

Capital Cushions

BY STEPHEN SLIVINSKI

The Basel Accords and bank risk

The recent “stress test” the federal government conducted on the nation’s biggest banks was an attempt to ascertain whether those depository institutions could withstand a market downturn. This new form of bank examination was meant to quell some of the uncertainty among investors about the value of the assets the banks were holding on their balance sheets as well as whether these banks had enough capital on hand to keep them standing in the wake of an extended economic storm.

Banks can finance their operations

through the interest payments made by borrowers.)

When a bank borrows money to fund its operations, this creates a liability that can cause the bank to fail if it cannot meet its repayment obligations. On the other hand, the revenue generated by a stock sale is considered “capital” since it can be used to pay off depositors or bondholders if necessary. Thus, the larger the portion of the bank’s operations that are financed by capital funds, the more losses the bank can absorb.

Measuring how much capital a bank has on hand relative to its assets has become an important function of the bank regulatory system. The main regulators of the U.S. banking system — the Federal Deposit Insurance

Corporation, the Federal Reserve, and the Office of the Comptroller of the Currency — have routinely examined banks for years to measure the adequacy of their capital cushion, among other things.

One of the metrics by which this adequacy is measured is a capital-to-assets ratio. While this

based on are relatively new. Before the 1980s, bank supervisors did not impose a specific quantitative capital requirement on a bank. Instead, through most of the country’s history, an institution’s solvency was based largely on an examiner’s judgment. Supervisors had the freedom to take a look at each bank individually and use formal and informal measures and their knowledge of each bank’s circumstances to form their views.

Rigid adherence to something quantitative like a capital ratio was still widely perceived to discourage a more comprehensive and thoughtful analysis of a bank’s potential solvency in the face of an economic shock. For instance, the American Bankers Associations 1954 “Statement of Principles” explicitly rejected the use of ratios as a centerpiece of bank supervision. Even as late as 1978, the FDIC Manual of Examination Policies — the rulebook for that agency’s bank auditors — instructed their examiners to use capital ratios as only “a first approximation of a bank’s ability to withstand adversity. A low capital ratio by itself is no more conclusive of a bank’s weakness than a high ratio is of its invulnerability.”

This was a sustainable strategy for bank examiners from the 1940s through the early 1970s. Bank failures were few in number and in scope during that time. The dollar-weighted average capital ratio for the banking industry remained healthy also, ranging from 6 percent to 8 percent between 1950 and 1970.

The high-inflation environment of the mid- to late-1970s led to high interest rates that severely weakened large banks and the savings and loan (S&L) industry. In 1981, the federal regulators introduced an explicit capital ratio requirement for the first time. It consisted of a “leverage ratio” of primary

Bank Capital Ratios Have Risen Since the 1980s



SOURCE: FDIC Historical Statistics on Banking

in two ways. They can borrow money — or accept more deposits from their customers, which by definition is a form of borrowing since the bank is required to return the full deposit balance if demanded by the customer — or they can sell stock. Banks can then turn around and lend this money to others. (The loans the banks extend to others are considered assets since they generate income for the bank

might sound like a simple concept to operationalize, the proper role for the ratio in regulatory policy is far from settled. In addition, current events have raised questions regarding the old assumptions about how best to define a bank’s capital cushion.

A Brief History

The numeric standards that the current capital adequacy requirements are

capital (mainly the amount of stockholder equity) to average total assets (an average of aggregate assets over a set time period, usually two years). Congress furthered the push by passing the International Lending and Supervision Act of 1983 (ILSA). The legislation ushered in a common definition of uniform capital requirements for all bank regulatory agencies to use.

In 1985, under the auspices of ISLA, the standard mandated capital ratio for banks converged on 5.5 percent of total assets. Any bank operating at a leverage ratio of 3 percent was declared unsound and was required to comply with federal enforcement actions.

By 1986, however, regulators began to realize that the ratio failed to differentiate between different sorts of risks on the bank's balance sheets. The simple ratio, by definition, ranked all assets as being equally likely to maintain their value. But during the 1980s, financial markets were becoming vastly more international in scope and innovations in financial products were introducing a new element of risk into bank holdings. Besides, many banks were beginning to move away from lower-yielding liquid assets while also experimenting with "off-balance-sheet" activities that would allow them to make certain higher-yield (but riskier) investments. Under the old rules, they didn't have to increase the size of their capital cushion as a result.

