



SIMPLIFICATIONS TO THE CAPITAL RULE PURSUANT TO THE ECONOMIC GROWTH AND REGULATORY PAPERWORK REDUCTION ACT OF 1996

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RIN: 3064-AE59

**Attention: Mr. Robert E. Feldman, Executive Secretary, Federal Deposit Insurance Corporation,
550 17th Street NW, Washington, DC 20429.**

Dear Mr. Feldman,

Thank you for the chance to comment on the notice of proposed rulemaking regarding the Simplifications to the Capital Rule Pursuant to the Economic Growth and Regulatory Paperwork Reduction Act of 1996.¹ I am an economist at the Mercatus Center, a university-based research center

¹ EGRPRA, 12 U.S.C. § 3311 (1996).

at George Mason University. My comments do not reflect the views of any affected party, but do reflect my general concerns about the regulatory burden and unintended consequences of regulation. I would like to address questions 14 and 15 posed in the notice of proposed rulemaking. Before that, however, I will discuss the growing regulatory burdens facing banks, and in particular the burdens that come from regulatory capital requirements.

THE GROWING COMPLEXITY OF BANK CAPITAL REGULATION

Federal Deposit Insurance Corporation (FDIC) Vice Chairman Thomas Hoenig observed in an April 15, 2015 speech that “new risk-based capital rules” and “an ever-expanding Call Report” pose a costly challenge to community banks since many entries in the call report schedules concern activities that have no bearing on community banking.² While those same call report schedules may be relevant for activities undertaken by larger banks, they are nonetheless costly to complete for larger banks too.

A relatively new methodology, available through an open-source platform called QuantGov, makes it possible to quantify the growing complexity of regulations by measuring regulatory restrictions, as well as word counts, within the various parts of the *US Code of Federal Regulations (CFR)*.³ Regulatory restrictions include terms such as *shall*, *must*, *may not*, *required*, and *prohibited*.

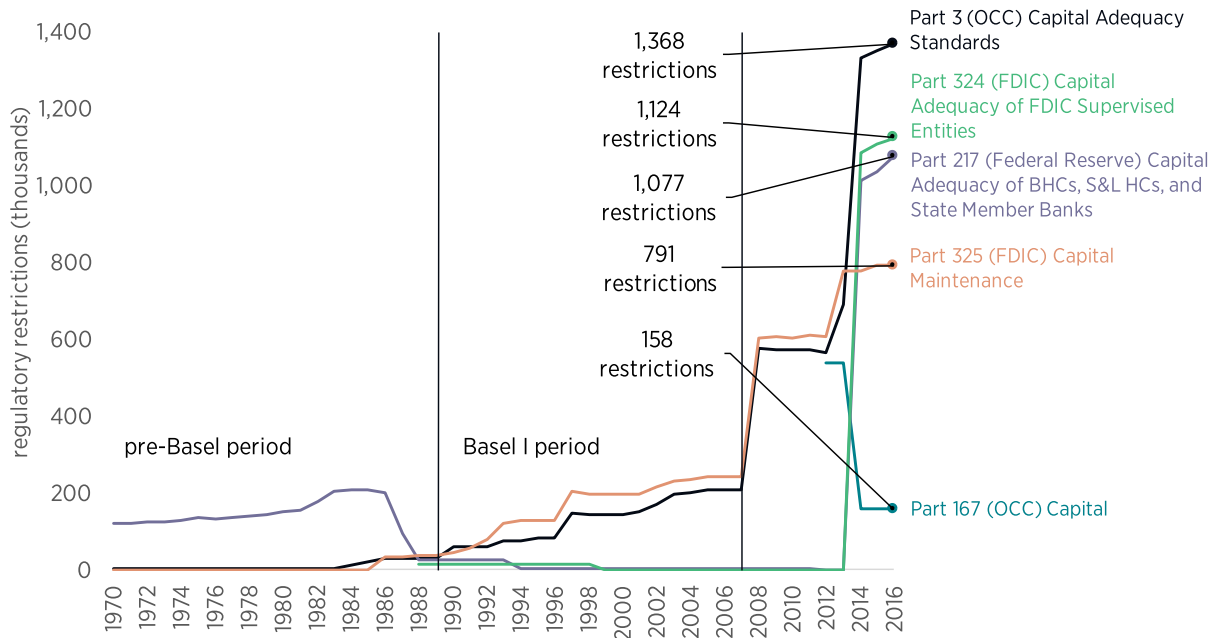
A key factor underlying the “ever-expanding call report” is the growing complexity of bank capital requirements arising from risk-based capital requirements. Figure 1 shows the number of regulatory restrictions in the three parts of the CFR affected by this notice of proposed rulemaking, namely Part 3 (for the Office of the Comptroller of the Currency [OCC]), Part 217 (for the Federal Reserve), and Part 324 (for the FDIC), all of which concern bank capital. The figure also depicts the number of regulatory restrictions for two other parts of the CFR that relate to bank capital—Part 167 (for the OCC) and Part 325 (for the FDIC). The legend displays the series titles sorted from the largest to the smallest number of restrictions in 2016.

