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***“Simplicity and Complexity
in Capital Regulation”***

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Federal Reserve Bank of Boston

*The Financial Stability Institute of the
Bank for International Settlements:
Program for Financial Sector Supervisors*

Abu Dhabi, United Arab Emirates
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I would like to thank the Basel Committee on Banking Supervision, the Arab Monetary Fund, and the Financial Stability Institute for inviting me to speak today. I would also like to commend Josef Tosovsky and the staff of the Financial Stability Institute for facilitating these global discussions on very important bank-supervision and bank-regulation issues. Comparing implementation challenges and sharing best practices in supervision and regulation are increasingly important in a global financial system, so gatherings like this are welcome. Indeed, we have been reminded in

recent years that significant banking and financial problems in one country can have serious ramifications that are far removed from the source of the original problem.

As always, my remarks reflect my own views, not necessarily those of my colleagues at the Board of Governors or on the Federal Open Market Committee.

Today I will focus my comments on bank capital requirements, an area where we have made substantial progress – but also an area that has become increasingly complex. A particular challenge with this added complexity is the difficulty in providing a transparent picture of the banking organization’s financial health when many of the calculations involve very granular, firm-specific information.

This complexity poses difficulties not only for the management of banking organizations and their supervisory agencies, but also for investors and, importantly, the public. When the regulatory environment becomes more difficult for investors to understand, the efficacy of market discipline can erode. Market discipline requires at very least that investors and the public can clearly understand the financial condition of firms. As a result, too much complexity may be costly.

Transparent financial disclosures that promote effective monitoring of financial condition are vital. In a supervisory context, market signals can be an important tool for bank supervisors. Indeed, during the financial crisis, market signals provided timely and useful information about the condition of financial institutions. Like others, I carefully examined stock price movements, subordinated debt spreads, availability of wholesale funding, and credit default swap spreads to better understand how markets were assessing the financial condition of institutions – and whether the market assessment was at variance with what could be observed in supervisory reports.

The complexity of capital regulation is readily apparent in the annual reports and financial statements of the largest U.S. banking organizations. The regulatory and capital sections often extend

for more than 20 pages, consisting of dense discussions of capital regulation and measurement. While some of this necessarily reflects the complicated nature of the business of global banking, I think it would be beneficial to look for ways to streamline discussions in order to focus investors and the public on those factors most relevant to the financial solvency of the firm.

Allow me to preview some of the main points I will discuss today:

- I will argue that the increased attention on sufficient high-quality capital for banking organizations is extremely important, and represents an important “lesson learned and applied” coming out of the financial crisis. In the United States, this increased attention has resulted in a significant increase in the quantity and quality of capital that most U.S. banking organizations have on hand to withstand possible future shocks.
- I will suggest that at least some of the complexity could, and probably should, be reduced if the so-called “Pillar 3” goals of increased transparency and market discipline are to be achieved.
- I will argue that, because of the variety of banking models and their associated risks, *both* risk-based capital requirements and leverage-based capital requirements are likely to continue to be needed. Consider the fact that the capital ratios of the largest banking organizations are comparable to those of the wider group of bank holding companies with more than \$50 billion in assets *when using risk-based capital* – but are low relative to those banking organizations *when using the leverage ratio*.
- I will note that a number of the largest global banking organizations have significant broker-dealer operations and are highly dependent on wholesale funding. This funding structure makes them inherently more susceptible to runs, suggesting that their relatively low leverage-ratio capital may not be appropriate. I would note that Federal Reserve

Governor Dan Tarullo has focused on the dependence on wholesale financing in several speeches, and on the need for higher capital charges for institutions that are heavily reliant on this less stable funding model.¹

The Financial Crisis and Capital Regulation

One of the positive things to emerge from the financial crisis of 2008 was a renewed emphasis on increasing the quantity and quality of the capital cushion in the banking system. Enhancements to capital requirements played an important role in forcing firms to increase capital. New supervisory tools have been critically important as well. In particular, the stress tests that require banking organizations to consider whether they have sufficient capital under stress scenarios designed by bank supervisors have, in many cases, provided significant impetus to improve capital positions.

