

Daniel K Tarullo: Advancing macroprudential policy objectives

Speech by Mr Daniel K Tarullo, Member of the Board of Governors of the Federal Reserve System, at the Office of Financial Research and Financial Stability Oversight Council's 4th Annual Conference on "Evaluating Macroprudential Tools: Complementarities and Conflicts", Arlington, Virginia, 30 January 2015.

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Standing in front of this audience I feel secure in observing that we are all macroprudentialists now. The imperative of fashioning a regulatory regime that focuses on the financial system as a whole, and not just the well-being of individual firms, is now quite broadly accepted. Indeed, the two entities co-sponsoring this conference were themselves created by the Dodd-Frank Wall Street Reform and Consumer Protection Act, which reoriented financial regulation toward safeguarding financial stability by containing systemic risk – an aim that may not define all of macroprudential policy, but surely rests at its center.

But beneath the high-level consensus for a macroprudential orientation lies a broad range of substantive views, as well as a host of analytic and practical questions, which form the subject of this conference and many like it. Experience with macroprudential policy measures in various countries is not extensive and may, in any case, have only limited applicability elsewhere because of differences in economic conditions, the relative importance of capital market and traditional bank intermediation, and many other factors. And there is sometimes a tendency to overlook the significance of institutional and legal considerations in fashioning and comparing macroprudential policies. If macroprudential policy is to be more than a catchphrase, policymakers must confront these considerations in specifying how a macroprudential perspective will inform financial regulation.

Today I would like to suggest some specific macroprudential objectives that I regard as both realistic and important to incorporate into a near- to medium-term policy agenda: first, continuing the task of ensuring that very large, complex financial institutions do not threaten financial stability; second, developing policies to deal with leverage risks and susceptibility to runs in financial markets that are not fully contained within the universe of prudentially regulated firms; and third, dealing with the vulnerabilities associated with the growing importance of central counterparties. Before discussing these specifics, I will begin with some brief observations on macroprudential tools and, in particular, the special difficulties associated with time-varying macroprudential policies.

The varieties of macroprudential tools

In mapping out the range of macroprudential policies, analysts have developed various taxonomies. Common to most is the distinction between tools designed to prevent systemic risk from building by "leaning against the wind" and tools designed to increase the resiliency of the financial system should systemic risk nonetheless build and lead to broad-based stress. While some tools may straddle this distinction, it seems useful as a starting point for evaluating the utility of different measures. As I have explained elsewhere, I think a distinction of equal – if not greater – importance is between structural or "through the cycle" tools, on the one hand, and time-varying tools, on the other.¹ Structural macroprudential tools are put in place as a part of the ongoing regulatory structure, but they are designed specifically from a systemic, as opposed to a firm- or asset-specific, perspective.

Many proponents of macroprudential policy seem particularly attracted to time-varying measures for both resiliency and lean-against-wind measures. The aim is to regulate in an

¹ See Daniel K. Tarullo (2013), "[Macroprudential Regulation](#)," speech delivered at the Yale Law School Conference on Challenges in Global Financial Services, New Haven, Connecticut, September 20.

explicitly countercyclical fashion through measures that attempt to restrain rapid, unsustainable increases in credit extension or asset prices – either directly or through shifts in incentives – and to relax those measures as economic conditions deteriorate. One can readily understand the conceptual appeal of this approach, but it raises a fair number of significant issues – analytic, practical, institutional, and legal. These include the reliability of measures of excess or systemic risk, the appropriate officials to be making macroprudential decisions, the speed with which measures might realistically be implemented and take effect, and the right calibration of measures that will be efficacious in damping excesses while not unnecessarily reducing well-underwritten credit flows in the economy.

Even if these issues could be addressed and a time-varying macroprudential measure developed and applied, there is some reason to believe that regulatory relaxation of such a requirement may not have much effect on the downside of an economic or financial cycle. Market discipline, which may have been lax in boom years, tends to become very strict when conditions deteriorate rapidly. At that point, counterparties and investors may look unfavorably at a reduction in capital levels or margins or other protective measures, despite their formal elimination by regulators and despite the potential benefits for the economy as a whole.

None of this is to say that analysis of possible time-varying macroprudential tools should not continue. Indeed, some are clearly appropriate for near-term use. For example, since good prudential supervision must always be time-varying, we should continue to adapt oversight with a view to changing conditions. And we will be working with the other banking regulators to build out the Basel III countercyclical capital buffer regime, which takes effect in the United States next year. But as a realistic matter, the role of time-varying macroprudential tools is probably limited for the immediate future.

