

## **STRESS TESTS**

**Good morning. I am honored to be here with you today to discuss one of the most important regulatory innovations developed in response to the Financial Crisis: supervisory stress tests. Former Federal Reserve Governor Dan Tarullo has described these tests as a “cornerstone of post-crisis prudential regulation”. Beverly Hirtle, Director of Research at the Federal Reserve Bank of New York, recently referred to them as “the most significant and impactful [regulatory] change”.**

**The concept of stress tests is simple and, in my view, compelling. A bank’s balance sheet, capital and liquidity are not static, measured solely at a point in time. Rather, they are subject to change, sometimes rapid change, and this change can occur because of both organic and exogenous reasons. Stress tests require a bank to analyze the risks in and outside their balance sheets, consider the potential of various changes, and maintain sufficient capital and liquidity to deal with these developments.**

**Following the collapse of a number of major financial institutions in 2008, stress tests help provide depositors, lenders and other bank customers with confidence in banks' financial condition and ultimately their viability. Indeed, I do not think it is an exaggeration to say that stress tests were essential in restoring confidence in the U.S. banking system.**

**Maintaining this confidence is crucial in times of financial stress. With respect, I believe that a number of regulators and observers got it wrong when they concluded that the principal cause of the near-collapse of the banking system in 2008 was inter-connectedness.**

**Instead, I believe that the cause was contagion. Funders could not be sure whether the acknowledged serious problems at some institutions were isolated or widespread. So they simply fled the entire financial system.**

**Credible stress tests help reduce this contagion risk because they maintain confidence in both individual institutions and in the financial system as a whole.**

**But the fact that stress tests have made such a positive contribution to the soundness and stability of our banking system does**

**not mean that they cannot be improved. Accordingly, I will devote the balance of my remarks to suggestions for improvement in the stress test regime.**

**I realize that, in making these suggestions I may be the proverbial day late and a dollar short. In Vice Chairman Quarles' testimony earlier this week, he emphasized that the Federal Reserve was committed to "increased visibility into the stress testing program". This would include "more granular" descriptions of the models and more details about projected outcomes. Accordingly, much of what I am going to advocate for may be already on the way. But I will nonetheless continue because, at the very least, it can be gratifying to be proven right.**

**The need for re-examination of the stress test regime reflects change not error. The banking system in 2008-09 is not the banking system of today. Subsequent developments may not mandate change in the stress test regime, but they should mandate reconsideration.**

**Periodic meaningful re-examination is particularly necessary because stress tests have become the ultimate arbiter of capital. Major banking organizations report that the most binding capital constraint is**

**found in the supervisory stress test regime. Convincing evidence of this is seemingly provided by the fact that a bank's published capital ratios – CET1, Tier 1, Total and Leverage -- typically considerably exceed the well-capitalized regulatory standards and fully phased-in regulatory buffers. This is less about conservatism and more about the unpredictability of stress tests. Banks require their own buffers because of the serious consequences of failing a stress test.**

**Parenthetically, I would note that the liquidity stress tests have not proven to be the binding liquidity restraint. Rather, it is the resolution plans.**

**Some would argue that even an overly conservative stress test is not, on balance, a bad result. This is based on the proposition that there can never be too much capital.**

**I would disagree. For illustrative purposes, let us take the extreme -- banks are required to maintain 100% capital. Forget about what the depositors would now do with their transaction and other accounts, and just look at the impact on lending. It would reduce large bank lending by something around 80%. Is there capacity elsewhere in the financial system to take up that lending in a frictionless way? And,**

**even if there were, would we want the bulk of lending to be in a largely unregulated segment of the financial system?**

**Now, of course, this example is fanciful. But, I have used it to make a basic point. Too little capital is undeniably bad for our financial system and the overall economy. But, so is too much capital.**

