Banking on Basel: An Alternative for Capital Requirements

By Kory Killgo and Kenneth J. Robinson

Equity capital represents a bank's net worth—the difference between its assets and liabilities. Put another way, it's the value of assets financed by the bank's owners, rather than depositors or other sources of funds. Capital serves as a buffer to absorb losses and prevent failures and figures prominently in the banking industry's ability to lend.

Banks must have sufficient capital to back the risk of lending to consumers and businesses. If banks don't have enough, an economic downturn could force lending cutbacks, further exacerbating the slump. But capital isn't free. It costs money to raise and hold. If banks maintain too much capital, lending becomes more expensive, and banks will do less of it. This, too, could dampen economic activity.

Capital adequacy is a primary concern of regulators. The amount of capital they require banks to hold is based mostly on the size and riskiness of the institutions' assets and their off-balance-sheet exposures. Because banks with riskier portfolios are more likely to incur losses, they need to maintain a bigger capital cushion than safer banks. This principle has been in place since 1988, but the regulations implementing it are likely to change under proposals now being considered.

How might the new regulations impact banks in the Eleventh Federal Reserve District? The answer depends largely on banks' risk profiles. The results, however, could have important implications. The District's many smaller, locally based banks are key sources of financing for small businesses. It could be difficult for these borrowers to establish the same relationships with larger, nonlocal institutions. Since capital supports lending activity, changes to banks' capital profiles could affect credit availability and local economies.

Regulating Bank Capital

Today's capital requirements date to the Basel Capital Accord of 1988, known as Basel I. The accord was hammered out by the Basel Committee on Banking Supervision to foster regulatory consistency for banks operating across national borders.[1] The committee drew up broad standards and guidelines but left it to individual countries to implement them in ways that suited their own systems. The United States also adopted the standards for smaller, domestic banks.

Basel I groups assets according to perceived credit risk, with each group having a different capital requirement.[2] Cash in a bank's vault, for example, is virtually risk-free, so it gets a capital requirement of zero, while banks must hold capital equal to 8 percent of their business loans (*Table 1*).

Basel I strengthened the international banking system, but problems emerged. Most important, Basel I asset categories are very broad. All business loans, for example, have the 8 percent capital requirement, regardless of how risky the borrower might be. Under Basel I, capital's role in enhancing banking safety and soundness could be diminished because taking on greater risk doesn't necessarily mean higher capital requirements.

An array of sophisticated banking products—such as swaps, collateralized debt obligations and other off-balance-sheet items—were either not around or in their infancy when Basel I was adopted. And banks' risk measurement and management techniques have improved markedly. Today, most large banks employ sophisticated statistical models to assess risk and the appropriate amount of capital to allocate across exposures.

Recognizing these developments, the Basel committee decided on a new capital framework and in June 2004 endorsed what is known as Basel II. The definition of capital remains the same. What changes is the calculation of capital requirements for individual asset exposures. Banks, with the approval of regulators, will be able to allocate capital based on their own risk assessments.

U.S. regulatory agencies have decided

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Table 1
A Sampling of Basel I Capital Requirements

Assets	Capital requirement (percentage of assets in category)
Cash, U.S. Treasury and agency securities	0
Interbank claims, state and local government general obligation bonds	1.6
Residential first-lien 1–4 family mortgages, certain privately issued mortgage-backed securities, state and local government revenue bonds	4
Business and consumer loans, industrial development revenue bonds	8
Certain asset securitizations with long-term, below-investment-grade credit ratings	16

NOTE: The Basel Capital Accord has been revised more than 25 times since its inception, and the asset categories are very detailed. For more information, see *Banking Regulation: Its Purposes, Implementation, and Effects*, by Kenneth Spong, Federal Reserve Bank of Kansas City, 2000.

