

How Well Capitalized Are Well-Capitalized Banks?

The wave of bank and savings and loan failures in the 1980s and early 1990s, and the resulting losses to deposit insurance funds, served to highlight the need for banks to hold sufficient capital to survive difficult times. In addition, many argued that deposit insurance made it imperative that banks be better capitalized, since deposit insurance reduces the market discipline that depositors might otherwise provide. With reduced market discipline, banks have an incentive to take on greater risks and more leverage than they would if the market fully reflected the increased risk such actions pose.¹ Consequently, recent bank regulatory initiatives increasingly have emphasized the role of bank capital as a cushion to allow banks to absorb adverse shocks without experiencing insolvency.

Recent bank legislation and regulation have sought to implement a carrot-and-stick approach that penalizes banks that have too little capital, while reducing the regulation imposed on banks deemed to be well capitalized. The Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) has served as the cornerstone of a major overhaul of banking legislation unprecedented since the Great Depression. The early intervention component of FDICIA provides for prompt corrective action (PCA) based on capital ratio thresholds, with supervisory intervention in undercapitalized banks that becomes increasingly severe as the bank's capital position deteriorates.² Undercapitalized banks are restricted in their activities, and severely undercapitalized banks are subject to early closure.³ On the other hand, as long as a bank is deemed to be well capitalized, regulators are not required to take any action.

This emphasis on bank capital also is found in newly proposed legislation to relax Glass-Steagall restrictions, which would allow expanded activities only at banks that are well capitalized. Nor is the United States the only country to focus on bank capital regulation. With the 1988 adoption of the Basle Accord, an international agreement that set common standards by which to evaluate capital adequacy, many other

*Joe Peek and
Eric S. Rosengren*

Professor of Economics, Boston College and Visiting Economist, Federal Reserve Bank of Boston; and Vice President and Economist, Federal Reserve Bank of Boston, respectively. Leo Hsu and Carol Greeley provided valuable research assistance.

countries now place greater emphasis on the role of bank capital.

While regulations are being designed to reward banks that are deemed to be well capitalized and restrict those that are not, no clear consensus has been reached in the academic literature on just how much capital is necessary. Ideally, required capital ratios should be related to the degree of risk undertaken by the individual institution, and a movement in that direction has been taken with the implementation of risk-based capital ratio requirements. Still, risk measurement remains a herculean task, given that many bank assets are difficult to value and risk characteristics can change rapidly as banks adjust their on- and off-balance-sheet positions.

Recent bank regulatory initiatives increasingly have emphasized the role of bank capital as a cushion to allow banks to absorb adverse shocks without experiencing insolvency.

While FDICIA established the capitalization categories, it was left to bank regulators to assign numerical values to capital ratios to serve as the thresholds defining those categories. The levels that were eventually assigned were below the levels proposed by many of the early proponents of the legislation (Benson and Kaufman 1994a, 1994b) and originally considered by regulators (Carnell 1995). Nonetheless, the capital ratio threshold associated with regulators' current definition of a well-capitalized bank is certainly higher than that maintained by many banks before FDICIA.

This article examines whether institutions satisfying the "well-capitalized" criteria before and during the recent banking crisis in New England had suffi-

cient capital to weather the storm. We find that many of the institutions that either failed or required substantial supervisory intervention were well capitalized prior to the emergence of banking problems in New England. In fact, four-fifths of the banks that failed during the New England banking crisis were still classified as well capitalized within two years of their failure. In addition, at one-third of those failed banks, the capital-to-asset (leverage) ratio declined by more than 5 percentage points in a single quarter, enough to wipe out the entire capital of any bank below the well-capitalized threshold.

The recent increased emphasis on capital levels has been instrumental in raising the capital ratios of most U.S. banks, and the more frequent examinations required by FDICIA may result in reported capital ratios that more accurately reflect bank health. Nevertheless, problems of the magnitude of those recently experienced in New England would require greater capital cushions than the minimum "well-capitalized" PCA threshold, if widespread bank insolvencies were to be avoided.

The next section of this article briefly reviews recent legislation that has attempted to induce banks to become better capitalized and examines how the legislation relates to traditional supervisory oversight. The second section investigates whether examiners view well-capitalized banks as posing little threat of insolvency. The third section considers whether banks that met the "well-capitalized" threshold were successful in avoiding problems during the severe economic downturn in New England in the early 1990s and shows how quickly banks had their capital base eroded. The final section provides some conclusions.