**In suggesting, as I will, certain changes in the stress test protocols, I am not writing on a blank slate. To the regulators' credit, they have exhibited a willingness to reconsider the stress tests and make changes over time, and, as I noted, more are coming. One of the most important has been the so-called "mulligan". And, although the two sets of changes I will propose may seem more fundamental, they are inherently process-oriented. The objective is not to reduce the capital requirements driven by the current stress tests. Rather, it is to make them more accurate and more credible.**

**In my view, the key improvements that are needed in stress tests relate to two fundamental principles: consultation and transparency. These two principles, in turn, relate to the two factors that are the principal determinants of the stress test results: the economic scenarios and the Federal Reserve models.**

**A number of observers have been critical of the 2018 severely adverse economic scenario. They maintain that the scenario went beyond severely adverse, and went to something approximating “end of the world”.**

**Without engaging in that debate, I would propose that the scenarios be the subject of a meaningful level of consultation between the Federal Reserve and the industry, as well as other interested parties. Perhaps this could be done through a brief notice and comment period, with the Federal Reserve proposing the scenario, and the industry and others having an opportunity to comment.**

**I have heard four arguments made against this type of approach. The first is that there is insufficient time. Although a notice and comment period would undeniably impose some time pressure on the Federal Reserve, it would appear to be manageable. In effect, the Federal Reserve would be required to propose its economic scenarios about 60 days before they would otherwise have adopted them. This incorporates a 30-day comment period and 30 days for the Federal Reserve to consider the comments and publish its final scenarios.**

**If I am too sanguine about the timing considerations, at the very least there should be an ex-post comment period on the scenarios. And to instill discipline, the Federal Reserve would be obligated to publish a written response to the comments.**

**I will state, but totally reject, the second argument against a comment process on the scenarios -- the resultant danger of regulatory capture. I reject this argument so vigorously because it is not only without evidentiary support, but it is so demeaning of the regulators. Regulators are human, and they inevitably will make mistakes, but there is a wide gap between mistakes and undue influence. I have every confidence that consideration of comments from the industry and others does not mean unqualified or even qualified acceptance of them. It means only to evaluate them on their merits.**

**The third argument is that the scenarios are not predictions but hypotheticals. But even hypotheticals should not be unbounded. Whatever you might call the economic assumptions, what they produce are binding capital constraints. Accordingly they should be tethered to some level of rationality, even if that level is highly pessimistic.**

**The fourth argument is that banks might somehow position their portfolios during the 60-day period to perform better in the stress tests. This concern, however ignores the practical challenges a bank would face in attempting to reposition its balance sheet.**

**My transparency recommendation is more controversial, but, I believe, even more important. It relates to a basic revision in the secrecy regime enveloping the models used by the regulators to determine loan losses and operating income.**

**Ever since the stress tests were put into place, it has seemingly been a regulatory article of faith that secrecy of the regulators' models was sacrosanct.**

**A change in the regime to provide for future disclosure of models does not mean that the confidentiality of the past was necessarily wrong. The exigencies of the Financial Crisis made it essential that the stress tests be not only stringent but totally free from taint of industry influence. And -- at that time -- the values of transparency may have been outweighed by the need for absolute confidence in the pristine nature of the tests. But 10 years removed from the Financial Crisis, it is at least an appropriate time to re-examine those precepts.**



**One obvious and basic reason for disclosing the regulatory models is that they could be wrong, either individually or relatively. And, if they are wrong, then a bank is being required to hold too little or too much capital. Neither is a good result, even if you believe you should err on the side of too much.**

**Indeed, there is a certain irony here when other regulatory developments relating to capital adequacy are considered. The basic premise of Basel 4, or, if you prefer, revised Basel 3, is that there should be less reliance on models. Presumably, this is not because of a belief that banks are inappropriately configuring models to achieve objectives rather than accuracy. Rather, the view is that models can, and often do, provide flawed outputs because of flawed inputs, no matter who is administering them. The regulators cannot be entirely insulated from these flaws.**

**The objective of accuracy should be sufficient in and of itself to provide for greater transparency, both as a principle and as an outcome. But there are also two related reasons that I find highly persuasive, indeed compelling.**

