

THE PROCYCLICAL APPLICATION OF BANK CAPITAL REQUIREMENTS



Capital requirements have long been considered important to bank safety and the protection of the federal deposit insurance fund. But widespread banking problems and heavy losses to the deposit insurance fund have intensified the focus on capital. Supervisory agencies have become even more rigorous in applying and enforcing capital standards, imposing higher requirements on damaged banks. Furthermore, capital requirements have taken on greater significance as a result of a key provision of the recently enacted banking legislation, the Federal Deposit Insurance Corporation Improvement Act of 1991, which links various supervisory actions to deteriorating capital ratios in troubled institutions. Meanwhile, insufficient attention has been given to enhancing the role of capital requirements in limiting excessive risk-taking at an earlier phase of the cycle. Thus, in response to the cycle of heavy risk-taking and subsequent losses that characterized the U.S. banking system in

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the 1980s, capital requirements may have reinforced the economic downswing without sufficiently moderating the earlier upswing.

This essay discusses current supervisory practices with respect to capital and examines their appropriateness in the context of long-standing supervisory concepts, the various phases of the risk/loss cycle for banks, and the health of the regional and national economies.

CURRENT APPLICATION OF CAPITAL REQUIREMENTS



Historically, regulators have determined the general level of capital considered necessary for banks and bank holding companies (BHCs) at times when nearly all banks were in sound condition and required that each bank maintain sufficient capital to absorb potential future losses. Because banks differ in the riskiness of their asset composition and lending practices, supervisors not only establish general standards in terms of capital

ratios but also tailor the capital requirements of individual banks to their particular vulnerabilities to future losses. Capital measures and standards are described in Box 1 on p. 10. These include the standards adopted under the Basle Accord for international banks, which regulators in the United States have chosen to apply to all domestic banks as well.

The adequacy of bank capital traditionally has been determined relative to the credit risk exposure inherent in an individual bank's asset structure, with factors such as management capability, fundamental profitability, liquidity, interest rate exposure, and general business risk considered as well. Even when a risk-based measure was used, its function was simply to organize certain risk information, not to eliminate the need for supervisory discretion.

The concept of risk employed in the international risk-based capital measures relates to the inherent vulner-

ability of certain asset classes to future losses. In the deliberations leading to the decision to adopt risk-based measures in this country, the federal supervisory agencies specifically rejected the concept of basing capital requirements on current credit weaknesses as reflected in delinquent loan data or examiner loan classifications. The rationale was that the most important function of capital is to prevent bank failures. To do this, sufficient capital must be in place before a bank finds itself in serious difficulty. It is usually too late to raise capital after problems appear.

Another important function of bank capital is to protect the deposit insurance fund. The debate on risk-based capital measures recognized that this function can be performed most efficiently by minimizing the incidence and cost of bank failures, and that this can be achieved by requiring ex ante capital proportionate to risks taken.

It was also understood that capital should be countercyclical, built up as banks take increasingly risky

positions, but allowed to decline as losses are absorbed in times of stress. Regulators anticipated that most damaged banks would not be able to replenish capital quickly in a period of general distress, and that the appropriate focus at such time should be on overcoming problems rather than forcing shrinkage to meet higher capital requirements.

Current distress among banks not only is unusually severe but also follows closely on the heels of the thrift crisis, which wiped out the deposit insurance fund for thrifts and ultimately will cost the taxpayers about \$130 billion, according to recent estimates by the Resolution Trust Corporation, the federal agency created to dispose of failed thrifts. Against this background, bank regulators, the Congress, and the Administration have developed great sensitivity to the need to tighten supervisory standards. The major focus has been on the application of strict capital requirements. Over the past three

years, regulators have imposed supplemental capital requirements based on their evaluations of the problems in individual banks. As illustrated in Box 1, one way the tightening has been implemented is by increasing the leverage ratio (capital to total assets) requirement from the 3 percent minimum to a much higher level for a troubled bank.

The 3 percent minimum leverage ratio is, by design, seldom the most restrictive when compared simultaneously with the risk-based ratios. The leverage ratio often becomes constraining, however, when its requirement is adjusted to account for a bank's poor supervisory rating, imposing a capital requirement significantly higher than would be called for by the risk-adjusted standards.