The Basel Accord and U.S. Policy

In the summer of 1988, central bank governors from the 10 biggest economies (also called the Group of Ten, or G-10) met in the town of Basel, Switzerland, to approve an agreement — eventually called Basel I — that would set the approach that bank regulators would take for the next 18 years. The first big result of the accord was to redefine the way regulators in each participating country measure capital. It created two "tiers" — Tier 1 (core) capital and Tier 2 (supplementary) capital. Tier 1 is basically equity owned by common stockholders while Tier 2 consists of a variety of other forms of capital, such as a "hybrid" equity instrument like preferred stock that resembles equity in some form but also maintains a liability claim on the bank in the event of bankruptcy.

The next new step was to break away from a simplistic, uniform approach to capital ratios and instead create a series of risk categories into which the assets of a bank can be subdivided. A "risk weight" would then be assigned to each class of asset for the purposes of taking into account the potential for a loss in value or probability of default: The higher the risk weight, the more capital the bank needs to have on hand to compensate for the potential loss. Those ranged from a "0.0 percent" risk weight for bonds issued by the governments of most developed countries to a "100 percent" risk weight for corporate debt. Mortgages fell in the middle (a 50 percent weight). Off-balance-sheet assets were also included in these "risk buckets" and weighted by a similar risk factor.

To calculate the risk-weighted capital ratio, regulators would sum the new weighted values of the assets before they

calculated the capital-to-asset result. The standard would require banks to hold capital (Tier 1 plus Tier 2) that consisted of 8 percent of their newly defined risk-weighted assets.

Coincidentally, the year after the original Basel Accord was agreed upon and the standards began to be adopted by a number of countries — over 100 by the year 2002 — the United States witnessed the largest number of bank failures since the Great Depression. More than 530 FDIC-insured banks failed in 1989. The concern among policy-makers at the time was about "regulatory forbearance" — in other words, the act of looking the other way when a regulator discovered that a bank might be in jeopardy of collapsing.

Analysts of the period often point out that bank regulators were aware of many of the warning signs and the losses from the S&L crisis of the 1980s were made worse than they might have been. "The consequent increased pressure to forbear from managers and owners in the industry, unchecked by an offsetting increased pressure to facilitate early closure, may have led to changes in favor of such policies in the 1980s," write economists Randall Kroszner of the University of Chicago and Philip Strahan of Boston College in a 1996 paper. (Kroszner subsequently served as a Governor at the Federal Reserve Board.)

Partly in response to this concern, Congress passed the Federal Deposit Insurance Corporation Improvement Act (FDICIA) in 1991. It created a set of categories to classify the capitalization of a bank. A bank was "well capitalized" if it had a risk-weighted capital ratio of 10 percent or more. It was "adequately capitalized" at 8 percent or more. Below 8 percent was considered "undercapitalized." The law mandated "prompt corrective action" by regulators to shut down banks that were considered undercapitalized and failed to meet other criteria. The purpose was to minimize the potential cost to taxpayers of the government's deposit insurance guarantees by heading off a potential bank collapse while a bank still had a positive, but low, capital ratio.

The Rise of Basel II

Soon, a variety of inherent flaws in Basel I's treatment of capital became apparent. First, the relationship between assets' actual revealed default risk and their risk weights proved to be less reliable than had been thought. For instance, all bonds issued by countries that were members of the Organization for Economic Cooperation and Development (OECD) were given the same weight even though doing so might have downplayed the very real differences in the risk of defaults among these countries or, conversely, possibly overstated the difference in default risks between OECD and non-OECD countries.

Second, the Basel methodology was too crude. It simply summed the risk weights to construct a measure of overall capital risk, but that is a poor proxy for actual risk. Doing so does not take into account the overall portfolio risk of the bank and the formula made no room for management

strategies that could reduce that overall risk. A bank portfolio can indeed be more or less risky than the mere sum of its parts might indicate because of the correlation among assets.

Third, the broad categories were lumped together, and assigned a single weight to a variety of assets that in reality exist along a spectrum of risk profiles. A loan to a startup company, for instance, was treated the same as one to an established Fortune 500 company. As such, banks investing the same share of their portfolio in either asset would have identical mandatory capital set aside. This creates an incentive for a bank to invest in high-yielding assets in the risky end of the spectrum without having to make a corresponding expansion of their capital cushion. This sort of activity could over time increase the overall risk of a bank's portfolio although it would still meet Basel I standards.