I. Capital Regulation and the Supervisory Process

Prior to the enactment of FDICIA, the bank supervision and examination process already gave bank supervisors the opportunity both to verify that a bank's practices and procedures were consistent with safety and soundness criteria and to act to correct the situation if they were not. Both informal and formal

¹ An extensive literature exists on the causes of bank failures, including loss of charter value (for example, Keeley 1990) and moral hazard (for example, Kane 1985; Barth 1991). Numerous studies about moral hazard helped motivate the recent legislation that focused on capital.

² Peek and Rosengren (1997) provide a more comprehensive discussion of Prompt Corrective Action and a more technical analysis of its likely impact on the timing of supervisory intervention in problem banks.

³ While reported capital ratios are notoriously inaccurate indicators of the actual financial health of a bank (see, for example, Jones and King 1995), the early closure provision, by raising the capital ratio threshold that could trigger bank closure, should be expected to reduce but not eliminate the resolution costs of failed banks. In fact, Billett, Coburn, and O'Keefe (1995) find that overall resolution costs have decreased since the enactment of FDICIA.

regulatory actions could be used for early supervisory intervention, well before a bank reached the point of failure.

As the financial condition of a bank deteriorates, the first action taken is usually the memorandum of understanding (MOU), an informal regulatory action that lists recommended actions to improve the bank's condition. If bank supervisors determine that a bank's problems are more serious, they will institute a formal regulatory action, either a written agreement or a cease and desist order. Both actions cover the same general areas discussed in a full bank examination or in the MOU. However, because formal actions are legally enforceable agreements with civil penalties for noncompliance, they are viewed as the most drastic action available to the bank supervisor short of closing the bank.⁴

Formal actions are intended to provide specific recommendations for actions to be taken by banks to prevent further deterioration in their financial condition. These recommendations may include improved management information systems, greater oversight of credit risks, and improved reserving procedures. In addition to such general management recommendations, frequently the result of deficiencies found during the examination process, several specific quantitative requirements are usually stated in the formal action. By far the most common are requirements to improve capital ratios or at least to maintain them above a particular level.⁵ The most common target in these actions has been a 6 percent capital-to-asset (leverage) ratio (Peek and Rosengren 1995c).

The mandatory provisions instituted against undercapitalized banks under the PCA guidelines of FDICIA are similar to the conditions commonly imposed on banks under formal regulatory actions. FDICIA requires that bank regulators each quarter assign every bank to one of five regulatory categories,

⁴ Cease and desist orders signed after the August 9 passage of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 generally have been publicly disclosed by regulators, resulting in greater public scrutiny of the problems at the bank. Written agreements have been publicly disclosed only since November 29, 1990, when the disclosure requirement was amended in the Crime Control Act of 1990. MOUs are not publicly disclosed by the regulatory agencies. Of course, the institution receiving the regulatory action can choose to announce that it had, or would soon, come under a regulatory action.

⁵ Numerous studies have found evidence that bank behavior was altered as a result of the renewed emphasis on achieving specified capital ratios (for example, Furlong 1992; Hall 1993; Hancock and Wilcox 1992; Peek and Rosengren 1995a), although this view is not unanimous (for example, Berger and Udell 1994). See Burger and Udell (1994) for a detailed survey of this literature.

based on its capital: (1) well capitalized, (2) adequately capitalized, (3) undercapitalized, (4) significantly undercapitalized, and (5) critically undercapitalized. Banks in the top two categories essentially are not restricted. Banks then come under progressively more severe restrictions as they cross capital thresholds that place them in lower categories. The leverage ratio thresholds assigned by regulators to the top four categories relevant to the early intervention provisions of FDICIA are as follows: 5 percent or higher for well-capitalized banks; 4 percent or higher for adequately capitalized; below 4 percent for undercapitalized; and below 3 percent for significantly undercapitalized institutions. Critically undercapitalized institutions (a ratio of tangible equity to assets of 2 percent or less) face the early closure provisions of FDICIA.

Many of the institutions that either failed or required substantial supervisory intervention were well capitalized prior to the emergence of banking problems in New England.

While the capital thresholds associated with the prompt corrective action provisions of FDICIA are stated in terms of both leverage ratios and risk-based capital ratios, we focus only on leverage ratio thresholds. First, risk-based capital ratios are not available before 1990. Second, for the period in New England under study here, leverage ratios rather than risk-based capital ratios tended to be the binding constraint on capital-constrained banks. This is consistent with evidence on nationwide samples that leverage ratios and not risk-based capital ratios affected bank behavior (for example, Hancock and Wilcox 1994).