Damaged banks are required to meet higher capital standards than those applied when they were engaged in risky lending activities, a few years before. The forced shrinkage in assets or loans that results is just the sort of procyclical effect deliber-

ately avoided in the design of the international capital standard.

The international standard does not call for a leverage ratio. In adopting the risk-based measures, U.S. regulators decided to continue a leverage ratio for a time because of concerns that some banks with unusual risk characteristics could have insufficient capital and yet meet the risk-based standard. It was also noted that some minimal level of capital should be required to cover possible interest rate sensitivity risks in banks with low credit risk requirements. Since the risk-based requirements are expected to incorporate a measure for interest rate sensitivity risk in the near future, it may be that the leverage ratio requirement will become redundant at that time.

This prospect for elimination of the leverage ratio at some point does not relieve immediate concerns, however, as the New England economy still is affected by limited credit availability, although the problem should gradually diminish. Also, the practice

of increasing capital requirements based on current condition is not necessarily tied to the leverage ratio. Another recent regulatory practice has been to increase the requirement for the risk-based total capital measure above the 8 percent minimum, on the basis of supervisory evaluations. This generally makes the adjusted total capital ratio binding, again setting a higher standard for damaged banks which can force immediate and undesirable shrinkage in assets.

Current supervisory practice forces undercapitalized banks to submit capital restoration plans that call for near-term conformance with capital standards, even though many banks can only accomplish this through the shrinkage of assets, particularly loans. A number of New England commercial and savings banks are now attempting to reduce their loan volume, not only through loan sales and minimal new lending activity but also by squeezing out existing borrowers.

This practice tends to deepen the economic slump and hinder recovery in the following ways:

1. **B**anks can most easily dispose of their best and more profitable assets. Thus, rapid loan shrinkage increases the risk and lowers the profitability of the remaining portfolios, making it more likely that even banks with good prospects will eventually fail.

2. **W**hen several banks in a region must shrink their lending at the same time, numerous borrowers are forced to seek credit elsewhere, with fewer alternative sources. Many New England banks have failed and their sound loans have been absorbed by other banks in the region, decreasing both the number of lending alternatives and the available lending capacity of the acquiring banks. Moreover, uncertainties stemming from the collapse of the commercial real estate market, the general weakness of the regional economy, and recent changes in supervisory practices have made most banks strongly risk averse. Thus, even

Box 1

SUPERVISORY CAPITAL STANDARDS FOR BANKS

An international agreement in July 1988 established a uniform standard for capital adequacy based on levels of credit risk in certain asset categories, for use by international banks in the major industrialized countries. The standard, known as the Basle Accord for the city in Switzerland in which negotiations were held, began to be phased in for all United States banks in 1989, and will be fully implemented by the end of 1992.

Countries are free to augment the Basle standard with other requirements, and the federal supervisors in this country adopted a uniform 3 percent minimum leverage ratio (capital to assets). In addition, each of the three U.S. banking agencies more recently has adopted its own supplemental standards requiring higher capital ratios for banks with weak supervisory ratings.

Historically, bank supervisors generally assessed capital adequacy using either a basic ratio of capital to total assets, now commonly referred to as a leverage ratio, or a slightly more complex ratio that excluded very low-risk asset categories from the denominator. (An exception was the use by the Federal Reserve of a detailed risk-based measure, referred to as Form ABC, from 1956 to the mid-1970s.) Immediately prior to the Basle Accord, federal agencies employed a uniform version of the leverage ratio called the "primary ratio," which differed significantly from the current leverage ratio in its treatment of intangibles and by fully including loan loss reserves as capital.

BASLE ACCORD REQUIREMENTS

The fundamental Basle Accord concept relates capital to weighted categories of assets. For example, cash and U.S. government securities carry no capital requirement, securities such as those issued by banks or local governments are given a 20 percent weight, residential mortgages a 50 percent weight, and most other assets a 100 percent weight. Weightings are also calculated for off-balance-sheet risks.