Table 2
A Profile of Conservative and Aggressive Banks

	Assumed capital requirement (percent)	Loan concentrations (percent) Conservative banks	Aggressive banks
		Commercial real estate loans	
Least risky	8	75	20
	12	25	20
	16	0	30
Most risky	28	0	30
		Consumer loans	
Least risky	4	50	5
	6	25	15
	8	25	50
Most risky	12	0	30
		Residential mortgages	
Least risky	1.6 (<= 60% loan-to-value ratio)	30	0
	2.8 (61%–80% loan-to-value ratio)	60	20
	4 (81%–90% loan-to-value ratio)	10	50
Most risky	8 (91%–100% loan-to-value ratio)	0	30

NOTE: For a complete description of the loan concentrations, see www.csbs.org/Content/NavigationMenu/Home/Basel1aInfo.htm.

that only large, internationally active banking organizations—those with assets of at least $250 billion or foreign exposure of at least $10 billion—will be required to adopt the Basel II framework. Others may do so with regulators' approval.[3]

What about smaller banks? Adhering to Basel II will be costly and complex. While more meaningful risk measures could lead to lower capital requirements, smaller banks probably wouldn't be able to afford the necessary modeling techniques. As a result, two banks with similar risk profiles could face different capital requirements, depending on whether they stuck with Basel I or adopted Basel II.

Responding to these concerns, in October 2005 federal banking agencies released an advance notice of proposed rules for revising Basel I implementation in the U.S. This new approach is known as Basel IA.

As with Basel II, the definition of capital wouldn't change, nor would minimum capital requirements. One important modification being considered is an increase in the number of risk categories. Other proposals include expanding the use of external credit ratings and using loan-to-value ratios in determining capital requirements for residential mortgages.[4]

Bank Capital in the Southwest

New capital requirements could have important implications for the Southwest. None of the institutions that will be required to adopt Basel II are based in the Eleventh District, but branches of big, internationally active banks hold slightly more than 40 percent of all District bank and thrift deposits.

All District-based banks will likely have to deal with Basel IA. Although the regulations are still being discussed, we can estimate some of their potential impact on bank capital in the Eleventh District. The Conference of State Bank Supervisors (CSBS) has developed an analytic tool that uses data from banks' Consolidated Reports of Condition and Income. This can be used to calculate the change from the minimum capital levels currently required to what Basel IA might mandate.

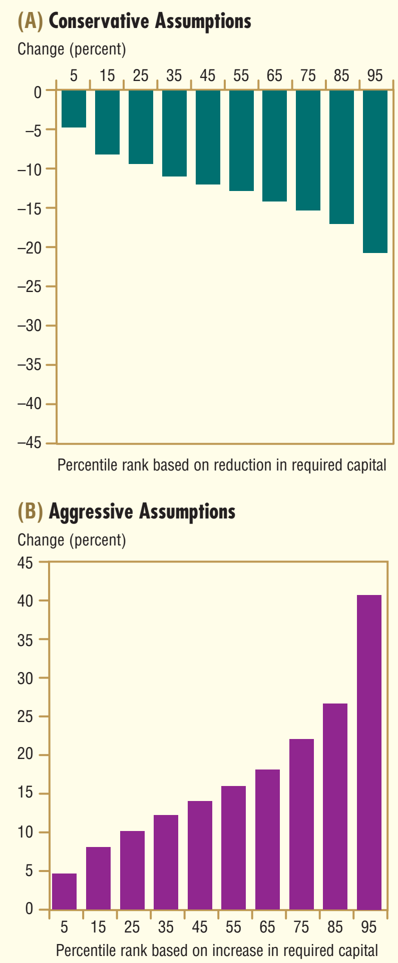
Banks don't have to report all the information needed to calculate capital charges under Basel IA, so we had to make some assumptions: the percentage of commercial real estate loans in various risk categories, the amount of residential real estate loans in the different loan-to-value ratios and the exposure to borrowers in each rating category. We estimated banks' minimum capital requirements for two risk profiles—one "conservative" and the other "aggressive" (*Table 2*).[5]

These labels distinguish two hypothetical banks that in the judgment of CSBS staff would occupy opposite ends of the risk spectrum. A conservative bank, for example, has no loans in the riskiest commercial real estate category, while an aggressive bank is assumed to have 30 percent of its loans in this category.