The figure shows the increase associated with the implementation of Basel I capital adequacy standards and especially postcrisis reforms, including the implementation of the Basel III capital adequacy standards. By 2016, there were 1,368 restrictions in Part 3, 1,124 restrictions in Part 324, and 1,077 restrictions in part 217; Part 167 contained 158 restrictions while Part 325 had 791 restrictions.

² Thomas Hoenig, “A Conversation about Regulatory Relief and the Community Bank” (remarks, 24th Annual Hyman P. Minsky Conference, Washington, DC, April 15, 2015), <https://www.fdic.gov/news/news/speeches/spapril1515.html>.

³ Patrick A. McLaughlin and Oliver Sherouse, *QuantGov—A Policy Analytics Platform* (Arlington, VA: Mercatus Center at George Mason University, November 8, 2017).

Figure 1. Regulatory Restrictions in Title 12, Part 3 “Capital Adequacy Standards” (OCC), Part 167 “Capital” (OCC), Part 217 “Capital Adequacy of Bank Holding Companies, Savings and Loan Holding Companies and State Member Banks” (Federal Reserve), Part 324 Capital Adequacy of FDIC-Supervised Institutions, and Part 325 “Capital Maintenance” (FDIC), 1970–2016.



Source: Patrick A. McLaughlin and Oliver Sherouse, RegData 3.0, accessed October 18, 2017, <https://quantgov.org/>.

The volume of regulatory restrictions that concern bank capital for the OCC, the FDIC, and the Federal Reserve has also increased relative to the total number of regulatory restrictions for each agency, and the rise is also reflected in the “ever-expanding” call report. To show this, Figure 2a plots (1) the fraction of regulatory restrictions embedded in Title 12 Parts 3 and 167 relative to all OCC-related regulatory restrictions in parts 100–199, (2) the fraction of regulatory restrictions embedded in Title 12 Part 217 relative to all Federal Reserve–related regulatory restrictions in parts 200–299, and (3) the fraction of regulatory restrictions embedded in Title 12 parts 324 and 325 relative to all FDIC-related regulatory restrictions in parts 300–399. Figure 2b plots page numbers in bank call report instructions and page numbers in bank holding company (BHC) call report instructions.

Figure 2a. Title 12 Regulatory Restrictions in Parts 3 and 167 Relative to Parts 100–199 Covering the OCC, Part 217 Relative to Parts 200–299 Covering the Federal Reserve, and Parts 324 and 325 Relative to Parts 300–399 Covering the FDIC

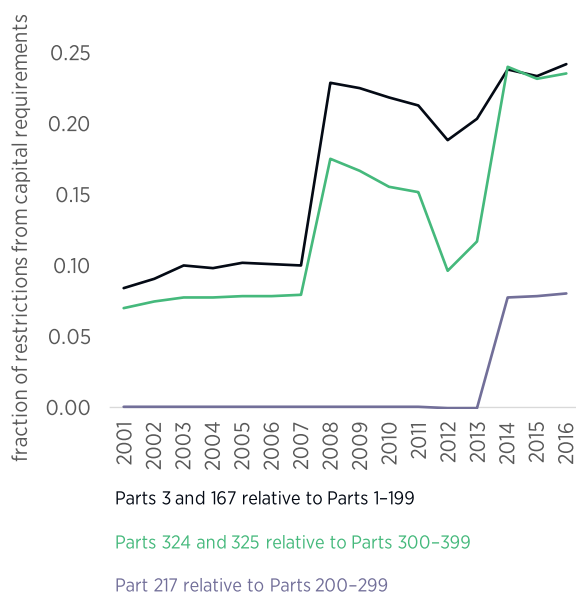
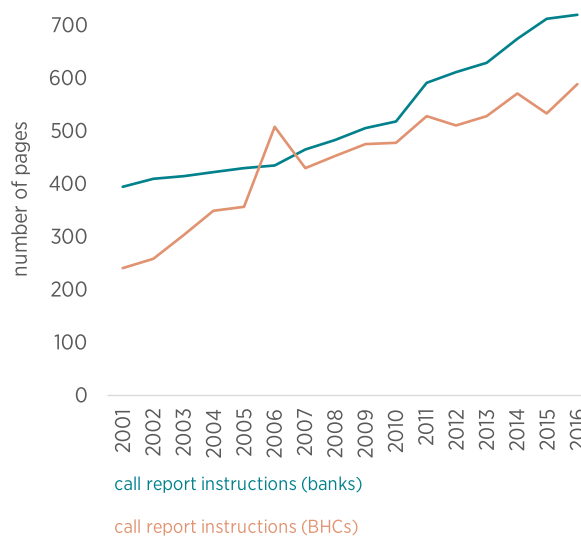


Figure 2b. Page Numbers in Bank Call Report Instructions and Bank Holding Company Call Report Instructions, 2001–2016



Source: **Figure 2a:** Patrick A. McLaughlin and Oliver Sherouse, RegData 3.0, accessed October 18, 2017, <https://quantgov.org/>; **Figure 2b:** The number of pages in the bank call report form instructions is available from Federal Financial Institutions Examination Council, “Reporting Forms—FFIEC 031: Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices,” accessed October 18, 2017, <https://www.ffiec.gov/forms031.htm>. The number of pages in the holding company call report form instructions is available from Board of Governors of the Federal Reserve System, “FR Y-9C,” accessed October 18, 2017, <https://www.federalreserve.gov/apps/reportforms/reporthistory.aspx?sOoYJ+5BzDal8cbqnRxZRg==>.