Two definitions of capital are used: tier 1 capital is essentially pure equity, whereas total capital includes additional (tier 2) items such as a portion of the reserve for bad debts and certain debt instruments. The Basle Accord sets minimums in terms of these two ratios. By the end of 1992, tier 1 capital should be at least 4 percent of weighted assets, and total capital should be at least 8 percent of the same base. In this country, most banks are required to have tier 1 ratios well in excess of the minimum, and in practice all but a small percentage of U.S. banks currently have tier 1 ratios above 6 percent.

MINIMUM LEVERAGE RATIO

When adopting the Basle standard, U.S. supervisors decided that a minimum leverage ratio was desirable to cover banks that might have very low risk-adjusted requirements, yet have other risk characteristics not currently reflected in the measure, such as interest rate risk.

This ratio was originally set at 3 percent for all banks; the intent was that it serve only as a floor and that the higher risk-based ratios be more constraining in all but exceptional cases.

SUPPLEMENTAL REQUIREMENTS TIED TO CURRENT DETERIORATION IN CREDIT QUALITY



Recently, each of the bank supervisory agencies has been imposing special capital requirements based on the degree of deterioration in a bank's current condition, as opposed to the inherent risk of future problems that is captured by the risk-based measures. Based on a review of capital plans submitted by New England banks and bank holding companies (BHCs) to the three federal regulatory agencies for approval, it is evident that supervisors are requiring institutions with weak supervisory ratings to achieve higher leverage or total capital ratios than healthier banks.

While the additional capital required may be determined judgmentally for each institution, the typical pattern can be illustrated as follows, based on bank or BHC composite supervisory ratings (CAMEL or BOPEC):*

RATING	LEVERAGE RATIO	TOTAL CAPITAL RATIO
1	3%	8%
2	4	8
3	5	9
4	6	9.5
5	8	9.5

INTERACTION OF VARIOUS CAPITAL MEASURES



If it were not for the supplemental requirements tied to current deterioration, the most important capital standard would undoubtedly be the tier 1 equity capital ratio in most cases. Nearly all banks are, and should be, expected to operate in a range well above 4 percent, with the inherent risks associated with loan concentrations and other risk factors that are not explicitly addressed in the risk-based weighting system influencing judgments as to the adequacy of ratios for individual banks. If a 6 percent tier 1 ratio requirement is assumed for illustrative purposes, the tier 2 capital needed to meet the minimum 8 percent total capital requirement would be only 2 percent of assets and could usually be satisfied by a portion of the reserve for loan losses, augmented if necessary by modest amounts of subordinated debt or other tier 2 capital instruments. Qualifying tier 2 capital may not exceed actual tier 1 capital, and the portion of subordinated debt and intermediate preferred stock counted in tier 2 capital may not exceed 50 percent of tier 1 capital. Many smaller banks that cannot easily issue the types of debt eligible as tier 2 capital meet all, or nearly all, of their total capital requirement with tier 1 capital. As originally intended, the 3 percent minimum leverage ratio would be the most constraining ratio only in rare cases.

If, however, the requirement for either the leverage ratio or the risk-adjusted total capital ratio is raised above the minimum for troubled banks and BHCs based on the scheme illustrated above, a ratio reflecting the current supervisory rating would be constraining for most New England institutions.

* BANKS ARE RATED ON FIVE FACTORS: CAPITAL, ASSET QUALITY, MANAGEMENT, EARNINGS, AND LIQUIDITY, GIVING RISE TO THE ACRONYM CAMEL. BHCs ARE RATED ON THE CONDITION OF SUBSIDIARY BANKS (THEIR CAMEL RATINGS), THE CONDITION OF OTHER SUBSIDIARIES, AND THE PARENT COMPANY, PLUS CONSOLIDATED EARNINGS AND CAPITAL. THIS GIVES RISE TO THE BOPEC RATING FOR BHCs. EACH INDIVIDUAL COMPONENT OF A CAMEL OR BOPEC RATING, AS WELL AS A COMPOSITE RATING OF ALL FIVE FACTORS, IS ASSIGNED A SCORE FROM 1 (STRONGEST) TO 5 (LIKELY TO FAIL).

relatively healthy displaced borrowers may find it hard to reestablish satisfactory credit facilities, and some must cut back operations.