As shown in Table 1, virtually all the PCA mandatory provisions imposed on undercapitalized and significantly undercapitalized institutions are included in formal regulatory actions.⁶ Only restrictions

⁶ In addition to the mandatory actions under PCA listed in Table 1, examiners are allowed optional actions. For example, many of the required provisions for significantly undercapitalized institutions can be applied to undercapitalized institutions at the discretion of the bank supervisor, based on a bank's unsatisfactory CAMEL rating.

Table 1
Provisions for Prompt Corrective Action

Major Provision	Formal Regulatory Action: ^b No Explicit Capital Trigger	Categories Specified in FDICIA for Prompt Corrective Action ^a			
		Well Capitalized: RBC \geq 10% and LR \geq 5%	Adequately Capitalized: RBC \geq 8% and LR \geq 4%	Undercapitalized: RBC < 8% or LR < 4%	Significantly Undercapitalized: RBC < 6% or LR < 3%
Increase loan loss reserve	Yes	No	No	No	No
Increase charge-off of classified assets	Yes	No	No	No	No
No renewals or extensions of credit to borrowers with classified assets	Yes	No	No	No	No
Capital restoration plan required	Yes	No	No	Yes	Yes
Suspend dividends	Yes	No	No	Yes	Yes
Asset growth restricted	Yes ^c	No	No	Yes	Yes
Prior approval required for acquisitions, branching, and new lines of business	Yes ^d	No	No	Yes	Yes
Require recapitalization	Yes	No	No	No	Yes
Restrict transactions with affiliates	Yes	No	No	No	Yes
Restrict interest rates paid	No ^e	No	No	No	Yes
Further restrictions on asset growth	Yes	No	No	No	Yes
Prohibits deposits from correspondents	No ^e	No	No	No	Yes
Hire or replace senior management	Yes	No	No	No	Yes

^aRBC represents the risk-based capital ratio. LR represents the leverage ratio. The fifth category, "Critically Undercapitalized," when regulators can close banks, is not shown.

^bProvisions are mandatory when included. While these provisions generally appear in formal actions, some formal actions do not include all of the provisions.

^cAsset growth is restricted by requiring that capital-to-asset ratio targets be achieved. While most institutions shrink, asset growth is not explicitly restricted.

^dUsually stated as approval needed for any purchase or any activity influencing the capital plan.

^eNot explicitly addressed, but could be restricted by general prohibition on unsafe or unsound banking practices.

on interest rates paid and on deposits from correspondents are not generally discussed explicitly in formal actions, although they could be assumed to be covered there by general prohibitions of unsafe and unsound practices. It is not until banks become significantly undercapitalized that PCA provisions require restrictions roughly equivalent to those contained in formal regulatory actions, however. Well-capitalized institutions are not restricted in any significant way, while adequately capitalized institutions need FDIC approval to hold brokered deposits, a very modest restriction for most adequately capitalized institutions. Thus, under PCA provisions, significant actions are taken only when an institution becomes undercapitalized. Undercapitalized banks must adopt a capital restoration plan, suspend dividends and management fees, and restrict growth.

The PCA guidelines in FDICIA also do not address loan problems that can affect bank capital, such

as the first three provisions typically included in formal regulatory actions, as listed in Table 1. Formal actions devote significant attention to classifying, reserving for, and charging off (and transferring to OREO) problem loans, frequently including requirements for explicit, quantified increases in loan loss reserves that directly reduce reported capital. Thus, formal actions are generally more comprehensive than the PCA provisions and they include nearly all of the PCA provisions required of undercapitalized and significantly undercapitalized institutions.

II. Do Well-Capitalized Banks Raise Supervisory Concerns?

If supervisors viewed well-capitalized banks as posing little risk of insolvency, most formal actions would occur only after a bank's leverage ratio had

Table 2
Leverage Ratios at New England Banks Operating in 1989:I That Received Formal Actions between 1989:I and 1993:IV