Figure 2a shows that in 2001, the fraction of regulatory restrictions—measured by agency—devoted to capital requirements was about 8 percent for the OCC, 7 percent for the FDIC, and 0 percent for the Federal Reserve. By 2016, that fraction was about 24 percent for the OCC and FDIC and about 8 percent for the Federal Reserve. Meanwhile, Figure 2b shows that between 2001 and 2016 the number of pages in the instructions to fill out the bank call reports has grown by about 82 percent to 718 pages, while the number of pages in the instructions to fill out bank holding company call reports have grown by about 146 percent to 587 pages. Although a measure of compliance costs is not readily available from call report data, as the volume of regulatory restrictions increases, so does the complexity, and the costs associated with compliance likely rise as well.

These graphs suggest that bank capital regulation has become increasingly complex. Moreover, the argument that risk weighting of assets leads to better bank risk management is inconsistent with the empirical evidence that risk weighting could well have had unintended consequences that contributed to the 2007–2009 financial crisis.

UNINTENDED CONSEQUENCES OF THE MORE COMPLEX BANK CAPITAL REGULATION

One justification for using risk weights is that it adjusts bank capital for the riskiness of a bank's underlying asset holdings. However, the standardized approach to risk weighting typically involves assigning predetermined risk weights to assets that may not reflect the true risks of the bank's assets. Meanwhile, an often-repeated claim holds that the leverage ratio contributes to bank risk taking, yet the same might be said about risk weights leading up to the most recent crisis.

The Recourse Rule, finalized on November 29, 2001 by the Federal Reserve, FDIC, and OCC, altered capital requirements for bank holdings of highly rated, private label asset-backed and mortgage-backed security tranches and collateralized debt obligation tranches.⁴ The rule changed capital requirements for tranches with AAA or AA ratings by lowering their risk weights from 1 or 0.5 to 0.2, which meant that capital requirements for these assets fell from 8 or 4 percent to 1.6 percent. For A-rated tranches the risk weights were set at 0.5, which meant that the capital requirement equaled 4 percent.⁵

In a recent working paper, I construct a measure of holdings of highly rated, private label securitization tranches by BHC—as suggested by Erel, Nadauld, and Stulz—from Q2 2001 to Q1 2009.⁶ I find that on average the largest BHCs that securitized assets held the most highly rated securitization tranches, whether measured relative to total assets or to Tier 1 capital, and their holdings rose after the Recourse Rule was finalized and until the crisis began to unfold. BHCs were not required to report such holdings before the Recourse Rule, so you might expect that reported holdings would rise after the rule was finalized. Still, given the similarity of reported holdings for both types of BHCs prior to the Recourse Rule being finalized and the flat pattern of holdings for other BHCs before and after the rule was finalized, the rising average holding for the largest securitizing BHCs after the rule was finalized would be consistent with the rule change spurring their holdings of highly rated tranches. Figure 3 depicts the average holdings of highly rated tranches relative to Tier 1 capital for US global systemically important banks (GSIBs) listed in