At the same time, there is both considerable need and potential for completing or developing in the near- to medium-term what I have termed structural macroprudential measures. Of course, there are intellectual and practical challenges here as well, including the need to assess the impact of the measures on economic and financial activity in non-stress times. But unlike time-varying measures, which often must be adopted swiftly to be effective, structural measures can be developed through a full and careful process, including normal administrative law notice and comment procedures. Additionally, where appropriate, the development of such measures can readily involve multiple regulatory authorities. Let me turn now to what I regard as three priority areas for the application of macroprudential tools.

Large financial institutions

By definition, too-big-to-fail problems implicate systemic risk considerations and must be addressed in any regulatory system that seeks to preserve financial stability. More generally, the dynamics observed during the financial crisis – including correlated asset holdings, common risks and exposures, and contagion among the largest firms – suggest that the well-being of any one of these firms cannot be isolated from the well-being of the banking system as a whole. Much of the post-crisis reform agenda has been centered on these institutions. Various regulatory measures informed to a greater or lesser extent by macroprudential considerations have been developed and are now at various stages of implementation. I will mention three of the most important.

First is a set of strengthened capital standards, which fit squarely within the objective of increasing the resiliency of systemically important institutions. Basel III fortified the microprudential requirements for both the quality and quantity of capital for all internationally active institutions. But, both internationally and in the United States, the post-crisis reform agenda includes capital requirements derived in whole or in part from macroprudential aims. These include capital surcharges for systemically important firms and stress testing.

Stress testing, unlike conventional capital requirements, provides a forward-looking assessment of losses that would be suffered under adverse economic scenarios. Moreover, the related capital planning process helps ensure that the banking system would continue to have

adequate capital to provide viable financial intermediation even in the face of adverse conditions. The simultaneous testing of the largest firms using a supervisory model provides a perspective on a large part of the banking system and facilitates identification of correlated exposures and other common risks. The supervisory construction of adverse scenarios each year allows us to incorporate changes in financial practices, vulnerabilities, and conditions into a dynamic capital standard. For example, in recent tests, the Federal Reserve has assessed potential interest rate risk by analyzing how sensitive deposits will be to rate rises, whether banks might have to raise deposit rates more than expected to retain deposits, and whether banks that are hedging interest rate risk are all dealing with the same few counterparties.

The system of risk-weighted capital surcharges adopted by the Basel Committee on Banking Supervision is a regulatory innovation designed to reduce the chances of distress or failure of “G-SIBs” (global systemically important institutions) to a greater degree than at other firms, in recognition of the fact that the resulting negative consequences for the financial system would likely be substantially more significant. These surcharges are an important example of the principle, embodied in section 165(a) of the Dodd-Frank Act, that prudential requirements should increase in stringency with the systemic importance of regulated firms.² The surcharge applicable to institutions varies based on the relative systemic importance of a firm.

As you are doubtless aware, the Federal Reserve has proposed for domestic implementation a range of surcharges higher, and somewhat differently calibrated, than the Basel framework.³ The approach to calibration we developed in cooperation with other Basel Committee members was to determine the additional capital necessary to equalize the probable systemic impact from the failure of a systemically important bank, as compared to the probable systemic impact from the failure of a large, but not systemically important, bank. However, the surcharge levels ultimately agreed to by the Basel Committee were toward the low end of the range suggested by this analysis. The levels included in the proposed rule are more in the middle of that range and thus higher than the Basel surcharges. As suggested in an economic impact analysis undertaken by Basel Committee members, this higher level of surcharges should provide substantial net economic benefits by reducing the risks of destabilizing failures of very large banking organizations. The proposed rule would also take into account a firm’s relative dependence on short-term wholesale funding, a source of systemic vulnerability to which I will return a bit later in these remarks. During the transition period for implementation of the G-SIB surcharges (as modified following the notice and comment process), the affected firms will presumably be considering whether they wish to reduce or alter the range, amount, or types of their activities so as to place themselves in a lower “risk bucket,” with a concomitantly lower capital surcharge.

A second kind of post-crisis regulatory reform with a macroprudential influence is the new set of quantitative liquidity requirements, including the now-adopted liquidity coverage ratio (LCR) and the internationally agreed-upon net stable funding ratio (NSFR) soon to be considered for adoption by U.S. banking regulators. Having just recently given an entire speech on the subject, I will note here only that both the LCR and the NSFR – along with the Federal Reserve’s annual Comprehensive Liquidity Assessment and Review – were motivated by the systemic liquidity squeeze experienced during the crisis. Even though the LCR, for example, is principally microprudential in design, it still reflects macroprudential concerns, as in its exclusion of deposits with other banks from the set of assets that qualify as highly liquid. And, as in the requirements applicable to matched books of large firms that are important providers of liquidity

² Another capital measure applicable only to the eight most systemically significant U.S. institutions is a leverage ratio of 5 percent, which is higher than the international standard. In light of increases in applicable risk-based capital requirements, this increase seemed warranted to maintain the traditional complementary relationship between these two forms of capital rules.