As is shown in Figure 1, since the financial crisis the Tier 1 common equity capital ratio has increased significantly for bank holding companies of all sizes.² This improvement in a relatively narrowly defined capital measure has led to the presence of significantly more loss-absorption capabilities than U.S. banks had, prior to the crisis.

While the increased attention to improving the size and quality of capital positions of banking organizations should reduce insolvency risks at many institutions and enhance the ability of the economy to sustain negative shocks, this attention has also generated a much more complicated set of capital regulations. An examination of the 2012 annual reports of the largest banking organizations highlights just how complicated capital regulations have become. It is not unusual for the largest banks to devote considerable space in their annual reports, or separate papers, to discuss at length the regulatory environment and their implementation of capital regulations. This complexity makes

evaluations of banks' financial conditions challenging and makes it more difficult to make comparisons across banking organizations.

The complexity stems from several factors. First, many firms report on their positions relative to Basel I, Basel II, and Basel III capital requirements. This reflects the fact that Basel I is the current capital regulation in the United States, but some of the largest firms are discussing Basel II capital requirements that they are running in parallel, and most large banking organizations are now also reporting what they expect their capital position will be under Basel III.

This is primarily a transition problem, but the transition to full implementation of Basel III is not scheduled to be completed internationally for another five years. A possible simplification over time might be that once large banking organizations are fully compliant with Basel III, they no longer also report capital under earlier frameworks. That said, once Basel III has been fully adopted, significant complexity will still remain.³

A second form of complexity results from the variety of measures of capital. Figure 2 highlights the variety of capital being used. Tier 1 common equity is generally the narrowest definition of capital reported, focusing on those elements of capital best able to absorb losses. Tier 1 capital is less narrow. Total risk-based capital has an even broader definition.⁴ The leverage ratio uses Tier 1 capital but is relative to a measure close to average total assets, rather than risk-weighted assets.

U.S. Basel III implementation will include a supplementary leverage ratio – the ratio of Tier 1 capital to total leverage exposure – of at least 3 percent for large global banks. This ratio broadens the denominator from average total assets to total leverage exposure. Also under consideration for the largest global banks is an additional Tier 1 capital leverage buffer of at least 2 percent above the minimum supplementary leverage ratio, for a total of 5 percent.⁵

One potential simplification would be to focus only on the narrower definition of capital, Tier 1 common equity. During the financial crisis, investors and regulators focused on narrow definitions of capital, given the urgency around loss absorption capabilities. Potentially de-emphasizing the reporting of the broader measures of capital would simplify financial statements, and would create more focus on the capital base with the best loss-absorption capability – where investors and regulators should likely concentrate.

A third form of complexity emerges from the complications involved in risk-weighting assets for risk-based capital calculations. Making capital ratios more risk sensitive has the benefit of discouraging shifts to riskier assets as a means to maximize near-term profitability at the expense of future viability. However, the need to rely on models and judgment gives rise to complexity and perpetuates the challenges of comparability across firms that may use very different risk models – and some of those models may be in different stages of development. In fact, a recently published paper associated with the Basel process has sparked discussion of whether greater simplification would be desirable.⁶

A fourth form of complexity stems from the use of both risk-based capital ratios and leverage ratios. But the need for both capital ratios reflects in part the complexity of banking organizations' activities. In other words if all banking organizations had similar business models, it might not be necessary to use both ratios.

For a banking organization that primarily takes deposits and makes loans, its reliance on wholesale funding is low, the risk of runs is limited by deposit insurance, and much of the risk to the institution derives from the riskiness of its loan portfolio. However, many global banking organizations have concentrated their operations in less traditional banking activities. For example, many global banking organizations have large broker-dealer operations. In this case they are heavily

reliant on wholesale funding, they have few deposits covered by deposit insurance, and their greatest risk is that the wholesale financing they need in order to fund (i.e., to keep rolling over) their securities portfolio during a crisis will not be available, causing a severe liquidity problem.

As shown in Figure 3, the liabilities of bank holding companies with broker-dealer operations can be quite different from those of bank holding companies without broker-dealer operations, given the former's dependence on wholesale funding rather than deposits. This makes the likelihood of liability runs dependent on a firm's business model, with those firms reliant on wholesale funding much more likely to experience a liability run during a crisis. New liquidity measures will reduce some of the mismatch, but given the importance of financing long-term securities with short-term financing as part of the business model, the new liquidity measures may not be sufficient. Larger capital positions for firms with a business model reliant on wholesale funding will help to further reduce the likelihood of a liability run.