**The first is loan allocation. The inability to have a direct insight into the models that the Federal Reserve is using does not prevent banks from trying to determine what those models produce. What it prevents is obtaining an accurate determination.**

**And all that factors into the potential for misallocation of lending. If a bank believes that a certain category of loans requires a higher capital charge than its assessment of the risk would otherwise require, the inevitable result is that the bank will make fewer loans in that category. And, because banks talk to one another, it may not be a single bank, but the banking sector that avoids a class of loans because of a perceived misallocation of capital to risk.**

**Perhaps I should pause at this point to state explicitly what I am hopeful that everyone understands implicitly. The regulators are not infallible. Their expertise and objectivity reduce the risk of error; but this risk cannot be eliminated. The consequences of an error in this space are of such significance that it is worth the effort to attempt to reduce the risk of error even further.**

**And there is one additional risk in the current opaque system that is beyond error. Indeed, I am now going to suggest that, if you**

**ignore every other point I am attempting to make, this risk is so consequential that it alone demands a reconsideration of the opaque system.**

**To be blunt, so long as the models are kept confidential, there is a risk that a bank regulator somewhere in the world will consciously reduce the expected losses, or increase the expected income, in the models it uses to enable its home country banks to look better capitalized than they are. Or perhaps somewhat more benignly, to encourage lending to a particular sector.**

**The consequences of this behavior will ultimately be severe -- and not necessarily limited to that single country. If banks in that country start to fail because of losses in one or more portfolio sectors, the demonstrated ineffectiveness of that country's stress test system will inevitably raise questions about the reliability of stress tests around the globe. The immediate suspicion may not fall on the U.S., but on countries that have less credible regulatory systems. But if the issues snowball, even the U.S. may not be able to escape blowback. There will be deep skepticism regarding U.S. stress tests, whether justified or not.**

**And if confidence is lost, it is hard to imagine any new stress test regime that would regain it.**

**Indeed, it is the very pedestal on which stress testing has been put that creates such a problem if the base starts to crumble. If I can be permitted one literary reference, consider the relevance of Shelley's poem "Ozymandias".**

**What must be recognized is that so long as the U.S. keeps its models confidential, it provides the excuse for every other country to keep its models confidential. This is the case whether the actual rationale for confidentiality is legitimate or illegitimate. In the latter case, the U.S. confidentiality approach provides the necessary cover for the other regulator.**

**The Federal Reserve's rationale for not disclosing its models is apparently based on two related arguments. First, and more vocally, disclosure would enable banks to "game" the system. Second, disclosure would discourage banks from being rigorous in their own modelling efforts.**

**I am not purposely being obtuse, but I have never really understood the gaming concern. What is there to be gamed? Would**

**banks shift their lending to loans that are less heavily penalized in terms of expected losses? Or shift into businesses that are treated more favorably in terms of expected revenues? As I mentioned, that may be what is happening today -- but on an uninformed vs. an informed basis. To state it differently, if gaming is going to occur, it will occur irrespective of model disclosure. Moreover, there is a fine line between gaming and recognition of regulatory reality.**

**The second concern -- less rigor in implementing the bank's own internal models -- is unlikely to occur in reality. Any slackening of efforts by a bank in developing and implementing its models would inevitably come to the attention of the examiners, and they are unlikely to be forgiving.**

**I have heard some regulators ask why a bank needs to see the models if the bank does not want to game them.**

**I think the banking industry would be best served by providing a direct and candid answer. Banks want to see the regulatory models so they can determine if the regulators and/or the banks themselves are making errors and, if there is an honest disagreement, see if it could be resolved.**

**Let me suggest one more precaution the Federal Reserve could take to deal with a concern about gaming. This would be a delayed release of its models. For example, the models for the 2019 stress tests would not be released to the banks until after the 2019 submissions have been made.**

**To conclude, I am urging consideration of reforms to supervisory stress tests precisely because I believe that they are so fundamental to our regulatory system. As such, these tests must be both as accurate as possible and as credible as possible.**