Leverage Ratio	1989:I		1990:I	
	Number	Assets (\$000)	Number	Assets (\$000)
Less than 2.0	1	177,205	8	19,420,254
2.0-2.5			1	64,770
2.5-3.0	1	64,208	2	7,802,880
3.0-3.5			1	1,303,973
3.5-4.0			3	1,815,926
4.0-4.5			7	4,668,568
4.5-5.0	3	17,843,223	4	41,538,350
5.0-5.5	6	26,838,272	8	1,868,188
5.5-6.0	17	36,583,455	14	18,753,153
6.0-6.5	15	16,400,457	16	8,924,377
6.5-7.0	12	3,878,168	14	6,976,463
7.0-7.5	17	6,057,514	18	4,483,754
7.5-8.0	10	2,284,694	12	1,989,581
Greater than or equal to 8.0	77	18,574,841	51	12,217,781
All Banks Receiving Formal Actions	159	128,702,037	159	131,828,018

declined below the 5 percent “well-capitalized” threshold. To assess whether this is the case, we examine the period of supervisory intervention associated with the New England banking crisis. This episode is particularly suited for such a study because the banking problems were widespread, it was the first major regional banking crisis to occur following the renewed emphasis on bank capital in the late 1980s, and, prior to this time, regulators were not required to publicly disclose formal regulatory actions.

Between 1989:I and 1993:IV, the years that span the period of severe banking problems in New England, a large number of New England banks received formal regulatory actions. For banks operating in 1989:I that received a formal action, Table 2 shows their number and the volume of their assets as of 1989:I and 1990:I, grouping the 159 banks according to their leverage ratios.⁷ Although the table includes only

⁷ In this study, banks are defined to include all FDIC-insured commercial and savings banks. The sample of banks is restricted to the First District of the Federal Reserve System (New England) for three reasons. First, this was the region most severely affected by reduced bank capital. Second, this was the first region to have extensive implementation of formal actions following the new emphasis on capital in the late 1980s. Third, this is the only region for which we have a complete set of formal actions and examination

those banks that eventually underwent the most severe form of regulatory intervention short of closing the bank, as of 1989:I only five of the 159 banks had a leverage ratio below the well-capitalized threshold of 5 percent; 77 had leverage ratios equal to or exceeding 8 percent.

As of 1989:I, reported leverage ratios provided little indication of the extent of the severe banking problems soon to be experienced in New England. Even as late as 1990:I, only 26 of these institutions had a leverage ratio below 5 percent. In addition, 51 of these banks, almost one-third of the banks that would receive a formal action by 1993:IV, still had a leverage ratio equal to or exceeding 8 percent. Thus, reported leverage ratios did not forecast the extent of the impending problems at these institutions soon to come under formal regulatory actions.

One explanation for the failure of reported capital ratios to serve as leading indicators of formal actions is that the formal actions often are taken by supervisors well before banking problems are revealed in reported bank data. For this reason, it may be informative to examine the level of bank capital ratios at the time supervisors imposed formal regulatory actions. This would also provide some evidence about how serious a problem “well-capitalized” banks can pose, in the view of bank supervisors. To make this comparison, it is necessary to date the initiation of a formal action. For our purposes, we date the formal action as occurring at the beginning of the examination that resulted in the formal action.⁸

information. Because this table focuses on the ability of capital ratios to foreshadow coming banking problems, the table includes neither the seven New England banks that were already operating under a formal regulatory action at the end of 1988 (included in Table 5) nor the three de novo banks that began operations after 1989:I that subsequently received a formal action (included in Tables 3 and 5).

⁸ The standard practice of the Federal Deposit Insurance Corporation (FDIC) is to date examinations (which are usually reported in the formal actions) as of the beginning of the exam. The Office of the Comptroller of the Currency (OCC), on the other hand, often reports an “as of” date, the date of financial data referred to in the report, often the end-of-quarter call report date immediately preceding the start of the exam. Consequently, when the OCC exam date is the last day of the quarter, we denote the subsequent quarter,

Table 3 shows the leverage ratios of New England banks receiving formal actions between 1989:I and 1993:IV, both in the quarter immediately prior to the exam resulting in the formal action and at the end of the quarter in which the exam occurred. Of the 162 institutions that received formal actions during this period (the 159 banks in Table 2 plus three de novo banks not yet operating in 1989:I), 122, or three-quarters of the total number (65 percent if measured as a share of assets), had leverage ratios above the 5 percent “well-capitalized” PCA threshold in the quarter prior to the exam. Almost 90 percent (143 institutions) had capital ratios above the 4 percent “adequately capitalized” threshold, and one-fifth of the banks still had leverage ratios above 8 percent, twice the minimum leverage ratio required to be considered adequately capitalized by PCA standards. It appears that either supervisors do not view reported capital ratios as sufficient statistics to measure bank health or they believe that a 5 percent capital cushion is not sufficient to protect the deposit insurance fund from bank failures.

