

Daniel K Tarullo: Regulating systemically important financial firms

Speech by Mr Daniel K Tarullo, Member of the Board of Governors of the Federal Reserve System, at the Peter G Peterson Institute for International Economics, Washington DC, 3 June 2011.

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As the one-year anniversary of the Dodd-Frank Act approaches, there will be much discussion about the progress that has been made in reforming financial regulation. Today I would like to get a head start on this exercise, concentrating on Dodd-Frank's requirement that the Federal Reserve Board establish special prudential standards for systemically important financial institutions or, as they are now generally known, "SIFIs." My focus will be on the requirement for more stringent capital standards, which has generated particular interest.

Let me begin by placing this regulatory task in context. The financial crisis spawned or strengthened many reform agendas – among them consumer protection, securities and commodities market regulation, and traditional bank regulation. But a focus on systemic risk has been central to reform efforts, and fittingly so. It was, after all, a systemic financial crisis that we experienced and that led to the Great Recession that affects us still today. Regulatory reform in the wake of the crisis cannot be judged a success if it does not reduce the incidence and severity of future crises.

The pre-crisis regulatory regime had focused mostly on firm-specific or, in contemporary jargon, "microprudential" risks. Even on its own terms, that regime was not up to the task of assuring safe and sound financial firms. But it did not even attempt to address the broader systemic risks associated with the integration of capital markets and traditional bank lending, including the emergence of very large, complex financial firms that straddled these two domains, while operating against the backdrop of a rapidly growing shadow banking system.

A post-crisis regulatory regime must include a significant "macroprudential" component, one that addresses two distinct, but associated, tendencies in modern financial markets: First, the high degree of risk correlation among large numbers of actors in quick-moving markets, particularly where substantial amounts of leverage or maturity transformation are involved. Second, the emergence of financial institutions of sufficient combined size, interconnectedness, and leverage that their failures could threaten the entire system.

In prior speeches I have discussed the correlated risks present in such areas as money market funds and repo markets.¹ This afternoon I turn to some of the issues surrounding regulation of SIFIs. Before doing so, it is important to underscore what is at stake here. For all the disagreements among legislators, policy officials, and the public over the right set of financial reform measures, I have noted one point on which there is near unanimity: No one wants another TARP program. Not those who thought TARP was the best of a bad set of options in the fall of 2008. Certainly not those who opposed it. Not the American people, many of whom saw the injection of billions of dollars of government capital into financial firms as more a bail-out of large banks than an imperative to stabilize the financial system. And not even, I suspect, most of the large financial firms that received the government capital.

In a period of financial stress, the disorderly failure of one or more SIFIs carries the potential for a devastating impact on the financial system. The fear elicited by that prospect led the

¹ See Daniel K. Tarullo, *Regulating Systemic Risk* (2011), "Regulating Systemic Risk," remarks delivered at the 2011 Credit Markets Symposium, Charlotte, North Carolina, March; Daniel K. Tarullo (2010), "Comments on 'Regulating the Shadow Banking System,'" remarks delivered at the Brookings Panel on Economic Activity, Washington, September.

Bush Administration to ask for TARP authority. That same fear led many members of Congress with no great love for large financial firms to vote for TARP. Those actions are further evidence for the proposition that, no matter what their general economic policy principles, government officials faced with a cascading financial crisis that threatens to bring down the national economy will usually support measures to rescue large banks. In order to avoid the need for a new TARP at some future moment of financial stress, the regulatory system must address now the risk of disorderly failure of SIFIs.

Rationale for enhanced capital requirements

Last fall central bank governors and heads of supervision from countries represented on the Basel Committee on Banking Supervision agreed to the important package of reforms in capital regulation known as Basel III. The Basel III requirements for better quality of capital, improved risk weightings, higher minimum capital ratios, and a capital conservation buffer comprise a key component of the post-crisis reform agenda. But they are just that – a component. Although a few features of Basel III reflect macroprudential concerns, in the main it was a microprudential exercise. The new minimum equity capital ratio and conservation buffer were calibrated on the basis of an historical examination of the individual loss experiences of banks in the United States and six other countries.

