Appendix A – The Federal Reserve Board's Framework for Implementing the Countercyclical Capital Buffer

1. Background

The Board of Governors of the Federal Reserve System (Board) issued a final regulatory capital rule (Regulation Q) in coordination with the Office of the Comptroller of the Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC) that strengthened risk-based and leverage capital requirements applicable to insured depository institutions and depository institution holding companies (banking organizations).[1] Among those changes was the introduction of a countercyclical capital buffer (CCyB) for large, internationally active banking organizations.[2]

The CCyB is a macroprudential policy tool that the Board can increase during periods of rising vulnerabilities in the financial system and reduce when vulnerabilities recede. It is designed to increase the resilience of large banking organizations when policymakers see an elevated risk of above-normal losses. Increasing the resilience of large banking organizations should, in turn, improve the resilience of the broader financial system. Above-normal losses often follow periods of rapid asset price appreciation or credit growth that are not well supported by underlying economic fundamentals. The circumstances in which the Board would most likely use the CCyB as a supplemental, macroprudential tool to augment minimum capital requirements and other capital buffers would be to address circumstances when potential systemic

[1] See 78 FR 62018 (October 11, 2013) (Board and OCC); 79 FR 20754 (April 14, 2014) (FDIC).

[2] 12 CFR 217.11(b). The CCyB applies only to banking organizations subject to the advanced approaches capital rules, which generally apply to those banking organizations with greater than $250 billion in assets or more than $10 billion in on-balance-sheet foreign exposures. See 12 CFR 217.100(b). An advanced approaches institution is subject to the CCyB regardless of whether it has completed the parallel run process and received notification from its primary Federal supervisor. See 12 CFR 217.121(d).

vulnerabilities are somewhat above normal. By requiring large banking organizations to hold additional capital during those periods of excess and removing the requirement to hold additional capital when the vulnerabilities have diminished, the CCyB also is expected to moderate fluctuations in the supply of credit over time.[3] Further, Regulation Q established the initial CCyB amount with respect to U.S.-based credit exposures at zero percent and provided that the maximum potential amount of the CCyB for credit exposures in the United States was 2.5 percent of risk-weighted assets.[4]

The Board expects to make decisions about the appropriate level of the CCyB on U.S.-based credit exposures jointly with the OCC and FDIC, and expects that the CCyB amount for U.S.-based credit exposures will be the same for covered depository institution holding companies and insured depository institutions. The CCyB is designed to take into account the macrofinancial environment in which banking organizations function and the degree to which that environment impacts the resilience of the group of advanced approaches institutions. Therefore, the appropriate setting of the CCyB for private sector credit exposures located in the United States (U.S.-based credit exposures) is not closely linked to the characteristics of an individual institution. However, the overall CCyB for each institution will differ because the CCyB is weighted based on a banking organization's particular composition of private-sector credit exposures across national jurisdictions.

2. Overview and Scope of the Policy Statement

This Policy Statement describes the framework that the Board will follow in setting the amount of the CCyB for U.S.-based credit exposures. The framework consists of a set of principles for translating assessments of financial-system vulnerabilities that are regularly undertaken by the Board into the appropriate level of the CCyB. Those

[3] Implementation of the CCyB also helps respond to the Dodd-Frank Act's requirement that the Board seek to make its capital requirements countercyclical 12 U.S.C. §§ 1844(b), 1464a(g)(1), and 3907(a)(1) (codifying sections 616(a), (b), and (c) of the Dodd-Frank Act).

[4] The CCyB is subject to a phase-in arrangement between 2016 and 2019. See 12 CFR 217.300(a)(2).

assessments are informed by a broad array of quantitative indicators of financial and economic performance and a set of empirical models. In addition, the framework includes an assessment of whether the CCyB is the most appropriate policy instrument (among available policy instruments) to address the highlighted financial-system vulnerabilities.

3. The Objectives of the CCyB

The objectives of the CCyB are to strengthen banking organizations' resilience against the build-up of systemic vulnerabilities and reduce fluctuations in the supply of credit. The CCyB supplements the minimum capital requirements and the capital conservation buffer, which themselves are designed to provide substantial resilience to unexpected losses created by normal fluctuations in economic and financial conditions. The capital surcharge on global systemically important banking organizations adds an additional layer of defense for the largest and most systemically important institutions, whose financial distress can have outsized effects on the rest of the financial system and real economy.[5] However, periods of financial excesses, as reflected in episodes of rapid asset price appreciation or credit growth not well supported by underlying economic fundamentals, are often followed by above-normal losses that leave banking organizations and other financial institutions undercapitalized. Therefore, the Board would most likely apply the CCyB in those circumstances when systemic vulnerabilities are somewhat above normal.

