Lessons from New England Bank Failures

Richard E. Randall

Vice President, Federal Reserve Bank of Boston. The views expressed do not necessarily reflect official positions of the Federal Reserve Bank of Boston or the Federal Reserve System. *Paul D. Charrette and Kenneth S. Neuhauser provided valuable research assistance.*

New England had until recently experienced few bank failures, only nine from the end of World War II through 1988. The situation has changed dramatically since then, as three banks insured by the Bank Insurance Fund failed in 1989, nine in 1990, 46 in 1991, and 31 in 1992.[1] Additional banks were heavily damaged, although a number of these have made a significant recovery. The failures include commercial and savings banks, Massachusetts cooperative banks (essentially savings banks), and federal savings banks. In addition, some savings and loans and credit unions, including some privately insured institutions in Rhode Island, failed in the 1989–92 period.

The true dimensions of the damage sustained by New England banks are distorted somewhat by focusing on the number of failed banks. Many of these banks were newly chartered in the 1984–89 period and were still relatively small, despite rapid growth. Other failures, however, involved institutions of great importance to the region. Most prominent was Bank of New England Corporation, with total assets in 1988 of more than $32 billion. The almost simultaneous failure of five of the seven largest banking institutions in New Hampshire damaged that state's economy severely. Failures of large and mid-size savings banks in Connecticut, Maine, and Massachusetts affected numerous customers. In Connecticut, Bridgeport's distressed economy, which forced the city into bankruptcy, was weakened further by large bank failures. The estimated cost to the Bank Insurance Fund (BIF) of handling New England bank failures is in the vicinity of $6.6 billion.

Thus, the rapid deterioration in the condition of New England banks during the late 1980s is a significant event in the history of the U.S. banking system, and the lessons from this episode should play a role when considering steps to protect the banking system from future shocks. One purpose of this study was to determine the causes of the New England bank failures and the sequence and manner in which various indicators of bank condition reflected growing problems. An-

Table 1
Asset Size and FDIC Estimate of the Cost of Resolving Failed New England Banks, 1989 to 1992

Group	Number of Banks	Size of Bank at Time of Failure[a] Assets ($ millions)	Size of Bank at Time of Failure[a] Percent of Total Assets of Failed Banks	FDIC Estimate of Cost[b] Cost ($ millions)	FDIC Estimate of Cost[b] Percent of Total Cost	FDIC Estimate of Cost[b] Cost as Percent of Bank Assets
Mature Commercial Banks	23	27,511	56.1	2,414	36.6	8.8[c]
Mature Savings Institutions Other than New or Converted	22	11,137	22.7	2,067	31.4	18.6
Mutual to Stock Conversions (1984 on)	17	8,452	17.2	1,551	23.5	18.4
New Commercial and Savings Banks (1984 on)	25	1,946	4.0	556	8.4	28.6
All Banks in Study	87	49,046	100.0	6,588	100.0	13.4

[a]Taken from final call report before failure.
[b]Cost to the Bank Insurance Fund, as estimated by the FDIC. These estimates are reportedly proving to be valid for groups of banks, if not for individual failed banks. See Brown and Epstein (1992) for a description of the methodology employed in the estimates.
[c]The estimated cost of resolving the three subsidiary banks of Bank of New England included here is only 5.0 percent of assets. The cost for all others in this group is 22.9 percent of assets.

other purpose was to place the New England experience in the context of other recent boom and bust banking cycles. It is hoped that the analysis of these cycles will provide insights as to how the calamities might have been mitigated, and offer lessons that will help supervisors forestall future large-scale bank credit problems.

The study covered 87 New England banks that failed in the 1989 to 1992 period, and involved individual analysis of the nature and timing of their developing risk exposures, the deterioration in their financial performance, and their eventual failure.[2] Most events are dated relative to the quarter when emerging loan problems should have been evident because nonperforming assets reached an abnormal level, referred to here as the nonperforming assets threshold.

The banks were divided into three groups as shown in Table 1: mature commercial banks, mature savings institutions, and recently chartered banks. An exceptionally large number of new banks were chartered in 1984 or later—89 banks, including 41 in Connecticut. Most grew rapidly, but 28 percent of these banks failed when the local economy weakened and the commercial real estate market collapsed. During the same period, 98 savings institutions converted from mutual to stock form, resulting in large influxes of often redundant equity capital. Most of these banks took advantage of the real estate boom to grow into their capital by acquiring risky assets and 17 failed as a result, including three in the $900 million to $2.4 billion asset range.

The study includes an analysis of commercial real estate loan concentrations in all BIF-insured banks in New England and of the degree to which banks that did not fail also developed serious problems as a result.

I. Summary of the Findings of the Study

Commercial real estate loans were the dominant factor in recent New England bank failures. The evidence shows this clearly. Of the 62 banks in existence before 1984 that failed from 1989 to 1992, commercial real estate loans were the dominant factor

[1] In 1989 Congress reorganized the deposit insurance structure, renaming the Federal Deposit Insurance Corporation (FDIC) fund the Bank Insurance Fund, and placing under FDIC administration a second fund, the Savings Association Insurance Fund, to cover thrift deposits.

[2] Appendix A describes the methodology of the study, and Appendix B presents selected details on each of the failed banks. Bank failures include any banks taken over by the FDIC or acquired by others with FDIC assistance.

in 58 failures, shared the blame in two, and were a non-critical factor in only two. In addition, real estate lending was a major if not dominant factor in 19 of the 25 failures of new banks.

Indirect evidence shows that the real estate loan problems in New England during this period were based almost entirely on construction and development lending and the resulting damage to the economics of existing commercial properties.[3] The sustained period of rapid growth in commercial real estate lending by both failed and surviving banks helped to create the excess capacity that eventually resulted in a major correction in property values. Those banks most exposed have either failed or sustained heavy damage. Commercial real estate loans exceeded 30 percent of assets in 47 of the 62 established banks in the study, and exceeded 20 percent in all but four. Such concentrations exceeded 50 percent of assets in eight banks. Prior to 1984, commercial real estate loans seldom exceeded 20 percent of assets.

A comparison of failed and surviving banks shows that high concentrations of commercial real estate loans led to either failure or poor supervisory ratings in all but a few cases. Most of the exceptions involved banks with a long-standing practice of lending on existing commercial structures rather than construction.

Progression of Credit Problems

The level of nonperforming assets used in this study as the threshold of the problem recognition phase, 1 percent of assets in most cases, was selected to be above the normal range for this ratio in each bank. It was not, however, a particularly high level for nonperforming assets in New England banks at the end of the decade and is well below the norm in the current environment. The banks in this study experienced a steady increase beyond 1 percent in the nonperforming ratio over the next year or two after reaching that threshold.

