FRBSF ECONOMIC LETTER

2011-27 | August 29, 2011

Variable Capital Rules in a Risky World

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The recent financial crisis showed that a financial institution's equity may be sufficient to absorb losses during normal times, but insufficient during periods of systemic distress. In recognition of this risk, the Basel III agreement last year introduced a new element of macroprudential regulation called countercyclical buffers, variable capital requirements that shift based on credit growth. These buffers raise the classic regulatory dilemma of safety versus economic growth, but may provide protection against financial calamity at an acceptable cost.

Equity is the levee that protects a bank from a flood of bad loans. Not surprisingly, the Basel Committee on Bank Supervision concluded in 2010 that the best protection against another financial crisis is to increase the quantity and quality of capital banks are required to hold. This is the *microprudential* component of Basel III, as this new regulatory framework is known. But Basel III also introduces a novel piece of *macroprudential* regulation called countercyclical buffers. Under this mechanism, banks would accumulate capital in periods of unusually high credit growth, thus slowing the formation of credit bubbles, strengthening bank balance sheets, and preventing draw-down spirals. These can occur when a bank responds to a series of write-downs by slowing loan growth to protect its capital position, thereby triggering a domino effect on credit availability.

Basel III stipulates that countercyclical buffers be capital ratios of 0 to 2.5% on top of a 7% core capital requirement. It leaves implementation to national regulators. In June, in a move to further buttress the macroprudential edifice, a requirement was added that international systemically important financial institutions (SIFIs) hold an extra 1–2.5% in equity. In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act requires that the Federal Reserve establish special prudential standards for domestic SIFIs. In a recent speech, Governor Tarullo (2011) suggested that SIFI capital requirements could be as high as 14%. That would mean 2% above the 7% core capital requirement, the 2.5% upper limit of the countercyclical buffer, and the 2.5% Basel III requirement for global SIFIs. Bankers warn that such increases could be a death knell for economic growth. Assessing this claim requires a look at the history of finance since the 1870s.

A century of financial development in three acts

A study of 14 advanced economies over the last 140 years demarcates three phases of financial development (Schularick and Taylor 2011). From the 1870s until the 1940s, the ratio of bank loans to GDP remained very stable at around 50%, despite numerous financial crises that culminated in the Great Depression. There followed halcyon days of financial calm up to the fall of Bretton Woods in 1971, a period characterized by strong regulation and a deafening absence of financial drama.

The effectiveness of the regulatory regime gradually declined, primarily because of the growth of the more loosely supervised shadow banking system consisting of nondepository financial institutions such as investment banks, hedge funds, money market funds, special purpose vehicles, and insurers. The desire to keep bank regulators at arm's length generated ever more creative securitization of bank balance sheet items, such as mortgages. By June 2008, the U.S. shadow banking system apparently was larger than the traditional depository banking system (see Pozsar, et al. 2010).

U.S. financial sector assets ballooned from 150% of GDP in 1975 to about 350% in 2008 (*Economic Report of the President* 2010). In the United Kingdom, the financial sector's balance sheet was 34% of GDP in 1964 and 500% in 2007 (Turner 2010). By 2008, the ratio of bank loans to GDP had swelled to 200% in the 14 countries observed by Schularick and Taylor. This growth was accompanied by a resurgence of domestic financial crises culminating in the global events of 2007–08.

This history illustrates the regulatory dilemma of balancing financial stability and stable economic growth. Strict regulation can choke off access to credit, douse entrepreneurial initiative, and disturb the channels by which risk is shared. Yet, average output growth from 1945 to 1975 in the 14 countries was double the rate of the period since then. And economic activity has become more volatile. Hume and Sentance (2009) have pointed out that aggregate investment has stagnated or fallen despite the sharp rise in outstanding credit volumes. Turner (2011) concludes, "There is no clear evidence that the growth in the rate and complexity of the financial system in the rich developed world over the last 20 to 30 years has driven increased growth stability."