3. **B**ecause of information costs and deficiencies, many marginally satisfactory borrowers, particularly small businesses, cannot find alternative sources of credit when squeezed out by their banks. Such firms are likely to be forced out of business.

Forced loan shrinkage intensifies current regional economic weakness through additional layoffs, bankruptcies, and cancelled leases. Less credit is available to fund economic recovery. The overall negative effect on the New England economy and on the lending capacity of the remaining healthy banks has been significant.

ACTUAL LOAN SHRINKAGE

Table 1 shows considerable shrinkage in outstanding loans during 1991 in the 43 First District commercial BHCs studied, with some acceleration in the second half of the year.

TABLE 1
CHANGE IN TOTAL LOANS OUTSTANDING DURING 1991 IN FIRST DISTRICT COMMERCIAL BANK HOLDING COMPANIES,* IN \$ BILLIONS

ASSET SIZE	1ST HALF 1991		2ND HALF 1991	
	AMOUNT	%	AMOUNT	%
OVER \$5B	-1,370	-2.0	-2,124	-3.2
\$1B TO \$5B	-.268	-2.6	-.485	-4.9
\$150M TO \$1B	-.200	-2.8	-.267	-3.9
TOTAL BHCs	-1,837	-2.1	-2,875	-3.5

*CHANGE IN LOAN VOLUME, ADJUSTED FOR NET CHARGE-OFFS, FOR ALL BANK HOLDING COMPANIES WITH ASSETS OF \$150 MILLION OR MORE WHERE THE PREDOMINANCE OF ASSETS IS IN COMMERCIAL BANKS, ADJUSTED FOR MAJOR ACQUISITIONS OF LOANS FROM THE FDIC BY FLEET FINANCIAL GROUP AND BANK OF IRELAND FIRST HOLDINGS. INCLUDES ONLY FIRST DISTRICT BANK SUBSIDIARIES OF FLEET AND KEYCORP.

All but a few BHCs experienced significant shrinkage in commercial loans. Lending by New England banks might be declining for a number of reasons: demand is weak; spreads on various investments are more attractive than those on smaller commercial loans; bank managements are nervous about risk; and market forces as well as supervisors are pushing bankers to be

cautious. The degree to which capital regulation has contributed to the overall shrinkage in bank loans in the region cannot be quantified, but it has been a known factor in several banks, and it is reasonable to assume that capital regulation is a significant factor more generally.

*B*ANK CAPITAL AS A SHOCK ABSORBER ▼

Even without the imposition of higher capital requirements on troubled banks, some will have survived a period of severe testing and stabilized, but with capital ratios weakened because of the losses they have absorbed. This is the natural result of capital serving its shock absorber role. In such a situation, our reaction should be that capital did its job, since it was adequate to save the bank. In time, the bank, if well-managed, should be able to build back capital, or at least become a valuable acquisition target for a stronger bank.

But with uncertainty as to the extent of their remaining imbedded losses, and strong risk aversion on the

part of healthy banks, weak banks often find it impossible to locate acquirers or investors, and they must shrink assets to meet scheduled capital ratio objectives. Radical shrinkage can increase the likelihood that an otherwise viable bank will fail, as well as damage marginally satisfactory business customers and the regional economy. Thus, both conceptual and practical reasons argue against compelling viable banks with satisfactory managements to shrink in order to meet near-term capital objectives.

*A*LTERNATIVES ▼

In order to lessen the pressures on damaged banks to shrink assets, supervisory agencies should discontinue the practice of requiring higher capital ratios for banks based on their weak supervisory ratings. The leverage ratio should be used as originally intended, as a minimum capital requirement for especially low-risk banks, and phased out after interest sensitivity is reflected in the risk-based measure.