A macroprudential perspective on capital requirements complements the microprudential orientation of Basel III. There would be very large negative externalities associated with the disorderly failure of any SIFI, distinct from the costs incurred by the firm and its stakeholders. The failure of a SIFI, especially in a period of stress, significantly increases the chances that other financial firms will fail, for two reasons. First, direct counterparty impacts can lead to a classic domino effect. Second, because losses in a tail event are much more likely to be correlated for firms deeply engaged in trading, structured products, and other capital market instruments, all such firms are vulnerable to accelerating losses as troubled firms sell their assets into a declining market.

A SIFI has no incentive to carry enough capital to reduce the chances of such systemic losses. The microprudential approach of Basel III does not force them to do so. The rationale for enhanced capital requirements for SIFIs is to take these costs into account, make SIFIs less prone to failure, and thereby to make the financial system safer. An ancillary rationale is that additional capital requirements could help offset any funding advantage derived from the perceived status of such institutions as too-big-to-fail.

Of course, if a SIFI could be resolved in an orderly fashion, negative externalities could be greatly reduced. The special resolution regime in Dodd-Frank aims at just such an outcome. The FDIC is investing considerable time and talent into making that outcome more likely, and thus bringing a greater measure of market discipline to large financial firms more generally. Together with the FDIC, the Federal Reserve will be reviewing the resolution plans required of larger institutions by Dodd-Frank and, where necessary, seeking changes to facilitate the orderly resolution of those firms.

Still, we must acknowledge that we are some distance from achieving this goal. The legal and practical complexities implicated by the insolvency of a SIFI with substantial assets in many countries will make its orderly resolution a daunting task, at least for the foreseeable future.² Similarly, were several SIFIs to come under severe stress, as in the fall of 2008, even the best-prepared team of officials would be hard-pressed to manage multiple resolutions simultaneously.

² Two examples of these complexities are that placing a financial firm into a resolution process in one country could trigger cross-default clauses or induce ring-fencing of assets in other jurisdictions.

For these reasons, the special resolution mechanism of Dodd-Frank and the enhanced capital requirements called for by that same law should be regarded as complementary rather than as substitutes. Indeed, additional capital requirements would relieve some pressure on the insolvency regime. That regime, in turn, could over time induce additional market discipline so as to make more likely the chances that failure of a very large institution would be a manageable event.

Features of the enhanced capital requirement

While Dodd-Frank mandates an enhanced capital requirement for SIFIs, it does not specify the form of that requirement. I would suggest five desirable characteristics.

First, in keeping with the macroprudential aims of SIFI regulation, an additional capital requirement should be calculated using a metric based upon the impact of a firm's failure on the financial system as a whole. Size is only one factor to be considered. Of greater importance are measures more directly related to the interconnectedness of the firm with the rest of the financial system. Several academic papers try to develop this concept based on inferences about interconnectedness from market price data, using quite elaborate statistical models.³ Others have proposed using more readily observed factors such as intra-financial firm assets and liabilities, cross-border activity, and the use of various complex financial instruments.

Second, the metric should be transparent and replicable. In establishing the metric, there will be a trade-off between simplicity and nuance. For example, using a greater number of factors could capture more elements of systemic linkages, but any formula combining many factors using a fixed weighting scheme might create unintended incentive effects. On the other hand, using a small number of factors that measure financial linkages more broadly might reduce opportunities for unintended incentive effects, but at the cost of some sensitivity to systemic attributes of firms. Whatever the set of factors ultimately chosen, the metric must be clear to financial firms, markets, and the public.

Third, the enhanced capital standards should be progressive in nature. Dodd-Frank itself mandates that they "increase in stringency" with the systemic footprint of the firm, though the statute gives the Federal Reserve Board discretion in deciding how to realize this goal. There are good reasons for this requirement. Systemic importance is not a binary determination, but one of degree. A related point is that it is generally better to avoid cliff effects, whereby significant regulatory consequences ensue based on relatively modest differences among firms. On this point, I would note that, while Dodd-Frank requires us to apply enhanced capital standards to all bank holding companies with more than \$50 billion in assets, we would not want a big difference between the capital requirements for firms with assets just over that level and those just under that level. Thus the supplemental capital requirement for a \$50 billion firm is likely to be very modest.

