

Will Basel II Help Prevent Crises or Worsen Them?

2 Two points of view on whether Basel II—a set of guidelines on how much capital banks should hold to guard against current and future risks—adds to boom-bust cycles

THE current financial market turmoil—which began in the U.S. subprime mortgage market in summer 2007 and quickly spread to Europe—has exposed glaring weaknesses in how financial institutions are supervised and regulated. As a result, at the 2008 IMF–World Bank Spring Meetings, top financial leaders endorsed a series of measures to beef up the global supervisory and regulatory structure, including a proposal by the Financial Stability Forum that calls for more vigilant oversight of capital and liquidity at financial institutions.



Currently, bank regulators across the globe are implementing what is known as Basel II—an international standard for the amount of capital that banks need to put aside to deal with current and potential financial and operational risks. As it stands, Basel II requires banks to set aside more capital for higher-risk exposures. An ongoing review by the Basel Committee could further increase the capital requirements for complex structured products and off-balance-sheet vehicles, which were the main sources of stress in recent months. A 2006 survey by the Financial Stability Institute suggests that about 100 countries plan to apply Basel II over the next few years, although implementation is not expected to be uniform across regions. Already, most of Europe has implemented the new standard, and the United States is slated to do so in 2009.

But now there are calls to make the rules even tougher. After all, why didn't the rules soften the fallout from the current market turmoil? (For more on that question, see "Banking on More Capital," on page 24 in this issue.) And the several-year-old controversy over whether the rules would offer a panacea for financial crises, or instead exacerbate them, is once again front and center.

The critical question turns out to be: Are the rules too procyclical: that is, are they too lax on capital requirements during the "good times" and too tough during the "hard times," exacerbating boom-bust cycles in the process? In an effort to shed more light on this question, F&D turned to two experts for their insights.

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Banking on the Right Path

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THERE is nothing more procyclical than a badly managed bank. When the economy is growing, even badly managed banks with inadequate levels of capital and provisioning can expand their business. But when the economy takes a turn for the worse, badly managed banks have to immediately change their lending policies to avoid going under (Caruana, 2005).

In 1988, the first international accord on bank capital, known as Basel I—for the Basel Committee on Banking Supervision (BCBS)—was adopted. It represented, at the time, a significant step forward. But its rules for setting capital requirements were very simple, and internationally active banks were eventually able to circumvent them. The main problem with Basel I's capital requirements was that they were, practically speaking, not sensitive to risk. A loan to a nonfinancial firm required 8 percent of capital, irrespective of the firm's risk (that is, its leverage, profits, solvency, and economic environment). This ran counter to the way banks managed their loan portfolios and economic capital (considering far more sophisticated measures of risk).

In June 2004, BCBS published a new framework for the capital requirements of credit institutions, known as Basel II, which was finally issued in June 2006. In brief, Basel II links capital requirements more tightly to the risks that banks incur and is thus a significant and necessary improvement over Basel I.

Is procyclicality exacerbated?

During the Basel II discussions, some analysts voiced concerns about the potential procyclicality of the new capital framework (see Taylor and Goodhart, 2006). In good times, credit risk, measured by the borrower's probability of default, would be low, as would capital requirements (now closely tied to risk). Conversely, in bad times, banks would face much higher capital needs. This could have an undesirable effect on the overall economy if banks were capital constrained in downturns and thus forced to cut lending when it is most needed.

During downturns and recessions, banks find it more difficult to increase their capital because their profits and, hence, their capacity to build up reserves diminish. They may also have more difficulty increasing capital and issuing subordinated debt because of the heightened uncertainty. The combination of higher capital requirements (because of increased risk) and the difficulty of raising new capital could lead institutions to reduce credit to firms and households, which would aggravate the recession or hinder economic recovery.

But for Basel II, or any risk-based capital adequacy requirement, to add significantly to boom-bust cycles—that is, exacerbate the inherent procyclicality of the banking system—at least three causal links have to be followed.

First, *capital requirements would need to increase in downturns and decline in upturns*. But Basel II contains a number of mechanisms that dampen this effect while still making capital requirements more risk sensitive than under Basel I. Although the time horizon used to estimate the probability of default is one year, banks are expected to use a longer time horizon to assign ratings. Indeed, capital requirements obtained with a default probability at a point in time (over a one-year horizon) are significantly different from those obtained with an average default probability calculated over a whole business cycle.

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Empirical evidence shows that for mortgage loan portfolios (or any loan portfolio), capital requirements will fluctuate along a business cycle significantly less using an average probability of default than a probability of default at a point in time (Saurina and Trucharte, 2007). Thus, if banks use longer time horizons for their estimates, as required by Basel II, capital requirements fluctuate (because capital should be proportional to risk, and risk moves with the cycle), albeit considerably less: the relative change in capital requirements from peak to trough is almost five times smaller.