In January of 2001, a second set of Basel standards — called Basel II — attempted to remedy these problems. (The implementation by the Federal Reserve began in the fall of 2006.) The first big change altered the risk weight. By using the ratings issued by credit rating agencies like Standard and Poor's and Moody's to determine the potential risk of default, Basel II set up a system by which assets within each broad "risk bucket" could be further classified.

The second big change was a new method by which risk profiles could be measured. Instead of forcing all banks to abide by the specific numeric standards set forth in Basel II, certain banks could opt out. In place of the top-down approach, the "internal ratings based" approach — available only to sophisticated banks with the resources and knowledge base to develop an internal rating with a mathematical model — allowed some banks to estimate the necessary size of their own capital cushion.

Both changes were aimed at answering the critics who stated that the original Basel standards did not integrate any market-based mechanisms for evaluating risk. Yet these changes seem to have proven flawed as well. The grades awarded by the ratings agencies for some mortgage-backed securities, for instance, have been shown to be less reliable than originally hoped. Some argue it's hard to make a case that a handful of firms which are largely insulated from competition by the Securities and Exchange Commission, as the "Big Three" ratings agencies are, could be considered a sufficient market-based mechanism. (For a detailed analysis, see this issue's cover story on page 14.)

In addition, allowing banks to set their own capital requirements doesn't seem to acknowledge the current state of the science of risk management. It has become apparent that the models of risk used by many banks may not have been sufficiently robust to anticipate the potential default of complex new asset-backed securities.

There has been some discussion within the Federal Reserve about how to overcome the incentive a bank would have to lowball their capital requirement estimates. One way to create an incentive for banks to be as honest as possible is to require them to precommit to a maximum loss exposure

and corresponding capital buffer. If the bank's losses exceed the declared maximum, the bank supervisor would levy a fine on the bank.

A criticism of the precommitment approach centers on the ability and willingness of a regulator to assess fines. For the fines to be a credible threat, they must be large enough to spur action by the bank. But if an economic shock were to reduce a bank's soundness, a regulator might feel compelled, if he believed the shock to be temporary, to avoid assessing the fine if doing so would result in the bank's failure. Yet the failure to issue a penalty, especially if it is sufficiently steep for the precommitment regime to work, would severely restrict the credibility of the regulatory threat in the future.

The Search for a Market-Based Mechanism

Critics of the Basel standards have pointed out that each round of changes has yet to address a key conceptual problem: Banks face a variety of risks that cannot be captured by a simple ratio. There is no attention paid to the risks of a heavy concentration of a bank's balance sheet in a certain sort of investment. And a ratio has no way to gauge the risks of poor management, the risks of an economic shock, and the risks to reputation in the marketplace. Critics argue that a real market-based mechanism that does not rely almost solely on credit rating agencies or mathematical models would be better suited to managing not just the capital ratios of a bank but also these other intangible risk factors that those institutions face.

One proposal is to require large banks to hold a certain portion of their assets in long-term subordinated debt. This form of debt would be uninsured — meaning it has no claim to a federal guarantee — and would have a maturity of more than a year. The term "subordinated" means that the holders of these bonds are in line for repayment behind depositors, conventional bondholders, and the FDIC should the bank fail. The bonds could be traded in a secondary market.

Supporters of this proposal suggest that these characteristics would be important for making this form of debt a strong market-based barometer of a bank's capital position. Because these bondholders would be among the last to get paid in the event of a bank failure, they would have an incentive to monitor the bank's relative riskiness. Subordinated debt holders would be watchful of the bank's levels of leverage because that level would influence not just the probability of the bank's failure but also the composition of risks on its balance sheet — and, consequently, the bank's ability to repay subordinated bondholders in the event of failure. Finally, because the bonds can be traded in secondary markets, the risk yield would go up on the debt in the event of a market perception that the bank is taking on too much risk, thus sending a signal to both regulators and investors.

As Charles Calomiris of Columbia University and Robert Litan of the Kauffman Foundation argue, a subordinated debt requirement could be preferable to the current Basel standard that encourages more equity financing of banks.

Stockholders of a bank are likely to be more concerned about the bank's profitability and, hence, more interested in the bank making high-yield, potentially risky investments. As Calomiris and Litan point out in a 2000 study, "because holders of subordinated debt have no upside other than the interest they are promised, they are likely to be less risk seeking than shareholders." They argue that these debt holders would also have a relatively longer time horizon than a stockholder because of the long-term nature of the bond maturities. And they suggest that, because a portion of the bonds will mature regularly, a subordinated debt requirement on banks would force those banks to prove themselves in the credit markets on a regular basis.