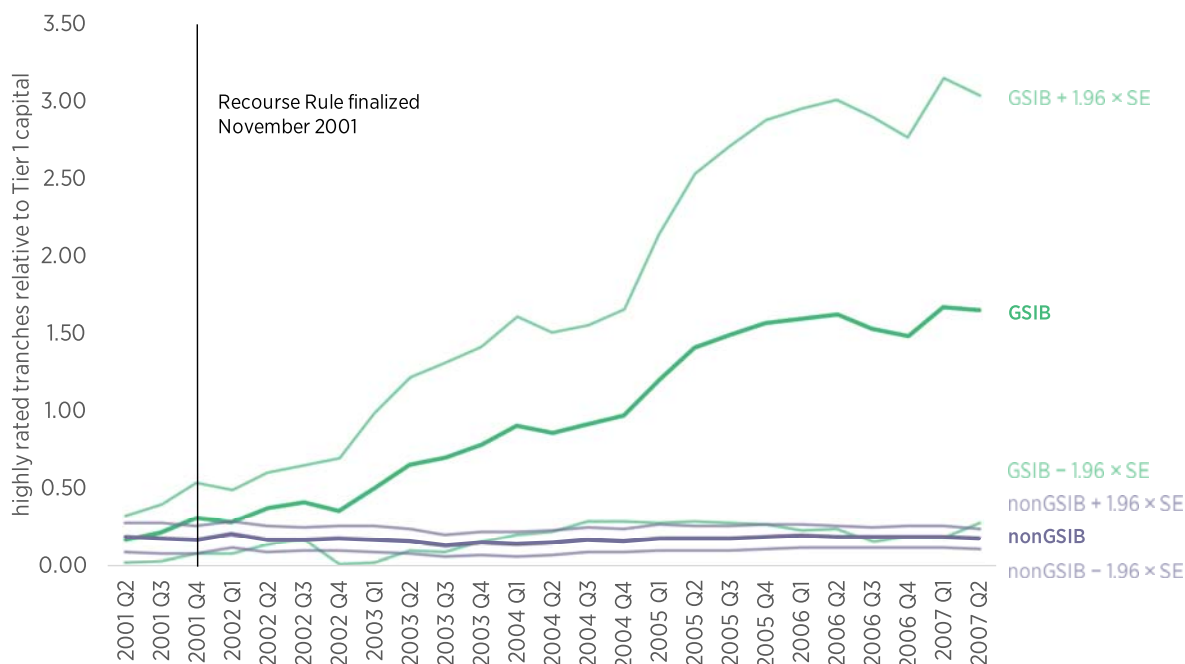
⁴ Comptroller of the Currency, the Federal Reserve System, the Federal Deposit Insurance Corporation, and the Thrift Supervision Office, Risk-Based Capital Guidelines; Capital Adequacy Guidelines; Capital Maintenance: Capital Treatment of Recourse, Direct Credit Substitutes and Residual Interests in Asset Securitizations; Final Rules, 66 Fed. Reg. 59614 (November 29, 2001). Two related rules that may have also contributed to the increased holdings were the Interim and Final Rules on Capital Treatment of Consolidated Asset-Backed Commercial Paper Program Assets. See Risk-Based Capital Guidelines; Capital Adequacy Guidelines; Capital Maintenance: Interim Capital Treatment of Consolidated Asset Backed Commercial Paper Program Assets, 68 Fed. Reg. 56530 (October 1, 2003); and Risk-Based Capital Guidelines; Capital Adequacy Guidelines; Capital Maintenance: Interim Capital Treatment of Consolidated Asset Backed Commercial Paper Program Assets, 69 Fed. Reg. 44908 (July 28, 2004). The rules allowed banks with asset backed commercial paper programs to exclude assets held in those programs when they estimate risk-weighted assets for the purpose of satisfying capital adequacy standards.

⁵ Risk weights for the riskiest tranches were increased to above 1, meaning that capital requirements for these assets increased above 8 percent.

⁶ Stephen Matteo Miller, "The Recourse Rule, Regulatory Arbitrage, and the Financial Crisis" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA: Mercatus Center at George Mason University, 2017); Isil Erel, Taylor Nadauld, and René M. Stulz, "Why Did Holdings of Highly Rated Securitization Tranches Differ So Much across Banks?" *Review of Financial Studies* 27, no. 2 (2014): 404–53. Erel, Nadauld, and Stulz observe that while the measure would tend to positively bias estimates of highly rated tranche holdings, given that it includes lower-rated trading asset tranches, this is likely offset by the fact that the measure does not include collateralized debt obligation (CDO) tranches, the key assets at the heart of the crisis. Still, the authors find that the measure behaves much like alternative measures that include estimates of CDO tranche holdings.

FDIC's Global Capital Index and Wachovia from Q1 2001 to Q2 2007, as well as for all other BHCs with at least \$1 billion in total assets.⁷

Figure 3. Average Highly Rated Tranche Holdings Relative to Tier 1 Capital for US GSIBs and All Other Banks, Q2 2001-Q2 2007



Note: To estimate these holdings for all reporting bank holding company corporations with total assets (bhck2170) greater than \$1 billion, Erel et al. suggest adding held-to-maturity securities in the 20-percent and 50-percent risk buckets (bhc21754 and bhc51754), available-for-sale securities in the 20-percent and 50-percent risk buckets (bhc21773 and bhc51773), and trading assets—all other mortgage backed securities (bhck3536). From this total, they subtract the amortized cost of held-to-maturity US government agency and corporation obligations issued by US government-sponsored agencies (bhck1294); amortized cost of available-for-sale US government agency and corporation obligations issued by US government-sponsored agencies (bhck1297); amortized cost of held-to-maturity mortgage pass-through securities issued by Fannie Mae and Freddie Mac (bhck1703); amortized cost of available-for-sale mortgage pass-through securities issued by Fannie Mae and Freddie Mac (bhck1706); amortized cost of held-to-maturity mortgage-backed securities issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae (bhck1714); amortized cost of available-for-sale mortgage-backed securities issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae (bhck1716); amortized cost of other held-to-maturity mortgage-backed securities collateralized by MBS issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae (bhck1718); amortized cost of other available-for-sale mortgage-backed securities collateralized by MBS issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae (bhck1731); amortized cost of held-to-maturity securities issued by states and political subdivisions in the US (bhck8496); and amortized cost of available-for-sale securities issued by states and political subdivisions in the US (bhck8498). These estimated holdings are then divided by Tier 1 capital (bhck8274).