One could argue that examined data present a more accurate indication of a bank’s health (for example, FDIC 1997). If so, the more relevant measure of the leverage ratio associated with the implementation of a formal action would be the leverage ratio reported subsequent to the associated exam. In fact, as can be seen in the last two columns of Table 3, the distribution of capital ratios based on examined data presents a much less rosy scenario, although over half the banks remain in the well-capitalized category. While only 40 banks were not “well capitalized” prior to the exam resulting in the formal action, 78 banks were no

in which the exam began, as the exam quarter. According to discussions with examiners, banks normally will know they are likely to receive a formal action at the beginning of an examination, although the actual formal action is often not signed for several months or even quarters after the completion of the exam. Furthermore, many of the provisions of the formal action that are time-dependent are dated as of the beginning of the exam. Peek and Rosengren (1995b) have found that bank behavioral responses, such as decreases in lending, occur discretely in the quarter of the exam resulting in the formal action, consistent with this dating practice.

Table 3
Leverage Ratios at New England Banks That Received Formal Actions between 1989:I and 1993:IV

Leverage Ratio	One Quarter Prior to Exam Resulting in Formal Action		At Exam Resulting in Formal Action	
	Number	Assets (\$000)	Number	Assets (\$000)
Less than 2.0	1	118,039	10	11,814,178
2.0–2.5	1	1,018,367	6	2,066,654
2.5–3.0	4	1,130,876	9	2,527,144
3.0–3.5	5	3,458,220	4	815,266
3.5–4.0	8	936,097	10	6,030,544
4.0–4.5	8	3,541,292	19	13,874,913
4.5–5.0	13	35,559,818	20	59,736,340
5.0–5.5	18	34,145,499	15	8,094,667
5.5–6.0	17	25,692,396	9	2,486,893
6.0–6.5	17	4,731,821	13	6,709,029
6.5–7.0	16	8,384,222	11	10,082,397
7.0–7.5	14	3,188,792	8	1,568,646
7.5–8.0	7	1,355,508	9	2,567,242
Greater than or equal to 8.0	33	7,624,212	19	3,566,124
All Banks Receiving Formal Actions	162	130,885,159	162	131,940,037

longer well capitalized after the exam. The deterioration in reported capital ratios appears across the board, with many banks experiencing a substantial drop in their capital ratio in the quarter of the exam that led to the formal action. Thus, examiner enforcement may be one of the primary factors that cause banks to cross capital thresholds.

The large number of well-capitalized banks receiving formal actions indicates clearly that examiners do not believe that high capital ratios are a sufficient statistic for determining the health of the bank. This is especially true if the data have not been examined recently. It appears that examiners find that even banks reporting that they are well capitalized can have very serious problems that affect their safety and soundness.

III. How Did Well-Capitalized Banks Weather the New England Banking Crisis?

It could be that when supervisors impose regulatory actions on so-called “well-capitalized” banks, supervisors are being overly cautious and these banks do not pose a significant risk of failure. One way to determine if supervisory caution about well-capital-

ized banks is warranted is to ask how quickly banks make the transition from being a well-capitalized bank to being a failed bank. If bank capital erodes relatively slowly, then supervisors will have substantial time to take precautionary (and preventive) actions once the well-capitalized threshold has been breached. If, instead, bank capital erodes rapidly, then banks defined as “well-capitalized” can still fail quickly, and regulatory intervention may be necessary well before that capital threshold has been crossed, if early intervention policies are to be effective.

Table 4 examines the number of quarters it took for each New England bank that failed since 1989:I to make the transition from the “well-capitalized” category to failure.⁹ The results are striking. As recently as two years before failure, 81 percent of these banks were still well capitalized. Within one year of failure, 28 percent still were well capitalized. Most of the failed banks moved from the well-capitalized classification to failure during a four- to eight-quarter period. Thus, once a bank’s leverage ratio breached the 5 percent well-capitalized threshold, regulators had relatively little time to intervene before failure occurred. Given the quick erosion of bank capital during the New England banking crisis, effective early intervention may require that regulators take corrective actions to prevent bank failures well before the 5 percent well-capitalized threshold is crossed. This finding is consistent with the observed pattern for formal actions taken by regulators.

