks, that it is not going to cost them a dime to do this kind of thing.

So these kind of liquidity rules in conjunction with things like negative interest rates are really, really problematic. They muck with the heart of what it is to be a banker.

Senator COTTON. Thank you.

Dr. Goodfriend, would you have anything to add to that statement?

Mr. GOODFRIEND. I agree completely that, as I said in my opening remarks, the liquidity coverage ratio is ill-conceived. Even if you think there is some reason to get the banks to hold more liquidity, the liquidity coverage ratio is about as destructive a regulation as you can imagine, especially given in the United States the Federal Reserve's power to pay interest on reserves. This is a game changer. It amazes me that we have a regulation that I understand comes from Europe, and we have institutional circumstances in the United States that obviate the need for it.

What I mean is with interest on reserves, the Federal Reserve will be able to pre-position on bank balance sheets essentially enough liquidity in terms of balances at the Fed that would satisfy the financial stability concerns that the liquidity coverage ratio was designed to deal with. But it will do so without any regulations at all. The Fed can pre-position reserves in the way that it had not been able to do before 2008, before the Fed had the power to pay interest on reserves.

Let me just continue. Before the Fed had the power to pay interest on reserves, the Fed had to maintain a scarcity of reserves in the banking system in order to raise interest rates. It is a little arcane but it is a critical point. And since that time, the Fed no longer has to maintain a scarcity. By far, the most effective way to liquefy the banking system is to have the reserves created by the central bank, and we can do that.

So for the life of me, I do not understand how the liquidity coverage ratio could come about with such onerous, complicated, arcane regulatory means at a time when we do not need it in the United States. We should have left that idea, I think, abroad.

Senator COTTON. Thank you.

Chairman SHELBY. Senator Merkley.

Senator MERKLEY. Well, thank you, Mr. Chairman.

There is a lot of conversation here about a liquidity crisis, so we might as well ask the question whether or not there is a liquidity crisis at all. Corporate bond issuance is strong. Borrowing costs are near historic lows. In 2015, the dollar volume of corporate bond issuances was a record \$1.5 trillion compared to half of that 10 years earlier, in 2005, before the crisis. Securitization markets are performing well. Securitized product issuance was hovering around \$200 billion in 2014 and 2015 in line with the early 2000s. Secondary markets, bid-ask spreads, and corporate bond markets were down to around 30 basis points in 2015, which is certainly a lot lower than 90 basis points at the height of the crisis. But it is even lower than the 40 basis points in 2006.

Professor Schooner, is there a liquidity crisis in the U.S. banking system?

Ms. SCHOONER. I do not believe that there is a liquidity crisis, but I also want to say that I think that if we were to expect improving our regulation of financial institutions, that doing so would have absolutely no effect on our markets. I think that would be not a reasonable expectation, and that we should expect movements in response to creating safer financial institutions, and we have to keep our eye on them. But I do not think we should be alarmed when we see movements of this kind.

Senator MERKLEY. Well, I do think it is worth noting that the New York Federal Reserve Bank President, William Dudley, gave a speech in New York City. He was rebutting this contrived argument that there is some liquidity crisis. He said, and I quote, "There is limited evidence pointing to a reduction in the average levels of liquidity." And he went on to say it was a "noteworthy assertion and would have significant implications for regulatory policy if it were correct." But, of course, he rebutted that it was not correct.

It is also interesting that liquidity is put up as some kind of nirvana, some kind of essential—the more buyers you have, the better. But if liquidity is fueled by high leverage ratios that destabilize the system, is that a good idea, Professor Schooner?

Ms. SCHOONER. No, I do not think we want to sacrifice a goal of liquidity by creating very unstable, highly indebted financial institutions. That does not seem to be a tradeoff that is worth making.

Senator MERKLEY. So here we have a lot of bubble talk about liquidity, but it is really an argument that they are trying to put forward to say let us deregulate the banks once again, let us forget the fact that the last time we did this it destroyed the savings of Americans, it destroyed their retirement savings, it often destroyed their mortgages, it destroyed often their very jobs. And so I think it is important to understand what this is aimed at and the false premise that is being put forward right from the beginning.

Chairman Volcker said traders' and investors' sense of an ability to sell anything instantaneously contributed to the excessive leverage and risk taking that led up to the crisis. Just one more point to bear in mind about this kind of false idol that is being put forward here today.

I wanted to turn to the orderly liquidation authority and the effort to eliminate that. That was a bipartisan effort to say if a bank is in trouble, the shareholders should be at risk, the bond holders should be at risk, not the taxpayers. Why do we see this effort through Chairman Hensarling and his Wall Street crew to repeal the orderly liquidation authority and put taxpayers back on the hook and try to restore too-big-to-fail? Professor?

Ms. SCHOONER. I think banks want to avoid any kind of regulation, and they have, you know, good reasons for doing that. But I think we need to keep in mind that even when we ask for higher capital regulations, the capital, for example, is only one element of the way in which we have traditionally regulated financial institutions. There are a whole host of factors that go into making for safer organizations. And certainly eliminating the too-big-to-fail massive problem requires an ability to resolve institutions in an orderly fashion, and if we do not have that mechanism for resolution in an orderly fashion, we will be back to the same sort of bailouts that we saw in the financial crisis.

Senator MERKLEY. So here we have Hensarling leading the charge to privatize the gains and socialize the losses, stick the taxpayer once again, and let me point out that that is not the basic theory of capitalist enterprise. The basic theory is you take your risks, and you make mistakes, you suffer the losses. You do not stick the losses on other people. You certainly do not stick it on middle-class Americans, destroying their jobs, their savings, and their mortgages.

And so I hope that everyone in America will pay attention to this gambit to restore the false premises that undermined the economy and destroyed the success of so many millions of American families in its effort to once again enable Wall Street to stick their losses on the American people. It was wrong then. It did a lot of damage. It would be wrong now.

Thank you.

Chairman SHELBY. Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman.

You know, I do not think there is anybody up here that wants to see banks without regulations, and I have never talked to a single banker anyplace that does not think that regulations are not important. I think they want a fair playing field. I also think that if you take a look at this Committee, I think we all want to see a very stable financial institution or series of financial institutions of all different sizes. None of us want to see a taxpayer bailout again, and at the same time, though, as we look at stable financial institutions, we want to see competition, because we all want to be able to borrow money at a rate which is as inexpensive as possible. And if we have got assets, we want to be able to get a fair rate of return when we put our money into a savings account. I think that is what most Americans want.

I think the job of this Committee is to look at financial institutions and the regulations that are there, and we tweak them when we think that they need to be tweaked, and at the same time we offer stability long term.

Yet when we look at Dodd-Frank, we have got a huge series of rules, and over a period of now 6 years, we have not made changes

to them. We have simply expected that the regulators would make the changes based upon a framework. It looks to me like maybe we have not done our job to come back in and take a look at a regulatory framework which should be tweaked.

I would like to ask each one of you just very quickly—and then I want to touch a little bit about the availability of money in the marketplace, and credit—if there was one thing under Dodd-Frank that really Republicans and Democrats should look at and say there are fixes that should occur, can you give me just one or two real quick things that you think we really ought to be taking a look at to make the system work better? Professor.

Mr. SCOTT. Thank you, Senator. I believe that we have strengthened the financial system in many ways by Dodd-Frank—capital requirements and liquidity. There are problems with how we are doing it, but I think we have strengthened the system.

I think, on the other hand, we have very much weakened the system by the provisions of Dodd-Frank which limit the ability of the Federal Reserve to be the lender of last resort in a crisis. We all hope there will not be another banking crisis, but I can assure you there will be one. The question is when. Despite all these efforts, there will be another banking crisis. They are endemic in our history and in the history of global finance.

So the Fed's powers to lend to nonbanks is, as I indicated earlier, a growing sector of the economy largely fueled by a lot of the regulation that we are putting on the banks. The amount of short-term liabilities in the nonbanking system is growing, and the Fed's ability to lend in a crisis under 13(3) amendments to Dodd-Frank has decreased.

We also took away the ability of the Federal Deposit Insurance Corporation, the FDIC, to raise insurance limits during the crisis, which they did on transaction accounts, which are key to the payment system. They raised them to infinity. OK? That power has been removed by Dodd-Frank, and as you recall also, the Treasury guaranteed the money market funds that power.

Now, we do not all—

Senator ROUNDS. Let me just move along just because I am going to run out of time, but I would like to give the other folks—

Mr. SCOTT. Yes, OK. That would be one thing I would fix.

Senator ROUNDS. OK.

Mr. SCOTT. But, you know, just one word, Senator. We have done all that because we think bailouts are bad. But I think we need to rethink what we mean by a bailout.

Senator ROUNDS. OK. Dr. Goodfriend?

Mr. GOODFRIEND. Yes, I think in general the regulations that Dodd-Frank has imposed on depository institutions have increased the regulatory arbitrage that I talked about in my opening remarks. In other words, the regulations are offset by lowering deposit rates that are available to retail deposits. The small guy is the guy that is getting hurt. And what happens is the small guy says, well, I am going to put my money in money market funds, repackage it, and re-lend it back to the banks as institutional wholesale funding. And those rates the banks cannot push down. They have to compete aggressively for wholesale deposits.

So what is happening is these regulations that are being imposed by Dodd-Frank on the banks, in my view, are increasing this kind of round-tripping of money and making our banking system much more unstable in the sense that the retail funding is falling as a share and the wholesale funding is rising as a share. In other words, those regulations are going exactly against the problem that they are trying to solve, and it does not seem to me that Dodd-Frank has taken that into account at all.

Senator ROUNDS. Dr. Schooner?

Ms. SCHOONER. Very quickly, more equity capital. I think that this Committee should consider proposals like what were in Brown-Vitter, which would require a 15-percent leverage ratio. So I think when we talk about capital, if we are talking about actual equity and not equity disguised as debt, or debt disguised as equity, that considering heavier capital requirements would be a big improvement.

Senator ROUNDS. Thank you.

Dr. Kupiec?

Mr. KUPIEC. I think simplification is key. Higher equity and things like debt that are disguised as equity, which is exactly what the TLAC rule is that I railed against in my comment, these things obfuscate what is really going on. The complexity is beyond imagination even for folks like me and Hal Scott and all these people at the table even to get a grip on. And if people like us cannot get a handle on this stuff, you better hire a few law firms or something. I do not know. It is beyond the pale, the complexity in the rules. It really has to change. And it is up to Congress to tell the regulators to make it simpler, more transparent.

Senator ROUNDS. Thank you.

Thank you, Mr. Chairman.

Chairman SHELBY. Senator Brown.

Senator BROWN. Thank you, Mr. Chairman.

Professor Scott, let me start with you. In 2009, in the aftermath of the financial crisis, the Committee on Capital Markets Regulation, which you lead, released a proposal for regulatory reform that included a couple things I could mention: more intense prudential supervision—I am quoting—

more intense prudential supervision, a better process than bankruptcy for resolving the insolvency of financial institutions, and a comprehensive approach to regulating risk in the financial sector.

Title I of Wall Street reform, as you remember—you were successful—adopted these recommendations by imposing heightened prudential regulations on the largest banks and provided a framework for addressing risks in the nonbank financial sector while Title II created an orderly liquidation process for large financial institutions. Senator Warren mentioned Chairman Hensarling's proposal today. He has proposed repealing both of these titles. Do you continue to support the proposals that you made in 2009? Or do you agree with Chairman Hensarling?

Mr. SCOTT. Well, I certainly continue to support the proposals—

Senator BROWN. Could you turn your microphone on?

Mr. SCOTT. I am sorry. I certainly continue to support the proposals we made in 2009. With respect to Chairman Hensarling, I

have not looked in detail at this. You know, there are many amendments that are being made here to Dodd-Frank. I would be concerned with eliminating Title II in its entirety. I think that has enhanced our ability to resolve large systemically important institutions.

Other parts, though, of exactly what he wants to do with FSOC, what the remaining authority would be to, for instance, regulate products and services, which I think might be a better approach to dealing with things than designating a few SIFIs—we only have a couple—I think were removed is to thinking we should look at products and services which are a concern in the industry rather than trying to solve this problem through designation of specific institutions that we think are systemically important.

But I think a lot of the devil is in the details, as anything, so—

Senator BROWN. Yes, of course it is, but he also does propose repealing those two titles, which are important, so thank you.

Professor Schooner, let me ask you a handful of questions. There is a lot of talk about rolling back regulations for banks of various sizes that meet higher capital standards. While I do not agree with all of his proposal, Tom Hoenig has proposed targeted relief for truly simple institutions. However, others have suggested we do not need things like living wills in Title II of Dodd-Frank if banks just had more capital.

Should we be concerned by proposals that use capital requirements as a Trojan horse for a broad-based deregulation of the industry?

Ms. SCHOONER. I think we should. I think that we would make the system much safer with higher equity capital, but I do not think, unfortunately, that equity can solve all problems unless we had 100 percent equity, and I do not think we are going there.

There might be some regulations. As we have mentioned, the proposals with respect to TLAC and requiring more debt of institutions, if we had higher equity, those proposals do not make a lot of sense. But I think ignoring some of the problems with resolving highly complex institutions and making an attempt to do so proactively, figure out the process for doing that proactively through living wills, would be a big mistake even if we had higher equity levels, and it certainly would not make our financial system safer.

Senator BROWN. Thank you. Thank you for your comments about Brown-Vitter in response to a question from, I believe, Senator Rounds. As you know, that proposal helped—contributed to the public debate that later did lead to OCC and the Fed and the FDIC imposing capital requirements, so while that bill obviously was—never really got serious hearings or moved forward in the legislative process.

Three years ago, Fed Chair Bernanke testified that unsafe practices by large financial institutions pose a risk not just to themselves but to the rest of society. Setting policy, we should look at the social costs and not just the cost to the firms. These are Chairman Bernanke's words. And given the enormous cost of the crisis, that strong measures to prevent a repeat are obviously well justified on a cost-benefit analysis, the cost to society, the benefit to the banks.

Many in Washington are pushing for more cost-benefit analysis and analyses. What are the appropriate costs and benefits to consider when thinking about increased capital?

Ms. SCHOONER. So I think that oftentimes when we talk about cost-benefit analysis, it sounds scientific. But, of course, many value judgments go into any kind of cost-benefit analysis. And I would certainly urge anyone conducting that kind of analysis to seriously consider the social costs over the private ones.

I believe private costs to financial institutions can often be dealt with through appropriate implementation periods, and sometimes those costs are appropriate to be borne by the individuals dealing with such institutions. The financial crisis, as you have said and others on the Committee have said, is beginning to fade in memory, but I just have to say that the impact on the economy was so severe, and I think we also forget sometimes that the impact, some studies have shown, go to the health of citizens. So the impact is very broad, and considering the social benefits of avoiding financial crises, should also be very important in any kind of cost-benefit analysis.

Senator BROWN. Thank you. I appreciate your reminding this Committee again—this Committee seems to suffer from some collective amnesia about what happened to a whole lot of families. I have said in this Committee before, my wife and I live in Zip Code 44105 in Cleveland. That Zip Code 9 years ago for the first half of the year had more foreclosures than any Zip Code in the United States of America, and I still see the blight in that community, my community, and still know some families who lost their homes and their lives were turned upside down, and that is something we absolutely never should forget.

I appreciate, too, your saying that cost-benefit sounds scientific, in this all-knowing world, with Washington pundits nodding their heads in their all-knowing way that saying cost-benefit sounds so serious, and, you know, maybe you can do it occasionally in a food safety or a public health way, although it is awfully hard to quantify then, but clearly the damage that bad financial regulation or inadequate regulation brings to a society as a whole is awfully difficult to quantify.

Let me ask one last question. Professor Schooner, we heard a number of complaints that capital rules are too onerous. Governor Powell's comments in my opening statement speak to that. The Federal Reserve has tied a number of its rules to factors like international footprint, to size, to interconnectedness, to short-term funding, to complexity. The rules for the largest banks are more stringent for them because they are more systemic and they are more complex themselves.

Give me your thoughts, if you would, Professor Schooner, on this approach for the largest banks, if they want to reduce the requirements, the tradeoff is either reducing their own size or complexity or risk to the system.

Ms. SCHOONER. So, obviously, the regulations on larger complex banks are more onerous, are more complex, but I believe that is clearly in reaction to the growing complexity, size, interconnectedness of financial institutions, not the other way around. We did not

create complex regulations and then ask for the banks to become more complex.

And I also think that this criticism is a little unusual since it is exactly what banks do with their customers. When a bank lends to a larger, more complicated borrower, they require more complicated covenants, place more onerous restrictions on that borrower than they would with a smaller, safer borrower. So I think that the complexity and the onerousness is often quite appropriate given the institutions that we are trying to regulate, and they could avoid some of that if they were to become smaller, safer, less leveraged, as we have been discussing.

Senator BROWN. Thank you so much.

Thank you, Mr. Chairman.

Chairman SHELBY. Senator Toomey.

Senator TOOMEY. Thank you, Mr. Chairman. I must say I think this hearing took an Orwellian turn a little while ago, and I feel the need to revisit some of the unbelievable things that I have been hearing.

First of all, the notion that repealing Title II puts taxpayers on the hook for a bailout is just amazing to me. Title II is the part of Dodd-Frank that explicitly authorizes and creates the mechanism by which taxpayers can be forced to bail out financial institutions. That is what Title II does in black and white language. Is that not true, Dr. Kupiec?

Mr. KUPIEC. That is correct.

Senator TOOMEY. Right. So now we are told that if we repeal the authorization to force taxpayers to bail out banks and have a different mechanism for resolving, which I will get to, which is basically bankruptcy, that that somehow puts taxpayers on the hook. The fact is taxpayers are on the hook today because of Dodd-Frank.

What we learned or should have learned during the financial crisis, among other things, it seems to me, is that we did not have an adequate resolution mechanism for the failure of a very large, complex financial institution. And the way to solve that, it seemed to me, was to fix the Bankruptcy Code so that we would have an adequate resolution mechanism without having to put taxpayers on the hook.

But we did not do that in Dodd-Frank. Instead, what we did was we said we will explicitly authorize the taxpayer bailout in Title II, but since that would be very, very embarrassing, we will empower regulators to do anything they want and encourage them to do everything to take complete control of financial institutions, regulate every minute activity, forbid whole categories of activities so that we hope we will not actually have to go there.

So when Members of Congress, House Members and myself, are advocating repeal of Title II, it is to do it together with reform in the Bankruptcy Code so that the only people who take a loss if a big financial institution fails will be shareholders and unsecured creditors. And if we actually had that mechanism in place and we had the political will to force that mechanism rather than a bailout, which is what my friends on the other side want to preserve in Title II, while they nevertheless rail against bailouts, if we had that mechanism in place, then unsecured creditors would be the

ones who would impose the discipline on the financial institution because they would be acting out of self-interest to avoid losses.

I also want to address another bill that I am amazed to hear the discussion about. Some of us think that Congress has spent a lot of years shirking its responsibility by kicking all kinds of authority to regulators to write rules and regulations and then deny the accountability that ought to go with that. Effectively, it is a legislative function. Oh, and by the way, it is also an enforcement function, and it is also a judiciary function. The regulators are omnipotent in some respects.

I think we ought to be accountable for the authority we grant, that we delegate to a regulator, and that is what the Hensarling proposal is. It says when a new regulation is proposed, let us subject it to an up-or-down vote so that Members of Congress can no longer deny accountability. I know Members of Congress like to be able to avoid that accountability. There are some here who would like to be able to look the other way and say, "Oh, those bad regulations, that is someone else's fault." But that is shirking our own responsibility.

Let me go to a specific example of the excessive and counter-productive regulations that result from this approach that we have taken instead of a better ability to resolve failed institutions, and that is the LCR rule. And, Mr. Goodfriend, you have suggested you are not too fond of this rule, I gather. I do not want to put words in your mouth, but I think there is a redundancy to it compared to enhanced capital requirements. The complexity is unbelievable, which I think several of you have acknowledged.

Could we be clear about one thing? When we impose this type of—this specific regulation, the LCR rule, does that not add a cost to making loans? Does that not result, all else being equal, in a higher cost of borrowing for a small business, a medium-sized business, whoever would like to borrow the money that is subject to this rule? Isn't the cost ultimately borne by the consumer, Dr. Goodfriend?

Mr. GOODFRIEND. Absolutely, and I think the costs are borne by the most vulnerable, the smaller borrowers, the smaller depositors, the people who do not have the time every day to worry about what they are doing with their money and which bank they should be in. And so it is not only that the costs get passed on. They get passed on to the most vulnerable people on both sides, the borrowing and the depositing side.

Senator TOOMEY. Dr. Kupiec, do you agree that those costs end up being borne by consumers?