I would now like to delve further into this difference for large banking organizations.

Leverage and Risk-based Capital Requirements

Broker-dealers tend to hold large securities portfolios, many of which carry low risk weights because the risk weighting is based on credit risk – that is, default risk. Less capital is required for assets with a lower risk weighting. Because of the low risk weighting on their primary assets, broker-dealers tend to have high risk-based capital ratios.

However, for these organizations the riskiness of their assets is significantly compounded by the riskiness of their funding model – that is, the risk that their short-term financing, accomplished through repurchase agreements and other wholesale funding arrangements, might dry up with a financial shock and not be available to finance their longer-term securities portfolio. Should investors

lose confidence in these firms, broker-dealers can be forced to sell securities at fire-sale prices, causing solvency and liquidity concerns.

These concerns are far from theoretical, in that many difficulties in the fall of 2008 stemmed from runs on institutions that were reliant on wholesale funding – and many of those firms failed or were acquired. I would add that some of the largest U.S. global banking organizations have significant broker-dealer operations, some of which were acquired during the financial crisis.

Figure 4 shows the Tier 1 common equity capital position of U.S. bank holding companies by asset size. Bank holding companies with greater than \$50 billion in assets appear relatively well capitalized relative to smaller bank holding companies. Most of the large bank holding companies have more than 10 percent Tier 1 common equity capital relative to risk-weighted assets. Figure 5 shows that this is true for even the largest bank holding companies. Nine of the ten largest U.S. bank holding companies have Tier 1 common equity capital ratios over 10 percent.⁷

Figure 6 shows the leverage ratio of U.S. bank holding companies, by asset size. The largest bank holding companies do not appear as well capitalized when using the leverage ratio, which does not use risk-weighted assets as a denominator. More of the bank holding companies with greater than \$50 billion in assets have less than 8 percent leverage ratio capital compared with smaller bank holding companies.

Figure 7 shows that the 10 largest bank holding companies have among the lowest leverage ratios of the largest bank holding companies. Six of the ten have leverage ratios below 8 percent. This is not reflected in other large bank holding companies with more than \$50 billion in assets; most of these banks have leverage ratios above 8 percent.

Figures 8 and 9 illustrate one of the reasons for this difference. The 10 largest US domestically owned bank holding companies are categorized by the relative importance of their

broker-dealer operations. Those with very large broker-dealer operations tend to be high on the Tier 1 common equity ratio, but low on the leverage ratio. Given the risks that broker-dealer funding models pose, and the failure of many of the large broker-dealers during the crisis, it would seem appropriate that these organizations should be holding more capital. Certainly one way to achieve this would be to impose capital charges for bank holding companies highly reliant on wholesale funding.

These differences in business lines highlight why a risk-based capital requirement alone is not sufficient. Many of the largest banking organizations are less reliant on deposits and more reliant on wholesale funding as a result of their large broker-dealer operations. For these organizations, the primary risk issue is the riskiness of their funding model. As a result, using only credit-risk-based measures of capital may not capture the “true riskiness” of these organizations.

Given all this, I would argue that the leverage ratio is an important supplement to risk-based capital requirements. While the leverage ratio is not designed to explicitly capture wholesale funding risk, it in effect serves this purpose because of the higher weight it gives to low-risk assets – which are the very assets that wholesale funding typically supports.

In sum, the business models of some bank holding companies span diverse activities, particularly among the largest organizations. Broker-dealer operations carry high risk-weighted capital ratios because they hold low-risk assets – but they are still highly leveraged.

Concluding Observations

Bank holding companies have responded to more regulatory and supervisory scrutiny of capital by raising their capital ratios. This should position banking organizations to have greater loss absorption capacity, should it be necessary.

However, along with the increased focus on capital regulation has come significantly more complexity. To the extent that this complexity makes it more difficult for investors and depositors to distinguish the financial condition of bank holding companies, there is the potential that the complexity could weaken the third pillar of Basel III market discipline. Now that many of the regulations are being implemented, there should be thoughtful consideration as to whether streamlining the rules could maintain the same level of capital adequacy assurance with lower cost to banking organizations, regulators, and investors.