Table 5 shows the largest one-year decline in the leverage ratio during the period 1988:I to 1996:IV for every New England bank in operation in 1989:I. The endpoints of the one-year subperiods correspond to the 1989:I to 1996:IV sample period that has been the focus of this study. For de novo banks, the table includes the largest one-year decline in the leverage ratio subsequent to the first two years of their operations. A different standard is needed because a de novo bank typically begins operations with a very high capital ratio that declines over time as the bank expands its operations. Since such a decline would be

⁹ The elapsed time between the last well-capitalized date and the failure date is measured as the number of quarters between the dates of the last call report at which the bank had a leverage ratio equal to or greater than 5 percent and the last call report filed by the failed bank.

Table 4
Quarters to Failure from Last Well-Capitalized Quarter, New England Banks Failing Since 1989:I

Quarters to Failure from the Last Well-Capitalized Quarter	Number of Banks	Percent	Cumulative Number of Banks	Cumulative Percent
1	2	2.5	2	2.5
2	1	1.3	3	3.8
3	5	6.3	8	10.1
4	14	17.7	22	27.8
5	10	12.7	32	40.5
6	10	12.7	42	53.2
7	11	13.9	53	67.1
8	11	13.9	64	81.0
9	7	8.9	71	89.9
10	3	3.8	74	93.7
11	2	2.5	76	96.2
12	1	1.3	77	97.5
13	1	1.3	78	98.7
14				
15	1	1.3	79	100.0

associated with the normal operations of a de novo bank, rather than a decline in the bank’s health, declines in the leverage ratio during the initial eight quarters of operations are not considered.

The table separates the sample along two dimensions: (1) banks that failed and banks that did not and (2) banks that did and did not receive a formal regulatory action. Of the banks that did not fail and did not receive a formal action, those least impaired by New England’s banking problems, roughly one-third experienced a decline of 2 percentage points or more in their reported capital-to-asset ratio over the course of a single one-year period. Among banks that were troubled enough to receive a formal regulatory action, but strong enough to avoid failure (perhaps because of the guidance provided by the formal action), nearly two-thirds experienced a leverage ratio decline of 2 percentage points or more in a one-year period, and 14 percent experienced a decline of more than 5 percentage points, enough to wipe out the entire capital of a bank at the 5 percent well-capitalized threshold.

Banks that failed exhibited an even higher proportion with extremely large one-year declines in their leverage ratio. Of the 19 banks that failed before they could receive a formal action, all experienced declines of more than 3 percentage points in their leverage

Table 5

Largest One-Year Leverage Ratio Decline for Each New England Bank, 1988:I to 1996:IV

Percentage Point Decline	Banks That Did Not Fail				Failed Banks			
	No Formal Action		Formal Action		No Formal Action		Formal Action	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 1	140	43.6	9	8.3				
1 to 2	79	24.6	31	28.4			1	1.7
2 to 3	38	11.8	28	25.7			2	3.3
3 to 4	27	8.4	14	12.8	1	5.3	6	10.0
4 to 5	13	4.0	12	11.0	2	10.5	10	16.7
5 to 6	13	4.0	5	4.6	2	10.5	11	18.3
6 to 8	7	2.2	8	7.3	3	15.8	10	16.7
8 to 10	2	.6	1	.9	4	21.0	5	8.3
Larger than 10	2	.6	1	.9	7	36.8	15	25.0
Total	321	100.0	109	100.0	19	100.0	60	100.0

Note: Percent columns may not sum to 100 due to rounding errors.

ratio, and over 80 percent of these banks experienced declines greater than 5 percentage points. Among the banks that failed after receiving a formal action, two-thirds experienced declines in their leverage ratio of more than 5 percentage points.

As Table 5 shows, both failed and non-failed banks in New England experienced substantial one-year declines in their leverage ratios. And even these statistics understate the severity of the declines in the capital-to-asset ratios experienced by New England banks that failed. The full extent of the decline in the

was wiped out by the time of its resolution by the FDIC, each of these banks experienced a further decline in its capital ratio subsequent to that call report.

This is most prevalent among those banks in the table exhibiting the smallest one-year declines in their leverage ratios. For example, 19 of the 22 failed banks with a one-year decline of less than 5 percentage points, and nine of the 10 with a one-year decline of less than 4 percentage points, reported a positive level of capital at their last call report. Furthermore, two of the three failed banks that experienced the smallest one-year leverage ratio declines (less than 3 percentage points) each had a final reported leverage ratio in excess of 6 percent, having failed only as a consequence of the failure of larger affiliates that caused the failure of the entire holding company.