Mr. KUPIEC. Yes. Somebody has to pay the costs. If you are required to hold a large volume of highly liquid assets that, by definition, have smaller returns because they are so liquid, then you are not earning on them, and you have to pass the costs of managing the bank on to somebody. So you are going to pay your depositors less and charge more on your loans.

Senator TOOMEY. And this rule that apparently we must not let Congress have any authority over, it goes into effect on banks with a balance sheet of \$50 billion, I think initially, right? A SIFI designated bank is subject to LCR rules. Is that correct? Right.

Dr. Kupiec, do you think a \$50 billion bank in America is systematically important to our \$17 trillion economy?

Mr. KUPIEC. Absolutely not, and I think most \$50 billion banks know how to manage their own liquidity without the regulators writing a rule to tell them how to manage it.

Senator TOOMEY. Do you think it has occurred to them that they might have to honor depositors who would like to withdraw money, do you think really?

Mr. KUPIEC. I think they know that, yeah.

Senator TOOMEY. OK. Thank you very much.

Chairman SHELBY. Senator Tester.

Senator TESTER. Thank you, Mr. Chairman.

Just for the record, because I think it has to be said, the bailout was done during the Bush administration, and the guy on this side of the aisle did not vote for it.

So that aside, I have a couple questions—I will be quick; they deal with stress tests—for Scott and Schooner. Look, the stress tests have—there is some good news attached to them. I think we only had one U.S. bank that had to go back to the drawing board last year once it was done. It does give us some information not only for the regulators but for Congress, for the public, as it relates to our largest financial institutions.

That being said, I am curious to know—and it kind of goes to some of the questions Senator Toomey was saying—where the line should be drawn. We drew the line at \$10 billion, Professor Scott. Is that the right spot to have it? Or should we be looking to modify that? Should we be going off a business model? What exactly—how should we be dealing with this? Because I get a lot of input from my community banks, and they are critical to a rural State like Montana. In fact, they are critical to the whole damn country, quite frankly. So could you give me some enlightenment on that issue?

Mr. SCOTT. Well, I think the stress tests, Senator, are being applied today to the largest banks.

Senator TESTER. Right.

Mr. SCOTT. And what the cutoff for that should be, you know, I think they should be extremely large. They should be G-SIBs. They should be banks that we have concern about the systemic impact of their failure. As I testified, my concern about the stress test today is the lack of transparency around the design of the test and the evaluation of the test itself.

Senator TESTER. Yes. How about you, Professor?

Ms. SCHOONER. So I think that I agree with what Professor Scott said, that stress tests should be focused on the largest financial institutions. I think that the CCAR tests apply to about the top 30 institutions.

Could there be a better designation? Could we decide that it was based on complexity?

Senator TESTER. Right.

Ms. SCHOONER. But I think that the problem with that from a regulatory resource standpoint is we could spend a lot of time trying to figure out which financial institutions should be subject to stress tests and make a lot of argument about that rather than just doing the stress test. So I do think that an asset-size threshold is

sort of efficient and can give us a rough estimate of which institutions it makes sense to—

Senator TESTER. And that from my perspective is—it is a lot cleaner. It is a lot easier. Let us put it that way. I do not know if it is cleaner, but it is easier. The question is where—I mean, you have both said it should be for the largest banks. The question is: Where is that line drawn? Because that is the debate we have all the time here, quite frankly.

Ms. SCHOONER. I have difficulty with answering that because I do—if I take a long view of banking in the United States, I do think that regional banks can often cause big problems. I mean, we saw that in the S&L crisis. They do not have the kind of economic impact that we saw in the 2008 financial crisis, but they can create a lot of damage to local economies. So I have trouble drawing the lines as well.

Senator TESTER. In what level do you draw regional banks at, between where and where? In your mind. I am not going to hold you to it.

Ms. SCHOONER. Yeah, in my mind, \$50 billion and above.

Senator TESTER. OK. Professor? Turn your mic on, please.

Mr. SCOTT. I think we should concentrate on the very largest banks with these tests. What is the test designed to do? It is to make sure that a systemically important institution does not fail because we are concerned that it would be so connective that it would send such a bad message that we can, you know, stimulate runs on the financial system, that other institutions tied to it would be failing. So I do not think that is 37 banks. OK?

So I think exactly where to draw the line, it needs to be higher. But exactly where it should be I am not sure.

Senator TESTER. OK. Just very quickly because I have only got about half a minute left. We have talked about community banks, how important they are. They are critically important to my State. And I think, as has already been said here, they were not involved with the meltdown. They did not deal with the exotics or the risky financial products.

Mr. Scott, in your testimony you talked a little bit about your concerns with how risk weights are calculated for assets, so I just want to focus on the community banks' perspective on that. Would you elaborate on your concerns about how risk weights are calculated? And would you share any concerns that you have about the effect these risk weights have, particularly on community banks?

Mr. SCOTT. Well, risk weights can be calculated in very different ways. The two most prominent ways of thinking about this are standardized and models. So under a standardized approach, the Government comes along and says this is the risk weight you should have on this asset. I have great difficulty in believing that our Government can assess the risk weight of complex financial instruments. I just think that is a job that is tremendously difficult, at best.

So the other alternative is model, and as we moved from Basel I to Basel II, we allowed much more reliance on banks using their own models to calculate, and the supervisors would supervise the use of the models. That has also led to difficulty because the banks

have, I would say, a knowledge advantage about how they devise their own models.

Senator TESTER. Sure.

Mr. SCOTT. There is concern they are gaming the models to get lower results. So there has been some dissatisfaction with the use of the models. So where do we go from there? You know, both of these—then there is the leverage ratio. OK. So we have got this risk-weight problem. We do not know how to do it. Let us go to leverage. Well, leverage is nothing but the same risk weight for every asset. OK? And it was that approach that led us to go to Basel in 1986. We said this is crazy. A loan to IBM is going to be risk-weighted? The loan to a startup company? That does not make any sense.

So the fact of the matter is methodologically we are at sea in terms of having valid ways to assess the risk of assets.

Senator TESTER. Thank you. I am not sure it was entirely helpful, but thank you. I want to thank all of you for your testimony. Thank you very much.

Chairman SHELBY. I want to take a few seconds just to thank all of you for your participation here today. This has been a very interesting, very complex hearing, and we appreciate your input, your preparation, and everything. And what we really want—and I believe whether we are Republicans or Democrats—for the most part, we want a strong banking system. We want a system that works for the market economy and opportunities for everybody. We do not want bailouts, whatever it is.

Thank you very much.

[Whereupon, at 11:26 a.m., the hearing was adjourned.]

[Prepared statements and responses to written questions supplied for the record follow:]

**PREPARED STATEMENT OF HAL S. SCOTT**

NOMURA PROFESSOR AND DIRECTOR OF THE PROGRAM ON INTERNATIONAL FINANCIAL  
SYSTEMS, HARVARD LAW SCHOOL AND

DIRECTOR, COMMITTEE ON CAPITAL MARKETS REGULATION

TUESDAY, JUNE 7, 2016

Thank you, Chairman Shelby, Ranking Member Brown, and Members of the Committee for inviting me to testify before you today on bank capital and liquidity regulation. I am testifying in my own capacity and do not purport to represent the views of any organizations with which I am affiliated, although some of my testimony is based on the work of the Committee on Capital Markets Regulation (CCMR). My testimony will focus on two key aspects of capital and liquidity regulation. The first is a general overview of the effectiveness of capital and liquidity regulations in reducing systemic risk. Second, I will discuss the process by which regulators impose capital and liquidity requirements, with a particular focus on Federal Reserve stress testing of financial institutions.

A capital requirement is a mandated minimum level of equity and subordinated debt (*i.e.*, “capital”) as a percentage of a bank’s assets. In general, capital requirements have one primary goal—to ensure a minimum level of capital capable of absorbing a bank’s potential losses.

The capital requirements in the United States today are largely based on the international standards set under Basel III, but are stricter in some respects. Similar to Basel III, we require banks to hold total minimum Tier I and Tier II capital of 8 percent of risk-weighted assets and total minimum common equity of 4.5 percent of risk-weighted assets. By 2019, these requirements will rise to 10.5 percent and 7 percent, respectively. Also similar to Basel III, we apply an additional capital surcharge for the largest banks. However, while Basel III has a top surcharge of 2.5 percent, the U.S. surcharge can reach as high 4.5 percent.<sup>1</sup> In total, a U.S. banking institution with a 4.5 percent surcharge would face a total capital requirement of 15 percent of common equity on a risk-weighted basis when the phase-in is complete in 2019. Basel III has also established a leverage ratio of capital to total assets of 3 percent. U.S. regulators have added on top of this an enhanced requirement for the largest U.S. bank-holding companies, increasing the leverage ratio to 5 percent for the eight largest bank-holding companies and 6 percent for their insured depository institutions.

Capital requirements are aimed at reducing systemic risk in several ways. First, capital can reduce the probability of a bank failing. This is important because the failure of several important banks at the same time, from an external shock like the housing price collapse in 2007, could endanger the stability of the financial system and, in turn, the economy. Capital erects a bulwark against such failures.

Second, capital can help to minimize the possibility that connections between banks can lead to a chain reaction of failures. If bank A has a credit exposure to bank B, then bank A’s failure would cause losses for bank B that could cause bank B’s failure. This could, in turn, trigger the failure of other connected financial institutions.

Third, adequate levels of capital can reduce moral hazard by making it less likely that banks will take risks that could endanger their solvency. This is because the private suppliers of capital would lose their investment if the bank failed and so they will seek to prevent their bank from taking undue risks. Insured depositors do not have similar monitoring incentives.

One should bear in mind that if we could resolve failing banks through effective and swift reorganizations, without the use of public capital, then a bank’s failure would be less likely to put the entire system at risk. Minimum capital requirements would therefore be less necessary to protect against bank failures, because the systemic consequences of such a failure would be reduced. Unfortunately, as of now, such a resolution procedure is still a work in progress.

Although capital requirements can serve these important purposes, at any realistic level they cannot prevent the financial contagion that we experienced in 2008, where widespread fears over the stability of the financial system led to a run on short-term funding in both the bank and nonbank sector. Indeed, contagion was the key systemic risk concern in the prior financial crisis and will be the key concern in any future crises.

But capital is not the solution to contagion, because in the midst of a crisis, no reasonable amount of capital will hold up against the panic of short-term debt

<sup>1</sup>See Federal Reserve Press Release, July 20, 2015, available at <https://www.federalreserve.gov/newsevents/press/bcreg/20150720a.htm>.

holders. Even higher capital proposals, such as Admati and Hellwig's suggestion of 20 to 30 percent of total assets, would not prevent failures in the face of contagion.<sup>2</sup> The only sure-fire level of capital that can prevent failure would be 100 percent. However, this would preclude banks from holding any debt, including deposits of any kind. The resulting massive contraction of credit would be completely unacceptable.

The most effective means of combating contagion is through central bank use of "lender-of-last-resort" liquidity authority and expanded deposit guarantees. During the recent financial crisis, these very means were used to combat contagion. The Fed employed its authority as lender of last resort and the FDIC enhanced deposit guarantees. Much of the Fed lending was conducted through its section 13(3) emergency powers to provide liquidity to nonbank financial institutions.

Unfortunately, Dodd-Frank has pared back many of the very powers that were so successfully deployed during the crisis. The Fed's 13(3) authority and the FDIC's authority to expand deposit insurance have been weakened. We are currently in a world exposed to contagion, but the Fed and FDIC have less effective weapons at their disposal to fight it. Ironically, this lack of contagion-fighting tools could put more pressure on Congress to bail out large financial institutions in the future.

In addition to the limitations on the ability of minimum capital requirements to prevent contagion, devising the content of capital requirements is a daunting task. As mentioned earlier, capital requirements can take the form of a simple leverage ratio, which compares the bank's capital to its total assets, or more complicated risk-based measures that include risk-weightings of assets.<sup>3</sup> Both simple leverage ratios and risk-based capital ratios have a role in the regulatory framework, but each are flawed in different respects.

The main problem with a leverage ratio is that it requires precisely the same amount of capital for all asset classes, irrespective of their various risk profiles. Effectively, a leverage ratio is a risk-weighted assets approach under which all asset classes are assigned a risk weight of 100 percent. As a result, the regulatory cost of capital is the same for both high- and low-risk assets, giving bank management an incentive to increase return on equity by investing in high-risk assets with higher returns. Such incentives are inconsistent with prudent risk management and sound banking practice. Indeed, before 1986 the United States relied exclusively on a leverage ratio and the weakness of this approach spawned risk-weighting through the Basel Accords.

However, risk-weighted measures are also flawed, primarily due to the difficulty of assigning appropriate risk weights. Under the first Basel Accord, which applied to U.S. banks during the 2008 financial crisis, banks were required to hold 8 percent capital against all corporate loans—whether to IBM or a fly by-night startup. On the opposite side of the spectrum, banks were not required to hold any capital against Government debt—whether to Uncle Sam or Greece—reflecting the desire of governments to drum up demand for their debt securities. Finally, banks were only required to hold 4 percent capital against residential mortgages, whether prime or subprime, as part of the U.S. Government's housing promotion policies—and we all know how that turned out. Under the second Basel Accord, large banks were permitted to base their capital calculations on internal models, which could be opaque and lacked consistency across banks. Smaller banks had to use a more standardized approach based on external credit ratings, and we also know the widespread problems with credit ratings.

The Basel approach to accounting for a financial institution's operational risk has also been flawed. Operational risk is fundamentally different from all other risks taken by banks, such as market and credit risk, but is much harder to measure and model. It accounts for roughly 9 to 13 percent of the total risk of a bank, with legal liability being a major component of it.<sup>4</sup> Despite its importance, however, the approach to measuring operational risk to date has been overly complex and has lacked comparability across institutions.

The Basel III regime has recognized many of these flaws and has made some progress toward addressing the deficiencies in the risk-based system by narrowing the definition of bank capital to rely more heavily on equity, the strongest forms of capital, and improving the calibration of risk-weights, including the treatment of

<sup>2</sup>A. Admati *et al.*, "Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Socially Expensive" 55 (Oct. 22, 2013), <http://www.gsb.stanford.edu/sites/default/files/research/documents/Fallacies%20Nov%201.pdf>.

<sup>3</sup>This is part of the Basel approach.

<sup>4</sup>See Mark Ames, Til Schuermann & Hal Scott, Bank Capital for Operational Risk: A Tale of Fragility and Instability, 2014, available at <http://fic.wharton.upenn.edu/fic/papers/14/14-02.pdf>.

securitized assets and off-balance sheet exposures. It is also currently exploring more reliance on standardized measures as compared with banks' internal models for both credit risk and operational risk. However, getting the standardized measures correct is no easy task and poses as many problems, if not more, than the use of internal models.

In the end, even with the Basel III revisions, both the leverage and risk-weight approaches remain problematic. There is still much disagreement regarding appropriate risk-weighting, whether it should be done by Government dictate or bank models, as well as lack of consensus around the use of simple leverage ratios versus risk-based capital requirements. If one tries to compensate for these flaws by even higher levels of capital than we are now imposing, one is faced with a possible significant contraction of credit, which would have consequences across the entire economy. We must be careful not to let our fear of bad times stifle the possibility of good times.

Before turning to liquidity, I want to briefly mention a new objective that has become a driver of increased capital requirements—to pressure large banks to shrink in order to have a lower capital burden.<sup>5</sup> The underlying idea is that shrinking large financial institutions would make our financial system safer. However, I have seen no evidence supporting this. Indeed, history has demonstrated that financial systems of all shapes and sizes are vulnerable to panic and crashes. In fact, the fragmented system of small banks in the United States was a constant source of instability in the 19th and early 20th centuries.<sup>6</sup> If we think large banks may be bad for financial stability, this should be further analyzed, and I commend Neel Kashkari at the Minneapolis Fed for facilitating such a debate. And if we conclude that the existence of large banks increases the likelihood of a financial crisis, then we should require their shrinkage directly, not through the back door of capital requirements (or for that matter for flunking living wills tests).

Although we have always known that liquidity was important, particularly as a means to deal with contagious runs, liquidity requirements are a much more recent form of prudential regulation and one that did not exist before the 2008 crisis. Before and during the crisis we relied on the Fed to be the liquidity provider, but the heavy criticism of the Fed's role as lender of last resort in 2008 has resulted in a new policy, requiring banks to have their own liquidity as a first line of defense against bank runs. This is despite the fact that it may be more efficient to provide liquidity on a collective basis through the central bank. More specifically, Basel III introduced the liquidity coverage ratio ("LCR") and the net stable funding ratio ("NSFR"). The LCR has a 30-day horizon, requiring a minimum amount of high quality liquid assets ("HQLA") to cover expected funding run-offs. The NSFR has a 1-year horizon.

However, the effectiveness of these new liquidity requirements is unproven. The amount of needed liquidity depends on assumptions about the runoff rates of various types of funding. For example, liquidity regulation assumes that retail funding is much more stable than wholesale funding—while this was true in 2008, Fed lending and the expansion of guarantees may have contributed to this. In the future, Fed lending and an expansion of guarantees may not be available. Further, in the Fed's proposal issued last week to implement the NSFR, the Fed stated that the NSFR builds on the same goals as the LCR, but over a longer horizon.<sup>7</sup> However, contagion and financial crises are issues of short-term panic. It is difficult to imagine a year-long liquidity crisis for a bank, so the justification for the NSFR seems considerably weaker than for the LCR.

There is also a concern that high liquidity requirements for banks could actually decrease liquidity in a crisis. This is because banks that formerly lent to other banks in need of funding during a crisis may now hoard their liquid assets to comply with the new liquidity requirements. While the Fed has said that they would suspend or relax the LCR in a crisis,<sup>8</sup> how this would happen and to what banks it would apply is very unclear. And during normal times, liquidity may also be negatively affected by the combination of the Volcker rule, which limits proprietary trading, and the leverage ratio, which makes it uneconomical for a bank to hold any liquid assets in excess of those required. For example, one measure of bond market

<sup>5</sup> See Federal Register Vol. 80, No. 157, available at <https://www.gpo.gov/fdsys/pkg/FR-2015-08-14/pdf/2015-18702.pdf>.

<sup>6</sup> See, e.g., Michael D. Bordo *et al.*, Why Didn't Canada Have a Banking Crisis in 2008 (or in 1930, or 1907) (Nat'l Bureau of Econ. Research, Working Paper No. 17312, 2011), <http://www.nber.org/papers/w17312>.

<sup>7</sup> See Federal Register Vol. 81, No. 105, available at <https://www.gpo.gov/fdsys/pkg/FR-2016-06-01/pdf/2016-11505.pdf>.

<sup>8</sup> See speech given by Daniel K. Tarullo, Federal Reserve Board Governor, on Liquidity Regulation at the Clearing House 2014 Annual Conference, Nov. 20, 2014.

liquidity is trading depth, or the trading volume as a share of the outstanding stock of an asset class. Since 2007, U.S. treasuries have lost 70 percent and U.S. corporate bonds have lost 50 percent of their trading depth. U.S. high-yield debt is down 30 percent. So, there is some evidence that bond market liquidity has declined in recent years. Of more concern, however, is how these markets would function under stress—on this subject we need to know much more.

In thinking about capital and liquidity requirements one very fundamental point must be kept in mind—they only apply to banks (albeit money market funds now also have SEC imposed liquidity requirements). This is significant in a financial system where nonbank financial institutions are of increasing importance.<sup>9</sup> The Financial Stability Board (“FSB”) reports that the overall size of the nonbank financial sector stands at \$80 trillion as of its November 2015 report.<sup>10</sup> In addition, nonbank financial assets have consistently increased by over \$1 trillion annually from 2011 through 2015 and, on a percentage basis, the FSB finds that assets of nonbank financial intermediaries has reached 59 percent of aggregate GDP.<sup>11</sup> The costs of meeting capital and liquidity requirements will undoubtedly spur even more growth of the nonbank financial sector. However, given the different business models of other financial firms, such as money market funds, insurance companies and broker-dealers, it would not make sense to impose bank capital and liquidity requirements on them. Indeed, in an Advanced Notice of Proposed Rulemaking released on June 3rd, the Fed indicated its intent to adopt capital requirements that are specific to the insurance industry and not to simply apply bank capital standards.<sup>12</sup>

I turn now to the second part of my testimony, about the *process* for establishing capital and liquidity requirements. Generally, the U.S. regulatory agencies “gold plate” (enhance the stringency of) the Basel requirements and then implement them through rulemakings that must comply with the requirements of the Administrative Procedure Act, which provides for notice and comment, as well as judicial review. Although this process could be improved by a cost-benefit requirement—that is a broad subject for another day that goes well beyond just capital and liquidity regulation.