What Basel IA means for the Eleventh District largely depends on the extent to which banks are conservative or aggressive. If we assume all banks fall into the conservative category, virtually all would experience a reduction from current levels of required capital. We rank the banks from the smallest to the largest percentage reduction in the required minimum. Banks at the fifth percentile would see about a 5 percent decrease in minimum required capital, while those at the 95th percentile would see their requirement drop by slightly more than 20 percent (*Chart 1A*).

If we assume all banks fall in the aggressive category, their required minimum capital would increase. The increase for banks at the fifth percentile would be almost 5 percent; for those at the 95th percentile, it would be 40 percent (*Chart 1B*).

Chart 1
Eleventh District Capital Needs Under Basel IA
Distribution of change in required minimum capital



SOURCE: Consolidated Reports of Condition and Income, Dec. 31, 2005.

While the conservative and aggressive models yield starkly different results, the impact on individual banks could vary considerably, depending on their asset structures.

To get some idea of how Basel IA might affect banks of different sizes, we divided Eleventh District institutions into five groups, based on assets: under $50 million, $50 million–$100 million, $100 million–$500 million, $500 million–$1 billion, and over $1 billion.

Under the conservative scenario, smaller banks would see slightly larger decreases in required capital than larger institutions (*Chart 2*). The median decline would be 14 percent for banks with under $50 million in assets and 8 percent for those with more than $1 billion in assets. If Eleventh District banks were aggressive, required capital would rise across all asset sizes, with larger banks seeing substantially greater increases than smaller institutions.

Commercial real estate loans could be a factor in these results. Capital requirements in this category range from 8 to 28 percent. Banks with under $50 million in assets average only 3 percent of their assets in commercial real estate, compared with 12 percent for institutions with more than $1 billion in assets. When all banks are aggressive, larger banks would see greater increases in required minimum capital because they would have higher concentrations of commercial real estate than smaller banks.

Would some banks need to adjust their capital positions? To uncover any relationship between banks' holding excess capital and required-capital-level changes under Basel IA, we ranked Eleventh District banks based on the percentage of capital they hold above what's currently required. We then divided this list into 10 groups of equal size and noted the median surplus for each. Banks in the lowest group hold about 33 percent more capital than required, while those at the highest percentile have 360 percent more (*Chart 3*).

As excess capital rises, the median percentage increase in capital under the aggressive approach shows a fairly steady decline. In the conservative scenario, little relationship exists between decreases in required capital and the amount of excess capital banks hold. Based on our preliminary work, it appears that most banks enjoy sufficient capital cushion to absorb potential increases in required capital.

Our work suggests, however, that banks with aggressive portfolios that rank low in excess capital could experience some pressure. Banks in the lowest grouping, for example, would see a median increase in required minimum capital of almost 25 percent, close to their median 33 percent in excess capital. Banks in the next lowest grouping, which now hold excess capital of 50 percent, could see a median increase of about 20 percent.

Banks can adjust their capital positions in several ways. They can raise more capital, which can be costly in terms of reducing dividends or issuing stock or qualified debt. Another option would be to rebalance their portfolios. Since capital requirements are based on the distribution of assets, banks could reduce the amount of capital they are required to hold by moving toward less risky holdings. This alternative could impact local economies if it means banks scale back their lending.

Getting Capital Right

U.S. banking regulators have put much time and effort into reviewing existing capital requirements and proposing revisions. Both larger, internationally active institutions and smaller banking organizations are likely to operate under new capital guidelines in the near future. These revisions will presumably provide more meaningful measures of risk and minimize any competitive inequities.

Our preliminary analysis of the proposed guidelines' impact on Eleventh District banks highlights the risk sensitivity of the changes being proposed under Basel IA. Conservative banks might see declines from current capital requirements, while aggressive institutions might see increases.