The CCyB is expected to help provide additional resilience for advanced approaches institutions, and by extension the broader financial system, against elevated vulnerabilities primarily in two ways. First, advanced approaches institutions will likely hold more capital to avoid limitations on capital distributions and discretionary bonus payments resulting from implementation of the CCyB. Strengthening their capital positions when financial conditions are accommodative would increase the capacity of advanced approaches institutions to absorb outsized losses during a future significant

[5] See 80 FR 49082 (August 14, 2015).

economic downturn or period of financial instability, thus making them more resilient. The second and related goal of the CCyB is to promote a more sustainable supply of credit over the economic cycle.

During a credit cycle downturn, better-capitalized institutions have been shown to be more likely to have continued access to funding and less likely to take actions that lead to broader financial-sector distress and its associated macroeconomic costs, such as large-scale sales of assets at prices below their fundamental value and sharp contractions in credit supply.[6] Therefore, it is likely that as a result of the CCyB having been put into place during a period of rapid credit creation, advanced approaches institutions would be better positioned to continue their important intermediary functions during a subsequent economic contraction. A timely and credible reduction in the CCyB requirement during a period of high credit losses could reinforce those beneficial effects of a higher base level of capital, because it would permit advanced approaches institutions either to realize loan losses promptly and remove them from their balance sheets or to expand their balance sheets, for example by continuing to lend to creditworthy borrowers.

Likewise, during a period of cyclically increasing vulnerabilities, advanced approaches institutions might react to an increase in the CCyB by tightening lending standards, otherwise reducing their risk exposure, augmenting their capital, or some combination of those actions. They may choose to raise capital by taking actions that would increase net income, reducing capital distributions through share repurchases or dividends, or issuing new equity. In this regard, an increase in the CCyB would not prevent advanced approaches institutions from maintaining their important role as credit intermediaries, but would reduce the likelihood that banking organizations with

[6] For additional background on the relationship between financial distress and economic outcomes, see Carmen Reinhart and Kenneth Rogoff (2009), *This Time is Different*. Princeton University Press; Òscar Jordà & Moritz Schularick & Alan M Taylor (2011), "Financial Crises, Credit Booms, and External Imbalances: 140 Years of Lessons," *IMF Economic Review*, Palgrave Macmillan, vol. 59(2), pages 340-378; and Bank for International Settlements (2010), "Assessing the Long-Run Economic Impact of Higher Capital and Liquidity Requirements."

insufficient capital would foster unsustainable credit growth or engage in imprudent risk taking. The specific combination of adjustments and the relative size of each adjustment will depend in part on the initial capital positions of advanced approaches institutions, the cost of debt and equity financing, and the earnings opportunities presented by the economic situation at the time.[7]

4. The Framework for Setting the U.S. CCyB

The Board regularly monitors and assesses threats to financial stability by synthesizing information from a comprehensive set of financial-sector and macroeconomic indicators, supervisory information, surveys, and other interactions with market participants.[8] In forming its view about the appropriate size of the U.S. CCyB, the Board will consider a number of financial-system vulnerabilities, including but not limited to, asset valuation pressures and risk appetite, leverage in the nonfinancial sector, leverage in the financial sector, and maturity and liquidity transformation in the financial sector. The decision will reflect the implications of the assessment of overall financial-system vulnerabilities as well as any concerns related to one or more classes of vulnerabilities. The specific combination of vulnerabilities is important because an adverse shock to one class of vulnerabilities could be more likely than another to exacerbate existing pressures in other parts of the economy or financial system.

The Board intends to monitor a wide range of financial and macroeconomic quantitative indicators including, but not limited to, measures of relative credit and liquidity expansion or contraction, a variety of asset prices, funding spreads, credit condition surveys, indices based on credit default swap spreads, options implied

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[7] For estimates of the size of certain adjustments, see Samuel G. Hanson, Anil K. Kashyap, and Jeremy C. Stein (2011), "A Macroprudential Approach to Financial Regulation," *Journal of Economic Perspectives* 25(1), pp. 3-28; Skander J. Van den Heuvel (2008), "The Welfare Cost of Bank Capital Requirements." *Journal of Monetary Economics* 55, pp. 298-320.