Of possible concern is the Basel process itself. Once Basel adopts a requirement, the 28 countries that comprise the Basel Committee on Banking Supervision (BCBS), which include the United States, are expected to comply by implementing the international requirements into domestic law. Thus, while the U.S. banking agencies engage in a notice and comment procedure in implementing the Basel Accords domestically, there is very little room for these agencies to depart from what has already been agreed. To the BCBS’s credit, this problem has been greatly alleviated by the BCBS itself providing notice and comment procedures as part of their own standards setting process.

But today, the Basel standards are only a piece of the total capital requirements picture. For U.S. banks, stress testing by the Federal Reserve is often the binding capital constraint, meaning that banks are required to hold more capital to pass stress tests than to comply with Basel requirements as implemented in the United States. And based on recent comments from the Fed, the capital requirements imposed through stress tests will soon be increased even further for the largest U.S. banks.<sup>13</sup>

The Fed adopted rules creating a stress testing process for large financial institutions under its supervision after the financial crisis.<sup>14</sup> The Fed currently conducts an annual stress test as part of the Fed’s annual assessment of the capital planning processes used by certain large financial institutions, known as the Comprehensive Capital Analysis and Review (the “CCAR”).<sup>15</sup>

<sup>9</sup>Financial Stability Board, *Global Shadow Banking Monitoring Report 2015 1* (Nov. 2015), available at <http://www.fsb.org/wp-content/uploads/global-shadow-banking-monitoring-report-2015.pdf>.

<sup>10</sup>*Id.* at 2.

<sup>11</sup>*Id.* at 10.

<sup>12</sup>Board of Governors of the Federal Reserve System, Capital Requirements for Supervised Institutions Significantly Engaged in Insurance Activities, Advanced Notice of Proposed Rulemaking, June 3, 2016, p. 26, <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20160603a1.pdf>.

<sup>13</sup>See Ryan Tracy and David Reilly, Fed Governors Signal Bigger Bank Capital Requirements Looming, *Wall Street Journal*, June 2, 2016.

<sup>14</sup>See 12 CFR § 252.41 *et seq.*

<sup>15</sup>Ben S. Bernanke, Chairman of the Board of Governors of the Federal Reserve System, Stress Testing Banks—What Have We Learned? (Apr. 8, 2013). The Fed also conducts an annual stress test under Section 165(i) of the Dodd-Frank Act.

The Fed uses the results of the stress tests to assess the ability of those institutions to absorb losses and maintain minimum regulatory capital ratios in stress situations, and ultimately, under the CCAR, to determine whether to object to the capital distribution plans of those institutions. If an institution fails the Fed's stress tests, the Fed can prevent an institution from returning cash to shareholders through dividends or stock buybacks.

In many ways, I think that stress tests, which are dynamic and look to the future, are an effective way to set capital requirements—they are certainly more in line with how firms themselves think about the need for capital. A major problem with the stress tests, however, is that their design is largely secret and not open to public evaluation. To conduct annual stress tests, the Board adopts a number of components that directly affect the outcome of the tests. In particular, the Fed establishes the hypothetical macroeconomic and financial scenarios that underlie the stress tests, *e.g.*, GDP growth and unemployment rates, assumptions regarding institutions' future capital actions and uses economic models to project each institution's capital levels and ratios under hypothetical scenarios. The Fed adopts the framework's components without subjecting them to public notice and comment. In fact, the Fed does not even disclose the models that it uses to make critical projections as to estimated post-stress capital levels.

A possible justification of this approach could be that the Fed views the stress tests as part of the supervisory process, or more technically as "adjudications" rather than "rulemaking" under the Administrative Procedure Act (APA). Adjudication is concerned with the operations of individual institutions based on institution-specific facts compared to rules that apply generally to a large number if not all institutions. Adjudication unlike regulation does not require an agency to follow notice and comment procedures. The argument that the components of the stress tests are adopted as part of adjudication is open to debate because, in fact, the stress test components, like the economic scenarios and undisclosed Fed model, are predetermined and are applied uniformly across institutions.

By not proceeding through notice-and-comment rulemaking, the Fed has exposed the legality of those components of the stress tests to potential legal challenge and uncertainty. It is difficult to see why the public should not have the opportunity to comment, for example, on what would be a reasonable GDP assumption in an extreme scenario in the coming year. In the 2014 CCAR (conducted in 2013), the severely adverse scenario assumed a real GDP decline of 4.75 percent in 2014. In reality, real GDP rose 2.4 percent in 2014. Of course, the purpose of the stress test is to use an adverse scenario, but what are the limits of adversity? Could the Fed assume a meteor would hit the earth?

When it comes to the stress test model the Fed uses to predict losses, special considerations may be at play. Former Fed Chair Bernanke suggested that disclosure of the models, which would have to accompany notice and comment, could cause banks to rely solely on the Fed's stress test models and not maintain an independent risk-management system.<sup>16</sup> Governor Tarullo has added that the Fed does not want to "teach to the test" by disclosing the models, thus allowing companies to construct portfolios to game the system.<sup>17</sup> I think these are valid concerns but there still needs to be more model transparency.

The Fed does subject its models to review by a Fed-established Model Validation Council that consists of five outside experts from the academic community.<sup>18</sup> However, the Fed chooses these experts and no transparency is provided regarding the review process or the actual evaluations of the experts. I recommend increased disclosure of the expert opinions. This can be done without disclosing the actual models themselves. Submitting the other components of the stress test framework to public notice and comment would seem legally required, and in any event would result in better decisionmaking, increase public confidence in the process and increase the legitimacy of Fed actions.

Thank you and I look forward to your questions.

<sup>16</sup> Ben S. Bernanke, Chairman of the Board of Governors of the Federal Reserve System, *Stress Testing Banks—What Have We Learned?* (Apr. 8, 2013).

<sup>17</sup> Governor Daniel K. Tarullo, Member of the Board of Governors of the Federal Reserve System, *Stress Testing After Five Years* (June 25, 2014).

<sup>18</sup> See <https://www.federalreserve.gov/aboutthefed/mvc.htm>.

**PREPARED STATEMENT OF MARVIN GOODFRIEND<sup>1</sup>**

THE FRIENDS OF ALLAN MELTZER PROFESSOR OF ECONOMICS  
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TUESDAY, JUNE 7, 2016

**INTRODUCTION**

I am pleased to be invited to testify today before the Senate Committee on Banking, Housing, and Urban Affairs on “Bank Capital and Liquidity Regulation.” In response to the 2007–09 credit turmoil, regulators in the United States and abroad strengthened bank capital requirements and introduced two new regulations intended to manage liquidity risk: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). My remarks today will focus on the LCR because it is the first of the new liquidity regulations to be put into effect and is supposed to be fully phased in by 2017.

In the aftermath of the credit turmoil, the Basel Committee on Banking Supervision and the Dodd Frank Act recommended that bank regulators adopt a new short-term requirement to promote liquidity resilience. U.S. bank regulators announced the new liquidity coverage ratio requirement in September 2014.

The LCR requirement may be said to update reserve requirements as a liquidity management regulation in three ways. First, the LCR requirement can be satisfied with securities earning a market rate of interest, instead of bank reserves that historically have paid below market interest. Second, the LCR requirement can be satisfied with a wide range of securities appropriately rated and capped according to their perceived liquidity. Third, the LCR requirement mandates that banks hold a stock of so-called high-quality liquid assets (HQLA) sufficient to meet projected net cash outflows over a 30-day period. The ratio of HQLA over projected net cash outflows must exceed unity; hence, the regulation is known as the liquidity coverage ratio requirement.

The LCR requirement is being introduced to facilitate banking liquidity in two senses—on the asset side, to better pre-position liquid assets on bank balance sheets, and on the liability side, to better guard against liquidity risks due to the use of uninsured wholesale short-term funding of bank assets.

I make two broad points in this regard. First, modern monetary policy utilizing interest on reserves is far less burdensome and a more efficient alternative to LCR requirements as a means of pre-positioning liquid assets on bank balance sheets. Second, simple sufficiently elevated bank capital leverage ratio requirements are far less burdensome and a more efficient alternative to LCR requirements as a means of guarding against wholesale liquidity funding risks.

Section 1 provides some perspective on the complexity of the rules involved in calculating LCR requirements that introduce significant new burdens of enforcement for regulators and compliance costs for banks.

Section 2 points out operational complications involved in employing the LCR over time to pre-position liquid assets on bank balance sheets in the manner of its reserve-requirement antecedent. It explains that, as a means of pre-positioning liquidity on bank balance sheets, monetary policy utilizing interest on reserves is preferable to the LCR because monetary policy can do so in the requisite quantity, without new rules and regulations, and without encumbering the reserve liquidity itself.

Section 3 addresses liquidity funding risks due to banks’ reliance on uninsured short-term wholesale funding in money markets. It explains the recycling of funds from low interest retail deposits through money markets to wholesale funding, in part, as an arbitrage around costly bank regulations. Thus, simple sufficiently elevated capital leverage ratio requirements that incentivize banks to manage their liquidity funding risks prudently, with minimally intrusive rules and regulations, are to be preferred to the more burdensome LCR requirement alternative.

**1) LIQUIDITY COVERAGE RATIO REQUIREMENT RULES**

The LCR is an extraordinarily complex regulation to implement. The complexity may be appreciated by the notice of the final LCR rule published in the *Federal Register*, which explains the final LCR rules in over 100 pages of responses to around 300 comments on the initial proposal.<sup>2</sup> A presentation produced by Davis Polk and

<sup>1</sup>Served as Senior Vice President and Policy Advisor at the Federal Reserve Bank of Richmond from 1993 to 2005.

<sup>2</sup>“Liquidity Coverage Ratio: Liquidity Risk Measurement Standards; Final Rule,” *Federal Register*, Volume 79, Number, 197, Friday October 10, 2014, Rules and Regulations, pp. 61440–541.

Wardwell LLP to help its clients comply with the LCR requirement incredibly takes 100 detailed slides to explain the final LCR rules.<sup>3</sup> There are 31 separate sections in the Davis Polk table of contents with headings such as: Which Organizations are Affected, When is the LCR Calculated, General Eligibility Criteria for HQLAs, Operational Requirements for Eligible HQLAs, HQLAs: Level 1 Assets, HQLAs: Level 2A Assets, HQLAs: Level 2B Assets, Denominator of LCR: Total Net Cash Outflow Amount, Prescribed Outflow and Inflow Rates, Falling Below 100 percent LCR During Periods of Stress, Basel Committee's Public Disclosure Standards for the LCR, *etc.*

Large, internationally active, or otherwise systemically important banking organizations are required to calculate their LCR each business day, with lower degrees of compliance required of less systemically important banks. To appreciate the level of detail involved in the computation of the LCR, consider in turn the numerator and the denominator of the calculation.

With regard to the numerator, bank assets are sorted into numerous buckets with varying discounts and caps for qualifying as HQLA based on the perceived robustness of their liquidity. For instance, level 1 assets include bank reserves and U.S. Treasury securities; level 2A assets including certain securities issued by U.S. Government-Sponsored Enterprises get a 15 percent discount when counted as HQLA and are capped at 40 percent of total HQLA; level 2B assets including some liquid and marketable corporate securities and some publicly traded common stocks get a 50 percent discount and are capped at 15 percent, and so on.

The denominator is calculated by adding up a bank's obligations and means of funding, multiplying each by an applicable outflow or inflow rate set by regulators on the basis of a combination of experience during the 2007–09 credit turmoil, banks' internal stress scenarios, and pre-existing supervisory standards. There are numerous obligation and funding categories and multiplier rates. For example, stable and fully insured retail deposits are multiplied by a 3 percent outflow rate; wholesale funding secured by overnight Treasury repurchase agreements is multiplied by a 0 percent outflow rate; undrawn committed lines extended by a bank to a wholesale nonfinancial entity are multiplied by a 30 percent outflow rate; payments contractually payable to a bank from nonbank wholesale counterparties are multiplied by a 50 percent inflow rate, provided that with respect to revolving credit facilities, the amount of the existing loan is not included in the unsecured wholesale cash inflow amount and the remaining undrawn balance is included in the outflow amount. The fraction of outflows that can be offset with potential inflows is capped at 75 percent. Such is the complexity of the LCR calculation.

## **2) PRE-POSITIONING LIQUIDITY ON BANK BALANCE SHEETS: LCR REQUIREMENTS VS MONETARY POLICY**

The pre-positioning of liquid assets on bank balance sheets via LCR requirements shares well-known deficiencies of reserve requirements as a means of liquidity provision. The most fundamental problem in employing the LCR is how high to set the required liquidity coverage itself. Set too high, the requirement may bind too tightly in aggregate, routinely elevating the implicit yield on liquidity too much, or causing the value of liquidity to spike inordinately during periods of financial stress. The result being depressed prices of illiquid assets and depressed yields on liquid assets. On the other hand, set too low the requirement may bind too loosely, in which case the burdensome complexity, enforcement, compliance costs of the LCR would count for little.

A second problem is that LCR requirements will encumber liquid assets on bank balance sheets available otherwise for banks to utilize in distress. And banks will build up excess, usable liquidity above and beyond LCR requirements. Banks' willingness to hold excess or usable liquidity under LCR requirements might even fall somewhat from what it was without the LCR.

Acknowledging the "encumbrance problem," regulators "affirm the principle that a covered company's HQLA amount is expected to be available for use to address liquidity needs in a time of stress. The agencies believe that the proposed LCR shortfall framework would provide them with the appropriate amount of supervisory flexibility to respond to LCR shortfalls."<sup>4</sup>

It is easy to see, however, that discretionary regulatory shortfall allowances could create problems of their own. Will regulators be lenient or reluctant to grant such allowances? Banks will find it difficult to predict regulatory inclinations; regulators,

<sup>3</sup>"U.S. Basel III Liquidity Coverage Ratio Final Rule, Visual Memorandum," Davis Polk and Wardwell LLP, September 23, 2014.

<sup>4</sup>"Liquidity Coverage Ratio: Liquidity Risk Measurement Standards; Final Rule," *Federal Register*, Volume 79, Number, 197, Friday October 10, 2014, Rules and Regulations, pp. 61517–8.

therefore, will find it more difficult to understand bank liquidity decisions. And if inadvertently made public, allowing the LCR to fall below 100 percent could signal a bank's weakness.

Regulators will also adjust on a discretionary basis discounts and caps on assets in the computation of HQLA, as well as outflow/inflow rates on obligation and funding categories in computing net cash outflows. Such adjustments would tighten or loosen the LCR requirement for the banking system as a whole. These discretionary adjustments could create problems reminiscent of those described above, especially if used to tighten or loosen the LCR in response to aggregate liquidity conditions. Moreover, adjusting the detailed asset, obligation, and funding computations underlying HQLA or outflow/inflow rates, or even the possibility of doing so, could complicate pricing of assets and in financial markets. Finally, new assets, obligations, and funding categories will evolve over time, partly for reasons of regulatory arbitrage in response to LCR regulation, complicating matters further.

For all the complexity and seeming comprehensiveness of the LCR, monetary policy remains the indispensable and most efficient provider of ultimate liquidity to the banking system in the form of reserve balances at the central bank. Monetary policy has long stabilized interest rates by accommodating the demand for required and excess reserves in periods of banking stress. Now for the first time in the United States, Federal Reserve monetary policy utilizing the power to pay interest on reserves acquired in 2008 has the power to pre-position unencumbered excess reserves on banking balance sheets in large quantity at market interest without reserve requirements, even as the Fed targets interest rates for other monetary policy purposes.<sup>5</sup> Thus, in December 2015 the Fed began to raise interest rates (by raising interest on reserves from  $\frac{1}{4}$  percent to  $\frac{1}{2}$  percent) with around \$3 trillion of excess reserves still on its balance sheet as a result of the expansion during and following the 2008 credit turmoil. The Fed will no doubt shrink aggregate bank reserves substantially as it normalizes its balance sheet. Going forward, however, monetary policy utilizing interest on reserves would be far less burdensome and a more efficient alternative to LCR requirements as a means of pre-positioning liquid assets on bank balance sheets to promote financial resilience.

### 3) ENSURING BANK FUNDING LIQUIDITY: LCR REQUIREMENTS VS. BANK CAPITAL LEVERAGE RATIO REQUIREMENTS

The LCR is designed in part to cover liquidity funding risks due to the use of uninsured and potentially unstable short-term wholesale liabilities. In the aggregate, short-term wholesale funding comes from money markets, which are funded, in part, by attracting retail deposits away from the banking system in the first place, so retail deposits can be repackaged for higher-interest wholesale funding at banks. In effect, the recycling of funds from retail to wholesale funding via the money market is a regulatory arbitrage. Banks readily pass intermediation and regulatory costs to retail depositors in lower retail deposit rates, but must pay higher interest when competing for institutional wholesale funding. Hence, the regulatory arbitrage is naturally perpetuated. Since institutional deposits are uninsured for the most part and managed professionally, they are more prone to being withdrawn at any sign of trouble. As a consequence, the banking system incurs ever greater liquidity funding risk.

As the economy and the financial system grow over time, retail funds are increasingly placed directly in money markets where they fund longer-term less liquid assets via "shadow banks." Nevertheless, the money market continues to be a net supplier of funds to the banking system via wholesale funding, which continues to grow steadily as a share of overall bank funding.

The question is: What is the best way to handle the growing funding liquidity risk in the banking system? One option is to utilize LCR requirements with all their enforcement and compliance costs, regulatory discretion complications, and market distortions outlined above.

A second option is to internalize bank balance sheet risks using simple, sufficiently elevated bank capital leverage ratio requirements. With enough of a bank's owners' capital at stake, a bank would have the incentive to manage prudently not only its credit and market risks but its liquidity risks too, so as not to jeopardize

<sup>5</sup> Before 2008 without the authority to pay interest on reserves, the Fed had to maintain a scarcity of reserves in the banking system sufficient to force banks to bid interest rates up to the Fed's target by competing to borrow the scarce reserves. The abundant reserves created today do not depress interest rates below interest on reserves because banks will not lend below the rate they get on reserves at the Fed. See Marvin Goodfriend, "Interest on Reserves and Monetary Policy," *Federal Reserve Bank of New York Economic Policy Review*, May 2002, Volume 8, Number 1, pp. 77–84.

its solvency due to a temporary loss of short-term funding. A high-enough simple, leverage ratio requirement would obviate the need for more burdensome LCR requirements. Regulatory costs would be contained, as would the regulatory arbitrage that helps perpetuate the growth of wholesale funding of banks and its attendant liquidity risks.

Moreover, a tightly binding bank capital leverage ratio requirement would deter intermediation through the more lightly regulated money markets. This it would do by attaching an elevated equity capital cost to the expansion of bank balance sheets when banks take up wholesale funding. Wholesale funding of banks would then leave money market rates commensurately lower than otherwise to cover the added balance sheet cost. Relatively lower money market rates, in turn, would deter intermediation through the more lightly regulated money markets.

In conclusion, rules and regulations should be simple enough so that bankers can manage banks without being expert in complex financial regulations. Simple, sufficiently elevated leverage ratio requirements offer the potential for regulatory relief. A high leverage ratio requirement wouldn't disadvantage banks that chose relatively riskless assets. Institutions with safe balance sheets should not be expected to earn much higher return on equity than safe assets themselves, excess returns would come from the value added of their financial services. On the other hand, if the required leverage ratio can be pushed high enough, then banks could be allowed to choose their risk assets with minimal regulations in return for a commensurably higher return on equity. The real question is: how high should the minimum leverage ratio be set, with adequate regulatory powers for monitoring and intervention, to justify the freedom for banks to fund and deploy assets efficiently?

#### **PREPARED STATEMENT OF HEIDI MANDANIS SCHOONER**

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TUESDAY, JUNE 7, 2016

Chairman Shelby, Ranking Member Brown, and Members of the Committee, thank you for this opportunity to participate in today's hearing on bank capital and liquidity regulation. In my testimony, I will make two central observations regarding the regulation of bank capital.

First, I will emphasize the importance of equity capital and the failure of current capital regulations to restrict heavy borrowing by financial institutions whose distress or default would cause collateral harm. While adequate capitalization is central to the safe operations of financial institutions, little justifies the current low levels of capital required under banking rules. More equity capital and less debt makes banks more resilient and better able to withstand inevitable economic crises. Current capital regulations were not derived from a valid analysis of the costs and benefits of different requirements. In fact, a growing body of research finds that current levels are unsafe and without justification from the public's perspective. The system can be made safer while at the same time correcting many distortions by significantly increasing equity capital.

Second, I will observe that the significant public resources allocated to the firm-specific supervisory process (through examination and stress testing) are not utilized efficiently given the dangerously low capital requirements. Supervision is difficult particularly given the conflict between the narrow interests of the banks in operating with so much debt and the public interest in making them safer by insisting, as normal creditors would have insisted, on much more equity to protect creditors and the public.

The risks associated with inadequate capitalization are borne by the public. These risks appear invisible and are thus tempting to ignore. I urge the Committee to consider a burden-shifting, precautionary approach to capital regulation that could more effectively protect the public from the negative effects of chronic under-capitalization that remains tolerated in banking.