Significant provisions to reserves, at least those related to the particular loan type that caused the bank to fail, generally did not precede the jump in nonperforming assets to the threshold level. Relatively high but irregular provisions to reserves and write-offs of loans, beginning about the time banks reached the 1 percent threshold, had the net effect of increasing reserves. These increases were, however, generally less than the increase in nonperforming loans, and the foreclosed property component of nonperforming assets, after netting any reserves, also increased rapidly.

The increased provisions to reserves quickly hurt banks' net income, resulting in losses in some quarters.[4] The income lost as loans became nonperforming, together with the high costs of administering such loans, turned operating income negative, resulting in steady losses. (As used here, operating income is net income before loan loss provisions, taxes, and extraordinary items.) Capital ratios began to erode, despite loan shrinkage in most banks. But the decline in capital below acceptable levels came quite late, and it was only a landmark on the path to insolvency. Use of an adjusted capital-to-assets ratio, which nets out nonperforming assets from equity capital while including loan loss reserves, indicates negative capital about a year earlier than the conventional leverage ratio measure (less than a year earlier for the new banks).

Response of the Banks

When nonperforming loans began to exceed normal levels, most banks had already ceased making commercial real estate loans and commercial and industrial loans or, if not, they pulled back at the first sign of credit problems. Allowing a quarter or two for loans in process to clear the pipeline, few banks continued to expand loans after credit problems began to appear, and most of these were relatively small, new banks. Available evidence suggests that most decisions to discontinue lending were initiated by bank management rather than the supervisory authorities.

Lessons from the New England experience should play a role when considering steps to protect the banking system from future shocks.

[3] See Appendix C, "Evidence on the Relative Contributions of Commercial and Residential Real Estate to New England Bank Credit Problems."

[4] Net income of banks is reduced by provisions to the reserve for bad debts, rather than by the actual loan losses.

Substantially all of the loans that caused the failures of the 87 banks in the study were on the books before the credit problems began to appear. No evidence was found of efforts to "grow out" of lending problems, as was the case with some savings and loan institutions during the mid 1980s. To the contrary, the evidence suggests that New England bankers generally adopted conservative postures upon recognizing the emerging problem. It seems safe to conclude that few bankers faced with potential failure took "second gambles" to try to recoup their losses.

Timing of Supervisory Actions

Supervisory ratings show that the regulatory authorities did not downgrade these banks based on their large concentrations of commercial real estate loans. Supervisors began to react to the emerging credit problems at the time, or shortly after, nonperforming loans reached the relatively low thresholds used in this study. The seriousness of the problems became apparent to supervisors only gradually, however, in part because examinations of some banks focussed more on policies than on detailed review of credit quality and lending terms. There were numerous instances of two- or three-step drops in bank ratings, and infrequent examinations appear to have contributed to this to some extent. New banks often received less frequent examinations than established banks.

Based on Federal Deposit Insurance Corporation (FDIC) estimates, losses to the BIF for most failed banks will substantially exceed the total of nonperforming assets and the deficit in gross equity capital (which includes loan loss reserves) reported in the final report of condition before failure. This result is of interest because a presumption has been widespread among supervisors and others that only a fraction of nonperforming assets will eventually become losses. Banks failed to reflect their growing risk concentrations in loan loss reserves, and most were soon significantly underreserved relative to likely credit losses implied by rapidly escalating nonperforming loans.

The New England experience was typical of other recent banking problems in that risk concentrations developed over several years, but serious credit problems did not emerge until economic factors transformed a euphoric boom into a period of major adjustment. Banks did not show gradual, reversible deterioration, but were committed to substantial losses by the time problems became recognizable. The evidence shows that in most cases bank managements reacted appropriately during the problem recognition stage. It also shows that supervisors were aware of the emerging problems and reacting to them well before capital ratios became weak, but their actions came too late to prevent the failures.

Limitations on the Study

The story of the New England banking crisis has many important and fascinating aspects. This article focuses on the way in which the commercial real estate cycle contributed to bank failures, but it does not explore the economic factors underlying the real estate boom and bust. The reader should be aware, however, that the real estate boom occurred in the context of a seemingly very prosperous regional economy. The article does not weigh the importance of the 1981 liberalization of tax laws regarding real estate or the tightening of these same laws in 1986, although both changes were important to the New England story. It does not explore the role of life insurance companies and other nonbank lenders in financing commercial real estate.

The article touches only briefly on the issues of fraud and insider abuse, and the events surrounding speculative investment in bank stocks by some savings banks, even though these factors contributed to the magnitude of the banking problems. It also does not attempt to evaluate several important aspects of bank lending practices, including more liberal appraisal standards, looser loan terms, diminished use of take-out commitments by permanent lenders, and lending to realty subsidiaries on the financial strength of developers who do not guarantee the loans.

II. Detailed Findings Related to Mature Commercial Banks

Nearly all of the 23 mature commercial banks that failed displayed a typical pattern of risk concentration, problem recognition, and deterioration in earnings and capital, with only relatively minor variations.

Causes of Failure

Data on nonperforming assets from the failed banks' final call reports and data on cumulative loan losses provide significant insights into the sources of

Table 2
Causes of Bank Failure: The Sum of Nonperforming Assets and Three Years of Cumulative Loan Losses, for the Real Estate and Commercial and Industrial Loan Categories, as a Percentage of Total Assets at the Time of Bank Failure
Number of Banks

Nonperforming Assets plus Cumulative Loan Losses as Percent of Total Assets	Mature Commercial Banks		Mature Savings Banks: Other than Recent Conversions		Mature Savings Banks: Recent Conversions		New Banks		All Failed Banks	
	RE	C&I	RE	C&I	RE	C&I	RE	C&I	RE	C&I
30 or more	1		3		4				8	
25–29.9	3		1		1		2	2	7	2
20–24.9	4		7		5		1		17	
15–19.9	4		7		4		4	4	19	4
10–14.9	6	1	4		3		6	8	19	9
5–9.9	3	8		2		3	7	4	10	17
0–4.9	2	14		20		14	5	7	7	55
Totals	23	23	22	22	17	17	25	25	87	87

Note: These data on nonperforming assets (from the failed banks' final call reports) and data on three years of cumulative loan losses provide significant insights into the sources of bank losses. Real estate loans, essentially commercial real estate loans, were the dominant cause of failure in 19 of the 23 mature commercial banks, and shared that role with commercial and industrial (C&I) loans in two other cases. Problems in real estate loans, again largely commercial real estate loans, were sufficient to cause the failure in all 39 mature and converted savings banks. Real estate loans were the dominant cause of failure in nine of the new banks, C&I loans in six others, and a combination of the two in the remaining 10. Fraud apparently contributed significantly to loan losses in four of these new banks.

losses (Table 2). Comparing the real estate loan category with the commercial and industrial loan category in terms of the combination of nonperforming assets (including foreclosed property) and cumulative net loan losses for three years prior to failure strongly suggests that real estate loans, essentially commercial real estate loans, were the dominant cause of failure in 19 of the 23 banks.[5] In two other cases, real estate loans shared that role with commercial and industrial loans. Only in two cases were commercial and industrial loans or still another loan category more influential.[6] In all but one case, the magnitude of likely loan losses in real estate and commercial and industrial loans, together with the related loss of interest income associated with nonperforming loans, clearly was sufficient to have caused the failures. The evidence is less conclusive in the remaining case.