The thrust of recent regulatory and legislative proposals has been to treat well-capitalized banks as having sufficient capital to absorb any unanticipated losses. The reward for thus posing little risk to the deposit insurance fund is that they receive less regulatory oversight and they can more easily enter businesses prohibited to less well-capitalized banks. The results in Table 5 suggest that the capital ratio threshold associated with the current definition of a well-capitalized bank is too low for effective early intervention, a conclusion that concurs with earlier criticism of the way FDICIA was implemented (Benston and Kaufman 1994a, 1994b). Some banks in New England, as a result of bad luck, bad management, or bad

The capital ratio threshold associated with the current definition of a well-capitalized bank may be set too low for effective early intervention.

capital ratios of many of these banks had yet to be reflected in their reported balance sheet information. For example, at the time of their final call report, a number of these banks still reported positive levels of capital. Since the capital of each of the failed banks

monitoring, lost more than 5 percentage points of their capital-to-asset ratio in a single year. In fact, among banks that eventually failed, nearly one-third experienced a decline in their leverage ratio in excess of 5 percentage points in a single *quarter*. Many well-capitalized banks failed too quickly for early intervention policies to have any chance to be effective in reversing their problems.

These sharp declines in capital ratios reflect not only the severity of the banking problems in New England, but also a failure to fully indicate the extent of the problems on a bank's books in a timely fashion. This may be due in part to the fact that exams were relatively infrequent at many institutions during the late 1980s and early 1990s (FDIC 1997). This made the data available to the public and the regulators potentially much less reliable. In fact, numerous studies have found that banks tend to be slow to recognize troubled loans and to add enough to loan loss reserves to fully reflect the risks and problems in their portfolios (see, for example, Jones and King 1992; Gilbert 1993; Dahl, Hanweck, and O'Keefe 1995).

The problems with infrequent examinations may have been remedied at least in part by FDICIA, which requires regulators to examine banks more frequently. Frequent exams will limit the discretion that banks can use with respect to the timing of reports of problem loans and provisions for loan loss reserves, and they will force banks to keep reported capital ratios more in line with the underlying condition of the bank.

During the New England banking crisis, when most of the large bank losses were due to commercial real estate loans, one might have expected that loan loss reserves would increase as the loan portfolio deteriorated, in line with the impaired collateral. One might also have expected that increases in loan loss reserves would be highly correlated across institutions, as deterioration in real estate markets forced all banks to increase reserves. Instead, we observe large declines in capital ratios in a single quarter, occurring at different times across institutions. This reflects the practice of many banks during this period of deferring the realization of problems until bank examiners pressured them to make provisions for impaired loans.¹⁰ Thus, one of the most beneficial requirements in FDICIA may very well be the mandating of more frequent bank exams, which will improve the accuracy of reported bank capital ratios, reduce the discon-

tinuities that occur between examined and nonexamined quarters, and make the capital thresholds in FDICIA more meaningful.

IV. Conclusions

Geographic and product barriers in banking are breaking down as a result of financial innovations, improvements in information technology, and changes in legislation and regulation. These changes should enable banks to become more diversified and better meet the financial needs of their customers. Nonetheless, the changes can also impose risks on banks. As banks expand into new markets and products, they may encounter problems unforeseen by management. FDICIA has required more frequent bank examinations and encouraged banks to be better capitalized, but it is important not to assume that because of the capital requirements in FDICIA, so-called "well-capitalized" banks pose little or no risk of failure.

The experience in New England has shown that even many banks with reported capital ratios well beyond the 5 percent threshold still failed or required regulatory intervention. Capital ratios were not a leading indicator of potential problems, frequently changing only after bank examiners forced an increase in loan loss reserves following an examination or formal regulatory action.

In addition, the capital cushion was not sufficient to provide much lead time for regulators. Formal regulatory actions frequently occurred while the bank was well capitalized, and four-fifths of failed banks failed within two years of having been well capitalized. Their quick demise was in part the result of the large, discontinuous declines in capital-to-asset ratios that occurred at troubled banks. It was not uncommon for the most seriously troubled banks to have their capital-to-asset ratio decline by more than 5 percentage points in a single year and, in a number of instances, in a single quarter. With such sharp declines, a 5 percent threshold was not sufficient to avoid insolvency at many New England banks.

Some of the large discontinuous declines in bank capital may be avoided in the future as institutions become better capitalized, more diversified, and better able to monitor risks, and as bank supervisors are better able to monitor and correct risky activities at banks. However, the experience of the New England banking crisis should make us cautious about the appropriate level of capital.