³ See Board of Governors of the Federal Reserve System (2014), “[Risk-Based Capital Guidelines: Implementation of Capital Requirements for Globally Systemically Important Bank Holding Companies](#),” notice of proposed rulemaking, 79 *Fed. Reg.* 74473 (December 18).

to financial markets, some overtly macroprudential provisions have been incorporated in the NSFR.

A third set of regulatory measures of relevance to systemic risks from large financial institutions concerns the potential failure of these institutions. These include, among others, the orderly liquidation authority given the Federal Deposit Insurance Corporation (FDIC) under title II of the Dodd-Frank Act and proposals to assure the availability of debt that is convertible into equity should a firm fail, thereby providing for absorption of losses and possible recapitalization without need for the injection of public capital.⁴ I suspect these and similar measures do not appear on many lists of macroprudential tools. And it may be hard to decide whether to classify them as resiliency tools or as structural measures designed to retard the build-up of systemic risk. Yet, with their purposes of ensuring that even the largest firms can fail and be wound down in an orderly fashion, and of countering too-big-to-fail perceptions associated with systemically important financial institutions, they belong on those lists.

One such tool that has gotten more attention in the past year is the resolution planning process established by section 165(d) of the Dodd-Frank Act. The Federal Reserve and the FDIC have identified substantial shortcomings in many of the plans submitted to date. In the next round of submissions, due this summer, these firms will need to produce plans that show they could be resolved in bankruptcy in an orderly fashion. Meeting this requirement will entail significant changes in some combination of corporate structure, inter-corporate relationships, the mix and extent of activities, and the legal locus of certain bank activities.

Developing a new form of market regulation

As I have just described, measures to promote the macroprudential objectives associated with the regulation of large financial institutions have already been developed. They need variously to be finalized or implemented. And all will probably need to be adjusted as time passes and circumstances change. But the tools themselves have been identified, selected, and elaborated upon. When it comes to much financial activity taking place outside prudentially regulated institutions, however, there is still a need to develop, analyze, and consider tools that should be used for achieving macroprudential aims.

Given the breadth and diversity of activities that can be encompassed, for example, in the term “shadow banking,” it is also necessary for policymakers to identify some priority areas within which to focus work on developing an appropriate set of regulations informed by macroprudential considerations. I would suggest that priority should be given to activities that pose significant risks of rapid investor flight during stress periods, with the attendant risks of firesales and other negative effects on funding and asset markets more generally. Specifically, it seems sensible to prioritize two areas: short-term wholesale funding and the liquidity and redemption risks that may be present in asset management activities. These areas may, of course, overlap in some circumstances.

I have on past occasions described at some length my concerns with short-term wholesale funding – especially, though not exclusively, funding associated with assets thought to be cash equivalents.⁵ We are, of course, addressing these risks within prudentially regulated firms through various types of liquidity regulation and supervision, as well as changes in practice by the firms that clear tri-party repo transactions. But, as demonstrated in the years preceding the crisis, short-term wholesale funding can support a form of shadow banking outside the regulatory perimeter. Indeed, one might expect that as regulatory and supervisory practice forces the internalization by regulated firms of the systemic costs of excessive dependence on

⁴ See Financial Stability Board (2014), “[Adequacy of Loss-Absorbing Capacity of Global Systemically Important Banks in Resolution \(PDF\)](#),” (Basel, Switzerland: Financial Stability Board November 10).

⁵ See Daniel K. Tarullo (2013), “[Shadow Banking and Systemic Risk Regulation](#),” speech delivered at the Americans for Financial Reform and Economic Policy Institute Conference, Washington, D.C., November 22.

runnable short-term funding, there will be increasing incentives for more leveraged credit intermediation to migrate outside the regulatory perimeter.

One policy response that the Federal Reserve has advocated and that has now been proposed by the Financial Stability Board (FSB), is for minimum margins to be required for certain forms of securities financing transactions (SFTs) that involve extensions of credit to parties that are not prudentially regulated financial institutions.⁶ This system of margins is intended to serve the macroprudential aim of moderating the build-up of leverage in the use of these securities in less regulated parts of the financial system and to mitigate the risk of procyclical margin calls by preventing their decline to unsustainable levels during credit booms.