Risk Concentrations

Focusing on the 21 failures where real estate loans played a major role, each bank experienced a period of rapid growth in commercial real estate loans, sometimes interrupted by a pause for two or three quarters. These periods of rapid growth lasted from seven quarters to six years: up to three years for six banks, three to five years for 11 banks, and five or six years for four banks. During these prolonged periods of rapid growth, the banks built concentrations in commercial real estate loans ranging from 16 percent to 59 percent of total assets. Even higher concentrations resulted later, as other loans ran off more rapidly. The distribution of commercial real estate concentration ratios and the dramatic increase since early 1984 are displayed in Table 3.

Emerging Credit Problems

As long as real estate prices continued to rise, the very high loan concentrations generally were not a

[5] In several cases throughout the article, the numbers presented in the text cannot be derived from the tables. The text is based on a detailed analysis of individual banks.

[6] One bank had problems centered in commercial and industrial loans and credit card loans. The other had mostly commercial and industrial loan problems, although its larger affiliate, a savings bank that also failed, had primarily real estate loan problems.

Table 3
Risk Concentrations: Commercial Real Estate Loans as a Percentage of Total Assets of Failed Banks, in March 1984 and at Highest Point Prior to Threshold (T)
Number of Banks

Commercial Real Estate Loans as Percent of Total Assets	Mature Commercial Banks		Mature Savings Banks: Other than Recent Conversions		Mature Savings Banks: Recent Conversions		New Banks	All Failed Banks
	March 1984	Peak	March 1984[a]	Peak	March 1984[a]	Peak	Peak	Peak
50 or more		4		1		3	1	9
40–49.9		1		5	1	7	5	18
30–39.9		8		12		5	3	28
20–29.9	4	7	2	3		2	6	18
10–19.9	5	1	4	1	10		5	7
0–9.9	14	2[b]	3		4		5	7
Total	23	23	9	22	15	17	25	87

[a]1984 data were not readily available for 15 savings banks. Earliest data examined ranged from December 1985 to March 1988 and showed five of the 15 already in the 30–39 percent range and four others in the 20–29 percent range.

[b]These two banks had peak concentrations in commercial and industrial loans of 32 and 44 percent of assets.

Note: Risk concentrations were built during periods of rapid growth in commercial real estate lending. The periods of rapid buildup ranged from one to six years, but in many cases the concentrations were built in two to four years.

problem. During the periods of rapid growth in commercial real estate loans, nonperforming real estate assets (including foreclosed property) seldom exceeded 0.75 percent of total assets in 18 of the 21 banks, and were usually below 0.5 percent in most banks.[7] But as market conditions worsened, first in condominium construction and conversions, then in tract housing, and eventually in commercial property, banks experienced sharp increases in nonperforming real estate assets. In many cases a sudden jump in nonperforming loans in one quarter was followed by continued increases in subsequent quarters.

The starting point of the "problem recognition phase" for this study was taken as the quarter end when nonperforming real estate assets first exceeded 1 percent of assets and remained above that level thereafter (1.2 percent in the three cases mentioned in footnote 7). One bank that was particularly aggressive in condominium lending reached that point by the end of 1986, six others did so in the first half of 1988, and 14 other commercial banks exceeded this threshold during the four quarters ending in September 1989. One bank exceeded the threshold in late 1990.

Anecdotal evidence indicates that a few banks masked their developing credit problems for a time, either by questionable accounting practices or deliberate falsification of records. Four failed commercial banks that were examined in the threshold quarter, or the prior quarter, received supervisory rating (CAMEL) downgrades to 3 (fair) or 4 (marginal) and reported large increases in nonperforming assets, suggesting that examiners may have found previous nonperforming data understated.[8] Thus, a few of the threshold quarters used in this study might have come a quarter or two earlier had more accurate nonperforming data been reported.

Banker Reaction

Much has been made of the efforts by managers of some damaged or insolvent savings and loans in

[7] The exceptions were two banks in southern Connecticut and one in Massachusetts, which reported nonperforming real estate assets slightly in excess of 1 percent for a few quarters near the end of their period of rapid growth in commercial real estate loans.

[8] Banks are rated by supervisors on five factors: Capital, Asset quality, Management, Earnings, and Liquidity, giving rise to the acronym CAMEL. Each individual component, as well as a composite rating of all five factors, is assigned a score from 1 (strong) to 5 (likely to fail).

Table 4
Timing of Events for 23 Failed Mature Commercial Banks Relative to the Threshold Quarter (T) When Nonperforming Real Estate Assets Exceeded 1 Percent of Total Assets[a]
Number of Banks

	Quarters before Threshold					Quarters after Threshold							
Event	Earlier	−3	−2	−1	T	+1	+2	+3	+4	+5	+6	Later	Never
Peak in Problem Loan Category	1	1	1	5	6	5		2	1	1			
Nonperforming Real Estate Loans													
3% or more of assets					2	6	8	2	2	2		1	
6% or more					1		1	7	4	2	1	4	3
9% or more							1		5	2	3	6	6
Real Estate Net Write-offs (0.4% or more of assets)					2	2	3	4	3	3	1	3	2
Loan Loss Provision (0.8% or more of assets)				1	3	4	4	4	3	1	1	2	
Negative Net Income			1	1	3	6	5	3	1		2	1	
Negative Net Operating Earnings						3	1	8	2	1	2	5	1
Ratio of Tier 1 Capital to Assets													
Weak (below 5.2%)[b]			1	2		3	3	3	2	1	2	5	1
Negative											2	12	9
Ratio of Adjusted Tier 1 Capital[c] to Assets													
Weak (below 5.2%)	3		1	4	4	6	1	2		1		1	
Negative					3	3	2	6		1	2	4	2

[a]Based on commercial and industrial nonperforming loans in two cases; 1.2 percent nonperforming threshold used in three cases.
[b]A lower threshold for weak capital was used for two banks.
[c]Full loan loss reserves added to capital and nonperforming assets deducted from capital.

the mid 1980s to try to "grow out of their problems" by rapid growth in risky lending areas. In this regard, it is interesting to review the actions of New England commercial bankers as evidence began to mount that they had serious credit problems. Table 4 shows the timing of peaks in each bank's most troubled loan category, relative to the nonperforming asset threshold of 1 percent of total assets.