Source: Chicago Fed Call Report Y-9C forms, available from The Wharton School, University of Pennsylvania, "Wharton Research Data Services," accessed August 18, 2015, <https://wrds-web.wharton.upenn.edu/wrds/>.

⁷ Federal Deposit Insurance Corporation, "Global Capital Index," accessed October 18, 2017, <https://www.fdic.gov/about/learn/board/hoenig/capitalizationratio2q16.pdf>. The sample includes only financial holding companies of commercial banking entities through 2007, prior to the BNY-Mellon merger and therefore excludes Goldman Sachs and Morgan Stanley. The commercial banks listed in the Global Capital Index are Bank of America, Bank of New York, Mellon, Citigroup, JPMorgan Chase, State Street, and Wells Fargo.

The graph shows that while there exists a narrow standard error band for nonGSIB banks, the band is wide for GSIBs. This reflects the considerable heterogeneity in holdings within this small group of large banks. For instance, in Q2 2007, State Street, Bank of New York, Mellon Bank, and Citigroup had holdings of highly rated tranches equal to 5.7, 3.3, 2.23, and 0.99 times their Tier 1 capital, respectively. Wachovia, JP Morgan, Bank of America, and Wells Fargo had holdings equal to only 0.57, 0.2, 0.17, and 0.08 times their Tier 1 capital, respectively. All of the GSIBs engaged in securitizing assets, yet they had very different estimated holdings of these assets, so any losses experienced by highly rated tranche holdings would affect the first four GSIBs more than the latter four GSIBs.

I also find that banks with greater holdings of highly rated tranches on average experienced large quarterly declines in distance-to-default—a measure of default risk—from Q1 2008 through the end of the sample, but not before that. Taken together, these findings imply that while more complex, risk-based capital rules were supposed to make banking organizations more resilient to financial distress, the risk-based rules could well have encouraged banks to hold the very sort of assets that featured prominently during the last financial crisis. With this background in mind, I will now address questions 14 and 15 from the notice of proposed rulemaking.

RESPONSE TO QUESTION 14 AND QUESTION 15: WHY THE LEVERAGE RATIO WORKS

Question 14 asks whether an alternative to risk-based capital, such as the US GAAP leverage ratio, would be effective, while Question 15 asks whether there should be a reduction in the number of capital ratios. Based on findings in a forthcoming update of a coauthored working paper, I believe that strict reliance on the leverage ratio would be more effective than having multiple capital ratios, with many being defined relative to risk-weighted assets, which addresses question 14. Relying on the leverage ratio can serve to eliminate the need for other measures, which addresses question 15.

To see why my coauthor and I ask in a recent paper whether the benefits of raising the book equity-to-book asset leverage ratio from the 2014 minimum value of 4 percent to 15 percent would have benefits that outweigh the costs.⁸ Nearly 95 percent of the BHCs in our sample operate with more than twice the 2014 minimum amount of 4 percent. We use 15 percent because several recent studies have found that a rate roughly equal to 15 percent would be optimal.⁹ We find that in most cases, the marginal benefits exceed the marginal costs.

Drawing from a study of large UK banks by Miles, Yang, and Marcheggiano, we measure benefits in terms of a reduction in expected real GDP losses arising from a financial crisis, and the costs in terms of forgone lending arising from the higher interest rates that might arise if banks are compelled to fund with more equity. In our benchmark case, we make relatively weak benefit assumptions in that we assume the expected benefit of a higher leverage ratio per percentage point

⁸ James R. Barth and Stephen Matteo Miller, “Benefits and Costs of a Higher Bank Leverage Ratio” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, 2017).

⁹ Begeau and Landvoigt find that a leverage ratio of at least 15 percent may maximize welfare. See Juliane Begeau and Tim Landvoigt, “Financial Regulation in a Quantitative Model of the Modern Banking System” (working paper, 2017). Karmakar finds that doubling equity capital requirements from 8 to 16 percent can maximize welfare. See Sudipto Karmakar, “Macroprudential Regulation and Macroeconomic Activity,” *Journal of Financial Stability* 25, no. C (2016): 166–78. Finally, Egan et al. find that the loss of welfare can rise substantially in more unstable equilibria when the capital requirement falls below 15 to 18 percent. See Mark Egan, Ali Hortacsu, and Gregor Matvos, “Deposit Competition and Financial Fragility: Evidence from the US Banking Sector,” *American Economic Review* 107, no. 1 (2017): 169–216.

reduction in the probability of a crisis equals only 7.7 percent of one year's GDP.¹⁰ Our benchmark also assumes the highest cost scenario from Baker and Wurgler in that an 11-percentage-point rise in the leverage ratio would result in lending rates rising by 99 basis points.¹¹

Moreover, the baseline estimates we adopt from Baker and Wurgler's study come from a sample of nearly 4,000 banks, whereas other studies typically only include the largest holding companies.¹² Also, since smaller banks tend to be more highly capitalized, our findings suggest smaller banks could comply with this regulation, which would have the benefit of greatly lowering their regulatory burden and the associated compliance costs.

