

# Commentary

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*Stephen G. Cecchetti*

This session contains four interesting papers that are brought together by the following important question: What does it mean for a bank to be capital constrained? Put slightly differently, the papers by Ediz, Michael, and Perraudin; Aggarwal and Jacques; Yonetani and Katsuo; and Le and Sheehan all attempt to measure how banks react to the presence of capital requirements. In the following, I will summarize and comment on what I believe to be the primary focus of each of these four papers as it relates to this question. I will then close with some general remarks.

The first paper, by Ediz, Michael, and Perraudin, entitled “The Impact of Capital Requirements on U.K. Bank Behaviour,” examines the behavior of British banks near the regulatory trigger levels for capital, as set by the examining authorities in the United Kingdom. The authors ask the very interesting question: What actions do banks take when their capital ratios fall close to the regulatory limit? Their conclusion is that banks approaching the limits imposed by regulators raise capital, and do not shed loans. This conclusion is valuable, as it suggests that the reaction of lenders to capital requirements is not to clamp

down on their borrowers. Regulatory constraints do not, by themselves, appear to reduce the *supply* of loans.

I view Ediz, Michael, and Perraudin’s results as preliminary. The authors provide a number of very interesting descriptive statistics that provide support for these conclusions. For example, they convincingly establish (graphically) that the closer a bank’s capital (relative to risk-weighted assets) gets to the regulatory trigger, the more likely a bank is to increase its capital. But their sophisticated econometric analysis has one fairly large difficulty. The authors estimate a simple model in which banks have an optimal or target level of capital in mind and adjust slowly to this target. Looking at the numerical results in the paper, one finds that banks are adjusting their capital levels each year by more than the difference between the current level and the target. That is, the estimated adjustment rate exceeds one, meaning that the banks are overshooting the target (and by more and more each year).

The second paper, by Aggarwal and Jacques, is entitled “Assessing the Impact of Prompt Corrective Action on Bank Capital and Risk.” The authors attempt to measure the impact of prompt corrective action (PCA) on bank capital levels and bank risk; again, an issue clearly worthy of study. In this work, Aggarwal and Jacques use

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*Stephen G. Cecchetti is an executive vice president and the director of research at the Federal Reserve Bank of New York.*

data on bank balances for the years 1991-93. This allows the assessment of banks' behavior before and after the institution of PCA in 1992. The authors find that banks with low levels of capital at the beginning of the period increased their levels of capital by the end and reduced the riskiness of their asset portfolios (using the authors' chosen measure).

While Aggarwal and Jacques' conclusions are plausible, can we really ascribe them to prompt corrective action? In order to fully confirm the causal link from PCA to the bank balance sheet changes they document, the authors need to confront two important difficulties. First, are there plausible alternative explanations for the findings? What else happened in the 1991-93 period? And second, does their measure of risk really track the quantity of interest? Again, is there another, equally plausible interpretation of the results? With respect to the first question, a number of things happened during this period that may have contaminated the results, making this an unfortunate period to use for an attempt to isolate the impact of PCA. First, 1992 was the year in which the 1988 Basle Capital Accord was implemented in the United States. In preparation for this, banks began reporting risk-based capital in 1990-91. It seems likely that banks' behavior during this period was a reaction both to PCA and to the implementation of the Basle Capital Accord, and that sorting out their relative impact will be very difficult.

Second, the early 1990s was an unusual point in what was an important cycle in the banking industry. Prior to this, in the late 1980s through 1991, banks had taken loan losses associated with their real estate portfolios. Banks' loan-loss reserves were depleted and their capital was significantly reduced. The natural reaction of the banks in 1992-93 was to rebuild their capital positions. Was the overall reaction of bank capital during the 1991-93 period the result of prompt corrective action? Maybe, but we do not yet have convincing proof.