#### **Capital Ratios: Important but Insufficient**

Financial institutions rely much more on borrowed money than other firms. One reason for this is that they have readily willing lenders in the form of depositors who need banks to smooth their uncertain need for cash. While tax advantages make debt an attractive source of funds for all firms (including nonbank firms), banks have added incentives. Banks borrow more than other firms because their creditors (*e.g.*, depositors) are not as demanding as the creditors of nonbank firms. The risks to banks' creditors are minimized by governments' explicit (*e.g.*, deposit insurance) and implicit guarantees that prevent their default. Banks' creditors thus

are considerably more complacent than normal creditors,<sup>1</sup> and it falls on regulators to protect the creditors from banks' excessive risk-taking. Perhaps most troubling is the fact that the heavy borrowing and Government subsidies feed on themselves. As a financial institution uses its borrowed money to expand, the expected Government subsidy increases allowing the bank to borrow more and grow even larger.

Banks that borrow less money to fund their operations are more resilient and therefore less likely to require Government assistance or to become distressed and stop lending or cause financial instability through their connections in the system. For this reason, rules that restrict a bank's borrowing (known as "capital regulation") have emerged as the cornerstone of modern bank regulation. Numerous studies demonstrate that better capitalized banks perform better during crises.<sup>2</sup> Capital regulation is appealing because, if done properly, it diminishes the need for other, potentially more intrusive, forms of prudential regulation.

Despite the manifold positive and normative claims supporting capital regulation, it suffers from limitations. First and foremost is the reality that the international regulation of capital, which began in the 1980s, did not prevent the devastating Financial Crisis in 2008. Using this measure, capital regulation has been a failure. The reason for this is that the requirements were much too low and allowed regulated institutions to take enormous risk and use much more borrowed money even while appearing to satisfy the rules. Simply put, capital regulation failed because it allowed banks to operate with far too little equity and much too much debt. Perhaps this should come as no surprise given the lack of any principled basis for current minimum capital rules. The Basel Committee on Bank Supervision never demonstrated support for setting the original risk-based capital ratio at 8 percent and yet that number continues to serve as a key point of reference. Moreover, U.S. bank regulators have never provided more than vague reasons for setting minimum capital ratios other than the observation that most banks were already in compliance with any newer, higher standards.<sup>3</sup>

In addition to the reality that current levels of capital (e.g., the 8 percent risk-based capital ratio referenced above or the 4 percent leverage ratio discussed below) lack foundation, the components of capital are subject to seemingly endless debate. Valuing assets, assessing the riskiness of assets, identifying off-balance sheet exposures—to name but a few—are all essential elements in the calculation of capital ratios and all are debatable and subject to error. Limitations in the various ratios are also apparent. The standard criticism of the leverage ratio, for example, is that it does not distinguish between types of assets. The typical criticism of the risk-weighted capital ratio is that it attempts to measure the riskiness of assets but does so poorly. Basel II was an attempt to improve risk weighting but was never fully implemented in the United States because of the FDIC's concerns that the newer, more complex risk assessment (which relied on banks' internal risk models for key inputs) would actually result in higher risk concentration. Importantly, all of these complications and limitations are reduced when the minimum required is not so minimal.

Given the obvious benefits of equity capital, policymakers raised regulatory capital requirements so that banks are now required to fund their operations with less debt than in the years prior to the Financial Crisis. With regard to the leverage ratio which compares capital to unweighted assets, U.S. banks have long been required under Federal Deposit Insurance Corporation regulations to maintain a leverage ratio of 4 percent.<sup>4</sup> More recently, bank-holding companies have also been

<sup>1</sup>Viral Acharya, Hamid Merhan, Til Schuermann, and Anjan Thakor, *Robust Capital Regulation*, Federal Reserve Bank of New York Staff Reports, no. 490 (June 2011).

<sup>2</sup>Sebastien Gay & Balthazar D. Bergkamp, *Does Basel Save Our Banks? The Effect of Basel I Capital Requirements on Bank Failures* (2015), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2629268](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2629268) [<https://perma.cc/5PMZ-BAKQ>]; Andrea Beltratti & Rene M. Stulz, *The Credit Crisis Around the Globe: Why Did Some Banks Perform Better?*, 105 J. Fin. Econ. 1, 8–10 (2012); Allen Berger & Christa H.S. Bouwman, *How Does Capital Affect Bank Performance During Financial Crises?*, 109 J. Fin. Econ. 146 (2013). An International Monetary Fund ("IMF") study found that banks with higher and better-quality capital were able to continue lending during the Financial Crisis. Tumer Kapan & Camelia Minoiu, *Balance Sheet Strength and Bank Lending During the Global Financial Crisis*, (Int'l Monetary Fund IMF Working Paper No. 13/102 May 2012).

<sup>3</sup>Eric A. Posner, *How Do Bank Regulators Determine Capital Adequacy Requirements*, 82 U. CHI. L. REV. 1853 (2015).

<sup>4</sup>12 C.F.R. § 325.3(b)(2). Certain highly rated institutions are held to a 3 percent leverage ratio. *Id.* § 325.3(b)(1). But that rule must be balanced against prompt corrective action rules (triggering certain agency action as bank capital deteriorates), which require an adequately capitalized bank to have a 4 percent or greater leverage ratio. *Id.* § 325.103(b)(2)(iii).

required to comply with a leverage ratio of 4 percent.<sup>5</sup> Consistent with the Basel III reforms, the United States has incorporated a more demanding supplementary leverage ratio. Bank-holding companies with assets equal to or greater than \$250 billion or on-balance sheet foreign exposures equal to \$10 billion must comply with a supplementary leverage ratio of 3 percent.<sup>6</sup> The supplementary leverage ratio includes on-balance sheet and many off-balance sheet exposures in the calculation of assets.<sup>7</sup> In addition, going beyond the standards set under Basel III, beginning on January 1, 2018, bank-holding companies with assets greater than \$700 billion must maintain an enhanced supplementary leverage ratio of 5 percent to avoid restrictions on dividends and discretionary bonus payments.<sup>8</sup> These newer capital ratios remain, however, much lower than many experts believe are adequate for safe operations and challenges persist regarding the inputs to those ratios which significantly impact their effectiveness.<sup>9</sup>

A growing number of authoritative commentators are urging significantly higher capital requirements. It is important to note that differences in percentages discussed by various experts may or may not signal a lack of consensus. The ratios involved rely heavily on key definitions (what constitutes equity, for example) and measurements (*e.g.*, what is the value of an asset). Even so, a consensus that more is better has formed. Economists Admati and Hellwig argue for levels in the 20 to 30 percent range relative to total assets and they note the measurement issues.<sup>10</sup> An eminent group of 20 scholars urged that if “at least 15 percent, of banks’ total, nonrisk-weighted, assets were funded by equity, the social benefits would be substantial.”<sup>11</sup> The Systemic Risk Council, a group of former policymakers and legal and financial experts, has written in support of a 10 percent nonrisk-weighted capital requirement.<sup>12</sup> Researchers at the Bank of England and Bank of International Settlements estimate that “optimal bank capital . . . should be around 20 percent of risk weighted assets.”<sup>13</sup> Brown-Vitter<sup>14</sup> would require the largest banks to comply with a 15 percent leverage ratio.

While few would deny the significant benefits of equity capital, the industry claims that equity is costly. Assertions regarding the costs of equity, however, identify potential private costs not social ones.<sup>15</sup> For example, if banks’ funding costs increase due to a higher equity requirement, then, it is said, banks will charge their loan customers higher interest rates. Yet these private benefits of excessive borrowing are funded through taxpayer-paid subsidies and also make the financial system fragile, thus being highly costly for society. If policymakers desire low-cost loans, then such subsidies can be provided directly to borrowers in ways other than through subsidies that reward fragile banks.

### Capital Supervision: Unrealized Promise of Safety and Soundness

The rules that govern bank capital, as discussed above, are often referred to as “minimum” capital ratios. Institutions that comply with the current ratios are not necessarily safe or unlikely to fail in a crisis, given that the requirements still allow extremely high levels of debt. Experience suggests that minimum capital ratios are a lagging indicator of a bank’s financial stability. Banks that failed or required Government support appeared adequately capitalized, under the then current rules,

<sup>5</sup> 12 C.F.R. § 217.10(a)(4).

<sup>6</sup> 12 C.F.R. § 217.10(a)(5) (supplementary leverage ratio of 3 percent applies to “advanced approaches Board-regulated institutions,” which is defined in 12 C.F.R. § 217.100(b) through 12 C.F.R. § 217.2). More capital is required to meet the supplementary leverage ratio than the simple (generally applicable) leverage ratio.

<sup>7</sup> 12 C.F.R. § 217.10(c)(4).

<sup>8</sup> 12 C.F.R. § 217.11(c). In addition, the FDIC-insured bank subsidiaries of such large institutions must maintain a supplementary leverage ratio of 6 percent to be considered well capitalized under prompt corrective action rules. 12 C.F.R. § 324.403.

<sup>9</sup> See, for example, FDIC Vice Chairman Hoenig’s discussion of the leverage ratio treatment of cleared derivatives. Thomas M. Hoenig, *The Leverage Ratio and Derivatives*, Presented to the Exchequer Club of Washington, DC (Sept. 16, 2015).

<sup>10</sup> Anat Admati & Martin Hellwig, *THE BANKERS’ NEW CLOTHES: WHAT’S WRONG WITH BANKING AND WHAT TO DO ABOUT IT* 182 (Princeton Univ. Press, 2013).

<sup>11</sup> Anat Admati *et al.*, *Healthy Banking System is the Goal, Not Profitable Banks*, FINANCIAL TIMES (Nov. 8, 2010).

<sup>12</sup> Letter from Sheila Bair, Founding Chair of the Systemic Risk Council, to Senator David Vitter (May 20, 2015).

<sup>13</sup> David Miles, Jing Yang, and Gilberto Marcheggiano, Optimal Bank Capital, Bank of England Discussion Paper No. 31. (2011). <http://www.bankofengland.co.uk/monetarypolicy/Documents/externalmpc/extmpcaper0031.pdf>.

<sup>14</sup> Terminating Bailouts for Taxpayer Fairness Act of 2013, 113th Cong. (2013).

<sup>15</sup> For a full exploration of this issue, see Anat Admati, *The Compelling Case for Stronger and More Effective Leverage Regulation in Banking*, 43 JOURNAL OF LEGAL STUDIES 535 (2014).

during the Financial Crisis.<sup>16</sup> Thus, the firm-specific supervisory process is meant to correct the deficiencies of the one-size-fits-all rule-based regulation.

The supervisory process plays a significant role in the regulation of banks' capital. Capital adequacy is a key measure in the supervisory process; it is listed as the first factor under the supervisory rating system, CAMELS.<sup>17</sup> Through the process of bank examination, regulators can (and do) determine that a particular bank must exceed the minimum capital ratios set in applicable rules. A study of capital enforcement actions brought against banks (virtually all smaller banks) from the period of 1993 to 2010 found that bank regulators had imposed a leverage ratio of between 4.5 percent and 28 percent through formal enforcement actions during the period studied.<sup>18</sup>

In response to the Financial Crisis, the Federal Reserve reformed many aspects of its supervision of large banks. With regard to capital supervision, large bank-holding companies with assets of 50 billion dollars or more are required by the Federal Reserve to submit an annual capital plan and are subject to the Federal Reserve's annual Comprehensive Capital Analysis and Review ("CCAR") process.<sup>19</sup> The Federal Reserve may object to a bank-holding company's capital plan and thereby prohibit the bank-holding company from making capital distributions (*i.e.*, paying dividends to shareholders, among other things). CCAR is an annual assessment that complements supervisory stress testing mandated under Dodd-Frank.<sup>20</sup>

CCAR includes both a qualitative assessment of a bank-holding company's capital planning process and a quantitative assessment of the bank-holding company's ability to maintain post-stress capital ratios above the applicable minimum ratios in effect.<sup>21</sup> By testing banks' regulatory capital under both expected and stressed (hypothetical) conditions,<sup>22</sup> CCAR, in effect, results in higher minimum capital requirements for large bank-holding companies. For example, with regard to the leverage ratio, while the minimum requirement under the Federal Reserve's rules is 4 percent, CCAR requires, in effect, higher leverage ratios for all 31 individual bank-holding companies reviewed. The 2015 CCAR projects a minimum leverage ratio of between 4.1 percent to 7.6 percent under severely adverse scenarios and between 4.5 percent to 9.1 percent for adverse scenarios for bank-holding companies with assets equal to or greater than \$250 billion or on-balance sheet foreign exposures equal to \$10 billion.<sup>23</sup> Note that the 2015 CCAR uses the general leverage ratio and not the stricter supplementary leverage ratio discussed above. The supplementary leverage ratio will also not be used in the 2016 CCAR.<sup>24</sup>

While the effective imposition of higher capital requirements through CCAR (or, for smaller banks, via administrative enforcement) sounds promising, this system is actually at odds with the concept of "prudential" regulation in that the supervisory process builds only incrementally upon weak minimum rules.<sup>25</sup> Consider the fact

<sup>16</sup>Thomas M. Hoenig, FDIC Vice Chairman, *Basel III Capital: A Well-Intended Illusion* (Apr. 9, 2013).

<sup>17</sup>CAMELS is an acronym for the examiners assessment of six key areas: Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity to market risk.

<sup>18</sup>Julie Andersen Hill, *Bank Capital Regulation by Enforcement: An Empirical Study*, 87 IND. L.J. 645, at 681 (2012). Hill's study includes data for enforcement actions that relied on other ratios as well, including risk-based capital ratios. The bank that was subjected to a 28 percent leverage ratio was identified as an outlier in Hill's study. Most banks subject to higher leverage ratios fell within a range of 12 percent and 17 percent.

<sup>19</sup>For a full discussion of the development and early experience with the CCAR program, see Robert F. Weber, *The Comprehensive Capital Analysis and Review and the New Contingency Bank Dividends*, 46 SETON HALL L. REV. 43 (2015).

<sup>20</sup>12 U.S.C. § 5365(i)(1) (2012).

<sup>21</sup>BD. OF GOVERNORS OF THE FED. RESERVE SYS., COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW 2015: ASSESSMENT FRAMEWORK AND RESULTS 9 (Mar. 2015).

<sup>22</sup>Stressed conditions are provided both by the Federal Reserve and developed by the bank-holding company itself. 12 C.F.R. § 225.8(d)(2)(i)(A).

<sup>23</sup>BD. OF GOVERNORS OF THE FED. RESERVE SYS., COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW 2015: ASSESSMENT FRAMEWORK AND RESULTS 15–18 (March 2015). The Federal Reserve has completed Comprehensive Capital Analysis and Review ("CCARs") every year since 2011. Results from year to year during that time are somewhat difficult to compare. This is because the CCAR quantitative assessment focuses on a bank-holding company's ability to maintain required minimum ratios during stress periods and the required minimum ratios have changed during this time period. BD. OF GOVERNORS OF THE FED. RESERVE SYS., COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW 2014: ASSESSMENT FRAMEWORK AND RESULTS 10, Box 2 (Mar., 2014).

<sup>24</sup>BD. OF GOVERNORS OF THE FED. RESERVE SYS., COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW 2016 SUMMARY INSTRUCTIONS 6 (January 2016).

<sup>25</sup>"The premise of the stress tests is the flawed notion that equity is scarce and expensive and that banks should have 'just enough.'" Anat R. Admati, *The Missed Opportunity and Challenge of Capital Regulation*, 235 NATIONAL INSTITUTE ECONOMIC REVIEW R4, R10 (Feb. 2016).

that the CCAR process is one that tests—hypothetically—a bank’s ability to maintain compliance with capital ratios under various stressed scenarios and recall the lack of any principled basis on which the minimum ratios were derived. Even assuming the value of testing against low equity levels, stress testing presents significant challenges. For example, the Office of Financial Research released a study raising serious concerns regarding stress tests’ evaluation of counterparty risk.<sup>26</sup> Broadly, stress tests rely heavily on modeling of future events and the Financial Crisis highlighted the folly of over reliance on such predictions.

Our combined rulemaking and supervisory system would be more effective if capital ratios applicable to all banks were set high—high enough so that the risk of serious undercapitalization, distress or insolvency is very small. This would mean that capital ratios would be consistent with a precautionary approach, erring on the side of more capital. Conceptually, capital regulation would be set and defined as “prudent” capital as opposed to “minimum” capital. While discussions of capital regulation tend to focus on systemically important firms, prudent capital requirements should not be limited to such firms. As discussed above, bank regulators routinely determine that small banks are undercapitalized even when they meet current minimum standards. Large regional banks may not be too big to fail, but they can contribute significantly to the depth of a financial crisis (Washington Mutual and Countrywide are obvious examples). It may be appropriate to have different thresholds based on bank size (as is the current practice with regard to minimum capital rules) but capital regulations for all banks should require much more significant equity than what is required under current rules. In addition, the supervisory process should continue to be engaged, dynamically, for assurance of compliance with rules and assessment of firm-specific risks. The supervisory process would, for example, trigger prompt corrective action well in advance of insolvency to build equity back to precautionary levels through retained earnings and other actions so the fear of insolvency does not rattle markets.

Prudent capital regulation would shift downside risk from the public to managers and equity investors who enjoy the upside and are thus the most natural candidates to bear, and thus care more about, the downside. In well-functioning markets, those who benefit most from banks’ profitability should bear the downside burden. Strong equity capital would correct the current distortion and establish safer banks and a more resilient financial system.

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<sup>26</sup> Jill Cetina, Mark Paddrik, Sriram Rajan, *Stressed to the Core: Counterparty Concentrations and Systemic Losses In CDS Markets*, OFR Working Paper 16–01 (Mar. 8, 2016).



Statement before the Senate Committee on Banking, Housing and Urban Affairs

## “Bank Capital and Liquidity Regulation”

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### Bank Capital and Liquidity Regulation

Chairman Shelby, Ranking Member Brown, and distinguished members of the committee, thank you for convening today's hearing on bank capital and liquidity regulations, and for inviting me to testify. I am a resident scholar at the American Enterprise Institute, but this testimony represents my personal views. My research is focused on banking, regulation, and financial stability. I have prior experience working on banking and financial policy issues at the Federal Reserve Board, the IMF and the FDIC. I served a three-year term as chairman of the Research Task Force of the Basel Committee on Banking Supervision. It is an honor for me to be able to testify before the committee today.

I will begin with a high-level summary of my testimony:

- Complex banking regulations are only justified when the complexity is necessary to mitigate the problem that requires a regulatory response.
- The Basel-based capital regulations adopted by the U.S. bank regulatory agencies are increasingly complex, and yet there is scant evidence that the complexity is necessary to meet the primary regulatory goals articulated in Congressional legislation.
- Basel-based regulatory capital ratios have been used to implement prompt corrective action legislation, but they have a terrible record of performance.
- Simple transparent measures of bank solvency—the so-called nonperforming asset coverage ratio (or NACR)—identifies weak and failing depository institutions far more efficiently than Basel-based regulatory capital measures.
- Academic studies suggest that deposit insurance fund losses could be reduced substantially by simply replacing Basel regulatory capital ratios with the NACR in the prompt corrective action rules.
- New minimum total loss absorbing capacity (TLAC) rules will make the capital regulations even more complex for large bank holding companies.
- The TLAC regulations will not solve the too-big-to-fail (TBTF) problem if TLAC resources are unavailable because the Secretary of Treasury cannot invoke a Title II resolution.
- TLAC “clean holding company requirements” make it less likely that the Secretary will be able to invoke Title II.
- The proposed use of TLAC resources in the Single Point of Entry resolution strategy extends new government guarantees to more than \$4 trillion in liabilities that are issued by the subsidiary banks of TLAC holding companies and are currently uninsured.
- Because TLAC imposes no constraints on the use of TLAC funds, there is no guarantee that TLAC will reduce the TBTF interest rate subsidy.
- All TLAC goals can be achieved by raising the capital requirements on TBTF bank subsidiaries and allowing the TLAC holding companies to fund the new capital with debt.
- Under the LCR and NSFR liquidity regulations, covered companies must simultaneously: (1) hold sufficient high quality liquid assets to fund operations for 30 days by fire-selling the assets; and (2) construct their asset, liability and off-balance sheet exposures so that they can wind down the institution for 12 months without access to any new funding.
- Regulatory agencies have not conducted an adequate cost-benefit analysis to support the need for the NSFR.

## 1. Introduction

Complex banking regulations often are justified on the grounds that the complexity is necessary to ensure the “safety and soundness of the financial system.” Few question this blanket assertion even though the attributes that characterize a “safe and sound” financial system have never been articulated by the Congress or the bank regulatory agencies that formulate bank regulations. The Dodd-Frank Act compounds this problem by introducing new regulations and regulatory responsibilities with the sole objective of preventing another financial crisis regardless of any countervailing considerations of the social costs that will be incurred to prevent a crisis.