After the fall of Lehman Brothers, major investment houses were reclassified as depository institutions and made subject to Dodd-Frank regulation of SIFIs. These measures should corral at least part of the shadow banking system into the regulatory fold. But the extent to which systemic risk can be managed through macroprudential regulation, such as the countercyclical buffers proposed in Basel III, depends on putting such buffers in place in time to affect the build-up of risk.

Countercyclical capital and the regulatory trade-off

Countercyclical buffers are an excellent example of the regulation-versus-growth dilemma. The economic burden of buffers depends on two factors: How does increasing the buffer affect credit formation? And can we predict when the buffer will be needed?

Buffer design requires regulators to make judgments about when credit formation becomes excessive. As an indicator of excess, the Basel Committee (2010) favors monitoring deviations from trend of credit as a proportion of GDP. Studies by the Bank for International Settlements and other researchers support this choice (see Drehmann et al. 2010 and Jordà et al. 2011).

Financial calamities are relatively rare events and therefore inherently difficult to predict. In a sample of 37 countries from 1970 to 2007, Laeven and Valencia (2008) identify 42 systemic banking crises, averaging one per country every 35 years. Claessens et al. (2011) sort data from 21 OECD countries from 1960 to 2007 into periods of financial deepening and financial retrenchment—much as we sort business cycles into expansions and recessions. Periods of retrenchment represent less than 25% of the sample.

If these financial storms could be foreseen, the financial stability versus growth conundrum could be easily resolved. Most of the time, capital requirements would be kept low, only to be gradually built in

anticipation of a financial event—a bit like upping your life insurance as you are about to bungee-jump off a bridge. Researchers are far from developing good models to explain how simmering financial trouble comes to a boil, let alone predict when this will happen. A forecast should be judged by the rewards associated with the actions taken as a result of the forecast, not by its ability to predict the next financial crisis. Inaccurate forecasts may lead to good regulation.

This paradox is best understood by example. In several papers, trend deviations of credit from GDP have been identified as reasonable indicators of impending financial mishaps (Jordà et al. 2011, Repullo and Saurina 2011, and Schularick and Taylor 2011). A regulator may compare measures of credit deviation with a specified threshold. Above the threshold, the countercyclical buffer is stocked to avert a financial crisis. Below it, the buffer is tapped to restore financial calm. If the costs of regulation are low relative to the losses experienced in a financial crisis, taking into account the infrequency with which crises occur, a low, conservative threshold might be appropriate. A low threshold may generate numerous false positives, but costly crises will almost certainly be averted. On the other hand, if the costs of regulation are high relative to the consequences of a financial catastrophe, then higher thresholds should be chosen. Crises will sometimes be missed, but their costs will be offset by keeping capital buffers low most of the time.

Quantifying the costs of regulation

Several researchers have attempted to quantify the costs and benefits of financial regulation. Angelini et al. (2011) calculate the impact of the proposed Basel III framework to be about 0.08-0.09% of steady-state output for each percentage point increase in capital requirements. Slovik and Cournède (2011) estimate a range of 0.05–0.15% in lost output. Other economists argue that bank equity is not socially expensive and that high leverage is not necessary to achieve socially desirable levels of financial intermediation (see Admati et al. 2011). Even if regulation does increase the price of credit, the resulting increase in interest rate spreads could be partially offset with more accommodative monetary policy. And, on the other side of the ledger, Jordà et al. (2011) calculate that, on average, recessions driven by financial crises depress output by 1% over four to five years.

These estimates should be woven into the regulatory decisionmaking process. Meanwhile, we can characterize the accuracy with which trend deviations of credit from GDP detect financial crises by averaging the rate of true positives and true negatives over all possible regulatory choices. Jordà et al. (2011) use 140 years of data from 14 countries. They calculate the average success rate to be about 80%, which is on a par with the ability of stock market indexes to predict recessions.

Conclusion

In the aftermath of the recent global financial crisis, economists are grappling with how best to merge fluctuations in economic activity and financial markets into a model of the economy, and hence how best to design regulatory policy. A complete picture on the genesis and evolution of financial maelstroms is still far on the horizon. However, in the meantime, countercyclical buffers linked to credit growth offer an easily understood and communicated way to fend off financial trouble at what appears to be a reasonable cost to economic growth.

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