Aggarwal and Jacques' second set of results concerns the impact of PCA on banks' willingness to assume risk. They measure bank risk exposure as the ratio of risk-weighted assets to total assets, and presume that the higher this ratio, the more risk a bank assumes per dollar of

book value. Unfortunately, this measures only credit risk, and not very well. What about other sources of risk, such as interest rate risk? I am led to conclude that they have not convincingly shown that PCA reduced the *overall* riskiness of banks' assets.

In "Fair Value Accounting and Regulatory Capital Requirements," Yonetani and Katsuo examine how market and regulatory discipline interact to affect Japanese banks. The market might perceive that banks are undercapitalized and might value their shares accordingly. But, Yonetani and Katsuo hypothesize, there may be a separate influence on the bank that comes when it actually hits its regulatory limit. At this point, does the market punish the bank even more? Or, does the market properly perceive the riskiness of the bank's asset position and value it correctly? The authors conclude that bank earnings based on fair market value are more volatile than those based on historical cost and that the impact of this additional volatility depends on the level of bank capital, suggesting that the two (negative) effects reinforce one another.

Yonetani and Katsuo's work is relevant in helping us answer a much broader question than the one on which they primarily focus: For the purposes of meeting regulatory capital requirements, at what frequency should we require banks to mark their portfolios to market? This is an extremely difficult question to answer. It seems that some market value accounting is necessary, and so "never" is not the right answer. But then, a very high frequency, even if it were cheap to administer, does not seem to be the right answer either. Should we insist that the bank's capital, at market prices, exceeds the regulatory minimum at every instant? Probably not, as some portions of a bank's portfolio may experience significantly more high-frequency volatility than low-frequency volatility. But we surely could use an answer to this question, and more work in this area would be very valuable.

The final paper in this group is Le and Sheehan's "Measuring the Relative Marginal Cost of Debt and Capital for Banks." In their study, these two authors ask whether we can measure the impact of capital requirements by looking at prices. The general idea of looking for the impact of quantity constraints by examining prices seems

like a good one. Here, Le and Sheehan proceed by studying the behavior of the difference between the cost of capital and the cost of debt. Does this give us the information we really want?

In assessing their methods, one must ask whether fluctuations in the cost of capital relative to debt are likely to tell us anything about the degree to which capital requirements bind. In trying to answer this question, first ask whether the cost of capital will equal the cost of debt even if there were no capital requirements. I think that the answer to this must be no. First, capital is more risky than debt, and so it should have a higher expected rate of return. Second, even if deposit insurance cuts the link between the marginal cost of debt and the level of capital, with costly bankruptcy, the marginal cost of capital will depend on the level of debt. As a result, anything that changes the riskiness of capital or the likelihood of bankruptcy will change the cost of capital relative to debt—even if there is no capital requirement at all.

Looking briefly at Le and Sheehan's empirical results, I have two comments. First, it is very difficult to measure the *marginal* cost of capital, which is what they need. Most techniques will allow measurement of the *average* cost. Second, looking at the specifics of their results, you see that the time path of their measure of how binding the constraints are depends critically on exactly how they choose to measure it. Is the deviation of the estimated cost

of capital from the estimated cost of debt calculated relative to the interest rate on Treasury bills or not? It turns out to make a big difference what measure is used, and since the authors provide no reason for one or the other, I am left puzzled.

In thinking about capital regulation generally, the problem that brings these four papers together is a fundamental one: What does it mean for banks to be capital constrained? The common methodology in addressing this question is to look at the behavior of banks as they approach the constraint imposed by regulators. But is this likely to give us an answer to the question we really care about? The one result that comes through in all of these papers is that banks that are *undercapitalized* raise capital. But surely *undercapitalized* banks will be under market pressure at the same time they come under regulatory pressure. Can we really say that the behavior we observe with the regulations is different from the behavior we would observe without them?

I realize that in these comments I have raised more questions than I have answered. My conclusion is that the success of these papers, really, is in helping us to refine the questions to which we need answers. After reading these four interesting papers, I am left asking myself two questions to which we would like to know the answers: How is it that required capital ratios work to affect bank behavior? What are capital requirements really supposed to achieve?

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