In the Dodd-Frank Act, Congress directs regulators to develop and impose whatever regulatory constraints are necessary to ensure that the largest regulated financial institutions are safe from failure, and regulators have been hard at work to complying with these orders. Unfortunately, in issuing Dodd-Frank Act directives, Congress failed to appreciate that the resulting “safe” financial system that will be created by the new Dodd-Frank regulations is unlikely to be a “sound” financial system that efficiently meets the needs of the economy.

When a financial system is regulated to the point of being overly safe, financial institutions are forced to focus on satisfying government regulations instead of meeting the needs of their customers. Such a system will not efficiently meet the financial needs of the real economy. The allocation of credit will be distorted by the need to meet government safety mandates.

Government regulators should not be running privately owned banks. A sound and efficient financial system must be governed by market forces. It must have minimal barriers to entry, allow institutions to innovate to meet the needs of their customers, and it must allow poorly managed institutions to fail.

The current system of regulation looks nothing like an ideal system. It has discouraged new depository institution formation<sup>1</sup> and encouraged internationally active banks to reduce their foreign business exposures.<sup>2</sup> It has focused on generating minimum capital and liquidity regulations that are intended to make it virtually impossible for large institutions to fail. It values

<sup>1</sup> See, for example, <http://www.americanbanker.com/news/law-regulation/fdic-to-slash-probation-time-for-new-banks-1080290-1.html>

<sup>2</sup> See, for example, <http://www.wsj.com/articles/when-bigger-isnt-better-banks-retreat-from-global-ambitions-1464628433>

large institution safety over all else, without undertaking a serious effort to gauge the impact of new regulations on economic growth. While it is difficult to prove cause and effect, it is unlikely to be pure coincidence that the U.S. economy has posted the weakest recovery on record under this new financial regulatory paradigm where, increasingly, banking regulators are running the banks.

A more balanced approach to financial regulation would focus on a simplified set of rules that allow institutions to enter, innovate, compete and fail. Regulations should not be so complex that they are unintelligible to lawmakers, bankers and investors, and cannot be satisfied without the assistance of an army of specialized compliance experts. Regulations should be tailored so that banks are allowed to satisfy the needs of their customers while making a profit, without being constrained by unnecessary and socially counterproductive “safety and soundness” regulations.

When regulating insured depository institutions, the regulations that govern institution failures are particularly critical for promoting a safe and well-functioning financial system. If policy makers handle bank failures properly, many of the other management decisions related to bank safety and soundness can be left to bankers. The regulations surrounding bank failure are of primary importance because, unless regulations are properly constructed and enforced, banks can continue to raise funds using insured deposits and use them to “gamble for resurrection.” This problem is especially severe when a bank is in an exceptionally weak financial condition.

Insured depositories do not go bankrupt like traditional non-bank corporations because they can always borrow more insured money to pay their bills.<sup>3</sup> Banks can continue to operate when their book equity is zero or even negative. In such instances, banks will be tempted to gamble on high risk investments in the hope of producing large payoffs that would alleviate the banks precarious financial condition. The only way a bank fails is if regulators “pull the plug,” that is, revoke the bank’s charter and suspend its deposit insurance coverage.

If regulators do not “pull the plug” quickly enough, a failing bank can make investments that generate losses that are passed on to the Deposit Insurance Fund (DIF). When a failed-bank’s losses require DIF assistance, the failed bank’s equity investors have passed their losses

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<sup>3</sup> This is of course over-simplified. Banks also can borrow from the Federal Reserve if they have appropriate collateral and the Fed believes they are solvent. Also many larger banks issue non-deposit claims that might be difficult to roll-over should the bank’s solvency condition deteriorate. Weak banks may face regulatory restrictions on the use of brokered deposits and not be able to replace this non-insured funding. In such cases, the bank would be closed by regulators for failing to have adequate liquidity presumably before the largest portion of the non-insured debt matures.

onto other banks that pay into the deposit insurance system. The mutualization of losses is problematic. Bank shareholders retain the profits when the bank invests successfully and so they should bear losses when the bank's investment decisions sour. When losses can be passed on to the DIF, the expected returns bank shareholders earn on bank's investments is distorted in a way that favors making high risk investments. With good luck, the bank's shareholders keep the profits; a bad investment generates a loss for the DIF. It is exactly like betting with other people's money.

In theory, a failing bank should generate a loss for the DIF only in cases when the bank's equity value is negative or nearly negative when the bank is closed.<sup>4</sup> To prevent weak banks from gambling for resurrection and passing their losses to the DIF, Congress passed the Federal Deposit Insurance Improvement Act of 1991 (FDICIA) which instituted Prompt Corrective Action or PCA. PCA requires regulators to close weak insured depository institutions when the institutions still have a positive equity value so bank shareholders still have something to lose and not pass losses on to the DIF.

PCA requires bank examiners to close a bank within 90 days once its tangible equity capital ratio falls to 2 percent, or its Tier 1 leverage ratio or Tier 1 risk-based capital ratios falls below 3 percent. If everything works exactly as planned, the FDIC should have a modest buffer to cover the cost of managing the receivership, and only in exceptional cases should the failure impose losses on the DIF.

For PCA to work properly and shutter weak banks before they have an opportunity to impose losses on the DIF, regulators must (1) have an accurate measure of the resources available to buffer a bank's losses when it shuttered; and (2) act in a timely manner to shutter weak banks.

## **2. Simple Solvency Measures vs Complex Basel Regulatory Capital Ratios**

### ***PCA Capital Ratios and Regulatory Intervention***

PCA rules classify banks as well capitalized, adequately capitalized, undercapitalized, significantly undercapitalized and critically undercapitalized according to the magnitude of a bank's regulatory capital ratios. PCA requires supervisors to intervene and impose mandatory

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<sup>4</sup> The FDIC charges a failed bank receivership for the costs it incurs in managing the receivership, so even if the true value of bank equity is positive when a bank is closed, the failure might generate some small losses for the deposit insurance fund.

changes on bank management practices and require capital restoration plans for banks that are rated undercapitalized and significantly undercapitalized. Should a bank be classified as critically undercapitalized, its primary Federal regulator must close the bank and appoint the FDIC as receiver, or, with the consent of the FDIC, take an alternative action if the latter action is consistent with PCA goals.

The PCA intervention and closure rules are based on regulatory measures of bank capital which have evolved over the last quarter century as the Basel Committee on Banking Supervision introduced and serially revised their rules governing the minimum regulatory capital requirements for internationally active banks. While only a handful of U.S. banks are truly active internationally, U.S. bank regulatory agencies have incorporated the Basel Committee's definitions of regulatory capital into the regulatory capital definitions used to monitor the solvency condition of U.S. depository institutions.

U.S. PCA bank regulations currently reference four different measures of bank regulatory capital: common equity tier 1 capital; tier 1 capital; tier 2 capital; and, tangible equity. The definitions of the four capital measures and the regulatory ratios that use them are reported in Table 1.

Prior to the recent financial crisis, PCA used four regulatory capital ratios to rate a bank's capital adequacy: a bank's leverage ratio, its Tier 1 risk-based capital ratio, its total risk-based capital ratio and its tangible equity ratio. More recently, bank regulators have adopted amendments to the definitions of PCA capital ratios to make them consistent with Basel III international capital standards. At present, a bank's PCA capital adequacy rating is determined by five regulatory capital ratios: the bank's total risk-based capital ratio; its Tier 1 risk-based capital ratio; its common equity Tier 1 risk-based capital ratio, its Tier 1 leverage ratio and its tangible equity to asset ratio. The PCA regulatory capital ratios and corresponding regulatory capital definitions are reported in Table 1.

A bank's PCA capital adequacy rating is determined by a comparing the bank's five PCA capital ratios with set PCA thresholds. The current PCA regulatory capital ratio requirements for each specific PCA capital adequacy rating are reported in Table 2.<sup>5</sup>

<sup>5</sup> The capital definitions are those that appear on FFIEC call reporting forms and the PCA thresholds are taken from the current FDIC "Risk Management Manual of Examination Policies" (2.1-8).

If a critically undercapitalized bank cannot quickly raise new capital or find an acquirer, PCA requires that it be closed and resolved by the Federal Deposit Insurance Corporation which administers failed bank receiverships. The FDIC liquidates the bank's assets and pays liability claims, including those of insured depositors, according to a specific priority established in law.

**Table 1: Regulatory Capital Ratios and Regulatory Capital Definitions**

| PCA Regulatory Capital Ratios                 | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Common Equity Tier 1 risk-based capital ratio | Common Equity Tier 1 capital divided by risk-weighted assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Tier 1 risk-based capital ratio               | Tier 1 capital divided by risk-weighted assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Total risk-based capital ratio                | The sum of Tier 1 and Tier 2 capital divided by risk-weighted assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Leverage ratio                                | Tier 1 capital to average total assets minus ineligible intangibles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Tangible equity to total assets ratio         | Tangible equity divided by total assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Regulatory Capital Definitions                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Common Equity Tier 1 Capital (CET1)           | Qualifying common stock and related surplus net of treasury stock, retained earnings, and qualifying components of accumulated other comprehensive income, qualifying common equity tier 1 minority interests, plus or minus regulatory adjustments.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Tier 1 Capital                                | The sum of "Common Equity Tier 1 Capital" and "Additional Tier 1 Capital". It includes: common equity plus noncumulative perpetual preferred stock plus minority interests in consolidated subsidiaries less goodwill and other ineligible intangible assets. The amount of eligible intangibles (including mortgage servicing rights) included in core capital is limited in accordance with supervisory capital regulations.                                                                                                                                                                                                                                               |
| Tier 2 Capital                                | Tier 2 capital components consist of a limited amount of subordinated debt, cumulative perpetual preferred stock, allowance for loan and lease losses, total mandatory convertible debt and a portion of unrealized gains on available-for-sale equity securities. The maximum amounts of supplementary items that qualify as Tier 2 capital is limited to 100 percent of Tier 1 capital. In addition, the combined maximum amount of subordinated debt and intermediate-term preferred stock that qualifies as Tier 2 capital is limited to 50 percent of Tier 1 capital.                                                                                                   |
| Tangible Equity                               | Tangible equity is total bank equity plus qualifying minority interests in subsidiaries plus other allowable additions to Tier 1 capital less the sum of: net unrealized gains(losses) on available-for-sale securities; accumulated net gains (losses) on cash flow hedges; non-qualifying perpetual preferred stock; disallowed goodwill and intangibles; the cumulative change in fair value of all financial liabilities accounted for at fair value that is included in retained earnings and is attributable to changes in the bank's own credit worthiness; disallowed servicing assets and purchased credit card relationships; and, disallowed deferred tax assets. |

Table 2: PCA Capital Adequacy Requirements

| PCA Capital Adequacy Rating    | Total RBC Ratio | Tier 1 RBC Ratio | CET1 RBC Ratio | Tier 1 Leverage Ratio | Tangible Equity-Asset Ratio |
|--------------------------------|-----------------|------------------|----------------|-----------------------|-----------------------------|
| Well Capitalized               | ≥ 10%           | ≥ 8%             | ≥ 6.5%         | ≥ 5%                  | > 2%                        |
| Adequately Capitalized         | ≥ 8%            | ≥ 6%             | ≥ 4.5%         | ≥ 4%                  | > 2%                        |
| Undercapitalized               | < 8%            | < 6%             | < 4.5%         | < 4%                  | > 2%                        |
| Significantly Undercapitalized | < 6%            | < 4%             | < 3%           | < 3%                  | > 2%                        |
| Critically Undercapitalized    |                 |                  |                |                       | ≤ 2%                        |

*Prompt Corrective Action and the Financial Crisis*

The definitions of a bank's regulatory capital and the rules governing the minimum required levels of bank capital adequacy are complex presumably because regulators have determined that the complexity enhances regulators' ability to satisfy the objectives Congress established when it legislated PCA objectives. But recent events call such a presumption into question. History shows that the complex system of Basel-based regulatory capital requirements did not enhance the performance of Prompt Corrective Action during the recent financial crisis.

If everything works as planned, under the PCA closure rules, the FDIC should have a buffer to cover the cost of managing a failed bank receivership and a bank failure should impose only minimal losses on the Deposit Insurance Fund. Unfortunately, a large body of evidence suggests that PCA has not worked as planned.<sup>6</sup> While the average book value of failed banks' equity the quarter before failure has increased under PCA, deposit insurance loss rates have also increased—not decreased as PCA intended.

In the most recent financial crisis, estimates suggest that the average PCA capital ratio in the final quarter before banks failed was +1.5 percent.<sup>7</sup> Prior to FDICIA, over the period 1986-1992, bank capital ratios averaged about -1.5 percent the final quarter before institutions were closed.<sup>8</sup> The imposition of PCA is associated with a higher bank capital ratios at the time a bank fails, but average failed bank loss rates have also increased.

<sup>6</sup> See, for example, GAO (2011), Financial Stability Oversight Council (2011), GAO (2015), Chernykh and Cole (2015), Cole and White (2015) or Balla, Prescott and Walter (2015).

<sup>7</sup> The estimates are for banks that failed between 2007 and 2013 as calculated by Balla, Prescott and Walter (2015).

<sup>8</sup> *Ibid.*

Table 3 reports estimates of the average loss rates on FDIC managed receiverships before FDICIA and after FDICIA using data reported by the FDIC. These calculations exclude the losses from savings and loan institutions that were resolved by FSLIC or RTC because these loss rates are unlikely to be comparable to the loss rates on bank failures resolved using the Bank Insurance Fund.

**Table 3: Loss Rates on FDIC Receiverships before and after FDICIA**

|                                             | Pre-PCA<br>1986-1991 | Post-PCA<br>1992-2014 |
|---------------------------------------------|----------------------|-----------------------|
| number of receiverships                     | 1021                 | 549                   |
| total assets of banks at<br>time of failure | 149,086,233          | 243,375,351           |
| total receivership losses                   | 20,792,247           | 46,801,222            |
| asset-weighted average<br>loss rate         | 13.95%               | 19.23%                |
| simple average loss rate                    | 21.74%               | 23.58%                |

Source: Author's calculations based on publically available FDIC insurance resolution data (HOSB data). Assets and Losses are in 1000s of dollars. The calculations exclude FSLIC and RTC receiverships because the experience of the 1980s savings and loan crisis are expected to differ from bank resolution costs for reasons other than PCA. The simple average loss rate is the simple average of the individual receivership loss rates.

The public data on FDIC receiverships suggests that failed bank loss rates have increased under PCA. While the exact cause of the increase in loss rates is unclear, the data show that PCA has not been effective at reducing loss rates to the deposit insurance fund.<sup>9</sup> The reason that PCA has not worked as envisioned is an inherent weakness in the Basel-based definitions of regulatory capital.

<sup>9</sup> There are many potential explanations for why failed bank receivership loss rates may have increased. One possible explanation is if loss rates are linked to the severity of a financial crisis. It is reasonable to think that the more severe a crisis, the greater the reduction in the demand for a failed bank's deposit franchise or assets. However, it is an open question whether the banking crisis of the late 1980s was more or less severe than the most recent banking crisis. An alternative explanation is regulatory forbearance. Losses tend to accumulate if weak and failing banks are not closed promptly. Some [Cole and While (2015)] have argued that the regulators were especially slow in closing banks in the most recent crisis. This might happen for example if PCA capital ratios are a lagging measure of a bank's true capital adequacy condition and thereby retard PCA's mandatory closure process.

Banks loans will appear profitable until the bank, the bank examiner, or its auditor requires the bank to reserve for possible loan losses. Reserves for the potential losses on loan, leases or held-to-maturity securities reduce the bank's reported income and the carrying value of its loans, leases and securities. The large losses suffered by the recent FDIC failed bank receiverships—notwithstanding the fact that many of these banks entered resolution with positive PCA capital ratios—is a clear indication that these banks had not adequately provisioned for losses in the quarters prior to their failure.

Because regulators have been too cautious in forcing banks to provision for substandard and doubtful loans, leases and held-to-maturity securities, bank regulatory capital ratios are a lagging indicator of bank solvency. Without proper provisioning, regulatory capital ratios can significantly overstate the solvency condition of banks, especially when the economy enters the downturn phase of a credit cycle.

Bank regulators are often reluctant to force banks to make provisions before losses materialize. One important reason is the conflict between generally accepted account practices and conservative regulatory practices. Accountants object to banks recording loan loss provisions (and reducing reported income) unless there is ample evidence that loan losses are inevitable. During late stages of a credit cycle boom, before defaults materialize and collateral backing loans and securities depreciates, accounting standards give banks an authoritative argument for resisting regulatory suggestions for increased provisions. Regulators can be reluctant to require provision when accounting standards do not require them.

#### *The Nonperforming Asset Coverage Ratio*

The source of weakness in the current PCA framework is PCA ratios inability to anticipate bank losses as they actually materialize. In its 2011 recommendations for PCA reforms, the GAO (p. 25) found that bank nonperforming assets were highly predictive of a subsequent deterioration in bank performance in the recent financial crisis:

*[L]arge differences in the level of nonperforming loans between healthy banks (our peer group) and banks that ultimately failed were evident well before the bulk of bank failures in 2009–2010. Starting in 2006, the difference between the two groups of banks increased as nonperforming loans grew dramatically over the next 3–4 years for banks that ultimately failed, but only modestly for healthy banks*

The idea of modifying the PCA rules to use a solvency measure driven by the level of nonperforming assets instead of regulatory capital has been further developed by Chernykh and Cole (2015). They investigate the viability of using a nonperforming asset coverage ratio or NACR<sup>10</sup> to create accurate warning signals well before regulatory capital measures signal bank weakness. A bank's nonperforming asset coverage ratio, or NACR is defined as,<sup>11</sup>

$$\text{NACR} = [\text{book equity} - \text{nonperforming assets} + \text{loan loss reserves}] \div \text{total bank assets}$$
 where nonperforming assets are defined as,

nonperforming assets = 20% assets past due 30 to 89 days  
                                   + 50% assets past due 90 days or more  
                                   + assets in nonaccrual status  
                                   + real estate owned assets

NACR is easily calculated using regulatory data on a bank's nonperforming assets. Data on a bank's loans and leases that are overdue 30-89 days, over 90 days, nonaccrual assets, and the value of repossessed real estate are reported quarterly on a bank's regulatory call reports. These data are made publicly available with a very short time delay.

The NACR statistic assume that the bank will suffer losses should its nonperforming assets be liquidated. The loss assumptions are: 20 percent on its assets past due 30 to 90 days; 50 percent on its assets past due 90 days on which the bank is still accruing interest; and 100 percent on assets for which it is no longer allowed to accrue interest income; and 100 percent on repossessed real estate.

These NACR loss assumptions are simple rules of thumb that are widely used by bank examiners to quickly judge the adequacy of a bank's loan loss reserves. If a bank's past due and nonperforming assets increase, and it does not commensurately increase its loan loss provisions, the bank's NACR ratio will decline and reflect asset quality weakness. In contrast, the bank's PCA regulatory capital ratios may not reflect any change in the bank's condition.

Chernykh and Cole (2015) show that NACR is a timelier and more accurate predictor of bank failure than the PCA Basel-based capital ratios used during the prior crisis. In related research, Cole and White (2015) estimate that, if PCA had used a closure rule of  $\text{NACR} \leq 2\%$  in

<sup>10</sup> Chernykh and Cole use the acronym NPACR. In Kupiec (2016) I shorten the abbreviation to NACR.

<sup>11</sup> This definition of NACR must be multiplied by 100 to be expressed as a percentage.

the recent financial crisis, DIF losses would have been reduced by about 27 percent from current FDIC resolution cost estimates.

Another way to assess the performance of Basel-based bank regulatory capital ratios is to compare them over time to the simpler and more transparent NACR alternative solvency measure. Between 2001 and 2015, the U.S. banking system went through a full boom-bust-recovery cycle. If bank regulatory capital ratios are truly indicative of the solvency condition of the banks in the system, then we would expect to see a clear boom-bust-recovery pattern in the evolution of the distribution of the banking system's regulatory capital ratios over this period. If banks are allowed to maintain optimistic loan loss reserves, then banks' regulatory capital ratios will fail signal the true deterioration in the condition of the banking system.

For each year between 2001 and 2015, I use the December regulatory "call report" data and calculate for each bank its Tier 1 leverage ratio, its Tier 1 risk based capital ratio (Tier 1 RBC) and its nonperforming asset coverage ratio (NACR). Then for every year, and each ratio, I rank banks according to their solvency ratios—from smallest to largest. From the ranked data, I construct the sample cumulative probability distribution for the banking systems' solvency ratios. For example, the cumulative probability distributions for banking system's respective solvency ratios as of December 2008 are plotted in Figure 1.