At the same time, it is important to build in constructive incentive effects. That is, the regulatory structure for SIFIs should discourage systemically consequential growth or mergers unless the benefits to society are clearly significant. There is little evidence that the size, complexity, and reach of some of today's SIFIs are necessary in order to realize

³ One such measure is "CoVaR": The prefix "Co" in front of the conventional abbreviation for value-at-risk is meant to refer to the co-movement of losses for a particular firm with those of the system as a whole. See Tobias Adrian and Markus K. Brunnermeier (2009), "CoVar." Federal Reserve Bank of New York Staff Report No. 348. Another is "Marginal Expected Shortfall," which predicts how much the stock of a specific financial firm will decline in a day relative to an overall market decline. See Viral V. Acharya, Lasse H. Pedersen, Thomas Philippon, and Matthew Richardson (2010). "Measuring Systemic Risk". Working Paper, New York University Stern School of Business.

achievable economies of scale and scope.⁴ Some firms may nonetheless believe there are such economies. For them, perhaps, the highest level of an additional SIFI capital charge may be worth absorbing. Others, though, may conclude in light of the progressive form of the capital requirement that changes in the size and structure of their activities would align better with their returns.

The implication of this point is that the enhanced capital requirements should increase based on the metric I discussed a few moments ago. As a theoretical matter, the ideal approach would be a continuous function, by which the percentage rate of the additional requirement would vary precisely with the measure of a firm's systemic importance. An alternative would be a tiered structure, by which firms are divided into several groups on the basis of the systemic metric, with the rate of the additional requirement varying by group but the same for every firm in each group.

Fourth, it is important that an enhanced requirement be met with high-quality capital. Our presumption is that this means common equity, which is clearly the best buffer against loss and is what markets focused on during the crisis when evaluating the viability of financial firms. Some have suggested that a form of contingent capital instruments ("CoCos") could be a partial or complete substitute for common equity. There is surely conceptual appeal in so-called "going concern" CoCos that convert from debt to equity early enough to forestall a run on a firm and keep it a viable financial intermediary even under stressed conditions. However, for all the attention paid to CoCos in the last few years, it is even now not clear as a practical matter that an instrument can be developed which would be cheaper than common equity but still structured so as to convert in a timely, reliable fashion.⁵ Furthermore, as the history of Tier 1 capital under the original Basel Accord teaches, there is considerable risk that once some form of hybrid is permitted, a slippery slope effect ensues, whereby national regulators approve increasingly diluted forms of capital under political pressures.⁶

Fifth, U.S. requirements for enhanced capital standards should, to the extent possible, be congruent with international standards. The severe distress or failure of a foreign banking institution of broad scope and global reach could have effects on the U.S. financial system comparable to those caused by failure of a similar domestic firm. The complexities of cross-border resolution of such firms, to which I alluded earlier, apply equally to foreign-based institutions. For these reasons, we have advocated in the Basel Committee for enhanced capital standards for globally important SIFIs.

Achieving and implementing such standards would promote international financial stability while avoiding significant competitive disadvantage for any country's firms. I would note in this regard that it will be essential that any global SIFI capital standards, as well as Basel III, be rigorously enforced in all Basel Committee countries.

Work on this subject in the Basel Committee started a bit slowly, but it has picked up considerably in recent months. Although there is not yet consensus on some of the key elements, discussions have decidedly moved in that direction. I am hopeful that in the next several months we will be able to agree upon a proposal on which the Basel Committee can seek public comment. This international process would roughly coincide with a domestic

⁴ As I have noted in prior speeches, there is a real need for a program of research into this question of the efficiencies of scope and scale in the financial services industry, as well as the relationship of industry structure to systemic risk.

⁵ The key problem revolves around the trigger for conversion. A trigger that was directly or indirectly exercised at the discretion of regulators would not necessarily be regarded by markets as predictable, but a trigger tied to a market measure could lead to a variety of unintended manipulative trading opportunities – including, in a worst case, a so-called death spiral.

⁶ In any case, it is absolutely clear that "bail-in" contingent capital – which converts at the point of non-viability of a firm in order to facilitate orderly resolution – would not be an acceptable substitute for common equity.

notice and comment process on a proposed Federal Reserve rulemaking covering enhanced prudential standards for SIFIs. The parallelism of the international and domestic processes should facilitate the goal of congruence. Of course, we will in any case apply our enhanced standards, as required by Dodd-Frank, to foreign banking organizations operating in the United States.