In two banks, commercial real estate loan totals peaked more than one quarter before nonperformance reached the 1 percent threshold. In 15 banks, the peak in commercial real estate loans occurred within one quarter before or after the rise in nonperforming assets. In the four remaining banks where commercial real estate loans were a significant factor, such loans peaked three to five quarters after nonperforming assets reached the 1 percent threshold. In three of these banks, however, the loan increases were small and the increases in nonperforming loans during this period were moderate. In those banks with significant problems in commercial and industrial loans, such loans peaked well before a significant increase in nonperforming assets in six of 12 banks, and within one quarter, earlier or later, in the others.

Generally, when credit problems first appeared, bankers either were already shrinking loan portfolios, both in total and in troublesome categories, or quickly began to do so. Considering that commercial real estate loans and commercial and industrial loans may be booked some time after commitments are made, and that the measurement was made from the first point when the level of nonperforming assets became abnormal, the evidence suggests that the commercial bankers adopted conservative postures promptly upon recognizing the emerging problem.

While no definitive evidence is readily available to show whether the cessation of lending in critical categories was initiated by bankers or bank supervisors, inferences can be made from supervisory (CAMEL) ratings. Of the 19 mature commercial banks

for which such ratings were available, 12 ceased to expand loans in critical categories (generally commercial real estate) while the bank was rated in the top two rating categories. It is unlikely that supervisors pressured such banks to stop lending, and even questionable that they did so for three additional banks when the composite rating was 3 (fair). Thus it is presumed that lending restraints were voluntary

Generally, when credit problems first appeared, bankers either were already shrinking loan portfolios or quickly began to do so.

actions in most cases. The prospect of supervisory intervention if problems were not contained may have given management an added incentive.

An analysis of the investment portfolios of these banks showed no evidence of new risk-taking after the loans began to run off. Conversations with supervisors produced no anecdotal evidence of late risk-taking in any of these banks. While the possibility of isolated cases cannot be ruled out, it seems safe to conclude that, in general, these commercial bankers did not take "second gambles" in an effort to recoup losses from their earlier bets.

Timing of Changes in Financial Indicators

Once the level of nonperforming real estate assets (assumed to be primarily commercial real estate) exceeded 1 percent, it moved rapidly higher in most cases. As shown in Table 4, in 16 of the 23 mature commercial banks, nonperforming real estate assets (commercial and industrial loans in two banks) reached 3 percent of assets within two quarters, and they did so in all but one of the remaining banks within three more quarters. Such assets reached 6 percent of total assets in 13 of the banks within one year, and 9 percent of assets in 11 banks within one and one-half years. Nonperforming real estate assets ultimately reached 6 percent of assets in all but three banks prior to failure, and 9 percent in all but six banks. Four banks had nonperforming real estate loans in the 20 to 25 percent range just prior to failing.

None of the banks took significant real estate write-offs (0.4 percent of assets or more) before the benchmark quarter, but 14 did so in that quarter or during the following year. Only one bank made a significant provision for loan losses (0.8 percent of assets or more) prior to the benchmark quarter, and this provision did not necessarily relate to commercial real estate loans. Eighteen banks took such provisions in the benchmark quarter or during the following year. Additional provisions followed, for most banks.

The initial large provisions for loan losses resulted in negative net income for a quarter in 21 banks and a substantial reduction in net income in the other two. Four banks had experienced isolated quarters with negative net income prior to the benchmark quarter, which were unrelated to the ultimate problem area and are not reflected in Table 4. Operating earnings (here, before provisions for loan losses and before taxes and extraordinary items) generally became negative two or more quarters after net income did, reflecting the loss of interest income, losses in the disposition of foreclosed property, and related costs.

Increasing losses eroded capital funds, and despite the rapidly shrinking loan volume, a slower decline in total assets permitted the ratio of capital to assets to decline. Table 4 shows the quarter in which the ratio of tier 1 capital to assets dropped below 5.2 percent, relative to the nonperforming real estate asset threshold.[9]

Three banks showed a sudden drop in their capital ratio to levels below 5.2 percent one or two quarters before the benchmark, one because of a sharp increase in loans, another due to a large provision for loan losses that was not real-estate-related, and the third as a result of marking equity securities to market. Thus, no commercial banks developed weak capital ratios prior to the nonperforming threshold as a consequence of the credit problems that were to destroy them. Eleven others showed deterioration in capital ratios below 5.2 percent, due primarily to large loan loss provisions, in the four quarters following the nonperforming asset benchmark. Six others did not fall below the 5.2 percent criterion for one and one-half years or more, because of slow development of losses, deferred recognition

[9] The 5.2 percent of assets threshold for capital was chosen because it was significantly below the normal range for nearly all banks, and yet was high enough to represent a level that might, at the time, have been considered minimally adequate for banks with satisfactory risk profiles. For two banks where tier 1 capital ratios were chronically under 5.2 percent, the timing of a major drop from the usual range was used instead.

of losses through loan loss provisions, or injections of fresh capital. One bank showed a ratio of capital to assets of more than 5.2 percent in its final call report before failure.

Capital did not turn negative until long after the initial increase in nonperforming assets: in two banks after six quarters, in eight after seven, and in four between nine and 15 quarters later. Nine banks still showed positive capital on their final call report before failure. Of those that reported negative capital, nine failed in the next quarter and the remaining five in the second quarter after so reporting.

The capital ratio used above excludes the loan loss reserves from capital and does not take asset quality into account. As will be shown later, most of these banks were underreserved for the loan losses that were to come. This becomes immaterial if reserves are included in capital and gross equity capital is related to a measure of potential credit losses. The best that can be done in this regard with call report data is to use nonperforming assets as such a measure.[10] Accordingly, a measure of tier 1 capital, plus loan loss reserves, minus nonperforming assets, as a percentage of total assets, has been applied to each of the failed banks.[11]

As shown in Table 4, this adjusted capital ratio became weak (below 5.2 percent) before the threshold quarter in eight of the 23 banks. In each case this occurred as a result of factors unrelated to problem real estate loans (or commercial and industrial loans in the case of one bank). But weakness in this ratio attributable to commercial real estate loans showed up in 10 commercial banks in the threshold quarter or the one following. Fourteen banks were insolvent within a year of the threshold on the basis of this ratio, whereas none were insolvent according to the conventional leverage ratio.