Loss given default, or LGD (an indicator of the severity of loss), is another risk driver of capital requirements that may exhibit procyclicality; that is, losses increase in bad times as recovery rates from loans plummet. However, Basel II also takes this issue into account by requiring a downturn LGD at any point along the cycle. Thus, LGDs already factor in the business cycle so that they will be similar in upturns and downturns.

Moreover, capital requirements for operational risk (at least in the two less sophisticated alternatives) will be countercyclical because capital is directly proportional to banks' gross income. Pillar 1 of Basel II also establishes that a borrower's rating must represent the bank's assessment of the borrower's ability to pay even in adverse economic conditions. In fact, it explicitly requires banks to stress-test their credit portfolios in the case of a mild recession (two consecutive quarters of zero growth). And Pillar 2 requires bank managers to be mindful of the stage of the business cycle when assessing their banks' capital adequacy. Thus, bank supervisors, through the Pillar 2 review process, have to take into account the potential procyclicality of Pillar 1 requirements if banks fail to do so. All in all, considering both Pillar 1 and Pillar 2 mechanisms, it is far from clear that capital requirements will be procyclical.

Second, *actual bank capital would have to behave procyclically*. Few banks hold a level of capital equal to their regulatory minimum requirement. In fact, most banks hold capital buffers to have enough room to expand their balance sheets (through loan growth, new business opportunities, and so on) without having to issue new capital or change their dividend policy. These capital buffers also cover signaling and bankruptcy costs and minimize supervisors' interference.

Through Pillar 3, Basel II reinforces bank risk transparency toward investors. Thus, Pillar 3 makes it more difficult for bank managers to reduce capital levels. If shareholders, preference share investors, and subordinated debt investors, as well as bondholders and depositors, care about banks' medium-term prospects, they will probably force bank managers to take into account capital levels over the whole business cycle. The fact that raising capital, both tier 1 and tier 2, is expensive in downturns also constrains managers' behavior. And, although banks' capital buffers might decline during expansions, the reduction could be small. Therefore, it is not at all clear that banks will significantly decrease their capital levels even if regulatory capital declines in good times.

Third, *the behavior of credit may depend on demand factors unrelated to banks' capital or may be determined by supply factors not directly related to the level of banks' capital buffers*. The international empirical evidence is not conclusive. For Spain, a panel data exercise suggests that bank capital buffers do not significantly affect the behavior of bank credit (Banco de España, 2006). By contrast, both other supply factors, such as profitability and risk profiles, and demand factors prove to be significant. And nonfinancial firms could partially compensate for a reduction in bank lending by resorting to trade credit, short- and long-term capital markets, or even private placements.

The bottom line is that it is not at all clear that Basel II will exacerbate lending booms and busts. A certain degree of procyclicality is certainly inevitable and appropriate if bank capital is to be more closely related to the risks incurred, which prudential supervision calls for.

Consider accounting rules

For readers who are not persuaded by my arguments, there is a regulatory policy answer, either inside or outside the Basel II framework. Jiménez and Saurina (2006) show the empirical underpinnings of a bank regulatory policy based on a countercyclical loan-loss provision or, alternatively, a countercyclical capital requirement (through Pillar 2). The idea is simple but powerful. Lending mistakes happen in good times, when over-optimism is widespread among banks and borrowers. It is during upturns that credit risk increases across bank portfolios.

Therefore, accounting rules and bank supervisors should acknowledge those risk developments and, accordingly, tighten loan-loss provisions and/or capital. In so doing, they will help to better align the incentives of bank managers with those of bank investors (in particular, depositors). At the same time, they will promote macroeconomic stability (that is, smoother business cycles).

Unfortunately, the setters of accounting standards do not seem to take prudential concerns on board. The International Financial Reporting Standards (IFRS), adopted by the European Union in 2005 and now expanding to other jurisdictions, are significantly procyclical. Incurred losses (either identified in an individual loan or lurking within a pool of homogeneous loans) do not relate to expected losses—that is, they do not allow forward-looking elements. Thus, IAS 39, the rule that governs loan-loss provisions, is not in line with the basic credit risk measurement and management tools used by banks and supervisors. In addition, developments since summer 2007 show how fair value can become extremely procyclical, in particular if liquidity disappears.