Calibrating the enhanced capital standards

As I mentioned earlier, the minimum and conservation buffer capital requirements of Basel III were calibrated by looking to the loss experience of larger banks. The intuition behind this approach was that historical loss experience provided the best basis for determining the amount of capital a bank would need in order to be regarded by counterparties as a viable financial intermediary. The minimum requirement was calculated by reference to the loss experiences of larger banks over several decades. The conservation buffer, intended to be the amount of capital necessary for a bank to withstand losses during a period of stress and still be above minimum required levels, was calculated by reference to the recent financial crisis.

A number of significant assumptions must be made in conducting analyses of this sort. For this reason, we found it more sensible to think in terms of ranges of capital requirements implied by this approach, rather than a specific number. Setting the final requirements still required some judgment, not least on the question of how much we should try to minimize the chances of failure. The requirements ultimately agreed upon by the Basel Committee were within the range we had estimated, though at the lower end of that range. But the key point is that there was a single, reasonably persuasive approach to calibration around which regulators here and abroad converged.

When we move from the microprudential to macroprudential rationale for capital regulation, there is no such single accepted method for calibration. We do want to reduce further the probability that a SIFI might fail under stress. In that sense the exercise has some continuity with the microprudential approach – the percentage of required capital needs to be increased to achieve a smaller probability of failure based on the kind of loss history examined for Basel III purposes. But the macroprudential rationale for enhanced capital standards is the amount of harm a SIFI failure will inflict on the rest of the financial system, not the amount of loss its shareholders and creditors will incur. The calibration of the additional requirement needs to reflect this concern.

Several different methodologies have been considered by the Basel Committee. The “expected impact” approach tries to determine how much additional capital would be needed to reduce the probability of failure of a SIFI sufficiently to equalize the expected impact on the financial system of the failure of a SIFI and the failure of a banking firm just outside systemic status. For example, if the loss to the financial system from the failure of a SIFI would be five times that resulting from failure of the non-systemic firm, then the SIFI would have to hold additional capital sufficient to make the expected probability of failure one-fifth that of the non-SIFI. The enhanced capital requirement implied by this methodology can range between about 20% to more than 100% over the Basel III requirements, depending on choices made among plausible assumptions.

Another methodology uses macroeconomic models to estimate both the costs and benefits of higher capital requirements to the economy as a whole. The motivation for this “long-run economic impact” approach is still macroprudential, even though it differs from that informing the expected impact approach. However, isolating the effects of capital levels within a general macroeconomic model is a very challenging task and, perhaps for that reason, it produced lower implied increases in capital requirements than did the expected impact approach.

A third methodology tries to determine how much additional capital would be needed to offset any reduction in funding costs associated with the perceived too-big-to-fail status of SIFIs. The capital requirement increases implied by this approach were considerably higher than for the other two approaches. However, the results seemed even more sensitive to changes in reasonable initial assumptions than did the other two models. Moreover, while the possible moral hazard and competitive funding advantage associated with SIFIs are certainly of concern, they do not relate directly to the conceptual foundation for enhanced capital requirements, which lies in the negative externalities associated with a SIFI failure.

In reaching our final view on calibration, the Federal Reserve Board will consider all these approaches, though I note that the expected impact methodology has had the most influence on our staff's analysis. We will also take account of observations from academics and financial institutions. We are certainly mindful of the uncertainties associated with these methodologies. But, at the same time, we cannot ignore the costs to society that the failures of SIFIs would cause the financial system and the economy more generally.

Objections to enhanced capital standards

As we draw closer to the January 2012 statutory date for a rule on enhanced prudential standards for SIFIs, and as the Basel Committee makes progress on a SIFI surcharge, various objections have been raised to additional capital charges for SIFIs. Some have suggested that the statutory requirement for stricter capital requirements could be formally met by lowering capital requirements for banks with less than \$50 billion in assets, or by modestly increasing the consequences of falling below the Basel capital buffer for banks with more than \$50 billion in assets.