Most of the commercial banks were underreserved for the loan losses that were to come.

Using the quarter in which the 1 percent nonperforming threshold was reached as a benchmark, the time until bank failure ranged from one and one-half years to five years, with 11 of the 23 banks failing by the seventh or eighth quarter. In some cases the overhang of nonperforming assets was so great that the banks were clearly nonviable long before capital became negative and they were closed.

Comparison to Banks That Did Not Fail

While the evidence presented earlier strongly links commercial real estate concentrations to bank failures, it does not shed light on the relative importance of concentrations and qualitative factors such as underwriting standards and management capabilities. To the extent that the study only considers failed banks, it does not eliminate the possibility that other banks with similar concentrations escaped unscathed by utilizing better lending practices.

Figure 1 and Table 5 offer some insight into this question by comparing failed and surviving banks in terms of peak commercial real estate loan concentrations and peak nonperforming real estate assets. While the figure shows a number of nonfailed banks with both high concentrations and delinquencies, most of these banks developed sufficient problems to be rated 4 (marginal) or 5 (likely to fail) in the supervisors' composite rating system (CAMEL). This distinction cannot be shown on the figure because individual bank ratings could be identified, but it is summarized in the table.

Of 147 current commercial banks (nonfailed and still in existence), 54 developed poor supervisory ratings during the 1986–92 period. Of the 93 that did not develop such serious problems, 11 had commercial real estate loan concentrations of 30 percent of assets or more. A review of these banks and six others with concentrations between 28 and 30 percent disclosed that only 5 of the 17 banks reported construction and development loans (a component of commercial real estate loans as used in this study) exceeding 5 percent of assets. Only one had construction and development loans exceeding 10 percent of assets. For the most part, banks that had large commercial real estate portfolios, but escaped relatively unscathed, did not become heavily involved in the development boom. In contrast, 18 of the 32 mature

[10] Although not publicly available, a weighted ratio of examiner classifications (problem assets) to capital would be a superior indicator of asset quality. But since such a ratio is only developed in the examination process, it is often so out of date in a time of rapidly deteriorating credit quality that the quarterly nonperforming data are more useful for the purposes of this study.

[11] The appropriateness of deducting 100 percent of nonperforming assets will be explored later by testing a derivative of this capital measure against FDIC loss estimates for individual banks.

Table 5
Mature New England Commercial Banks Reaching Specified Levels of Commercial Real Estate Loan Concentrations and Nonperforming Real Estate Assets, 1986 to 1992[a]
Number of Banks

Peak CRE Loan Concentration (Percent of Assets)	Peak in Nonperforming Real Estate Assets as Percent of Total Assets						
	Failed Banks		Current Banks				
			Troubled[b]		All Other		
	<6%	≥6%	<6%	≥6%	<6%	≥6%	Total
≥40%		5		4	1	1	11
30–39.9%		9	8	10	6	3	36
20–29.9%	1	5	10	10	24	2	52
10–19.9%	1	1	9	3	33		47
0–9.9%	1				23		24
Total	3	20	27	27	87	6	170

[a]Excludes banks chartered in 1984 or later (both failed and current) and banks that failed before 1989. Peak levels were determined from quarterly reports over the 1986 to 1992 span, except that the second highest level was used to avoid data distortions.
[b]Had a composite CAMEL rating of 4 or 5 at some point during the period studied.

commercial banks that either failed or received poor supervisory ratings, and had commercial real estate concentrations in excess of 28 percent, had peak construction and development loan concentrations in excess of 10 percent of assets and 26 of the 32 had such concentrations in excess of 5 percent. The overall conclusion is that high commercial real estate concentrations led to substantial damage as evidenced by poor supervisory ratings, if not actual failure.

III. Detailed Findings Related to Mature Savings Institutions

All 39 savings banks in this group failed as a result of heavy involvement in commercial real estate loans, and they displayed essentially the same pattern as the mature commercial banks. The 12 largest savings banks in this group ranged in size from $800 million to $2.4 billion in assets. Thirteen others were in the $300 million to $800 million range, nine held assets of between $100 million and $300 million, and five had less than $100 million in assets.

Causes of Failure

It is clear from Table 2 that real estate loan problems were predominant in each case and were sufficient to cause the failure. The total of nonperforming real estate assets plus cumulative net charge-offs of such loans over the three years prior to failure ranged from 10 percent of total assets to 48 percent, with 21 banks exceeding 20 percent. The corresponding numbers for commercial and industrial loans were under 1 percent for 13 banks and under 3 percent for 14 others. The highest was 8.3 percent. No other loan category contributed significantly to the problem, and only one bank appeared to be significantly damaged by negative earnings unrelated to nonperforming assets. As with the commercial banks, it can be assumed that the bulk of these real estate loan problems relate to commercial real estate loans rather than residential loans.

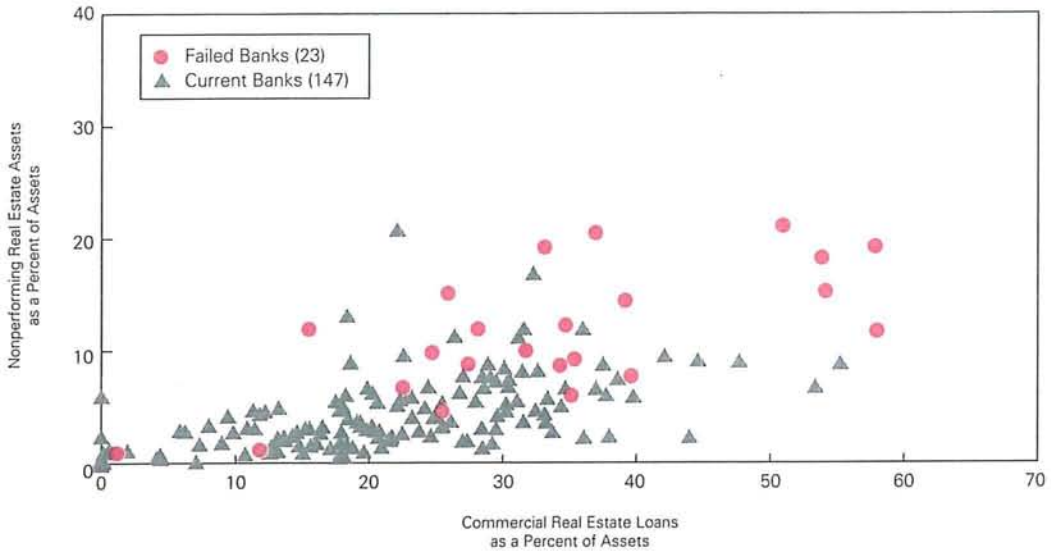
Risk Concentrations

Like the commercial banks, the savings banks showed rapid growth in commercial real estate loans, resulting in the high concentrations shown in Table 3.[12] The period of rapid growth in commercial real estate loans typically ranged from one and one-half to four years, sometimes interrupted by a brief period of decline in such loans.