Some of the complexity in bank capital regulation is unavoidable. Global banking organizations are in a variety of business activities, some of which take sophisticated modeling to assess the risk of the activity. However, potential ways to streamline capital regulation would be to place greater emphasis on narrow capital definition, such as Tier 1 common equity – and to accelerated emphasis on Basel III.

In contrast, the complexity of business models may make it difficult to rely on only risk-based capital requirements. The range of risks in business models – on both the asset side and the liability side of balance sheets – may make the funding model more risky than is captured by *only* using risk-based capital requirements. The leverage ratio is a particularly important supplemental tool for global banking organizations that are heavily reliant on wholesale funding. For many of these firms, the business model is less traditional than for smaller banks – and more at risk of experiencing funding problems potentially requiring fire sales of assets.

Large broker-dealers in many large bank holding companies exemplify this risk. By funding securities portfolios with shorter term wholesale funding, their risks are not fully captured by relying only on risk-based capital ratios. Large global banking organizations with large broker-dealers are organizations where leverage ratios and capital charges on wholesale funding are particularly

appropriate. Currently, many of these very large organizations have lower leverage capital ratios than are observed at more traditional large bank lenders.

Let me leave you with this view: global banks with significant investment banking and broker-dealer activities pose significant potential risk to the financial system and should be among the best capitalized large banking organizations.

Thank you.

Notes:

¹ See Tarullo, D. (2013, May), *Evaluating Progress in Regulatory Reforms to Promote Financial Stability*. Speech presented at the Peterson Institute for International Economics, Washington, D.C. See also Tarullo, D. (2013, September), *Macroprudential Regulation*. Speech presented at the Yale Law School Conference on Challenges in Global Financial Services, New Haven, Connecticut. Both speeches can be found at <http://www.federalreserve.gov>.

² The analysis for this talk includes bank holding companies that are Y-9C filers.

³ The Basel III rule augments both the general risk-based capital requirements (Basel 1) as well as the “advanced approaches” risk-based capital requirements (Basel 2), but both the general and advanced risk-based capital requirements remain in effect for advanced-approaches firms. As a result of the dual compliance requirement (i.e., the Collins amendment), the more binding of the two regulatory capital requirements at any given point in time is the effective risk-based capital requirement.

⁴ Tier 1 common equity is generally the most narrow definition of capital reported, and focuses on those elements of capital best able to absorb losses. Tier 1 equity capital is less narrow and allows banks to include qualifying perpetual preferred stock, qualifying minority interests, and qualifying trust preferred securities. Total risk-based capital is an even broader definition and includes qualifying subordinated debt, a portion of the loan loss allowance, and other Tier 2 capital elements.

⁵ The final rule implementing the Basel III regulatory capital reforms in the U.S., approved on July 2, 2013, includes a minimum leverage ratio of 4% for all banking organizations. For banking organizations using advanced approaches, there is an additional requirement, a supplementary leverage ratio – the ratio of tier 1 capital to total leverage exposure – of at least 3%. On July 9, 2013, the Federal Reserve Board, the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency adopted the Supplementary Leverage Ratio Notice of Proposed Rulemaking. Under this proposed rule, bank holding companies with more than \$700 billion in assets or \$10 trillion in assets under custody (covered BHCs) would also be required to maintain a tier 1 capital leverage buffer of at least 2 percent above the minimum supplementary leverage ratio requirement of 3%, for a total of 5%. In addition, depository institutions of covered BHCs would be required to meet a 6% supplementary leverage ratio to be considered “well capitalized.” See the July 2, 2013 Final Rule – BOG press release and The Federal Register, October 11, 2013, Vol. 78, No. 198, p 62018, CFR Parts 208, 217 and 225. Also see July 9, 2013 – BOG press release and The Federal Register, August 20, 2013, Vol. 78, No 161, p 51101, 12 CFR Part 324.

⁶ The Basel Committee on Banking Supervision (2013), "The regulatory framework: balancing risk sensitivity, simplicity and comparability," BIS discussion paper, July. <http://www.bis.org/publ/bcbs258.pdf>

⁷ The ten largest bank holding companies included here are the ten largest U.S. banking organizations, excluding one foreign-owned banking organization. These organizations all held assets over \$250 billion as of June 30, 2013.