CONSIDER INSTEAD A MARKET EQUITY-TO-BOOK SHORT-TERM LIABILITY RATIO

While our study does not examine the possibility, since any solvent bank has assets greater than total liabilities, as well as short-term liabilities, an alternative might be to define the leverage ratio as an entity's equity capital (and perhaps even long-term debt), measured at market value, relative to its short-term liabilities; for those that have no traded shares, market values could be estimated.¹³ Defining capital ratios in terms of liabilities would not be without historical precedent. Following the FDIC's establishment in 1934, its staff determined that minimum capital ratios should equal at least 10 percent of deposits.¹⁴ Defining the capital ratio relative to (short-term) liabilities rather than assets obviates the need to discuss whether or not capital ratios should be risk-weighted, and how to weight the various asset classes. Also, relying on the market value, rather than the book value, of equity capital would more closely connect the proposed leverage ratio to market discipline.

To see how different leverage ratios have performed over time, figure 4 depicts (1) the median ratio of total risk-based capital, about two-thirds of which is Tier 1 capital, relative to risk-weighted assets, (2) the median ratio of book equity to book assets, which is frequently discussed as an alternative to risk-based

¹⁰ For comparison, Miles et al. (2013) assume that the expected benefit of a higher capital ratio per percentage point reduction in the probability of a crisis equals 55 percent of one year's GDP, while Cline assumes that benefit equals 64 percent of one year's GDP. See David Miles, Jing Yang, and Gilberto Marcheggiano, "Optimal Bank Capital," *Economic Journal* 123 no. 567 (2013): 1-37; William Cline, "Benefits and Costs of Higher Capital Requirements for Banks" (Working Paper No. 16-6, Peterson Institute for International Economics, Washington, DC, March 2016).

¹¹ This assumption derives from the long-known "low-risk" anomaly, whereby low-risk assets tend to outperform the market and high-risk assets tend to underperform the market. Baker and Wurgler estimate that this so-called "alpha" equals 68 or 75 basis points per month, which, when annualized and multiplied by an 11-percentage-point increase in the leverage ratio—from 4 percent to 15 percent—yields a 90 ($= 12 \times 68 \times 0.11$) or 99 ($= 12 \times 75 \times 0.11$) basis-point rise in lending rates. See Malcolm Baker and Jeffrey Wurgler, "Do Strict Capital Requirements Raise the Cost of Capital? Bank Regulation and the Low Risk Anomaly" (NBER Working Paper No. 19018, National Bureau of Economic Research, Cambridge, MA, May 2013).

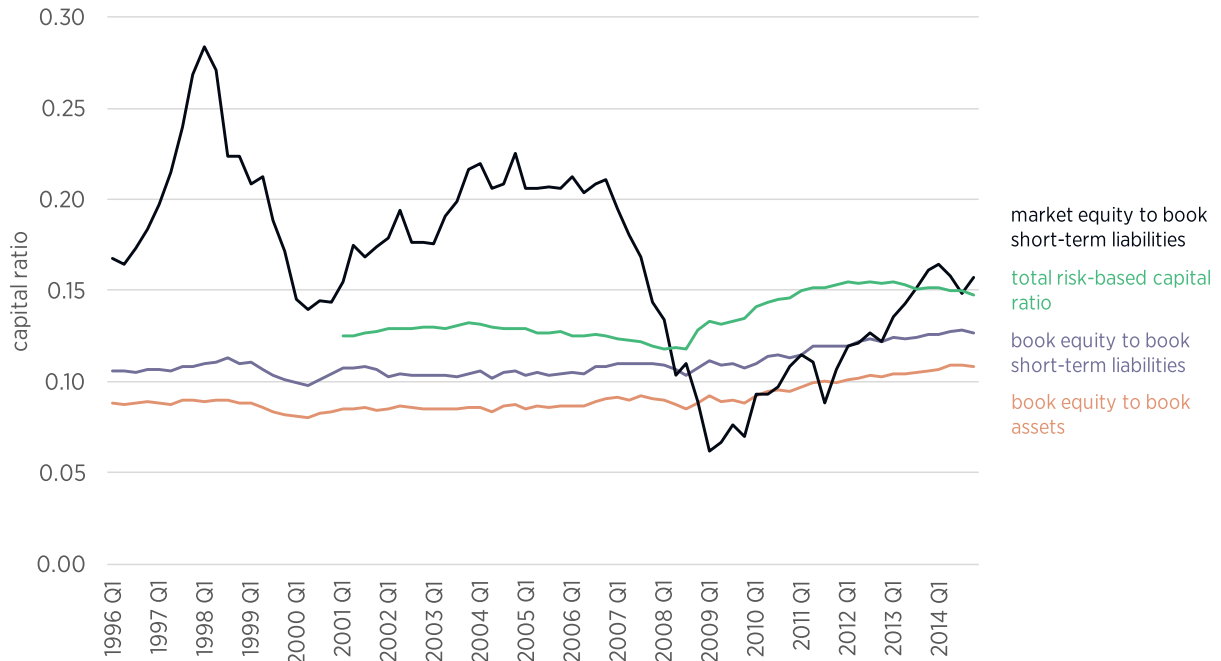
¹² Cline examines 54 large US banks from 2001 to 2013. See Cline, "Benefits and Costs of Higher Capital Requirements for Banks." The Minneapolis Fed study examines only banks with at least \$250 billion in total assets from 2010 to 2015. See Federal Reserve Bank of Minneapolis, *The Minneapolis Plan to End Too Big to Fail*, 2016. Firestone et al. examines all banks with at least \$50 billion in total assets from 2001 to 2015. See Simon Firestone, Amy Lorenc, and Ben Ranish, "An Empirical Economic Assessment of the Costs and Benefits of Bank Capital in the US" (Finance and Economics Discussion Series working paper 2017-034, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington, DC, 2017).