[12] The table does not fully reflect the amount of growth from 1984 because 14 banks converted to FDIC insurance from a private Massachusetts deposit insurer in the 1985–87 period, and earlier data were not solicited. Another savings bank converted from a federal to a state charter in 1988. Some of these banks had already achieved significant concentrations prior to becoming FDIC-insured.

Figure 1

Mature New England Commercial Banks, Peak Concentrations in Commercial Real Estate Loans and Nonperforming Real Estate Assets, 1986 to 1992[a]



[a] Excludes banks chartered in 1984 or later (both failed and current) and banks that failed before 1989. Peak levels were determined from quarterly reports over the 1986 to 1992 span, except that the second highest level was used to avoid data distortions

Emerging Credit Problems

The 1 percent of assets "threshold" for nonperforming real estate loans was appropriate for 29 of the 39 savings banks in this group. The 10 others experienced higher nonperforming levels preceding and continuing into the years of rapid growth in commercial real estate loans, perhaps representing chronic delinquencies in residential loans. Therefore, in order to capture the point at which the growth in commercial real estate loan problems first began to stand out, thresholds ranging from 1.6 to 3 percent of assets were employed for these banks.

Five failed savings banks that were examined in the threshold quarter, or the prior quarter, received supervisory rating (CAMEL) downgrades to 3 (fair) or 4 (marginal) and reported large increases in nonperforming assets in the threshold quarter. This suggests that earlier nonperforming data may have been understated and that the threshold quarter should have been earlier in some cases.

Commercial real estate loans peaked one or more quarters before the threshold in eight banks, in the threshold quarter or the following quarter in 12 banks, and in the second quarter after the threshold in 11 banks (Table 6). The eight others continued to increase the level of commercial real estate loans for a time—for six quarters, in one case. Six of the eight savings banks that continued to expand more than two quarters after the threshold did so in negligible amounts, or while the amount of nonperforming loans was growing slowly after exceeding the threshold.[13] Although three situations here suggest inappropriate behavior in continuing to aggressively expand commercial real estate loans after serious problems became clear, the other savings banks in the group generally reflected the same conservative reaction to emerging problems as did the commercial banks. No evidence of "second gambles" in other areas of risk-taking was noted.

In 18 of the 36 banks for which supervisory ratings were examined, commercial real estate loan growth ceased while the bank was rated in one of the

[13] The extent of continued lending in the riskier loan categories by three mature savings banks is summarized in Table 9 below.

Table 6
Timing of Events for 39 Failed Savings Banks Relative to the Quarter (T) When Nonperforming Real Estate Assets Exceeded a Threshold Percentage of Total Assets[a]
Number of Banks

	Quarters before Threshold					Quarters after Threshold							
Event	Earlier	−3	−2	−1	T	+1	+2	+3	+4	+5	+6	Later	Never
Peak in Problem Loan Category	1	2	3	2	5	7	11	2	4	1	1		
Nonperforming Real Estate Loans													
3% or more of assets					12	13	7	5	1	1			
6% or more					1	4	4	14	5	8	1	1	1
9% or more						1	3	5	7	9	5	8	1
Real Estate Net Write-offs (0.4% or more of assets)						6	6	5	3	7	4	8	
Loan Loss Provision (0.8% or more of assets)					4	5	8	6	3	4	5	4	
Negative Net Income				1	6	12	8	6	5			1	
Negative Net Operating Earnings				1	2	6	6	5	9	3	2	5	
Ratio of Tier 1 Capital to Assets													
Weak (below 5.2%)		1				1	7	8	1	6	3	12	
Negative									2	3	3	10	21
Ratio of Adjusted Tier 1 Capital[b] to Assets													
Weak (below 5.2%)[c]	2			1	17	8	3	2	1	3	2		
Negative					1	4	5	8	6	4	6	5	

[a]The nonperforming real estate threshold as a percent of assets was 1 percent for 29 banks, 1.6 percent for one bank, 2 percent for three banks, 2.5 percent for four banks, and 3 percent for two banks. The higher thresholds were required because some banks had occasional quarters with relatively high nonperforming loans, apparently stemming from temporary problems with residential mortgages.
[b]Full loan loss reserves added to capital and nonperforming assets deducted from capital.
[c]For one bank that had adjusted capital below 5.2 percent of assets throughout the period of rapid growth, the timing of the drop below 3.7 percent was used.

top two CAMEL rating categories, and therefore the action was presumed to be voluntary. In 11 others such loan expansion ceased while they were rated 3 (fair).