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It is quite surprising to see how much discussion has been generated by Basel II procyclicality (although Basel II contains the mechanisms to deal with it) and by the extent to which the procyclicality of accounting rules has been widely neglected. It is high time for more work and open discussion about the IFRS's potential to enhance boom and bust lending cycles. ■

References:

- Banco de España, 2006, Financial Stability Report, 05/2006 (Madrid), Box III.1.
- Caruana, Jaime, 2005, Monetary Policy, Financial Stability and Asset Prices, Occasional Paper 0507 (Madrid: Banco de España).
- Jiménez, Gabriel, and Jesús Saurina, 2006, “Credit Cycles, Credit Risk, and Prudential Regulation,” International Journal of Central Banking, Vol. 2 (June), pp. 65–98.
- Saurina, Jesús, and Carlos Trucharte, 2007, “An Assessment of Basel II Procyclicality in Mortgage Portfolios,” Journal of Financial Services Research, Vol. 32 (October), pp. 81–101.
- Taylor, Ashley, and Charles Goodhart, 2006, “Procyclicality and Volatility in the Financial System: The Implementation of Basel II and IAS 39,” in Procyclicality of Financial Systems in Asia, ed. by Stéfán Gerlach and Paul Gruenwald (Houndsmill, Basingstoke: Palgrave Macmillan).

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Sending the Herd over the Cliff. Again.

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FLASH back 10 years to May 1998. The Asian financial crisis is still unfurling. I am sitting on the JPMorgan dealing floor in Singapore. My trip to Jakarta has been cancelled because of rioting in the streets. Regional currencies are in free fall. Local equity markets are imploding. Credit rating agencies are “helpfully” responding by slashing their credit ratings. The region’s vaunted political and economic stability is collapsing before my eyes. On the Morgan dealing floor, we can’t tear ourselves away from the electronic screens transmitting the bloodbath tick by tick. I feel the primordial pull and guilt of passersby trying to get a closer look at a ghoulish car accident.

The really puzzling thing for a trained economist like me was that, late at night over cold Tiger Beers on Boat Quay, the exhausted sellers I spoke to were not motivated by a dramatic downgrading of the long-run value of their assets. They were selling because their risk models were flashing red, their stop-loss levels were closing down their positions, or rating downgrades meant they could no longer hold on to their assets.

When I returned to London, I heard a similar story from investors: “I wanted to hold on now that prices had fallen so far, but my risk systems pushed me out and kept me out.” In short, because these risk systems were fed by market prices and ratings were correlated with prices, price declines were driving price declines. The market was caught in a vicious circle then, as it is now. Later, I would christen this market behavior a “liquidity black hole,” where price declines triggered not bargain hunting, as in more normal times, but further selling. But what was particularly perplexing was that the very mechanisms financial institutions used to reduce risk were turning price declines into a systemic collapse.

Risk sensitivity introduced

JPMorgan had pioneered the development of risk-sensitive risk models for banks. In essence, we applied short-term price data to a Markovitz mean-variance model and, by inverting the model, produced estimates of the amount of market risk the bank was running to a considerable degree of confidence. We highlighted this process in our marketing. It showed off Morgan’s computing, information, and intellectual power and impressed regulators. By April 1995, these models had become standard practice for managing market risk capital at banks.

But these models assumed statistical independence. They would not work if everyone used them. Banks and other institutions responded to these risk-sensitive models by moving into favored sectors that had offered better risk-return trade-offs in the past and moving out of those that had not. But

when one bank’s risk-sensitive risk model detected a rise in short-term price volatility in the favored portfolio and tried to reduce its exposure, many other banks were trying to do the same thing at the same time, increasing volatility and correlation and prompting more model-driven selling. Liquidity vanished down a black hole. The observation of safe sectors by risk models turned them into risky sectors: increasingly overvalued, highly correlated, and prone to volatility. The opposite was also true: an observation of risk created safety. This is why the Argentine default had such limited contagion. Investors had previously fled the emerging market sector. Quantum physicists will note a parallel with Heisenberg’s uncertainty principle. The degree to which the observation of safety creates risk and vice versa is related not to instruments or sectors, but to the diversity of information used in risk models.

Risk and the Asian crisis

Many of the policy responses to the Asian financial crisis were odd: they seemed intended to score political or cultural points. (Certainly from the vantage point of the current crisis, it seems odd that foreign officials were lecturing Asian governments to raise interest rates and let bad banks fail.) The regulatory response was similar in that it ignored what was happening “on the ground” and called for an even greater use of price-driven risk models and a greater reliance on common information sets through the use of credit ratings and publicly available prices.

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I had learned firsthand that whereas risk-sensitive systems may help banks manage their risk during quiet times, they are like seat belts that don’t work when you drive fast. They are not crisis-prevention measures: they make crises worse. This lesson prompted me to write in 1999 the Jacques de Larosière Prize essay, “Sending the Herd off the Cliff Edge: The Disturbing Interaction of Herding Behavior and Market-Sensitive Risk-Management Practices.” Mature risk managers found resonance in the story, but regulators queued up to dismiss the criticisms of market-risk-sensitive risk models as too theoretical or extreme.