The plots in Figure 1 provide three different characterizations of the solvency condition of the U.S. banking system as of the end of December 2008. The NACR line crosses the 0-axis at about 3.5 percent, meaning that, should all banks be closed and liquidated at year-end 2008, 3.5 percent of the banks in the system would be expected to generate a loss before charging any FDIC administrative cost of liquidating the receiverships. According the Basel-based Tier 1 leverage ratio and Tier 1 risk-based capital ratios, none of the banks in the system had negative capital, and all were well above the 3 percent "critically undercapitalized" PCA threshold, suggesting that all of these banks would have a positive value in liquidation.<sup>12</sup>

<sup>12</sup> To make the graph scale manageable, Figure 1 cannot show the details of the distributions below the 1 percent quantile. In the very extreme left tail of the banking system distribution of solvency ratios, the Basel-based ratios do identify some distressed banks. Each Basel-based ratio suggests that 6 banks had negative capital (the 0.07 percent quantile of the system distribution), and roughly 20 banks violated the 3 percent critically undercapitalized PCA threshold (the 0.20 percent quantile of the system distribution). In other words, the Basel-based ratios suggest only a handful of banks are in trouble while the NACR suggests that hundreds of banks are insolvent on a liquidation basis (3.5 percent of banks in the system=291 individual banks).

**Figure 1: Cumulative Distribution of U.S. Insured Depository Institutions Solvency Ratios in December 2008**

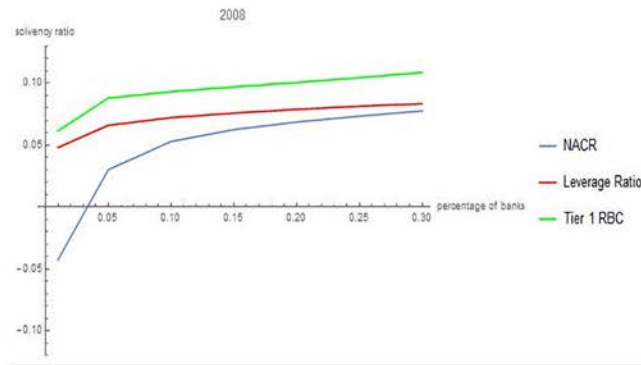
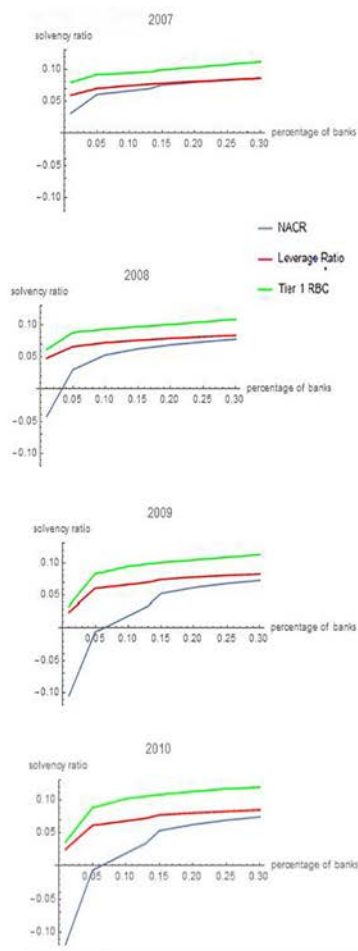


Figure 2 shows how these three alternative measures characterize the evolution of the solvency condition of the weakest 30 percent of the banks in the system over the core years of the financial crisis. In Figure 2, the NACR solvency ratio mirrors the true weaknesses as they develop in the banking system while the Basel-based Tier 1 leverage ratio and Tier 1 RBC ratio barely register any change in the solvency conditions of these banks over the financial crisis period.

The complexity of the Basel-based measures of bank regulatory capital do not enhance regulators' ability to meet the objectives that Congress set out in PCA legislation. The simple and transparent NACR ratio outperforms the complex collection of Basel regulatory capital measures.

The Basel-III changes that have been incorporated into bank regulatory capital definitions will not lead to improved PCA performance. Minimum regulatory capital regulations and prompt corrective action rules need to be amended to replace Basel-based capital measures with a solvency measure sensitive to the adequacy of loan loss reserves relative to nonperforming and nonaccrual assets

Figure 2: Evolution of Banking System Solvency Measures through the Financial Crisis



It would be straightforward to design a simplified regulatory capital and prompt corrective action framework using the NACR for the majority of banks in the system that would

perform far better than the current complex system of capital regulation.<sup>13</sup> The PCA could be modified to use NACR or a measure closely related to NACR in place of the Basel-based capital ratios.<sup>14</sup> The PCA system could be reduced to focus on two thresholds: (1) and high NACR threshold that requires regulators to closely examine the institution and impose any remedial measures that may be required to return the institution to a safe operating conditions; and (2) and lower NACR threshold that requires an acceptable capital restoration plan, franchise sale or resolution within 90 days of triggering the threshold.

While the exact levels of these two PCA thresholds would undoubtedly be the subject of debate, existing evidence suggests that thresholds set close to 6 percent and 3 percent respectively would be adequate to satisfy Congressional PCA objectives for the vast majority of depository institutions. PCA rules could also be amended to include an additional buffer in the minimum PCA thresholds for the largest depositories, those U.S. institutions considered to be “systemically important.” These higher PCA thresholds would substitute for the GSIB<sup>15</sup> capital surcharges currently imposed under the Basel III based rules.

### 3. Complex Minimum TLAC Rules will not Solve TBTF

Federal Reserve Board’s proposed Total Loss Absorbing Capacity or TLAC regulation will require GSIB parent holding companies to issue and retain an outstanding balance of TLAC-compliant subordinated debt whose sole purpose is to absorb losses in a Dodd-Frank Title II resolution.

My analysis of the proposal suggests that TLAC will not remove the risk that the largest financial institutions may require future taxpayer assistance should the country face another financial crisis. Indeed the uncertainties associated with using TLAC in a Dodd-Frank Title II resolution are likely to create a new important source of systemic risk — uncertainty about which investors bear losses in a GSIB resolution — a risk that did not exist in the prior financial crisis. Moreover, the language of the proposed TLAC rule promises new protections to a huge volume of outstanding GSIB operating subsidiary liabilities. These new protections will provide tangible

<sup>13</sup> Additional research is needed to determine whether the NACR could be further improved. For example, I can imagine that for some banks PCA performance might be further improved by including some portion of a bank’s undrawn committed lines of credit in the nonperforming loan measure. I am not aware of any research that has investigated such a modification.

<sup>14</sup> An empirical argument for the 6 percent and 3 percent thresholds are discussed in Kupiec (2016).

<sup>15</sup> GSIB is an acronym for global systemically important bank.

too-big-to-fail (TBTF) benefits to eight GSIBs that are not accessible to smaller institutions that are not eligible for a TLAC-Title II resolution. As a result, TLAC will not end TBTF, but instead will ensure that the largest financial institutions continue to benefit from a funding cost advantage created by their GSIB status as the TLAC plan makes it clear that regulators intend to preserve GSIB subsidiary institutions intact while smaller institutions will continue to fail and be liquidated under deposit insurance resolution rules.

The TLAC Notice of Proposed Rulemaking, and the companion Financial Stability Board TLAC proposal<sup>16</sup>, argue that TLAC will solve a number of important policy issues. However, neither document provides evidence to support these claims. There are many conceptual and practical issues raised by the TLAC proposal.

The first issue of concern is regulators' failure to address or discuss the possibility that that TLAC will not work as planned. The TLAC proposal presumes that a Title II resolution can be used to keep a GSIB's critical operating subsidiaries open and operating. But what happens if a Title II resolution cannot be authorized? While this is clearly a possibility under the Dodd-Frank Act language that authorizes the use of Title II orderly liquidation authority, the TLAC proposal is completely silent on this issue.

Secondly, TLAC relies on the use of a Title II resolution, but the "clean" parent holding company requirements in the TLAC proposal make it *less* likely that a GSIB parent company would be in danger of default if a critical operating subsidiary failed. The clean parent requirements will make the parent holding company less exposed to liquidity pressures and make it more difficult for the Secretary of Treasury to conclude that a GSIB parent company is in danger of default. Should the courts subsequently rule in favor of GSIB parent company shareholders and TLAC investors who seek damages for the illegal seizure of their property in a Title II resolution, taxpayers will ultimately be on the hook for the losses regulators illegally transferred to parent holding company investors.

A third important but unrecognized issue created by the TLAC proposal is that TLAC extends new government guarantees on nearly \$5 trillion in GSIB subsidiary liabilities that are not currently insured by Federal deposit insurance. The government charges nothing for the new guarantees extended in the TLAC proposal, but merely asserts that TLAC debt investors will suffer the losses that would otherwise have been imposed on the subsidiary liabilities of these GSIBs

<sup>16</sup> <http://www.fsb.org/wp-content/uploads/TLAC-Condoc-6-Nov-2014-FINAL.pdf>

should these subsidiaries face losses that tested their solvency. The assertion that the losses associated with these new guarantees will be paid for by TLAC investors incorrectly presumes that a Title II resolution is always an option when a critical GSIB subsidiary fails.

A fourth issue is that TLAC requirements, as they are currently proposed, will *not* remove or even limit the TBTF interest rate subsidy currently enjoyed by the largest financial institutions. The proposed TLAC regulation requires GSIB parent holding companies to issue and maintain minimum amounts of TLAC-compliant debt, but the proposal does not restrict how new TLAC funds are used. The GSIB's investment strategy for TLAC funds has important implications for a GSIB's TBTF funding subsidy. Unless TLAC funds are down-streamed to critical operating subsidiaries—primarily large subsidiary banks—and the funds are used to replace insured deposit funding (the first best solution) or at least be required to replace uninsured subsidiary liabilities, the GSIBs' TBTF funding cost subsidies will not be reduced. Indeed, the TBTF subsidies are likely to increase if investors believe the government's promise to protect nearly \$5 trillion in formerly uninsured subsidiary liabilities to be credible.

Finally, TLAC adds new complexity to a complex system of capital and other prudential regulations. Virtually all of the regulatory goals of TLAC could be achieved by imposing higher minimum regulatory capital requirements on GSIBs' critical operating subsidiaries.<sup>17</sup> Higher minimum capital requirements at GSIB critical operating subsidiaries is a much more transparent approach than the TLAC proposal. Furthermore, it would not suffer from the legal uncertainties that may prohibit Title II resolution and protect TLAC investors from bearing losses. A detailed discussion of these five important issues follows.

***The alleged benefits of TLAC are only available in a Dodd-Frank Title II Resolution. If the GSIB parent holding company is not eligible for a Title II resolution, TLAC investors will not be required to bear the loss of a failing bank subsidiary.***

Before TLAC can be available to recapitalize failing subsidiaries, the GSIB parent company must be in default or in danger of default and the Secretary of the Treasury must substantiate that the GSIB's failure in a bankruptcy proceeding would cause serious disruptions to the US financial system.

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<sup>17</sup> The new equity at subsidiaries could be funded with parent holding company debt issues similar to what is envisioned in the proposed TLAC regulations. However, in my opinion, there is no need to require holding companies to issue debt. The holding company management should decide how to raise any needed capital injection.

The Dodd-Frank Act created Orderly Liquidation Authority in Title II to allow financial institutions to fail using an administrative process managed by the FDIC instead of resolving the institution in judicial bankruptcy. The underlying assumption, although never substantiated, is that a government-run resolution process is quicker, more orderly, and less destructive of remaining franchise value than a court-administered bankruptcy.<sup>18</sup>

The TLAC rule is intended to facilitate a Title II resolution using the FDIC's proposed single point of entry (SPOE) resolution strategy.<sup>19</sup> Under this strategy, the parent holding company is taken into a Title II receivership. Resources owned by the GSIB parent company's shareholders and TLAC debt investors are then used to recapitalize the failing GSIB's operating subsidiaries, or at least the ones that regulators believe must be kept open and operating in order to prevent a wider financial crisis.

The regulatory view expressed in the Federal Reserve Board's TLAC proposal as well as in the FDIC's proposed SPOE strategy is that the survival or failure of the GSIB's parent holding company has no bearing on US financial stability. The GSIB parent company is viewed as a shell corporation with little or no interaction with financial markets outside of the GSIB group. The parent merely owns financial claims issued by its subsidiaries and manages the group.<sup>20</sup> Regulators believe that GSIBs are important to financial stability only because they own and manage important operating subsidiaries—large bank subsidiaries, broker dealers, or other large financial subsidiaries—that provide critical financial services that must be maintained to avoid triggering a financial crisis.

If a so-called “clean” GSIB parent company<sup>21</sup> suffers losses that put it in danger of default, it is only because one or more of its critical operating subsidiaries has suffered losses which are large enough to render one or more of the GSIB's operating subsidiaries insolvent. To prevent these operating subsidiaries from failing, the government will take the GSIB parent company into

<sup>18</sup> In a recently published paper, two FDIC economists show that the bank receivership process on average takes more than twice as long (about 5 years on average) as a bankruptcy proceeding (about 2 years on average). See Bennett and Unal (2014), “Understanding the Components of Bank Failure Resolution Costs,” *Financial Markets, Institutions & Instruments*, pp. 349-389. Post-FDICIA through 2014, the simple average loss rate on failed bank receiverships calculated from publically available FDIC data is 23.6 percent.

<sup>19</sup> [https://www.fdic.gov/news/board/2013/2013-12-10\\_notice\\_dis-b\\_fr.pdf](https://www.fdic.gov/news/board/2013/2013-12-10_notice_dis-b_fr.pdf)

<sup>20</sup> Indeed the “clean parent holding company” requirements proposed in the TLAC rule are intended to limit the parent companies transactions to ensure that failure of the parent company does not trigger the failure of its operating subsidiaries.

<sup>21</sup> A clean GSIB parent company is essentially a parent company that does not have outstanding financial contracts or investments other than its investment in operating subsidiaries that could trigger a parent company default.

a Title II receivership and use its assets to recapitalize the GSIB's operating subsidiaries and keep them from failing. Thus, if regulators believe that the continued operation of a large bank, broker dealer, or other GSIB operating subsidiary is critically important to financial stability, the FDIC will use parent company resources to cover the failing subsidiaries' losses and recapitalize the subsidiary to keep it from failing. This process is the only strategy the FDIC has made public for using its Title II resolution powers to "liquidate" a large failing financial institution without triggering a financial crisis.

When it comes saving a large failing GSIB bank subsidiary, one that renders the GSIB parent company in danger of default, there is an important legal obstacle that could prevent the FDIC's from using the SPOE plan. The problem arises when the parent company resources are insufficient to recapitalize the failing GSIB bank subsidiary to keep the bank from failing. New TLAC requirements are regulators' proposed fix for this potential problem.

If the GSIB's failing subsidiary is an institution other than a bank,<sup>22</sup> the FDIC is empowered to borrow from the Treasury using the Dodd-Frank Orderly Liquidation Fund to inject resources to keep a GSIB subsidiary from failing. However, Dodd-Frank expressly prohibits the use of the Orderly Liquidation Fund if the proceeds of the loan are used to benefit the Deposit Insurance Fund. It is difficult to see how using borrowed orderly liquidation funds to recapitalize a failing bank subsidiary would not violate this provision of Dodd-Frank Act.

The regulatory solution is to require GSIBs' parent holding companies to maintain a minimum amount of outstanding long-dated subordinated debt (TLAC debt). The resources generated by this TLAC debt can be used recapitalize a failing bank subsidiary in a Title II resolution after the parent company's equity capital is exhausted. TLAC debt, in conjunction with the parent holding company minimum regulatory capital requirements, are intended to be large enough to absorb any failing subsidiary bank's losses (absorbed by equity) and then to recapitalize the subsidiary institution using resources contributed by the GSIB parent company's TLAC debt investors, so that the bank subsidiary remains adequately capitalized, open and operating.

Another problem arises if TLAC debt resources are unavailable to recapitalize a GSIB's failing subsidiary bank. This problem could happen, for example, if the subsidiary bank failure does not put the GSIB's parent company in danger of default, or if the Secretary of the Treasury decides against using Title II. In a recently published paper, Peter Wallison and I demonstrate that

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<sup>22</sup> I use the term bank to refer to any insured depository institution.

many of the GSIBs' parent companies could absorb the capital losses associated with the failure of their largest bank subsidiary without themselves becoming insolvent.<sup>23</sup> If this were to happen, Title II orderly liquidation is not an option, and TLAC debt resources will be unavailable to recapitalize the failing bank subsidiary.

Some might argue the Federal Reserve's source of strength powers will allow the Federal Reserve Board to require the GSIB's parent company to recapitalize a subsidiary bank regardless of the bank's loss. However, prior legislation and the courts have set limits on the losses the Federal Reserve Board can impose on a bank's parent holding company using its source of strength powers.<sup>24</sup> The balance of the evidence leaves open the possibility that a large bank subsidiary of a GSIB could fail without putting the GSIB parent company in danger of default which would prevent the use of a Title II resolution.

Another scenario in which Title II may be unavailable is a condition similar to the last financial crisis. Should a number of GSIBs simultaneously suffer losses and be in danger of default, the Secretary could authorize multiple Title II resolutions. However, such an action would place a large percentage of U.S. banking system assets under direct government control and FDIC management. It is improbable that the FDIC staff would have the capacity to manage multiple Title II resolutions simultaneously. It is also highly unlikely that financial markets would be calmed by the prospect of multiple simultaneous Title II resolutions. In fact, the act of taking multiple GSIBs into a Title II resolution would almost certainly spark a financial crisis that would shut down normal financial market functions.

If a Title II resolution is unavailable, a large GSIB bank subsidiary would either have to be rescued with taxpayer support, sold to another large healthy GSIB creating a new larger GSIB, or be allowed to fail and be resolved in a Deposit Insurance Fund receivership. Regulators have already argued that the GSIB subsidiary bank failure option would likely have systemic implications—which is reason for Title II, SPOE and TLAC in the first place. However, with Title II powers now in place, and the regulators' TLAC and SPOE plans to use them publically revealed, the failure option becomes even more problematic. TLAC and SPOE promise to protect *all* the

<sup>23</sup> Paul Kupiec and Peter Wallison (2015), "Can the 'Single Point of Entry' strategy be used to recapitalize a systemically important failing bank?" *Journal of Financial Stability*, 20, pp. 184–197.

<sup>24</sup> I provide an extensive review of the history and litigation associated with the Federal Reserve Board's source of strength doctrine in, Kupiec (2015), "Is Dodd-Frank Orderly Liquidation Authority Necessary to Fix Too-Big-to-Fail?" <http://ssrn.com/abstract=2678234> or <http://dx.doi.org/10.2139/ssrn.2678234>

liabilities of important GSIB operating subsidiaries. Reneging on these explicit promises would almost certainly strengthen the negative systemic impact of a large bank failure compared to market reactions in the last financial crisis.

To summarize, even if the TLAC rule works according to the Federal Reserve Board plans in a Title II resolution, there is no guarantee that a Title II resolution will be available should a large systemically important bank subsidiary fail. If Title II is unavailable, the TLAC and FDIC SPOE plans cannot be used to keep the large systemically important bank subsidiaries open and operating. Absent open bank assistance, the failing GSIB bank subsidiary will face the deposit insurance bank resolution process, a fate which regulators believe could spark a wider financial crisis. The proposed TLAC and related SPOE proposals do not address this possibility.

*The “clean” parent holding company provisions of the proposed TLAC rule will make it more difficult to use a Title II resolution.*

The current TLAC proposal will increase the probability that regulators could face a large systemically important bank failure without being able to use a Title II resolution. The “clean” parent holding company component of the TLAC rule limits a GSIB parent company’s use of short-term debt and its issuance of qualified financial contracts. In reality, the inability of a financial institution to roll over its maturing short-term debt, or the default on its qualified financial contract collateral agreements are the primary reasons why financial firms are forced into bankruptcy. Typically, bankruptcy is triggered by an inability to meet liquidity demands and is only rarely if ever triggered by long-term debt covenant violations or balance sheet insolvency.

By limiting the short-term liquidity demands faced by a GSIB’s parent company, the “clean” parent holding company requirements in the current TLAC proposal will make it less likely that a GSIB parent company will be in default or in danger of default should a large bank subsidiary suffer crippling losses. If the GSIB parent’s capital structure is primarily comprised of equity and long-term subordinated debt with little repo or other short-term debt financing that is vulnerable to “run” risk, there is little likelihood that a parent GSIB would quickly and unquestionably become in danger of default. The use of Title II, if approved, would undoubtedly spark court cases and years of litigation as parent company investors pursued compensation for the unlawful taking of their property.