Clearly, the risk-based measures do not fully reflect important credit risk distinctions or various non-credit risks such as interest sensitivity and general operating risk. Therefore, supervisors must tailor the tier 1 risk-based requirement to reflect the inherent risk characteristics of individual institutions. Requirements generally should be well above the 4 percent minimum called for in the international standards. Actually, all but a few of the largest institutions already meet much of their total capital requirement (8 percent of risk-adjusted assets) with tier 1 capital because they cannot, or do not wish to, issue large amounts of debt qualifying as tier 2 capital.

The risk-based total capital requirement should be used only as a minimum, set at 8 percent. It is unnecessarily complicated to apply discretion as to particular risk characteristics of individual institutions to more than one ratio, and tier 1 capital provides greater protection. The

Basle standard does not impose any requirements beyond the minimums.

EFFECTS OF THE PROPOSED CHANGE ON BANK LENDING

The effects of this proposed change can be illustrated by comparing two regimes, one based on the above proposal and a second that simulates typical requirements now imposed on New England banks and BHCs. The first regime assumes that institutions must meet three tests: 1. a 6 percent tier 1 risk-based ratio, assumed to be the average requirement; 2. an 8 percent minimum risk-based total capital ratio; and 3. a 3 percent minimum leverage ratio.

Under the second regime, total capital and leverage ratio requirements are increased above the minimums for institutions with weaker supervisory ratings. While supervisors do not always relate the increased capital requirement directly to the CAMEL or BOPEC supervisory rating, a simple formula was employed here that

approximates the usual practice, as revealed in capital plans submitted by New England banks and BHCs for approval by federal supervisors. In this regime, the total capital requirement was increased to 9 percent for 3-rated institutions, and 9.5 percent for 4-rated institutions. (See Box 1 for rating definitions.) The leverage ratio requirement was increased to 4 percent for 2-rated, 5 percent for 3-rated, and 6 percent for 4-rated institutions. Since 5-rated institutions are likely to fail soon, their lending capacity was not considered under either regime. Instead, an estimate was made of the amount from their loan portfolios that would be acquired eventually by other BHCs in the First Federal Reserve District.¹

These alternative regimes were applied to the 43 BHCs in the First District with assets of \$150 million or more and the preponderance of assets

in commercial banks.² The excess or deficit lending capacity for each BHC was calculated for each ratio, as of year-end 1991, on the assumption that loans would be expanded or contracted to just meet the most constraining capital requirement, after adding to it 50 basis points for a management-imposed safety factor. It was assumed under each regime that 4-rated BHCs would not expand loans to absorb any excess lending capacity, because the aim of this proposal is to avoid forced shrinkage of loans as much as possible, not to encourage loan expansion by problem institutions.

The results, reflected in Table 2, show that the proposed change could produce a decrease of \$14.5 billion in the forced loan shrinkage implied by the current capital requirements on the BHCs studied. This decrease is substantial, equal to nearly 20 percent of their total loans outstanding. The

¹ THIS ESTIMATE ASSUMED THAT NONE OF THESE BANKS WOULD BE ACQUIRED BY OUT-OF-REGION BHCs AND THAT 80 PERCENT OF PERFORMING LOANS WOULD BE TAKEN BY FIRST DISTRICT BHCs, WITH OTHER LOANS TO BE LIQUIDATED BY THE FDIC.

² SAVINGS BANK BHCs WERE ALSO STUDIED, AND THE SAME CHANGES IN REQUIRED CAPITAL RATIOS SHOULD BE APPLIED TO THEM. COMMERCIAL BANK BHCs ARE EMPHASIZED HERE BECAUSE CREDIT CRUNCH CONCERNS PERTAIN MORE TO COMMERCIAL CREDITS, AND MOST SAVINGS BANKS ARE NOT SIGNIFICANT COMMERCIAL LENDERS.