A criticism of the subordinated debt proposal suggests that a secondary market for the asset may not emerge. The amount of debt outstanding, particularly for a small bank, might be too small for the market to be robust. Also, because the proposal relies on the assumption that the bondholders are relatively risk averse, they may be unusually sensitive to new information and rush to redeem the debt after hearing isolated pieces of bad economic news.

Another criticism of the subordinated debt is that political realities might make it a less effective tool at controlling risk. In a world of deposit insurance and central governments unable to credibly commit to not bail out failing banks, the upside of risk is privatized — by allowing the bank's stockholders to keep the profits of successful gambles — but the downside is socialized because the government ensures that the bank's debtors don't suffer. This creates an incentive for banks to make even riskier investments than they would otherwise. Meanwhile, the price of bank debt will be influenced by the implicit or explicit insurance guarantee, and the debt price would not necessarily yield accurate information about a bank's level of risk.

One way to control risk more directly is to approach the question from the other end by limiting the net return a bank can make and thereby limit its incentive to take too much risk. This can be done by requiring banks to issue stock warrants. Edward Simpson Prescott, an economist at the Richmond Fed, argues this requirement would alter a bank's capital structure in such a way as to replicate the incentives that a bank would face in a world in which deposit

insurance and bondholder guarantees didn't exist.

The stock warrants would contain a strike price — a set price at which the holders of the warrant could purchase a share of bank equity. If the per-share return a bank experiences is higher than the strike price, then the warrant holder could exercise his option to buy the stock at the predetermined price and reap the gains. The bank, on the other hand, would only receive the price of the stock. Selling a stock warrant would, in other words, be equivalent to selling a portion of the bank's return to a set of investors. This would have the effect of constraining the upper-end payoff a bank could reap if the managers pursued a risky yet potentially high-yield investment and should limit the incentive that banks have to engage in such behavior.

A potential risk here is that a stock warrant could penalize a bank that exhibits high returns generated by innovation or better management rather than risky leveraged investments. There are also political economy issues. Bank warrants can tip the balance of power away from bank managers, and a proposal to require warrants are likely to be met with opposition. Additionally, by definition a stock warrant requirement would work best with a lower equity capital requirement; high capital requirements choke off investment. Yet it's likely that a proposal to allow a lowering of capital requirements would be met with skepticism today.

As the economic downturn unfolds, the debate about the correct regulatory approach to capital buffers and the best way to integrate market-based mechanisms will continue. Bank regulation, by its nature, is often backward-looking, adjusting to new financial innovations after they become widespread. Some critics question whether the attempts to continually modify capital standards can ever keep up.

Nevertheless, capital ratios are quite firmly embedded in U.S. law now. Yet it remains an open question whether the spirit of the Basel II standards will survive intact. The Basel Committee responded to the situation in the worldwide financial markets in a November 2008 press release that recognized the "fundamental weaknesses" of Basel II and proposed a goal of modifying the standards once again by the end of 2009. **RF**

READINGS

Burhouse, Susan, John Feid, George French, and Keith Ligon. "Basel and the Evolution of Capital Regulation: Moving Forward, Looking Back." Washington, D.C.: Federal Deposit Insurance Corporation, Jan. 14, 2003.

Calomiris, Charles W., and Robert E. Litan. "Financial Regulation in a Global Marketplace." *Brookings-Wharton Papers on Financial Services: 2000*. Washington, D.C.: Brookings Institution Press, pp. 283-323.

Kroszner, Randall S., and Philip E. Strahan. "Regulatory Incentives and the Thrift Crisis: Dividends, Mutual-to-Stock Conversions, and Financial Distress." *Journal of Finance*,

September 1996, vol. 51, no. 4, pp. 1285-1319.

Kupiec, Paul, and James M. O'Brien. "The Pre-Commitment Approach: Using Incentives to Set Market Risk Capital Requirements." Federal Reserve Board Finance and Economics Discussion Series Paper 1997-14, March 1997.

Prescott, Edward S. "Regulating Bank Capital Structure to Control Risk." Federal Reserve Bank of Richmond *Economic Quarterly*, Summer 2001, vol. 87, no. 3, pp. 35-52.

Rodriguez, L. Jacobo. "International Banking Regulation: Where's the Market Discipline in Basel II?" *Cato Institute Policy Analysis* no. 455, Oct. 15, 2002.