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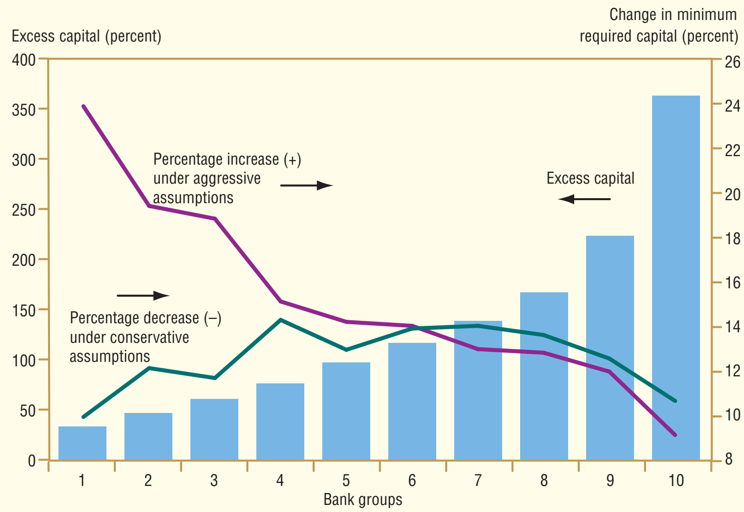
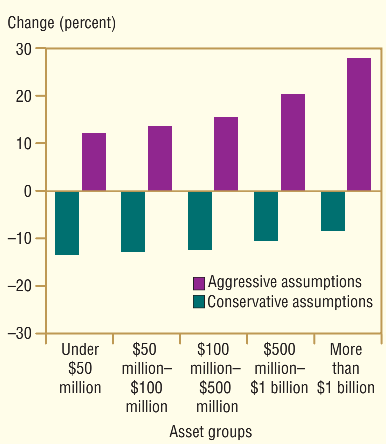
Chart 3
How Would Eleventh District Banks' Capital Requirements Change Under Basel IA?



NOTE: Groups are equal size and based on the percentage by which total capital exceeds the minimum required.
SOURCE: Consolidated Reports of Condition and Income, Dec. 31, 2005.

Chart 2
The Impact of Bank Size
Median change in minimum required capital under Basel IA



SOURCE: Consolidated Reports of Condition and Income, Dec. 31, 2005.

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Given capital's key role in banks' financial health, there are important benefits for financial stability and economic activity in refining capital requirements. Imposing unduly high requirements could limit bank lending, with potentially harmful effects on economic activity. Allowing banks to operate with inadequate amounts of capital increases the danger of financial-sector instability and taxpayer exposure to failures. Bank supervisors worldwide have seen the need to update capital requirements in the face of technological change and financial innovation. Basel IA and Basel II are important steps toward getting capital right.

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NOTES

The authors thank Michael Stevens for the use of the Conference of State Bank Supervisors' spreadsheet to calculate changes in capital requirements. They also thank Katherine Wyatt at the New York State Banking Department for assistance and Jeff Gunther for valuable comments.

1 The Basel Committee on Banking Supervision was established in 1974 by the central bank governors of the Group of Ten countries. Its members today represent Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the U.K. and the United States.

2 Basel I capital requirements are based on risk-weighted, rather than total, assets. The risk weights are equal to the capital requirements multiplied by 1 divided by 0.08. The minimum total capital required is 8 percent of risk-weighted assets. Off-balance-sheet exposures are converted to their equivalent amount of assets and weighted according to perceived risk. In addition to risk-based capital requirements under the Basel accord, U.S. banks must also meet leverage ratio requirements and are subject to prompt corrective actions designed to minimize the cost of failures. These requirements will remain in place.

3 See *International Convergence of Capital Measurements and Capital Standards: A Revised Framework*, at www.bis.org. An updated version published in November 2005 incorporates trading activities and the treatment of double default effects. For the U.S., the notice of proposed rule-making that would implement Basel II can be found at www.federalreserve.gov/generalinfo/basel2/DraftNPR.

4 See Federal Register, vol. 70, no. 202, pp. 61068–78.

5 Our results can be considered only possible outcomes because they depend on our assumptions, and the advance notice's proposals could be revised before adoption. The data used are from the December 2005 Consolidated Reports of Condition and Income and the Dec. 31, 2005, Uniform Bank Performance Report. Data for small business exposures are from the June 2005 Consolidated Reports of Condition and Income.

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