¹³ Black suggested measuring capital using market values, or estimates of market value if none are available, for equity and possibly long-term debt, and defining capital relative to deposits rather than assets. See Fischer Black, "Bank Funds Management in an Efficient Market," *Journal of Financial Economics* 2, no. 4 (1975): 334. I use other short-term liabilities since other forms of short-term funding have become more prominent in recent years.

¹⁴ Federal Deposit Insurance Corporation, "Bank Examination and Supervision," in *The First Fifty Years: A History of the FDIC, 1933-1983* (Washington, DC: FDIC, 1984).

capital measures of capital adequacy, (3) the median market equity-to-book short-term liabilities ratio, and (4) the median book equity-to-book short-term liabilities ratio. The figure shows that at the median the market equity-to-book short-term liabilities has been the highest throughout the sample, except during the crisis period, often exceeding 15 percent. The drop during the crisis reveals the potential for market discipline, since you would expect stock prices for poorly performing BHCs to drop.

Figure 4. Median Market Equity-to-Book Value of Short-Term Liabilities, Tier 1 Capital-to-Risk-Weighted Assets, Book Equity-to-Book Short-term Liabilities, and Book Equity-to-Book Assets, Q1 1996–Q4 2014.



Note: In Q1 1996 there were 548 holding companies in the sample and by Q4 2014 the number fell to 329. For the market value relative to short-term liabilities ratio, I measure market value of equity as the end-of-quarter share price times the number of shares outstanding for each holding company. I compute short-term liabilities as the sum of noninterest bearing domestic deposits (bhdm6631), interest bearing domestic deposits (bhfn6631), noninterest bearing foreign deposits (bhdm6636), interest bearing foreign deposits (bhfn6636), federal funds purchased in domestic offices (bhdmb993), securities sold under agreements to repurchase (bhckb995), trading liabilities (bhck3548), borrowed commercial paper (bhck2309), and other borrowed money with a remaining maturity of one year or less (bhck2332). The median value of short-term liabilities relative to total liabilities equals exceeds 90 percent for almost all of the sample. I estimate the median total capital-to-risk-weighted assets after dividing bhck7205 by 100. I estimate the median book equity-to-book short-term liabilities after dividing total equity capital (bhck3210) by the measure of short-term liabilities described above. I estimate the median book equity-to-book assets after dividing total equity capital, bhck3210, by total assets (bhck2170).

Source: The sample includes all reporting bank holding company corporations for which stock price is available from <https://wrds-web.wharton.upenn.edu/wrds/data>. To merge the CRSP data to the Call Report data, I use Federal Reserve Bank of New York, “Banking Research Datasets,” 2014-3, accessed November 15, 2015, https://www.newyorkfed.org/research/banking_research/datasets.html. The CRSP database is available from The Wharton School, University of Pennsylvania, Wharton Research Data Services, accessed November 15, 2015, <https://wrds-web.wharton.upenn.edu/wrds/>.

One troubling aspect of figure 4 is that the book equity-to-book asset ratio, the book equity-to-book short-term liabilities, and the Tier 1 capital-to-risk-weighted asset ratio fell little during the crisis. During the Q4 2007–Q3 2008 period, the median quarterly growth rate for the book equity-to-book asset ratio, the book equity-to-book short-term liabilities ratio, and the Tier 1 capital to risk-weighted asset equaled –2 percent, –1.3 percent, and –0.9 percent, respectively. The change in the market equity-to-book short-term liability ratio was –11 percent. This finding would be consistent with former SEC chief economist Mark Flannery’s 2014 study, which shows that the 25 largest US banks satisfied their regulatory capital ratios, even though many experienced distress.¹⁵

These findings highlight key problems with using accounting measures of capital, including Basel-type measures. For instance, book values may not serve as the most effective measures of a bank’s net worth, since they are reported with delay and can be revised. Although noisy, market values would reflect market perceptions concerning a bank’s performance in real time. Measuring market equity relative to short-term liabilities rather than assets also addresses the challenge of marking assets to market, which arises because many bank assets trade infrequently. Tracking the face value of short-term liabilities could simplify the process too.