Timing of Changes in Financial Indicators

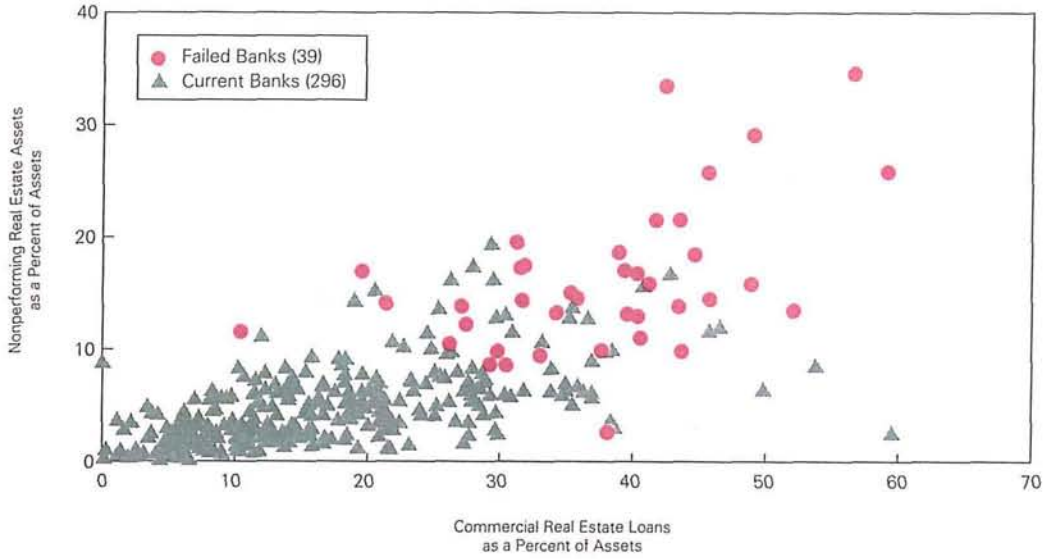
Once nonperforming real estate loans reached the threshold (1 percent of assets for most savings banks), they generally rose more rapidly than in the commercial banks (Table 6). The progression to 6 percent and to 9 percent or more was more rapid in the savings banks that did not convert to stock form than in those that did. As shown in Table 6, the initial upsurge in the threshold quarter went above 6 percent in one bank and above 3 percent in 11 others. Within two more quarters, all but seven savings banks had reached 3 percent, nine had reached 6 percent, and four had nonperforming real estate loans above 9 percent of assets. Within a year 16 of the 39 savings banks had reached 9 percent, and all but one did so before failure.

After the threshold quarter, significant real estate loan write-offs began to show up, and nearly one-half of the banks reported such loss recognition in the first year. Significant provisions to loan loss reserves began in the threshold quarter and generally preceded loan write-offs by about one quarter. These provisions to loan loss reserves resulted in negative net income in most cases, and operating earnings quickly turned negative as well, leading to negative net income in still more banks. Nineteen of the 39 savings banks had negative net income by the quarter following the threshold period, and all but one did within a year.

Tier 1 capital fell below 5.2 percent of assets in one bank before the threshold as a result of operating weaknesses. Emerging commercial real estate problems produced weak capital in one bank one quarter

Figure 2

Mature New England Savings Banks, Peak Concentrations in Commercial Real Estate Loans and Nonperforming Real Estate Assets, 1986 to 1992[a]



[a] Excludes banks chartered in 1984 or later (both failed and current), federal savings banks, and banks that failed before 1989. Peak levels were determined from quarterly reports over the 1986 to 1992 span, except that the second highest level was used to avoid data distortions.

after the nonperforming threshold and in 15 additional banks in the second or third quarter after the threshold. Capital weakness did not appear for at least a year and a half after the nonperforming threshold in 10 banks. Capital turned negative in two banks in the fourth quarter after the threshold. Only eight banks in this group reported negative capital as late as a year and a half after the threshold, and 21 still showed positive book capital in the final call report before they failed.

Applying the adjusted capital ratio, however, which deducts nonperforming assets from gross equity capital, all but four of the nonconverted savings banks had weak capital by the threshold quarter and all but three were insolvent within a year afterward. The converted savings banks took longer to work through their capital funds; 13 did not exhaust adjusted capital until the second year after the threshold had been reached.

Comparison to Savings Banks That Did Not Fail

Figure 2 and Table 7 compare failed mature savings banks to surviving banks in the same manner that Figure 1 and Table 5 did for the commercial banks. It is clear that nearly all mature savings banks with high concentrations in commercial real estate loans either failed or developed serious problems, as evidenced by poor supervisory ratings. It is also clear that these problems tended to relate to high levels of nonperforming real estate.

As with the commercial banks, some savings banks with relatively high commercial real estate loan concentrations did not develop serious problems. Of the 17 banks with commercial real estate loan concentrations in excess of 28 percent of assets that did not develop serious problems, only three had concentrations in construction and development loans of 10 percent or more of assets, and only seven had more than 5 percent of such loans. Thus, like their commercial bank counterparts, most mature savings banks with high commercial real estate loan concentrations that avoided problem status appear to have shunned the more aggressive development lending of the others. In contrast, of the 50 mature savings banks that either failed or received poor supervisory ratings, and had commercial real estate concentrations in excess of 28 percent, 39 reported peak con-

Table 7
Mature New England Savings Banks Reaching Specified Levels of Commercial Real Estate Loan Concentrations and Nonperforming Real Estate Assets, 1986 to 1992[a]
Number of Banks

Peak CRE Loan Concentration (Percent of Assets)	Peak in Nonperforming Real Estate Assets as Percent of Total Assets						
	Failed Banks		Current Banks				
			Troubled[b]		All Other		
	<6%	≥6%	<6%	≥6%	<6%	≥6%	Total
≥40%		17		5	1	1	24
30–39.9%	1	13	4	16	3	1	38
20–29.9%		6	3	19	33	15	76
10–19.9%		2	2	16	77	14	111
0–9.9%			1		84	1	86
Total	1	38	10	56	198	32	335

[a]Excludes banks chartered in 1984 or later (both failed and current), federal savings banks, and banks that failed before 1989. Peak levels were determined from quarterly reports over the 1986 to 1992 span, except that the second highest level was used to avoid data distortions.
[b]Had a composite CAMEL rating of 4 or 5 at some point during the period studied.

struction and development loans of 10 percent of assets or more, while 48 out of 50 reported such loans exceeding 5 percent of assets.

Converted Savings Banks

Of the 17 savings banks that converted to stock ownership after 1983 and then failed, two converted in 1985, nine in 1986, five in 1987, and one in 1988. Each of these banks expanded rapidly in order to grow into its suddenly enlarged capital base. The increase in capital ratios attributable to conversion was substantial except in the case of one bank, where the increase was minor and the resulting ratio of tier 1 capital to assets was 9 percent. Following conversion, the capital ratios of the other banks ranged from 9 to 29 percent, with six banks between 14 and 19 percent and five others at 20 percent or more.

Nine banks experienced an increase in nonperforming assets to the threshold level from four to eight quarters after converting, six banks from nine to twelve quarters, and two from 13 to 16 quarters after converting. Rapid growth, and eventually provisions to reserves, eroded capital ratios, but it was some time before such ratios declined to the 5.2 percent threshold used in this study. Two banks saw capital ratios decline to this point in the second year after conversion, two banks in the third year, seven banks in the fourth year, and six banks even later. In terms of the adjusted capital ratio described earlier, rising nonperforming loans (not covered by reserves) caused the ratio to go negative in three banks as early as the second year after conversion.