An examination of these objections does not, I believe, undermine the case for the type of SIFI capital standard I have described. On the contrary, some of these objections actually strengthen the case by revealing certain misplaced assumptions about the financial system that are embedded in the arguments of those who oppose a meaningful additional capital requirement.

A first objection is that equity is expensive – that the enhanced standard will force SIFIs to reduce their balance sheets because, with higher capital ratios, they cannot earn the rate of return that will be demanded by their investors. The purported result would be reduced intermediation, with consequent costs to the economy. This argument is conceptually incomplete, if not flawed, even when applied to generally applicable capital requirements. To the extent that equity investors demand higher rates of return from financial firms than from non-financial firms, it is largely because financial firms are so much more highly leveraged. Thus the risk of loss is greater, even as the prospect for outsized returns on the limited equity is improved. The lower leverage that would result from higher capital requirements should lead to at least some reduction in the required return on equity.

The argument is even weaker in the context of an additional charge limited to SIFIs. To the degree that systemically important institutions find the additional capital requirement makes some lending unprofitable, that lending could be assumed by smaller banks that do not pose similar systemic risk and thus have lower capital requirements. To be sure, there may not be perfect substitution, particularly not in the short term. In part for that reason, we contemplate a fairly generous transition period to the SIFI capital regime. In addition, though, it is worth recalling that not every additional dollar of lending or capital market activity is necessarily socially optimal. Just as monetary policy must at times induce higher credit costs in order to forestall the wider problems that high inflation would bring, so some checks on the scale of SIFIs are warranted to avoid a repeat of the financial crisis.

A second objection lodged by opponents is that what they characterize as the “punishment” of size and interconnectedness is shortsighted, because SIFIs are needed in a global financial system. But as earlier noted, while there are good reasons for firms to be big, there

is little if any research showing that firms need to have balance sheets with the size and composition some do in order to achieve genuine economies of scope and scale. Moreover, a SIFI capital requirement would not prohibit the size and interconnectedness of today's firms. Rather, it would incentivize firms to maintain those dimensions only if there are risk-adjusted returns for activities that require this scale. If research does establish some true economies for the largest, most interconnected firms, those benefits would need to be balanced with the societal risks associated with their potential distress or failure.

A third objection is that establishing SIFI metrics and capital requirements will actually increase, rather than mitigate, moral hazard by identifying which firms are considered too-big-to-fail. For those of us in the United States, Congress has already rejected this argument by its creation of the requirement for enhanced prudential standards.⁷ More fundamentally, the likelihood of systemic impact does not change regardless of whether firms have to meet enhanced capital standards. And moral hazard is already undermining market discipline on firms that are perceived to be too-big-to-fail. Higher capital standards will help offset the existing funding advantage for SIFIs.

A fourth objection is that a SIFI surcharge is unnecessary because Basel III and the Dodd-Frank Act have already put in place an adequate set of safety and soundness protections. I have already explained that Basel III is largely a microprudential tool, which does not fill the important macroprudential function of containing systemic risk. Provisions of Dodd-Frank such as the Volcker rule and the requirement for standardized derivatives to be centrally cleared are directed at specific activities believed by Congress to give rise to particular risks. It is important to recognize, first, that the diminution of such risks will carry some reduction in capital requirements and, second, that a crucial role of capital regulation is to provide a buffer against loss from all activities of a banking organization. As to the first, the cessation of proprietary trading and the limiting of private equity activities will directly reduce risk-weighted assets and thus capital requirements. Similarly, centrally cleared derivatives will carry lower capital charges.

As to the second point, the history of financial regulation over the last thirty years suggests that, when certain activities are restricted, firms will look for new areas in which to take more risk in the search for return. Capital regulation is the supplest and most dynamic tool we have to keep pace with the shifting sources of risk taken by financial firms. It is far from a panacea, subject as it is to arbitrage and dependent as it is on supervisory rigor. That is perhaps why Congress has also required enhanced prudential standards in other areas such as liquidity, concentration of counterparty exposures, and risk management. But, I would say in conclusion, capital requirements are integral to both microprudential and macroprudential regulation. They are the foundation upon which much other regulation is built.

⁷ By setting the threshold for these standards at firms with assets of at least \$50 billion, well below the level that anyone would believe describes a TBTF firm, Congress has avoided the creation of a de facto list of TBTF firms.