Proponents of Basel II think it is a good thing that, unlike Basel I, Basel II incorporates the market risk measures that banks use. I consider this a dereliction of regulatory duty. If the object of regulation is to align banks’ internal controls more closely with regulation, then why engage in extremely costly regulation in the first place? Leave it to banks’ risk controls. The reason we regulate markets over and above nor-

mal corporate law is that markets fail from time to time, with devastating systemic consequences. If the purpose of regulation is to avoid market failures, we cannot then use risk models that rely on market prices as the instruments of financial regulation. Market prices cannot save us from market failures. Market prices do not predict market crashes; if they did, crashes would not occur. Risk sensitivity as a regulatory principle sounds sensible only until you think about it.

History teaches us that the biggest market failure relates to market estimates of risk through the economic cycle. For many reasons, banks and markets underestimate risks in the up cycle and overestimate risks in the down cycle. Credit rating agencies and their ratings are just as much a part of this cycle as everybody else, as the current crisis has revealed once again. Consequently, economic cycles are augmented by boom-bust credit cycles, which follow a cycle of risk perceptions and appetites. This has been the case as long as banks and markets have existed. In an up cycle, market participants always see some new paradigm that tells them that the cycle is dead or that “it’s different” this time. Recall that just 18 months ago, credit spreads were near record lows.

The current credit crunch is just the kind of systemic failure that regulation should be trying to avoid. We can debate another time how regulators could do this, but it is useful to note that whenever regulators complain that the cycle is impossible to follow, we already expect our inflation-targeting central banks to do something even more difficult. Today, inflation-targeting central banks are expected to act against a forecast of rising inflation, rather than to lean against the winds of the current cycle. What is as clear as day following night is that putting measures of risk that rely on market prices into regulatory capital will mean that regulatory capital will follow the cycle rather than impinge on it.

At the top of a boom, the risk models prescribed in Pillar 1 of Basel II, whether using market prices or the ratings of credit rating agencies, will be telling banks that they are running less risk and are better capitalized than they will in fact turn out to be when the credit cycle turns. This will be the case even under the new rules to set aside risk-sensitive capital for off-balance-sheet and complex instruments. The very institutions that are now scrambling for capital and paying so much for it that they are undermining their future profitability—such as Citibank, UBS, Merrill Lynch, and others—had ample capital just 12 months earlier, according to their internal risk models.

Market discipline, embedded in Pillar 3 of Basel II, will punish banks that remain overcapitalized for long. At the top of a boom, banks will be under pressure to look for fresh sources of income rather than use the good times to add to their reserves. The risk-management practices of the U.K.’s Northern Rock were lauded by the financial markets less than six months before they were found to be wanting. In immortal words spoken in July 2007, Charles Prince, Chairman and Chief Executive Officer of Citigroup, described the effects of market risk models and market discipline on bank behavior: “As long as the music is playing, you’ve got to get up and dance.”

Promoting bad banking

If the general approach to risk were not procyclical enough, the specific approach underlying Pillar 1 adds further to procyclicality and a concentration of risk, and promotes bad banking to boot. A good bank is one that lends to borrowers that nobody else lends to because it has superior knowledge about them. For the same reason, it does not lend to borrowers that others are lending to. Under Basel II, banks have no incentive to follow this approach to banking. Instead of

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relying on grizzled credit-risk officers with a long knowledge of credits, Basel II considers the use of computer models using publicly available information as more sophisticated. But, again, this is pseudoscience. Any system in which market participants have the same tastes (to reduce risk and regulatory capital) and use the same information (publicly available ratings, prices, and price-driven models) will lead banks to herd into and out of markets and will eventually cause systemic collapse.

In short, Basel II is bad economics. It tries to use market prices to predict market failures and destroys the natural, liquidity-inducing diversity in risk assessments. What it ends up doing is precisely what regulation should avoid: acting procyclically. The philosopher Sir Karl Popper argued that good science is about falsifiability and predictability. Those who criticize the trend toward the use of price-sensitive risk measures, common-default databases, and credit ratings, as well as the view that risk does not change when it is transferred to others, predicted that this homogeneity would transfer risks to where they can no longer be seen, would do nothing to temper booms, and would lead to systemic collapse when the booms ended. Let us not forget that the proponents of Basel II, a system that promotes these trends, said that these criticisms were far-fetched and that the system was now far safer than ever before. ■

References:

Nugée, John, and Avinash D. Persaud, 2004, “The Dangers of Being Risk-Averse,” *Financial Times*, September 16.

———, 2006, “Redesigning Regulation of Pensions and Other Financial Products,” *Oxford Review of Economic Policy*, Vol. 22, pp. 66–77.

Persaud, Avinash D., 1999, “Sending the Herd off the Cliff Edge: The Disturbing Interaction of Herding Behavior and Market-Sensitive Risk-Management Practices”; available at <http://www.erisk.com/ResourceCentre/ERM/persaud.pdf>