[8] Tobias Adrian, Daniel Covitz, and Nellie Liang (2014), "Financial Stability Monitoring." *Finance and Economics Discussion Series* 2013-021. Washington: Board of Governors of the Federal Reserve System, http://www.federalreserve.gov/pubs/feds/2013/201321/201321pap.pdf.

volatility, and measures of systemic risk.[9] In addition, empirical models that translate a manageable set of quantitative indicators of financial and economic performance into potential settings for the CCyB, when used as part of a comprehensive judgmental assessment of all available information, can be a useful input to the Board's deliberations. Such models may include those that rely on small sets of indicators—such as the credit-to-GDP ratio, its growth rate, and combinations of the credit-to-GDP ratio with trends in the prices of residential and commercial real estate—which some academic research has shown to be useful in identifying periods of financial excess followed by a period of crisis on a cross-country basis.[10] Such models may also include those that consider larger sets of indicators, which have the advantage of representing conditions in all key sectors of the economy, especially those specific to risk-taking, performance, and the financial condition of large banks.[11]

However, no single indicator or fixed set of indicators can adequately capture all the key vulnerabilities in the U.S. economy and financial system. Moreover, adjustments in the CCyB that were tightly linked to a specific model or set of models would be imprecise due to the relatively short period that some indicators are available, the limited number of past crises against which the models can be calibrated, and limited experience with the CCyB as a macroprudential tool. As a result, the types of indicators and models

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[9] See 12 CFR 217.11(b)(2)(iv).

[10] See, e.g., Jorda, Oscar, Moritz Schularick and Alan Taylor, 2012. "When Credit Bites Back: Leverage, Business Cycles and Crises," Working Papers 1224, University of California, Davis, Department of Economics, and Drehmann, Mathias, Claudio Borio, and Kostas Tsatsaronis, 2012. "Characterizing the financial cycle: don't lose sight of the medium term!" BIS Working Papers 380, Bank for International Settlements. Jorda, Oscar, Moritz Schularick and Alan Taylor, 2015. "Leveraged Bubbles," Center for Economic Policy Research Discussion Paper No. DP10781. BCBS (2010), "Guidance for national authorities operating the countercyclical capital buffer," BIS.

[11] See, e.g., Aikman, David, Michael T. Kiley, Seung Jung Lee, Michael G. Palumbo, and Missaka N. Warusawitharana (2015), "Mapping Heat in the U.S. Financial System," Finance and Economics Discussion Series 2015-059. Washington: Board of Governors of the Federal Reserve System, http://dx.doi.org/10.17016/FEDS.2015.059 (providing an example of the range of indicators used and type of analysis possible).

considered in assessments of the appropriate level of the CCyB are likely to change over time based on advances in research and the experience of the Board with this new macroprudential tool.

The Board will determine the appropriate level of the CCyB for U.S.-based credit exposures based on its analysis of the above factors. Generally, a zero percent U.S. CCyB amount would reflect an assessment that U.S. economic and financial conditions are broadly consistent with a financial system in which levels of system-wide vulnerabilities are not somewhat above normal. The Board could increase the CCyB as vulnerabilities build, and a 2.5 percent CCyB amount for U.S.-based credit exposures would reflect an assessment that the U.S. financial sector is experiencing a period of significantly elevated or rapidly increasing system-wide vulnerabilities. Importantly, as a macroprudential policy tool, the CCyB will be activated and deactivated based on broad developments and trends in the U.S. financial system, rather than the activities of any individual banking organization.

Similarly, the Board would remove or reduce the CCyB when the conditions that led to its activation abate or lessen, rather than leaving the nonzero level of the buffer in place over periods when financial and economic developments suggest the absence of notable risks to financial stability. Indeed, for it to be most effective, the CCyB should be deactivated or reduced in a timely manner. This would reduce the likelihood that advanced approaches institutions would significantly pare their risk-weighted assets in order to maintain their capital ratios during a downturn.

The pace and magnitude of changes in the CCyB will depend importantly on the underlying conditions in the financial sector and the economy as well as the desired effects of the proposed change in the CCyB. If vulnerabilities are rising gradually, then incremental increases in the level of the CCyB may be appropriate. Incremental increases would allow banks to augment their capital primarily through retained earnings and allow policymakers additional time to assess the effects of the policy change before making subsequent adjustments. However, if vulnerabilities in the financial system are

building rapidly, then larger or more frequent adjustments may be necessary to increase loss-absorbing capacity sooner and potentially to mitigate the rise in vulnerabilities.