To implement a market equity-to-book short-term liabilities capital requirement, one method would be to draw from the US model for calculating required reserves for banks.¹⁶ For the purpose of satisfying reserve requirements, banks currently have to measure reserves relative to the average amount of net transaction accounts. Reserve managers first determine required reserves during the reserve computation period, and subsequently must at least cover those required reserves during the reserve maintenance period.

During the reserve computation period, which under current regulations begins on Thursdays and ends two Wednesdays later, the reserve managers must calculate the daily average during the previous 14 days of net transaction accounts. Net transaction accounts equal total transaction accounts, which include those for which account holders can make withdrawals (e.g., demand deposits and negotiable orders of withdrawal) minus demand balances due from other banks and items in process of collection.

Once reserve managers determine the target amount they must maintain during the reserve computation period, they must then at least cover that target during the reserve maintenance period. The reserve maintenance period begins 17 days after the reserve computation period ends.

Drawing from this model of reserves management, a bank’s treasury staff might ensure that the market value of the bank’s equity, equal to the market price of shares multiplied by the total number of shares of common stock outstanding, might equal a fixed fraction of current short-term liabilities during some short-term period (e.g., a week, month, or quarter). For instance, if a bank on average or at the median has \$100 billion in various forms of short-term debt during a particular period, and the capital requirement is 15 percent, then staff must ensure that the average or median market value of the bank’s shares equals \$15 billion.

¹⁵ Mark Flannery, “Maintaining Adequate Bank Capital,” *Journal of Money Credit and Banking* 46, no. 1 (2014): 157–180.

¹⁶ For a discussion of reserve maintenance, see Board of Governors of the Federal Reserve System, “Reserve Maintenance Manual,” accessed October 18, 2017, https://www.federalreserve.gov/monetarypolicy/rmm/Chapter_3_Calculation_of_Reserve_Balance_Requirements.htm.

One objection to such a proposal would be that stock prices can move by large amounts. In our benefit-cost analysis of a higher leverage ratio, my coauthor and I show that returns on BHC shares on average between 1996 and 2014 varied about by about 90 percent as much as the market as a whole, such that for every percentage change in market returns, the value of BHC equity changes by about 90 percent of that change, meaning they tend to be less volatile than the market as a whole.

However, the risk of large declines in the share price, which could reflect the manifestation of poor bank investment decisions, would mean that using a market-valued measure of capital could foster market discipline. A larger equity capital buffer would also mean that the bank would have less incentive to take on risk. Banks that have their market value of equity relative to liabilities drop below the minimum would be at higher risk of default, which could trigger change through bank shareholder activism.

A recent study by Raluca Roman suggests that shareholder activism is common for banks, and that shareholder activism creates gains for shareholders in terms of a higher market value without affecting the bank's operating returns, though it may increase bank risk in normal times.¹⁷ These findings apply mainly to smaller banks, as larger banks targeted by activists only experience higher market value. The study also shows, however, that shareholder activism did not contribute to the recent crisis, since market values were higher without any increases in risk-taking during crises. Overall, the findings suggest shareholder activism could serve to preserve firm value.

CONSIDER INSTEAD A MARKET EQUITY-TO-BOOK SHORT-TERM LIABILITY RATIO

Overall, serious concerns about Basel-style capital requirements exist. Their complexity has a bearing on the regulatory burden that banks face. Criticisms that the leverage ratio contributes to risk taking may apply equally to risk-weighted measures of capital, as we saw for some GSIBs during the crisis. While there is evidence that increasing the equity-to-asset leverage ratio from 4 to 15 percent has benefits that outweigh the costs, there may still be concerns about whether book measures of equity capital foster market discipline. An alternative may be to establish a market equity-to-book short-term liability ratio, drawing from the required reserves model currently in place. This approach has the advantage of fostering market discipline through the use of market-based measures of capital while avoiding the debate over how to measure assets.

Sincerely,

Stephen Matteo Miller

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Mercatus Center at George Mason University

¹⁷ Raluca Roman, "Shareholder Activism in Banking" (Research Working Paper No. 15-09, Federal Reserve Bank of Kansas City, Kansas City, MO, August 2015). Interestingly, the effects of shareholder activism, especially the higher risk taking, which was primarily at smaller banks, appear only since the Sarbanes-Oxley Act of 2002. See Sarbanes-Oxley Act, Pub. L. No. 107-204; 116 Stat. 745 (2002).