*The proposed TLAC rule extends trillions of dollars in new implied government guarantees for the liabilities issued by GSIB subsidiaries.*

The TLAC proposal, and the closely related FDIC SPOE resolution strategy, discuss a Title II resolution strategy that will protect *all* the liabilities of GSIB operating subsidiaries, or at least those that regulators deem “critically important” for the function of the US financial system. The regulators’ public plans envision that, should any of these operating subsidiaries suffer losses that endanger their solvency, the losses will be transferred to the GSIB’s parent company using a Title II resolution and the liabilities of the operating subsidiaries will be fully protected against loss. Thus the TLAC proposal, in effect, extends an implied government guarantee to all the liabilities issued by GSIB operating subsidiaries.

Based on publicly available data from September 2015, the bank subsidiaries owned by the eight U.S. GSIBs had total assets of \$7.54 trillion. GSIB assets comprise about 47.4 percent of all assets in the U.S. banking system. GSIB subsidiaries issued about \$6.73 trillion in liabilities, or about 47.7 percent of all liabilities issued by U.S. banks. Of the GSIBs’ subsidiary bank liabilities, about \$2.4 trillion are explicitly insured by Federal deposit insurance. Thus, as a result of the new TLAC proposal, the government will guarantee \$4.33 trillion in additional liabilities that are not currently insured.<sup>25</sup>

In return for new government protection on \$4.33 trillion GSIB subsidiary bank liabilities, the government charges nothing. In theory, the TLAC bond investors are the ones providing this new insurance coverage.<sup>26</sup> However, these TLAC investors will earn a risk premium for years but potentially never suffer insurance losses if the distressed subsidiary bank cannot be rescued using a Title II resolution.

*Requiring TLAC debt at the parent holding company does not necessarily remove large institution TBTF interest rate subsidies.*

The Federal Reserve’s proposed TLAC regulation will require GSIB parent holding companies to issue and retain an outstanding balance of subordinated debt. However, it does not place any restrictions on how TLAC funds are used. Unless TLAC funds are required to be “down

<sup>25</sup>In these calculations, I have only assumed that regulators would only consider large subsidiary banks to be critical. If it turns out that regulators protect all GSIB subsidiary liabilities using TLAC and SPOE, the subsidiary liabilities that will be protected total about \$7 trillion.

<sup>26</sup>According to my calculations, the GSIB parents would have been required to maintain, in total, roughly \$575 million in outstanding TLAC debt should the rule have been in force as of September 2015.

streamed” to GSIB bank subsidiaries as “back-to-back” TLAC debt or subsidiary equity, and the proceeds are used by the subsidiary to invest in safe assets or retire insured deposits, TLAC at the holding company will not reduce the GSIB’s implicit TBTF funding cost subsidy. This result is formally proved in Kupiec (2016a), “Will TLAC Regulations Fix the G-SIB Too-Big-to-Fail Problem.”

GSIB interest subsidiaries are generated when some GSIB liabilities are implicitly or explicitly insured by the government, but the government does not charge a fair insurance premium for the guarantee. Within a GSIB, these subsidies arise when a bank subsidiary’s insured deposits are charged less than a fair market insurance premium for the guarantee, or if investors believe that the GSIB’s uninsured liabilities are likely to receive government protection from default even though there is no explicit insurance guarantee.

The TLAC proposal not only keeps the guarantee on all GSIBs’ bank subsidiary insured deposits, it also explicitly guarantees *all* of the liabilities issued by GSIB subsidiary banks and other critical operating subsidiaries. Thus the TLAC proposal effectively extends government guarantees beyond insured bank deposits to an additional \$4.33 trillion in GSIB bank subsidiary liabilities. If the goal is to reduce TBTF subsidiaries, the proceeds from parent TLAC debt should ideally be used to replace explicitly insured bank deposits.<sup>27</sup> A second best alternative is to require TLAC debt to replace uninsured GSIB bank subsidiary liabilities. This requirement at least partially limits the extent by which TLAC and SPOE expand government guarantees.

However, the current TLAC proposal places no restrictions on the use of TLAC funds. Without restrictions, the GSIBs will raise the required TLAC funds but invest them in a way that maximizes their TBTF funding cost advantage. Given the expanded implicit default protection promised GSIBs’ subsidiary liabilities, in my assessment, the current TLAC rule will increase—not decrease—the funding cost advantage enjoyed by GSIBs.

*The proposed TLAC regulation adds complexity to a regulatory system already plagued by overly complex capital and other prudential regulations. There is a simpler, more transparent way to satisfy TLAC regulatory goals.*

If the goal of TLAC is to keep critically important GSIB operating subsidiaries open and operating, why not just raise the minimum regulatory capital requirements on critically important

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<sup>27</sup> The same effect occurs if the subsidiary banks uses TLAC fund to purchase default free US Treasury securities.

subsidiaries? The capital would be immediately available to keep critical operating subsidiaries open and operating without regard to the legal availability of a Title II resolution. There would be no extension of additional government guarantees to liabilities of GSIB operating subsidiaries. Moreover, there would be no question that GSIBs' systemically important subsidiaries had sufficient capital to absorb exceptionally large losses and continue to be adequately capitalized and operating in financial markets.

There is a cost to this alternative approach of raising operating subsidiary minimum capital requirements. Keeping TLAC at the parent holding company reduces the amount of TLAC needed because regulators can (in theory) rely on loss diversification across GSIB subsidiaries. Since only some GSIB subsidiaries are likely to incur losses while others subsidiaries will post profits, the resources needed to recapitalize losses at critical operating subsidiaries will be smaller if regulators can keep TLAC at "the top of the house" and distribute it to GSIB operating subsidiaries only when needed.

Because the higher minimum capital solution does not count on loss diversification, the resources needed to increase capital at each critical operating subsidiary may be larger than the proposed minimum TLAC debt requirement. However, the higher minimum capital solution removes the problem that a Title II resolution may not be possible and so TLAC may not be available when it is needed.

The cost of requiring "fortress" balance sheets at systemically important GSIB subsidiaries can be reduced if GSIB parent holding companies are allowed to raise the required funds by issuing debt at the parent holding company level and down-stream funds as equity to systemically important operating subsidiaries. Implemented in this way, the proposal to increase minimum capital requirements at critical operating subsidiaries is equivalent to the current TLAC proposal in many ways. It will require parent holding companies to issue TLAC-like debt, but in addition, it will require the GSIB parent company to down-stream the proceeds of the TLAC debt issue as equity to systemically important operating subsidiaries to satisfy higher minimum regulatory capital requirements. This is a much simpler and more transparent solution to the issues that regulators are trying to solve with the TLAC proposal.

#### **4. Minimum Liquidity Regulations**

U.S. regulations will incorporate two new Basel III regulations that are designed to ensure that large covered depository institutions maintain adequate liquidity. The first ratio, the so-called Liquidity Coverage Ratio or LCR, is designed to ensure that a large institution has sufficient liquidity to survive a 30-day stress period in which it experiences a run on its short-term funding sources which forces the institution to liquidate its high quality liquid assets to meet redemptions and other payment liabilities. In other words, the bank must have enough high quality liquid assets (HQLA) so that it could survive for 30-days if it had to dump them on the market in a “fire sale” in order to meet customer redemptions. The U.S. LCR regulations took effect in January 2015 and will be fully phased in by January 2017.

The second liquidity regulation, the Net Stable Funding Ratio or NSFR, seeks to ensure that a bank’s source funds and its need for funds are balanced over the subsequent 12-month period so that the institution will not ever face the need to engage in “fire sale” financing should it lose access to new funding.<sup>28</sup> Between these two regulations—should they work as regulators envision—large banks will always own enough low-yielding highly liquid assets to sell in a 30-day asset fire sale, but will never face the need to do so since the institution’s balance sheet is structured in a way that allows it to postpone holding a fire sale for up to a year even if new funding sources for the bank completely run dry. The NSFR has been released for public comment (due August 5, 2016) with a target implementation date of January 1, 2018.

The premise behind the need for imposing an NSFR is that a large bank may need to survive an extended period—up to a year—under market conditions in which new deposits and uninsured funding sources completely disappear. The regulation presumes that a bank can survive this stress without having to fire sale its assets provided it properly structures its balance sheet so that it has just the right balance of equity, liability maturity structure and mix of counterparties willing to maintain funds in the bank. The regulation imposes a rules that specify the amount of “stable available funds” the bank must retain to survive this year of stress.

The NSFR rule is complex. The total available stable funds the bank holds is calculated as a weighted sum of bank equity and liability categories, where the weights on liability categories depend on the type of liability (deposit, non-deposit), the maturity of the liability, and the

<sup>28</sup> The NSFR proposal states (p. 151), “... [M]aintenance of a more resilient funding profile heading into a period of significant stress can lessen pressure on a covered company or modified NSFR holding company to sell illiquid assets or reduce credit availability in response to the stress.”

attributes of the counterparty that supplied the funds (retail, wholesale, nonfinancial, financial). The bank's demand for net stable funds (or NSF) is calculated as a weighted sum of the book value of assets and off-balance sheet exposures from undrawn commitments and derivatives. Assets are assigned a liquidity weight according to regulatory assumptions about an exposure's credit quality, the tenor of the cash flows produced by the exposure, and the type of counterparty (wholesale, retail, financial, nonfinancial). Cash, reserves and HQLA holdings require no stable funding support since they can be liquidated within the year time frame notwithstanding the fact a bank that satisfies the NSFR regulations is not supposed to be forced to sell liquid assets within the year, and should they do so, they would be in violation of the LQR regulation.

A covered institution is supposed to satisfy both the LQR and the NSFR on a continuous basis. Between these two liquidity regulations, banking regulators have decided that the best way to prevent a financial crisis is to require very large depository institutions—indeed *all* large depository institutions—to manage their balance sheets and asset holding so that their cash flows would be matched if they were forced to wind themselves down over the course of a year without selling any of their liquid assets (to satisfy the LQG regulation) and without access to any new funding. It is difficult to believe that large banks could satisfy both rules without incurring significant costs, especially when interest rates are normalized and long maturity assets over a significant yield premium over short-dated assets. If there is any appreciable cost of complying by these regulatory constraints, it is difficult to see how requiring all institutions to self-insure against a systemic liquidity crisis would be a cost-efficient solution for crisis management.

If a single bank in isolation is faced with the envisioned stress situation, even if it is operated in a manner that satisfies both the LCR and NSFR regulations, I would expect the primary federal regulator to intervene using its prompt corrective action powers. A bank that is completely shut out of new funding for an extended period is clearly an institution that is facing a severe safety and soundness issue. Its primary regulator is supposed to intervene, identify the cause of weakness that is preventing the bank from having access to new investor funding, and prescribe a mandatory remedial action plan. If the bank's condition does not improve enough to regain access to funding markets, the bank should be closed or forced to find a qualified acquirer. Since regulators already have this power—and a corresponding responsibility to exercise this

power—under prompt corrective action laws, there is no need for new LCR and NSFR regulations.

Should a number of large banks all face an extended funding drought simultaneously, the underlying cause of the problem would mostly likely be systemic, and not a consequence of weaknesses in individual banks' operations. In this case, the NSFR regulation would not address the underlying cause of the problem. The solution would likely require some type of unanticipated central bank intervention to make liquidity available to the large group of impacted institutions.

The primary impact of the NSFR regulation is to create a buffer interval to lengthen the amount of time that regulators have to respond to a liquidity crisis. While some may argue that the rules will alter bank asset holding and management dynamics so that a liquidity crisis cannot no longer occur, this claim presumes that all of the assumptions underlying the rules continue to hold. For example, the rule will not forestall a systemic liquidity crisis if widely held assets identified as HQLA suddenly became illiquid and lose a substantial portion of their market value (think Greek government bonds or AAA-rated MBS paper).

Still the regulations require changes in the way banks operate that likely will buy the regulators time to craft a response to a systemic liquidity event. While this time new buffer could be valuable for crafting better solutions, it could also give regulators time to ignore a developing systemic liquidity problem, as many believe they did in the early stages of the prior financial crisis.

Even if you are skeptical that the LCR and NSFR regulatory engineering would prevent a financial crisis, there is no harm in imposing the new rules if they do not impose significant costs on the banks or society at large. In fact, the NSFR notice of proposed rulemaking (NPR) suggests that bank regulators have undertaken a formal cost-benefit evaluation of the proposed NSFR rule and found that the costs of imposing the rule are minor while the benefits are potentially very large.

The "costs" discussion in the NSFR NPR (pp.144-149) argues that, based on earlier bank submissions to a Basel-III Quantitative impact study, most firms subject to the NSFR rule already meet the requirements, and those that do not are *not* expected to incur "significant costs" in modifying their balance sheets to satisfy the rule. The NPR adds the caveat that that costs of complying with the rule could turn out to be much larger once the yield curve returns to a normal

level and shape.<sup>29</sup> Without supplying and hard evidence of the actual compliance costs that might be incurred by the banks, the NSFR proposal concludes, “operational and administrative compliance costs in connection with the proposed rule are expected to be relatively modest.” (p. 147)

Since it is projected to be nearly costless for banks to comply with the NSFR, regulators project that the regulation will have little or no impact on banks’ customers,

*... the agencies do not expect the proposed rule to result in material costs being passed on to customers, for example in the form of higher interest rates or fees. Similarly, the agencies do not expect covered companies of modified NSFR holding companies to materially alter their levels of lending as a result of the proposed rule. (p. 148).*

The conclusion of the regulatory cost analysis in NSFR NPR is that, should the rule be implemented as proposed, it will have no noticeable effect of the interest rates or fees charged by banks or on the loan amounts funded by the banks and holding companies that are subject to the rule.

Given that the rule is supposed to have no noticeable impact on banks’ costs or lending activities, the NPR conclusions regarding the potential benefits of implementing the NSFR (p. 149-151) are striking. The regulators claim that the NSFR rule will generate large benefits for society by removing the potential for a future financial crisis.

Regulators justify this claim by referencing a (2010) study by the Basel Committee on Bank Supervision.<sup>30</sup> This study claims that the proposed Basel III changes in bank regulation would significantly reduce the likelihood of another financial crisis. Since financial crisis are expensive for society, and the NSFR proposal was a part of Basel III, the benefits adopting NSFR must be large indeed.

The regulatory “cost-benefit analysis” in the NSFR notice of proposed rulemaking is dubious at best. Bank regulars are simultaneously arguing that the new regulation will not cause banks to change what they do, or impose any additional cost on banks or consumers, but still will generate enormous social benefits by preventing another financial crisis. How can a rule that

<sup>29</sup> The NPR states: “Thus, the agencies do not expect covered companies and modified NSFR holding companies to incur significant costs in connection with balance-sheet adjustments to maintain compliance with the proposed requirements; however, these costs may increase depending on a variety of factors, including future differences between the rates on short- and long-run liabilities.”

<sup>30</sup> “An assessment of the long-term economic impact of stronger capital and liquidity requirements,” <http://www.bis.org/publ/bcbst/73.pdf>

supposedly has no impact on banks or bank customers prevent the next financial crisis? If sounds like a magical conclusion precisely because it is a magical conclusion.

I was a part of the working group that was tasked with producing the Basle Committee study referred to in the NSFR notice of proposed rulemaking. The working group never met—not once. Group interactions included two chaotic conference calls before a draft paper showed up in working group participants’ email less than three months after the group was formed. Members were supposed to propose changes to the draft working paper.

Most of the analysis in the working paper is based on a Bank of England “reduced form” research model. The model was an opaque “black box” to working group members. Regulator policy changes can only be introduced into models of this type by proxy—that is, if the regulation is imposed, certain model parameters are likely to change in some way. Economists make educated guesses as to how parameters will change. The regulatory rules themselves are not in the models explicitly because the rules did not exist when the models were being built or when the data used to estimate the model was generated.

Models like the Bank of England model are typically used to investigate ideas at a conceptual level—that is, will the policy cause “X” to go up? “Y” to go down? This type of models have no proven predictive power and are typically not used to make quantitative forecasts of the impact of policy decisions. No one who understands models like these would take their quantitative forecasts as serious projections. And yet the working group did.

The Basel working group undertook no actual analysis of the proposed U.S. NSFR. The reality is that no one had the capacity to do such an analysis in the very short time frame allowed by the Basel Committee. There was intense political pressure to finalize the Basel III rules. The Basel III “impact studies” were an afterthought when some Basel Committee members realized that they had not produced any cost-benefit analysis to justify their proposals. The committee pressured its research groups to produce economic justifications for the Basel III proposals within an impossible time frame designed to meet Committee political goals. To satisfy the committee, the research groups produced two documents within a few months. In my view, these documents do not report on the results of a serious in depth research effort—they are propaganda produce for political cover.

In the end, I did not permit my name on the working group’s paper even though I was the Chairman of the Basel Research Task force and was expected to sign on. I had no access to the

models or the calculations that were being used to justify the study's conclusions and the working group made no effort to address my questions and concerns about the accuracy and validity of the analysis in the final report.<sup>31</sup>

### References

Balla, Eliana, Edward Prescott and John Walter, (2015). "Did the Financial Reforms of the Early 1990s Fail? A Comparison of Bank Failures and FDIC Losses in the 1986-92 and 2007-13 Periods." The Federal Reserve Bank of Richmond Working Paper No. 15-05.

Chernykh, Lucy and Rebel Cole, (2015). "How should we measure bank capital adequacy for triggering Prompt Corrective Action? A (simple) proposal," *Journal of Financial Stability*, Vol. 20, pp. 131-143.

Cole, Rebel and Lawrence White, (2015). "When Time is Not on Our Side: The Costs of Regulatory Forbearance in the Closure of Insolvent Banks." SSRN Working paper available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2694556](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2694556)

Financial Stability Oversight Council (2011). Report to Congress on Prompt Corrective Action. December.

GAO (2015). "Bank Regulation: Lessons Learned and a Framework for Monitoring Emerging Risks and Regulatory Response," GAO-15-365, June 2015.

GAO (2011). "Bank Regulation: Modified Prompt Corrective Action Framework Would Improve Effectiveness." GAO-11-612.

Kupiec, Paul (2016a). "Will TLAC Regulations Fix the G-SIB too-big-to fail problem?" *Journal of Financial Stability* (forthcoming).

Kupiec, Paul (2016). "Fixing Prompt Corrective Action," *Journal of Risk Management in Financial Institutions*, Vol. 9, No. 3, forthcoming (Summer) 2016.

<sup>31</sup> It is ironic that the Federal Reserve Board is using this study to justify the NSFR. Later in the fall of 2010, FDIC chairman Bair was negotiating with the Federal Reserve Board on the magnitude of the Basel III leverage requirement. Chairman Bair wanted a leverage ratio higher than what the Federal Reserve Board was willing to accept. To make her case, Chairman Bair pointed to the same study the NSFR now references—arguing that the study proves that Basel III costs are likely to be minor and its benefits are likely to be very large. In order to derail chairman Bair's argument, Governor Tarullo and Bank Supervision Director Pat Parkinson reportedly dismissed the importance of the Basel Committee working paper's conclusions by reading to chairman Bair my original detailed email to the Basel Committee working group members critiquing the paper. I do not know how Governor Tarullo and Mr. Parkinson acquired my email to working group members since neither individual was on the working group. When chairman Bair took issue with the Federal Reserve Board's critique of the paper and its findings, Governor Tarullo and Director Parkinson reportedly asked chairman Bair why she did not agree with the critique since it was written by the FDIC's Director of the Center for Financial Research (me). Chairman Bair failed to persuade the Federal Reserve Board on the benefits of a higher leverage ratio. She was furious at being outmaneuvered by the Board based on my critique—which is why I remember the incident so clearly.

**RESPONSES TO WRITTEN QUESTIONS OF SENATOR SASSE  
FROM HAL S. SCOTT**

**Q.1.a.** I'd like to discuss contingent convertible capital instruments, commonly known as CoCo bonds.

What lessons can be drawn from Europe's experience with CoCo bonds?

**A.1.a.** CoCo bonds have been far from a success in Europe, which should give U.S. regulators pause as to their potential effectiveness in increasing financial stability. While the theoretical concepts underlying the use of CoCos are appealing, the empirical evidence in European banks shows these products are unpopular for both issuer and investor. As we saw in February of this year, during volatile times the market for CoCos can dry up entirely.

**Q.1.b.** Do you believe CoCo bonds can uniquely help a firm withstand significant financial distress? If so, how?

**A.1.b.** No, in fact the complexity of the instruments and the uncertainty around triggers in the midst of a financial crisis, precisely at times when certainty is paramount, can ultimately undermine the stability of the issuer, rather than strengthen it.

**Q.1.c.** How should Federal regulators treat CoCo bonds?

**A.1.c.** Federal regulators should proceed with caution in employing CoCo bonds as part of the regulatory framework. They are far from a regulatory "silver bullet" in promoting financial stability. Developments in the European market should be continuously monitored.