TABLE 2

COMPARISON OF CURRENT AND PROPOSED CAPITAL REQUIREMENTS IN TERMS OF
LOAN SHRINKAGE AND LENDING CAPACITY FOR FIRST DISTRICT COMMERCIAL BHCs
AS OF DECEMBER 31, 1991, IN \$ BILLIONS

	(1) CURRENT REQUIREMENTS		(2) PROPOSED REQUIREMENTS		COMPARISON OF CURRENT AND PROPOSED REQUIREMENTS	
	TIER 1: 6% TOTAL AND LEVERAGE: REFLECTING CONDITION		TIER 1: 6% TOTAL: 8% LEVERAGE: 3%		(2) MINUS (1)	
ITEM	NO. OF BHCs ^A	LOAN VOLUME	NO. OF BHCs ^A	LOAN VOLUME	CHANGE IN NO. OF BHCs ^A	CHANGE IN LOAN VOLUME
SHRINKAGE REQUIRED	12	\$23.4	7	\$8.9	-5	-\$14.5
NET EXCESS (DEFICIT) LENDING CAPACITY ^B		\$(22.6)		\$(2.7)		+\$19.9

^A NUMBER OF BHCs REQUIRED TO SHRINK IN EACH CASE.

^B NET OF LOANS TO BE ACQUIRED FROM FAILING BANKS.

change in capital requirements could potentially eliminate nearly all of the deficit in lending capacity in the First District. The magnitude of these numbers clearly shows that some of the largest BHCs in the region would be affected.

Admittedly, this analysis estimates a theoretical maximum loan shrinkage based on various assumptions. As a practical matter, not all banking organizations will push capital constraints as close to the limit as has been assumed. Also, some will be able to raise capital

from outside sources, and some may have saleable assets that do not affect regional credit availability or an institution's viability.

Nonetheless, the sheer magnitude of the potential loan shrinkage associated with current requirements leaves ample room for undesirable loan curtailment, even if the estimate proves to be overstated. Furthermore, the negative impact of forced loan shrinkage on numerous relatively small business borrowers can materially harm the regional economy even without accounting for a large proportion of

total loans. A study by this Reserve Bank has found evidence that shrinkage in New England banks was greater among those with limited capital.³

ADDITIONAL ADVANTAGES OF THE PROPOSAL

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The distinctions built into the risk-based measures and the incentives to hold less risky classes of assets are nullified when a leverage ratio is the constraining measure. For instance, banks are tempted to hold too few liquid assets in relation to potential liquidity needs, because all assets have an equal effect on the leverage requirement, and yields tend to be lower on the more liquid assets. Also, it is important to have a risk-based ratio in effect in order to place a constraint on the assumption of off-balance-sheet credit commitments.

Making all adjustments to a single risk-based measure by emphasizing the tier 1 capital ratio has several advantages. Greater risk-taking should be supported by equity capital, which provides the

most protection and has the greatest deterrent effect against undue exposure. Overly aggressive institutions now may be able to support unwise expansion using debt eligible as tier 2 capital, becoming locked into high debt service commitments before emerging problems are fully recognized. In contrast, with an equity capital constraint, losses can be absorbed by the new capital and dividends can be eliminated if necessary. Thus, the proposed change not only restores the risk of *future* losses as the basis for capital requirements, but also shifts more of the emphasis to equity capital and focuses the judgmental aspects of risk assessment on a single measure, simplifying the entire process.

BROADER POLICY PERSPECTIVE

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In response to the serious banking problems of the 1980s, higher capital standards have been introduced, both by phasing in the international standard for risk-based capital and by increasing

³ PEEK, J. AND E. ROSENGREN, 1992, "THE CAPITAL CRUNCH: NEITHER A BORROWER NOR A LENDER BE," PAPER PRESENTED AT FEDERAL RESERVE BANK OF CHICAGO CONFERENCE ON BANK STRUCTURE AND COMPETITION, MAY 1992.

capital standards for banks with less than top supervisory ratings. And, as outlined in Box 2, recently enacted banking legislation gives bank supervisors less discretion in dealing with undercapitalized banks. Since many banks have sustained at least some weakening in the quality of their assets, reluctance to take on lending risks that would have been acceptable in the past is widespread in some regions. This reluctance goes well beyond any desirable backing away from overly liberal lending terms and practices of the 1980s.

An abnormal aversion to risk and the shrinkage of loans in capital-deficient banks are major reasons for the so-called "credit crunch" in distressed regions. Without question, the New England economy is adversely affected by limited credit availability, even though loan demand is at a cyclical low. Supervisory policies should be determined within the context of their effects on credit availability and, in turn, on the economies of distressed regions. The economic health of these regions will

have much more effect in reducing FDIC losses than will anything done now to strengthen the capital ratios of weakened banks.