¹⁰ The New England experience may not generalize to future periods to the extent that legislation and examiner attitudes discourage forbearance.

References

- Barth, James R. 1991. *The Great Savings and Loan Debacle*. Washington, D.C.: AEI Press.
- Benston, George J. and George G. Kaufman. 1994a. "The Intellectual History of the Federal Deposit Insurance Corporation Improvement Act of 1991." In *Reforming Financial Institutions and Markets in the United States*, edited by George G. Kaufman, pp. 2–17. Norwell, MA: Kluwer Academic Publishers.
- . 1994b. "Improving the FDIC Improvement Act: What Was Done and What Still Needs to be Done to Fix the Deposit Insurance Problem." In *Reforming Financial Institutions and Markets in the United States*, edited by George G. Kaufman, pp. 99–120. Norwell, MA: Kluwer Academic Publishers.
- Berger, Alan N. and Gregory F. Udell. 1994. "Did Risk-Based Capital Allocate Bank Credit and Cause a Credit Crunch in the U.S.?" *Journal of Money, Credit and Banking*, vol. 26, Part 2 (August), pp. 585–628.
- Billett, Matthew T., Jane F. Coburn, and John P. O'Keefe. 1995. "Acquirer Gains in FDIC-Assisted Bank Mergers: The Influence of Bidder Competition and FDIC Resolution Policies." In *The New Tool Set: Assessing Innovations in Banking*. Federal Reserve Bank of Chicago, Proceedings of the 31st Annual Conference on Bank Structure and Competition, pp. 276–94.
- Carnell, Richard Scott. 1995. "A Partial Antidote to Perverse Incentives: The FDIC Improvement Act of 1991." *Annual Review of Banking Law*, pp. 317–71.
- Dahl, Drew, Gerald A. Hanweck, and John P. O'Keefe. 1995. "Audits, Exams and Accounting Integrity in Banking." Unpublished manuscript. Presented at Academy of Financial Services Annual Meeting, October.
- Federal Deposit Insurance Corporation. 1997. "Bank Examination and Enforcement, 1980–1994." In *History of the Eighties—Lessons for the Future: Proceedings of the FDIC Symposium*.
- Furlong, Frederick T. 1992. "Capital Regulation and Bank Lending." Federal Reserve Bank of San Francisco *Economic Review*, no. 3, pp. 23–33.
- Gilbert, R. Alton. 1993. "Implications of Annual Examinations for the Bank Insurance Fund." Federal Reserve Bank of St. Louis *Economic Review*, January/February, pp. 35–52.
- Hall, Brian J. 1993. "How Has the Basle Accord Affected Bank Portfolios?" *Journal of the Japanese and International Economies*, vol. 7, pp. 408–40.
- Hancock, Diana and James A. Wilcox. 1992. "The Effects on Bank Assets of Business Conditions and Capital Shortfalls." In *Credit Markets in Transition*, Proceedings of the 28th Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May, pp. 502–20.
- . 1994. "Bank Capital and the Credit Crunch: The Roles of Risk-Weighted and Unweighted Capital Regulations." *Journal of the American Real Estate and Urban Economics Association*, March, pp. 59–93.
- Jones, David S. and Kathleen Kuester King. 1992. "The Implementation of Prompt Corrective Action." In *Credit Markets in Transition*, Proceedings of the 28th Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May, pp. 68–100.
- . 1995. "The Implementation of Prompt Corrective Action: An Assessment." *Journal of Banking and Finance*, vol. 19, June, pp. 491–510.
- Kane, Edward J. 1985. *The Gathering Crisis in Federal Deposit Insurance*. Cambridge MA: The MIT Press.
- Keeley, Michael C. 1990. "Deposit Insurance, Risk, and Market Power in Banking." *The American Economic Review*, vol. 80, December, pp. 1183–1200.
- Peek, Joe and Eric S. Rosengren. 1995a. "The Capital Crunch: Neither a Borrower Nor a Lender Be." *Journal of Money, Credit and Banking*, August, pp. 625–38.
- . 1995b. "Banks and the Availability of Small Business Loans." Federal Reserve Bank of Boston Working Paper Series No. 95-1, January.
- . 1995c. "Bank Regulation and the Credit Crunch." *Journal of Banking and Finance*, vol. 19, June, pp. 679–92.
- . 1997. "Will Legislated Early Intervention Prevent the Next Banking Crisis?" *Southern Economic Journal*, July.