Given the ease with which such transactions may move across borders, it is particularly important that the FSB has proposed a framework that could be applicable in all major financial markets. We will welcome comments on this proposal when, as I expect, the Federal Reserve issues a notice of proposed rulemaking to implement it domestically, probably by using the Federal Reserve's authority under the Securities Exchange Act of 1934 to supplement our prudential regulatory authorities. But it is also important to continue analysis of other macroprudential policy options that would address the risks associated with short-term wholesale funding. Indeed, even the FSB proposal does not extend to SFTs backed by government collateral, a very important source of short-term wholesale funds.

Asset management activities have commanded considerable attention lately, both internationally at the FSB and domestically at the Financial Stability Oversight Council (FSOC). The asset management industry has grown rapidly since the financial crisis, both in terms of the dollar amount of assets under management and in the concentration of assets managed by the largest firms. These trends may well continue as stricter prudential regulation makes investment in certain forms of assets more costly for banks. To the extent that asset management vehicles hold relatively less liquid assets but provide investors the right to redeem their interests on short notice, there is a risk that in periods of stress, investor redemptions could exhaust available liquidity. Under some circumstances, a fund might respond by rapidly selling assets, with resulting contagion effects on other holders of similar assets and, to the degree they had not already been subject to redemption pressures, other asset management vehicles holding those assets. The use of leverage by investment funds, including through derivatives transactions, could create interconnectedness risks between funds and key market intermediaries and amplify the risk of such firesales.

Considerable work is needed, first, to develop better data on assets under management, liquidity, and leverage, in order to fill the information gaps that have concerned so many academics and policy analysts. Then there is more work to be done in assessing the magnitude of liquidity and redemption risks, including the degree to which those risks vary with the type of assets and fund structure. And finally, we will need tools that will be efficient and effective responses to the risks identified.

Both the short-term wholesale funding and asset management examples point to the broader objective for macroprudential policy of developing what we might term "prudential market regulation" – that is, a policy framework that builds on the traditional investor protection and market functioning aims of securities regulation by incorporating a system-wide perspective. Like the reforms to banking regulation that followed the crisis, this new form of regulation might start by strengthening some of the firm- or fund-specific measures associated with those traditional regulatory aims, but then move forward to take into account such considerations as system-wide demands on liquidity during stress periods and correlated risks among asset managers that could exacerbate liquidity, redemption, and firesale pressures. The specific policies associated with prudential market regulation might be transaction-specific, or apply to

⁶ Financial Stability Board (2014), "[Strengthening Oversight and Regulation of Shadow Banking: Regulatory Framework for Haircuts on Non-Centrally Cleared Securities Financing Transactions \(PDF\)](#)," (Basel, Switzerland: Financial Stability Board, October 14).

certain kinds of business models. In her important speech last month, Securities and Exchange Commission (SEC) Chair Mary Jo White provided a roadmap for beginning to develop just such a regulatory approach for the asset management industry.⁷

In thinking about short-term wholesale funding and some forms of asset management, we encounter a background circumstance that complicates the task of developing effective macroprudential tools. Demand for safe short-term assets is both real and substantial, emanating from multiple sources, including sovereign nations that wish to self-insure against exchange rate pressures; non-financial corporations that have increased their cash holdings in the wake of the market disruptions associated with defaults by Enron and other companies; and institutional investors protecting themselves against redemption demands or other unexpected cash needs. While it is important to adopt measures that protect against runs and that counteract the illusion that cash equivalents are actually cash, it is equally important to realize that the demand for relatively safe, short-term assets will not disappear. Indeed, there is some risk that, as regulation makes some forms of such assets more costly, this demand will simply turn elsewhere. Thus the ultimate effectiveness of what I have termed prudential market regulation will depend on policymakers taking into account in their regulatory approaches the sources of, and motivation for, demand for short-term, liquid, and relatively safe assets beyond the debt of very creditworthy sovereigns.

Central counterparties

My third policy objective with a macroprudential component relates to central counterparties (CCPs). A key regulatory aim following the crisis, both in the United States and internationally, has been to encourage more derivatives and other financial transactions to be cleared through CCPs. There are important financial stability benefits to be gained from the progress that has been made toward this aim – including multilateral netting, standardized initial and variation margin requirements, and greater transparency.