*P*REVENTING FUTURE PROBLEMS ▼

The U.S. commercial banking system experienced a series of problems in the 1980s. A number of the money center banks overlent to developing countries in the late 1970s, and had to absorb heavy provisions to loan loss reserves throughout the 1980s. The end of the energy boom in the Southwest in the early 1980s produced the failure of Continental Illinois, a large money center bank, and Seafirst, a large regional bank. It severely damaged the major Texas banks and caused the failure of many smaller banks. The subsequent concentration and collapse in commercial real estate completed the destruction of nearly all of the large Texas banks. In the late 1980s, the Northeast experienced a boom-and-bust cycle in commercial real estate that caused the failure of Bank of New England and numerous other commercial and savings banks.

Box 2

**CAPITAL CONSTRAINTS INCLUDED
IN THE FEDERAL DEPOSIT INSURANCE
CORPORATION IMPROVEMENT ACT OF 1991**

This legislation, enacted in November 1991, contains provisions designed to ensure prompt regulatory action as bank capital ratios decline. The following schedule summarizes the levels of capitalization and the associated restrictions. The federal bank supervisory agencies have the flexibility to interpret some of the critical terms, such as "significantly undercapitalized" or a "reasonable time" for capital restoration. They also can specify some of the particular capital ratios to be used and can establish the level for "critically undercapitalized."

LEVEL OF CAPITALIZATION	GENERAL CRITERIA	CONSEQUENCES (EFFECTIVE DATES VARY)
1. WELL CAPITALIZED	SIGNIFICANTLY EXCEEDS THE MINIMUM FOR EACH CAPITAL MEASURE. ¹	NONE
2. ADEQUATELY CAPITALIZED	MEETS THE MINIMUM FOR EACH CAPITAL MEASURE.	RESTRICTIONS ON ACCEPTANCE OF BROKERED DEPOSITS.
3. UNDERCAPITALIZED	FAILS TO MEET THE MINIMUM FOR ONE CAPITAL MEASURE, OR, FOR DISCOUNT WINDOW PURPOSES, HAS THE LOWEST SUPERVISORY RATING REGARDLESS OF CAPITAL RATIOS.	NO DISCOUNT WINDOW ADVANCE FOR MORE THAN 60 DAYS IN ANY 120-DAY PERIOD UNLESS PRIMARY REGULATOR PROVIDES A CERTIFICATE OF VIABILITY. MUST SUBMIT CAPITAL RESTORATION PLAN.
4. SIGNIFICANTLY UNDERCAPITALIZED	SIGNIFICANTLY BELOW THE MINIMUM FOR ANY ONE CAPITAL MEASURE.	MUST RAISE CAPITAL OR BE SOLD (IF GROUNDS FOR RECEIVER EXIST). VARIOUS OTHER RESTRICTIONS.
5. CRITICALLY UNDERCAPITALIZED	RATIO OF TANGIBLE EQUITY TO TOTAL ASSETS (LEVERAGE RATIO) BELOW A LEVEL TO BE SET BY THE APPROPRIATE SUPERVISORY AGENCY. (FDIC MUST CONCUR, AND RATIO MUST NOT BE SET AT LESS THAN 2 PERCENT.)	RECEIVER MUST BE APPOINTED WITHIN 90 DAYS AFTER BECOMING CRITICALLY UNDERCAPITALIZED (SOME EXCEPTIONS); VARIOUS RESTRICTIONS APPLY IMMEDIATELY. NO FURTHER DISCOUNT WINDOW ADVANCES, AND ANY OUTSTANDING ADVANCES MUST BE CALLED WITHIN FIVE DAYS. ² NO PAYMENTS ON SUBORDINATED NOTES AFTER 60 DAYS (CURRENT NOTES GRANDFATHERED FOR FIVE YEARS).

¹ RELEVANT CAPITAL MEASURES WILL INCLUDE A RISK-BASED RATIO AND A LEVERAGE RATIO, AND MAY INCLUDE OTHER RATIOS.