**Q.2.a.** I'd like to ask about Federal Reserve Governor Powell testimony at the April 14, 2016, Senate Banking Committee that "some reduction in market liquidity is a cost worth paying in helping to make the overall financial system significantly safer."

Is there also a risk that reducing liquidity in the marketplace also makes the marketplace unsafe?

**A.2.a.** Yes, reducing liquidity in the marketplace will make the financial system unsafe for a variety of reasons. A contraction of liquidity, particularly during times of stress, can cause otherwise healthy financial institutions to fail as liquidity issues can lead to solvency issues. In addition, a reduction of liquidity can also exacerbate fire sale risks, which themselves can have severe systemic consequences.

**Q.2.b.** If so, how should regulators discern the difference between an unsafe reduction in liquidity and a safe reduction in liquidity?

**A.2.b.** This is a difficult task since the line between safe and unsafe liquidity reduction can fluctuate under a number of circumstances. Therefore, it is crucial that regulators have a strong tool box to respond to liquidity crises. It is of critical importance

that the United States maintain a strong lender of last resort in the Federal Reserve as a key component of the tool box.

**Q.3.a.** I'd like to ask about the various capital requirements that have been imposed after the 2008 financial crisis. Have Federal regulators sufficiently studied the cumulative impact—including on liquidity in the marketplace—of these various changes?

**A.3.a.** No, there has not been sufficient comprehensive analysis of the cumulative impact of the post-2008 financial reforms.

**Q.3.b.** If not, how should Federal regulators resolve this issue? For example, some have called to delay the imposition of new financial rules and regulations, to facilitate a broader study of these issues.

**A.3.b.** As the post-2008 reforms continue to take effect, regulators should conduct an *ex-post* review of all such reforms. For example, the amount of capital held by the largest banks has more than doubled since the financial crisis and the liquidity position has nearly tripled. Large banks have also simplified their structures since the financial crisis, easing the ability of regulators to unwind them in case of failure. All these measures should be considered in conjunction with each other to determine the cumulative impact. This should be done before additional rules and regulations are imposed.

**Q.4.a.** I'd like to discuss stress tests. How should policymakers balance the tension between providing more transparency and guidance to regulated entities about how to pass a stress test, and concerns that to do so would allow regulated entities to allegedly “game” these processes?

**A.4.a.** The concern that full disclosure of the stress tests models will result in the Fed “teaching to the test” is a valid concern. I therefore do not recommend that the Fed fully disclose the models. However, I think there is room for more transparency in the process. I recommend increased disclosure of the expert opinions that come out of the Model Evaluation Council. And rather than full disclosure of the models themselves, I recommend submitting the other components of the stress test framework to public notice and comment. The increased transparency should give regulated entities better guidance for passing the stress test without compromising their effectiveness.

**Q.4.b.** Do stress tests accurately depict how a firm would perform during a financial crisis, when taking into account “systemic” considerations? If not, what should be done, if anything, to improve their accuracy?

**A.4.b.** As I mentioned previously, I believe the accuracy of the stress tests is greatly improved with input by outside experts. While the Model Evaluation Council does include five outside experts from the academic community, the Fed chooses the experts and no transparency is provided regarding the review process of the actual evaluations of the experts. I recommend increased disclosure of the expert opinions, which I believe will ultimately lead to improved accuracy of the stress tests.

**Q.5.a.** I'd like to ask about House Financial Services Chairman Hensarling's legislation, the Financial CHOICE Act, which—in part—would allow banks to opt-out of various regulatory

requirements, in exchange for meeting a 10 percent leverage ratio that is essentially the formulation required by the current Supplemental Leverage Ratio.

What are the most persuasive arguments for and against relying upon a leverage ratio as a significant means of reducing systemic risk in the financial system?

**A.5.a.** The simplicity of a leverage ratio is its most beneficial feature, but also has its drawbacks. On the one hand, a leverage ratio does not require calibration of risk weights, which can be poorly constructed by regulators and gamed by financial institutions. On the other hand, since a leverage ratio requires the same amount of capital regardless of the riskiness of assets, it encourages financial institutions to maximize risk. For these reasons, leverage ratios should be part of the regulatory framework, but should not replace risk-weighted measures.

**Q.5.b.** Under this legislation, is the 10 percent leverage ratio the right level? If not, where should policymakers set the level at?

**A.5.b.** I do not believe leverage ratios should replace other regulatory requirements, so no reasonable level of a leverage ratio would be sufficient. Extreme leverage ratios approaching 100 percent would ensure financial stability, but would come at such severe costs to the broader economy that such levels are not worth the trade-off. Leverage ratios should be used as a backstop to prevent excessive build-up of leverage, not as the binding capital requirement. Therefore, the appropriate level will serve as such a backstop, with risk-weighted measures serving as the binding requirements.

**Q.5.c.** What evidence do you find or would you find to be the most persuasive in discerning the proper capital levels under this proposal?

**A.5.c.** Capital levels should be set to strike the appropriate balance between stability of financial institutions and optimal efficiency of the overall financial system, which necessarily involves some amount of leverage. Since no reasonable level of capital will completely eliminate the risk of failure, particularly in the face of contagion, I believe emphasis on a strong lender of last resort is an important pillar of financial stability. Regulatory capital requirements in conjunction with a strong lender of last resort is the optimal way to protect our system.

**Q.5.d.** If the leverage ratio was set at the right level, do you find merit in eliminating a significant portion of other regulatory requirements, as with the Financial CHOICE Act? Are there any regulations that you would omit beyond those covered by the Financial CHOICE Act?

**A.5.d.** No, I do not believe it possible to set a leverage ratio at a reasonable level that will merit elimination of a significant portion of other regulatory requirements. Leverage ratios should serve as a back-stop that prevents excessive leverage that may result from the risk-based framework. They should not be the binding capital requirements.

**Q.5.e.** What impact would this proposal have on liquidity in the marketplace?

**A.5.e.** If financial institutions were to face a leverage ratio exclusively, then firms will avoid lower-risk, lower-margin assets in favor of higher-risk assets. As a result, liquidity in safer assets, such as Treasuries and foreign sovereign debt, could be reduced dramatically. Liquidity in investment-grade corporate debt may also decline.

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**RESPONSE TO WRITTEN QUESTION OF SENATOR ROUNDS  
FROM HAL S. SCOTT**

**Q.1.** Are there any suggestions to balance the independence of appraisals with assuring the appraiser has sufficient knowledge, especially in rural areas or very dense cities?

**A.1.** I do not have any specific suggestions on this front, but generally believe that increased transparency of the appraisal process will serve to improve the process.

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**RESPONSES TO WRITTEN QUESTIONS OF SENATOR SASSE  
FROM MARVIN GOODFRIEND**

**Q.1.** I'd like to discuss contingent convertible capital instruments, commonly known as CoCo bonds.

- What lessons can be drawn from Europe's experience with CoCo bonds?
- Do you believe CoCo bonds can uniquely help a firm withstand significant financial distress? If so, how?
- How should Federal regulators treat CoCo bonds?

**A.1.** I am not familiar with Europe's experience with CoCo bonds. The attractiveness of CoCo bonds is that they appear to be a middle ground acceptable to banks, on one hand, and regulators on the other. They are a kind of compromise. Banks like the fact that CoCo's are normally debt, which allows more leverage, with potential tax benefits and higher standard ROE numbers. Regulators like the triggers that potentially convert CoCo's to loss-absorbing equity in times of stress. I don't think regulators should encourage the use of CoCo's as a substitute for simple equity capital for two reasons. First, debt in general already enjoys subsidies that encourage excessive leverage. Second, triggers are problematic in practice. Triggers linked to observable market prices can be inappropriately tripped, exacerbating financial distress; and linked to accounting measures, triggers can be activated too late to save a troubled bank. Moreover, in practice discretionary regulatory actions, whether explicitly allowed or not, will complicate the activation of triggers, creating confusion or possibly overriding completely the conversion of CoCos into equity in times of stress out of concern for wider destabilization of financial markets.

**Q.2.** I'd like to ask about Federal Reserve Governor Powell's testimony at the April 14, 2016, Senate Banking Committee that "some reduction in market liquidity is a cost worth paying in helping to make the overall financial system significantly safer."

- Is there also a risk that reducing liquidity in the marketplace also makes the marketplace unsafe?

- If so, how should regulators discern the difference between an unsafe reduction in liquidity and a safe reduction in liquidity?

**A.2.** The collapse of funding liquidity, so destructive during the 2007–09 crisis, was a symptom of fundamental insolvency brought about by the excessive leverage that funded longer-term illiquid assets, *e.g.*, mortgages, with short-term money market instruments. The lesson is that above all, the solvency of the banking system must be protected by higher capital ratio minimums, supported by adequate supervisory monitoring, and appropriate enforcement powers. Only then will the banking system utilize a safe level of funding liquidity, *e.g.*, wholesale funding. Bank balance sheet scarcity due to tightened capital requirements may be causing banks to withdraw from market making, *i.e.*, providing market liquidity. That may be creating opportunities for nonbank entities to enter the business of providing market liquidity. This development need not make market liquidity provision riskier as long as regulators make sure that such provision, which may involve insurance companies or hedge funds, cannot exploit any underpriced explicit or implicit Government credit enhancements.

**Q.3.** I'd like to ask about the various capital requirements that have been imposed after the 2008 financial crisis.

- Have Federal regulators sufficiently studied the cumulative impact—including on liquidity in the marketplace—of these various changes?
- If not, how should Federal regulators resolve this issue? For example, some have called to delay the imposition of new financial rules and regulations, to facilitate a broader study of these issues.

**A.3.** It was clear in the aftermath of the 2007–09 crisis that regulators needed to enforce much higher minimum equity capital ratios on the larger banks, as I said above, with requisite monitoring, and enforcement powers. Leverage ratios prior to and during the crisis for the larger banks in the United States were 3 percent or less. In the early 20th century, before banks could count on deposit insurance, Fed credit policy, or Government credit enhancements, voluntary leverage ratios ranged from 15 percent to 20 percent and higher. So in my view it is right to go ahead and move required leverage ratio requirements much higher without delay.

**Q.4.** I'd like to discuss stress tests.

- How should policymakers balance the tension between providing more transparency and guidance to regulated entities about how to pass a stress test, and concerns that to do so would allow regulated entities to allegedly “game” these processes?
- Do stress tests accurately depict how a firm would perform during a financial crisis, when taking into account “systemic” considerations? If not, what should be done, if anything, to improve their accuracy?

**A.4.** If the Fed believes that it knows the “risk space” very well, then it makes sense for it to provide more explicit guidance to banks to prepare for the stress test. But to the extent that the banks might know the “risk space” better than the Fed, the Fed

would want to be vague about its view of the “risk space” and let banks prepare for the stress test based on their own perception of the “risk space.” In the latter situation, banks would find it more difficult to prepare for the stress test. In order to answer this question, the Fed and the banks should discuss which of the two are better at forecasting the “risk space.” In any case, the stress tests should not be seen as a means of gauging how well particular institutions would perform in future stressful situations. There are too many uncertainties for the tests to be precise predictors of future performance. At most, the stress tests should be seen as a regulatory monitoring tool to facilitate the enforcement of equity capital minimums on banks.

**Q.5.** I’d like to ask about House Financial Services Chairman Hensarling’s legislation, the Financial CHOICE Act, which—in part—would allow banks to opt-out of various regulatory requirements, in exchange for meeting a 10 percent leverage ratio that is essentially the formulation required by the current Supplemental Leverage Ratio.

- What are the most persuasive arguments for and against relying upon a leverage ratio as a significant means of reducing systemic risk in the financial system?
- Under this legislation, is the 10 percent leverage ratio the right level? If not, where should policymakers set the level at?
- What evidence do you find or would you find to be the most persuasive in discerning the proper capital levels under this proposal?
- If the leverage ratio was set at the right level, do you find merit in eliminating a significant portion of other regulatory requirements, as with the Financial CHOICE Act? Are there any regulations that you would omit beyond those covered by the Financial CHOICE Act?
- What impact would this proposal have on liquidity in the marketplace?

**A.5.** The key ideas behind the higher leverage ratio requirement are these. First, with enough owners’ capital at stake, a bank would have the incentive to manage prudently not only the credit and market price risks of its assets, but its liquidity funding risks too, so as not to jeopardize its solvency due to a temporary loss of short-term funding. Second, enforcing higher capital minimums is essential to offset the incentive otherwise for competitive banks to position themselves (by taking on excessive leverage and risks) to take advantage of anticipated discretionary underpriced *ex post* credit enhancements delivered by the central bank or Government in times of financial stress. Third, the simple minimum leverage ratio requirement is preferable to risk-based capital requirements. There is no reason to weight assets according to their supposed risks. If leverage ratios are set high enough, then banks could be allowed to choose their risk assets within relatively wide limits to earn a higher return on equity commensurate with the risk of their assets and their leverage ratio. Not only are risk weights largely superfluous if the leverage ratio requirement is made high enough, but risk-weights themselves can be gamed by

the banks potentially to greatly weaken the effective regulatory constraint on leverage.

If anything, the minimum 10 percent leverage ratio requirement in the Choice Act may be too low in relation to the 15 percent to 20 percent and higher leverage ratios chosen by banks early in the 20th century. See my answer to question 3.

Generally speaking, I enthusiastically support the notion at the heart of the Choice Act that banks should be afforded substantial regulatory relief in exchange for agreeing to a higher minimum leverage ratio requirement. However, I am inclined to think that substantial regulatory relief should be granted at minimum leverage ratio requirements closer to 20 percent, at least for systemically important banks.

In effect, my answer to question 2 above addresses the impact on market liquidity of the proposal in the Choice Act.

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#### RESPONSES TO WRITTEN QUESTIONS OF SENATOR ROUNDS FROM MARVIN GOODFRIEND

**Q.1.** Has liquidity in these markets diminished in recent years? Are such markets less resilient than they used to be? If yes, would you attribute the change to market structure issues or to recent regulations, including bank capital and liquidity rules?

**A.1.** Based on the evidence summarized in Governor Powell's testimony cited above and other work I've seen, it does appear that market liquidity may have deteriorated in Treasury and corporate bond markets in recent years. It appears likely that the deterioration is due to both capital and liquidity rules and evolving market structure. Although I would add following my answer to question 2 above that market structure is likely to evolve still further in ways that might recover lost market liquidity.

**Q.2.** Given that future liquidity is fundamentally unpredictable, what steps can Congress or regulators take *ex ante* to try to head off market panics, short of insuring market losses? Given that, in some panics, no amount of liquid assets could prove sufficient, do liquidity requirements make sense?

**A.2.** I don't think liquidity requirements make sense. As I said in my oral statement at the June 7th hearing, and explained in detail in my written testimony, the liquidity coverage ratio (LCR) is a particularly ill-conceived means of facilitating liquidity in the banking system, especially relative to the alternatives. First, monetary policy utilizing interest on reserves is a far less burdensome and a more efficient alternative to LCR requirements as a means of pre-positioning liquid assets on bank balance sheets. Second, simple sufficiently elevated bank capital leverage ratio requirements are far less burdensome and a more efficient alternative to LCR requirements as a means of guarding against wholesale funding risks. Congress and regulators should support the Fed's use of interest on reserves and monetary policy to pre-position reserve liquidity on bank balance sheets albeit with a much smaller Fed balance sheet; and Congress and regulators should work to relax the LCR requirements with all their enforcement and compliance costs, regulatory discretion complications, and market distortions

in exchange for higher minimum leverage ratio requirements as proposed in the Choice Act. See my written testimony for details.

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**RESPONSES TO WRITTEN QUESTIONS OF SENATOR SASSE  
FROM HEIDI MANDANIS SCHOONER**

**Q.1.** I'd like to discuss contingent convertible capital instruments, commonly known as CoCo bonds.

- What lessons can be drawn from Europe's experience with CoCo bonds?
- Do you believe CoCo bonds can uniquely help a firm withstand significant financial distress? If so, how?
- How should Federal regulators treat CoCo bonds?

**A.1.** I have not studied the experience of CoCo bonds in Europe. I do, however, have several concerns regarding financial stability proposals relying on these and other, similar, debt instruments. First, requiring banks to hold more debt as opposed to equity is not the best way to make banks safer. While CoCos are convertible to equity under some circumstances, they are debt instruments. Requiring banks to fund their operations with less debt rather than more is a better way to protect banks during a financial crisis. Second, because CoCo bonds are relatively new, significant uncertainty remains with regard to how institutions and markets would react to the conversion of such instruments from debt instruments to common equity. This uncertainty could prove highly problematic under crisis conditions. Finally, I believe that a wiser course for regulators is to focus on increasing banks' equity. In this regard, I am disappointed that in the most recent stress tests the Federal Reserve missed the opportunity to restrict dividend payments by the largest banks.

**Q.2.** I'd like to ask about Federal Reserve Governor Powell testimony at the April 14, 2016, Senate Banking Committee that "some reduction in market liquidity is a cost worth paying in helping to make the overall financial system significantly safer."

- Is there also a risk that reducing liquidity in the marketplace also makes the marketplace unsafe?
- If so, how should regulators discern the difference between an unsafe reduction in liquidity and a safe reduction in liquidity?

**A.2.** Market liquidity is a key concern because highly illiquid markets can trigger and exacerbate a financial crisis. While determining the factors influencing, and the optimal level of, market liquidity may prove elusive, we know that highly leveraged institutions are less able to withstand fluctuations in market liquidity than firms with less debt. Thus, preparing firms for those inevitable fluctuations by reducing their debt is an effective means of addressing the question of market liquidity.

**Q.3.** I'd like to ask about the various capital requirements that have been imposed after the 2008 financial crisis.

- Have Federal regulators sufficiently studied the cumulative impact—including on liquidity in the marketplace—of these various changes?

- If not, how should Federal regulators resolve this issue? For example, some have called to delay the imposition of new financial rules and regulations, to facilitate a broader study of these issues.

**A.3.** I do not know whether Federal regulators have conducted such studies. However, as elaborated in my written testimony, significant research supports increases in required capital. Better capitalized banks perform better during financial crises. Banks with less debt are able to continue to lend during economic downturns and may avoid reliance on Government support. As indicated in my testimony, a significant consensus among economists and former policymakers supports significantly higher capital than the levels required under current rules.

**Q.4.** I'd like to discuss stress tests.

- How should policymakers balance the tension between providing more transparency and guidance to regulated entities about how to pass a stress test, and concerns that to do so would allow regulated entities to allegedly "game" these processes?
- Do stress tests accurately depict how a firm would perform during a financial crisis, when taking into account "systemic" considerations? If not, what should be done, if anything, to improve their accuracy?

**A.4.** Stress testing is an important part of modern bank supervision, a process that seeks to prevent firms' financial distress in order to protect the entire financial system and economy. Stress testing can provide both regulators and banks with valuable information regarding a bank's performance during a crisis. While I have conducted no study of the effectiveness of stress testing, I disagree that the evaluation of stress testing should focus on whether that process accurately predicts how a firm would perform during a crisis. This standard seems impossible to achieve. Instead, stress testing should be evaluated on whether it provides regulators and regulated firms with information that is important to their performance during a crisis.

**Q.5.** I'd like to ask about House Financial Services Chairman Hensarling's legislation, the Financial CHOICE Act, which—in part—would allow banks to opt-out of various regulatory requirements, in exchange for meeting a 10 percent leverage ratio that is essentially the formulation required by the current Supplemental Leverage Ratio.

- What are the most persuasive arguments for and against relying upon a leverage ratio as a significant means of reducing systemic risk in the financial system?
- Under this legislation, is the 10 percent leverage ratio the right level? If not, where should policymakers set the level at?
- What evidence do you find or would you find to be the most persuasive in discerning the proper capital levels under this proposal?
- If the leverage ratio was set at the right level, do you find merit in eliminating a significant portion of other regulatory

requirements, as with the Financial CHOICE Act? Are there any regulations that you would omit beyond those covered by the Financial CHOICE Act?

- What impact would this proposal have on liquidity in the marketplace?

**A.5.** While a 10 percent Supplemental Leverage Ratio would be an improvement over the current requirements, it is still lower than the levels many economists recommend as a safe. Picking ratios and deciding on the right levels is difficult and important differences are buried in the details. Valuing assets, assessing the riskiness of assets, identifying off-balance sheet exposures—to name but a few—are all essential elements in the calculation of capital ratios and all are debatable and subject to error. Limitations in the various ratios are also apparent. The standard criticism of the leverage ratio, for example, is that it does not distinguish between types of assets. The typical criticism of the risk-weighted capital ratio is that it attempts to measure the riskiness of assets but does so poorly. If the leverage ratio were increased significantly, proposals requiring banks to hold convertible debt, for example, would be unnecessary. While increasing capital levels could be a means for reducing regulatory burden, another key benefit of making banks safer by increasing their equity is eliminating the need for Government support during a crisis.