However, as has been frequently observed, if the financial system is to reap these benefits, the central counterparties to which transactions are moving must themselves be sound and stable. Extreme but plausible events, such as the failure of clearing members or a rapid change in the value of instruments traded by a CCP, could expose it to financial distress. If the CCP has insufficient resources to deal with such stress, it may look to its clearing members to provide support. But if the problems arise during a period of generalized financial stress, the clearing members may themselves already have been weakened or, even if they remain sound, the diversion of their available liquidity to the CCP may prevent customers of the clearing members from accessing needed funding. If the CCP fails, the adverse effects on the financial system could be significant, including the prospect that the CCP's default on its obligations could amplify the stress on other important financial institutions.⁸

Considerable work to ensure the safety of CCPs has been done – internationally by the Committee on Payments and Market Infrastructures (CPMI)⁹ at the Bank for International Settlements and by the International Organization of Securities Commissions (IOSCO), and domestically by the SEC, the Commodity Futures Trading Commission, and the Federal Reserve. The 2012 CPMI-IOSCO Principles for Financial Market Infrastructures (PFMIs) updated and strengthened regulatory standards for, among other financial market utilities, significant CCPs. These principles, once fully implemented by all relevant U.S. agencies, will

⁷ See Mary Jo White (2014), "[Enhancing Risk Monitoring and Regulatory Safeguards for the Asset Management Industry](#)," speech delivered at the New York Times DealBook Opportunities for Tomorrow Conference, New York, December 11.

⁸ For a more complete discussion of the potential financial stability risks associated with CCPs, see Jerome H. Powell (2014), "A Financial System Perspective on Central Clearing of Derivatives," speech at the 17th Annual International Banking Conference, Chicago, November 6.

⁹ Until September 2014, CPMI was known as the Committee on Payment and Settlement Systems.

provide a strong and consistent basis for heightened oversight of the CCPs designated as systemically important by the FSOC. These heightened standards must continue to be supported by robust supervisory efforts that should continue to evolve as supervisors gain experience assessing firms against new regulations and consider new and changing risks faced by CCPs.

Notwithstanding the advances in CCP regulation, questions have been raised in international fora, in discussions among domestic financial and regulatory officials, and by some market participants over whether more needs to be done. To me, at least, some of the most important questions implicate macroprudential concerns. One discrete example is the possibility that CCP margining practices may have a significantly procyclical character that could be problematic in deteriorating financial conditions.

More fundamentally, systemically important CCPs are now generally required to have funds sufficient to cover defaults by their two largest members (“cover 2”). Perhaps this is the right standard when contemplating the well-being of a CCP in isolation. But it seems worth considering whether this standard is adequate when hypothesizing stress throughout the financial system, since the default of two large counterparties would almost surely be accompanied by significant market disruption. At the least, it is important to ensure a consistent, robust implementation of the cover 2 standard that has already been agreed.

While the question of what constitutes the optimal default fund standard needs more analysis and debate, I think there is little question that more attention must be paid to strengthening stress testing, recovery strategies, and resolution plans for significant CCPs. The typical CCP recovery strategy does not take a system-wide perspective and is premised on imposing losses on, or drawing liquidity from, CCP members during what may be a period of systemic stress. Many of these members are themselves systemically important firms, which will likely be suffering losses and facing liquidity demands of their own in anything but an idiosyncratic stress scenario at a CCP. Moreover, in at least some cases, uncertainty is increased by the difficulty of estimating with any precision the extent of potential liability of members to the CCP, thereby complicating both their recovery planning and efforts by the official sector to assess system-wide capital and liquidity availability in adverse scenarios.

These and other questions will be discussed in the coming months at the CPMI, the FSB, and other international fora, as well as among U.S. regulators. Researchers with a macroprudential perspective can contribute to these discussions with analyses of system-wide liquidity demands and knock-on effects of defaults by CCP members, as well as policy suggestions to address vulnerabilities that emerge from these analyses.

Conclusion

In a basic sense, the imperative of a macroprudential policy perspective means taking account of system-wide effects as financial regulation is developed and implemented. But as is the case with traditional microprudential policy, agreement at this high level does not necessarily assure agreement on the priorities for regulatory attention, much less the specific regulations that should be adopted. Nor can even the best-conceived macroprudential policies compensate totally for the risks created by key macroeconomic or financial conditions. It should, however, force us all to think about issues like arbitrage, correlated risks and responses, and externalities in a more explicit and regular fashion than was evident in pre-crisis practice. And even as policymakers try to move forward with a practical agenda to incorporate macroprudential concerns in their programs, it is important that the academics and policy researchers represented by this audience continue to advance this still fledgling sub-discipline through both theoretical and empirical work.