² THE FEDERAL RESERVE BOARD WILL BE LIABLE TO THE FDIC FOR ANY ADDITIONAL LOSS RESULTING FROM MAKING AN ADVANCE THAT DOES NOT CONFORM TO THE RESTRICTIONS OF THE ACT (LOSS CALCULATED AS THOUGH THE ADVANCE WERE UNSECURED). HOWEVER, IN MOST CASES THE FEDERAL RESERVE'S LIABILITY WOULD BE LIMITED TO THE INTEREST EARNED ON THE ADVANCE.

Common to each of these situations was a period of aggressive bank lending that resulted in heavy risk concentrations, followed by a shift in the economic factors or market values underlying the credits. The result was a rapid increase in loan problems that led to high loan loss provisions and eventually charge-offs. Earnings were eroded, turned negative, and ate into capital, producing bank failures and undercapitalized surviving banks. (In the case of loans to developing countries, however, the capital losses were spread out over a decade and absorbed without producing failures.)

Looking forward, it is necessary to consider the role that capital can play in preventing such calamities, or at least in minimizing the losses to the deposit insurance fund. Banks operate on narrow margins in a highly competitive arena, with foreign and nonbank competitors. It is not feasible simply to increase capital requirements radically to cover all potential losses. In retrospect,

Bank of New England would have needed a 19 percent capital-to-assets (leverage) ratio to have survived with adequate capital, rather than the 5 percent it actually had when it was building up its commercial real estate lending concentration.⁴ Clearly, the market cannot supply that level of capital in an individual bank, much less in the banking system as a whole, and still earn adequate returns.

The Federal Deposit Insurance Corporation Improvement Act of 1991 requires that supervisors incorporate both concentration risk and interest sensitivity risk in the risk-based capital measure. As banks increase their concentrations in inherently risky assets, they should be required to support these risks with greater capital. Since all loans except residential mortgages are currently in a single risk category, ample room exists to make the risk-based measure more sensitive to credit risk distinctions. At some point, however, further bank risk-taking in a

⁴ ASSUMES CAPITAL ABSORBED \$1.9 BILLION SHRINKAGE (ACTUAL) PLUS FDIC ESTIMATE OF RESOLUTION COSTS OF \$2.5 BILLION, AND WAS SUFFICIENT TO MEET A 5.5% TIER 1 RISK-BASED RATIO AFTER ASSET SHRINKAGE OF 33% AND CREATION OF A 1.25% LOAN LOSS RESERVE. ARGUABLY, THE INSTITUTION COULD HAVE SURVIVED WITH A SOMEWHAT LOWER CAPITAL RATIO AS A RESULT OF INEFFICIENCIES INHERENT IN THE PROCESS OF DEALING WITH FAILING INSTITUTIONS.

particular area of concentration becomes undesirable regardless of capital support. For example, banks that continue heavy development lending on liberal terms into an overbuilt real estate market are endangering not only themselves but also other banks with large exposure in the market. Since the degree of adjustment that ultimately must take place in the market is impossible to forecast with certainty, it would be very difficult to quantify the capital needed by a particular bank. Nevertheless, supervisors must become more selective in relating capital requirements to risk in particular institutions. The solution may be a combination of a more sensitive risk-based capital standard and a broadening of the concept of unsafe banking practices to include unacceptable concentrations in risky assets.

*R*ESPONSES APPROPRIATE TO
THE PHASE
OF THE ECONOMIC CYCLE



Underlying this entire discussion has been the evidence of the past dozen years that banks have proved vulnerable to cyclical patterns of overlending and subsequent losses. Supervisors have an opportunity to take action in the risk-taking phase to materially dampen the severity of bank problems. Rigorous capital requirements should play a significant, though not exclusive, role. At the opposite phase of the cycle, where we find ourselves today, aggressive and rigid administration of capital requirements can be counterproductive, pushing damaged banks into failure and causing shrinkage of bank loans that harms customers and the local and regional economies. One clear step the supervisory agencies can take is to discontinue the practice of applying higher capital requirements to damaged banks.