The Board will also consider whether the CCyB is the most appropriate of its available policy instruments to address the financial-system vulnerabilities highlighted by the framework's judgmental assessments and empirical models. The CCyB primarily is intended to address cyclical vulnerabilities, rather than structural vulnerabilities that do not vary significantly over time. Structural vulnerabilities are better addressed though targeted reforms or permanent increases in financial system resilience. Two key factors for the Board to consider are whether advanced approaches institutions are exposed—either directly or indirectly—to the vulnerabilities identified in the comprehensive judgmental assessment or by the quantitative indicators that suggest activation of the CCyB and whether advanced approaches institutions are contributing—either directly or indirectly—to these highlighted vulnerabilities.

The Board, in setting the CCyB for advanced approaches institutions that it supervises, plans to consult with the OCC and FDIC on their analyses of financial-system vulnerabilities and on the extent to which banking organizations are either exposed to or contributing to these vulnerabilities.

5. Communication of the U.S. CCyB with the Public

The Board expects to consider at least once per year the applicable level of the U.S. CCyB. The Board will review financial conditions regularly throughout the year and may adjust the CCyB more frequently as a result of those monitoring activities.

Further, the Board will continue to communicate with the public in other formats regarding its assessment of U.S. financial stability, including financial-system vulnerabilities. For example, the Board's biannual Monetary Policy Report to Congress, usually published in February and July, will continue to contain a section that reports on

developments pertaining to the stability of the U.S. financial system.[12] That portion of the report will be an important vehicle for updating the public on how the Board's current assessment of financial-system vulnerabilities bears on the setting of the CCyB.

6. Monitoring of the Effects of the U.S. CCyB

The effects of the U.S. CCyB ultimately will depend on the level at which it is set, the size and nature of any adjustments in the level, and the timeliness with which it is increased or decreased. The extent to which the CCyB may affect vulnerabilities in the broader financial system depends upon a complex set of interactions between required capital levels at the largest banking organizations and the economy and financial markets. In addition to the direct effects, the secondary economic effects could be amplified if financial markets extract a signal from the announcement of a change in the CCyB about subsequent actions that might be taken by the Board. Moreover, financial market participants might react by updating their expectations about future asset prices in specific markets or broader economic activity based on the concerns expressed by the regulators in communications announcing a policy change.

The Board will monitor and analyze adjustments by banking organizations and other financial institutions to the CCyB. Factors that will be considered include (but are not limited to) the types of adjustments that affected banking organizations might undertake. For example, it will be useful to monitor whether a change in the CCyB leads to observed changes in risk-based capital ratios at advanced approaches institutions, as well as whether those adjustments are achieved passively through retained earnings, or actively through changes in capital distributions or in risk-weighted assets. Other factors to be monitored include the extent to which loan growth and spreads on loans issued by affected banking organizations change relative to loan growth and loan spreads at banking organizations that are not subject to the buffer. Another key consideration in

[12] For the most recent discussion in this format, see box titled "Developments Related to Financial Stability" in Board of Governors of the Federal Reserve System, *Monetary Policy Report to Congress,* July 2015, pp. 24-25.

setting the CCyB and other macroprudential tools is the extent to which the adjustments by advanced approaches institutions to higher capital buffers lead to migration of credit market activity outside of those banking organizations, especially to the nonbank financial sector. Depending on the amount of migration and which institutions are affected, those adjustments could cause the Board to favor either a higher or a lower value of the CCyB.

The Board will also monitor information regarding the levels of and changes in the CCyB in other countries. The Basel Committee on Banking Supervision is expected to maintain this information for member countries in a publically available form on its website.[13] Using that data in conjunction with supervisory and publicly available datasets, Board staff will be able to draw not only upon the experience of the United States but also that of other countries to refine estimates of the effects of changes in the CCyB.

By order of the Board of Governors of the Federal Reserve System, December 21, 2015.

Robert deV. Frierson (signed)

Robert deV. Frierson,
Secretary of the Board.

[13] BIS, Countercyclical capital buffer (CCyB), www.bis.org/bcbs/ccyb/index.htm.