IV. Findings Related to New Banks

This group consists of 23 commercial banks and two savings banks; 13 were chartered in Connecticut, seven in Massachusetts, and the others in New Hampshire and Vermont. Charter dates ranged from 1984 to 1989, with seven chartered in 1987. Life spans from start-up to failure were as follows:

Years	*Number of Banks*
3	2
4	7
5	6
6	5
7	5

One bank grew to $307 million in assets in its four and one-half years of existence, and three others topped $100 million. Thirteen never grew beyond $50 million in assets.

Causes of Failure

Real estate problems appear to have been the dominant cause of failure in nine of the new banks, commercial and industrial loans in six others, and a

combination of the two in the remaining ten. Several of these banks had contractors and developers on their board of directors, and loans to such insiders reportedly figured heavily in some failures. Fraud reportedly played a significant role in four of the Connecticut banks, contributing to loan losses. Unreliable reporting in some of the new banks may have distorted the picture of how much particular loan categories contributed to failures. It may also have deferred recognition of the nonperforming threshold as four new banks experienced supervisory rating (CAMEL) downgrades to ratings of 3 (fair) or lower in the threshold quarter, accompanied by large increases in nonperforming assets.

Both real estate problems and commercial and industrial loans were dominant causes of failure in the 25 new banks studied.

Risk Concentrations

As shown in Table 3, six of the new banks that failed developed concentrations in commercial real estate loans in excess of 40 percent of assets. Seven others had concentrations in commercial and industrial loans ranging from 40 percent of assets to 75 percent. The duration of the rapid buildup in these concentrations ranged from one to six years, but 15 of the 25 new banks built their concentrations within two to four years.

Emerging Credit Problems

In most cases it was not practical to apply separate thresholds of 1 percent nonperforming assets to total assets for real estate and for commercial and industrial loans, because both loan categories were significant in a number of the new banks and apparent reclassifications between loan categories were frequent. Instead, the point where nonperforming assets became abnormal was determined for 11 banks by combining the two loan categories. A 2 percent threshold for nonperforming assets was used in five banks that had chronically high levels of nonperforming assets.

Fourteen of the 25 new banks discontinued growth in the troubled loan categories prior to, or within one period following, the nonperforming threshold (Table 8). Unlike the banks in the other groupings, however, a number of the new banks continued to expand loans in the troubled categories long after the emerging problems were obvious. Five banks increased loans between two and four quarters beyond the threshold quarter, four others did so for five or six quarters, and two others for as long as nine and 13 quarters.

Timing of Changes in Financial Indicators

As with the other bank groups, once nonperforming assets exceeded the threshold, they increased fairly rapidly in subsequent quarters. As shown in Table 8, the initial jump in nonperforming assets in the threshold quarter exceeded the 6 percent level in two banks and 3 percent in two others. Over the next year, seven banks exceeded 9 percent and another eight exceeded 6 percent.

Fifteen of the 25 failed new banks took significant write-offs of loans within two quarters after the threshold, but loan loss provisions generally preceded these write-offs by a quarter or two. Net income turned negative somewhat sooner in this group, apparently because weak operating earnings were less able to absorb loan loss provisions. Three of these new banks had never been profitable, despite the rapid growth in loans that caused their demise.

The ratio of Tier 1 capital to equity fell below the 5.2 percent level in the threshold quarter for two banks and for several others soon after, but quite late for a number of others. Several of the new banks entered the period of credit problems with high capital ratios that were only gradually eroded. In general, capital ratios became weak shortly after nonperforming assets reached 3 percent of assets, and negative about the time they reached 6 percent.

Using the adjusted capital ratio, six banks had weak capital by the threshold quarter, and all but five within a year afterward. Five banks were insolvent on this basis by the second quarter after the level of nonperforming assets became abnormal, and five others by the fourth quarter.

Table 8
Timing of Events for 25 Failed New Banks Relative to the Threshold Quarter (T) When Nonperforming Real Estate Assets or Nonperforming Commercial and Industrial Loans Exceeded 1 Percent of Total Assets[a]
Number of Banks

	Quarters before Threshold					Quarters after Threshold							
Event	Continuous	−3	−2	−1	T	+1	+2	+3	+4	+5	+6	Later	Never
Peak in Problem Loan Category		2	1	3	6	2	1	3	1	3	1	2	
Nonperforming Loans in Problem Category													
3% or more of assets					4	5	5	5	2	3	1		
6% or more					2		3	2	8	4	1	5	
9% or more							1	2	4	5	3	8	2
Real Estate Net Write-offs (.4% or more of assets)					2	5	8	2	1	3	1	3	
Loan Loss Provision (.8% or more of assets)			1		4	6	9	1		1		3	
Negative Net Income	3		1	1	4	4	8	2		1		1	
Negative Net Operating Earnings	2			1	1	3	3		3	2	2	8	
Ratio of Tier 1 Capital to Assets													
Weak (below 5.2%)					2	2	2	4	3	2	1	9	
Negative								1	2	2	1	8	11
Ratio of Adjusted Tier 1 Capital[b] to Assets													
Weak (below 5.2%)					6	3	4	2	5	1	3	1	
Negative							5	1	4	6	2	7	

[a]The nonperforming threshold was based on real estate loans and foreclosed property in nine banks, C&I loans in six banks, and a combination of the two in the other 10.
[b]Full loan loss reserves added to capital and nonperforming assets deducted from capital.

Banker Reaction

Even among the new banks, most reacted promptly to reduce risk exposure at the first sign of emerging credit problems. A few slowed but did not immediately halt loan growth, where nonperforming loans were not increasing rapidly. There were, however, seven new banks that continued to increase the combination of commercial real estate and commercial and industrial lending for more than one quarter after total nonperforming assets exceeded and remained above 3 percent of total assets. At this level of nonperforming assets, nearly all associated with commercial real estate or commercial and industrial loan problems, it should have been obvious that loss exposure was significant and that further loan expansion in these areas of high concentration was very unwise.

Table 9 presents data on these seven new banks along with one mature commercial bank and three mature savings banks. Two banks continued to report loan expansion in their final call reports before failure, and three others were within one or two quarters of failure before such expansion ended. When nonperforming assets are deducted from tier 1 capital plus loan loss reserves, eight of the 11 banks listed in Table 9 were insolvent by the time loan expansion ceased. One bank continued to expand its loan portfolio even after being rated 5 (likely to fail) by the examiners. Several of these situations appear to reflect inappropriate behavior by bankers and raise questions about the quality of supervision given these new banks.[14]

Focusing again on just the new banks, 10 of the 21 banks for which supervisory ratings were available

[14] It is important to note, however, that together these 11 banks account for only 4.7 percent of the total assets of the failed banks in this study, and that the six banks that continued to expand beyond three quarters account for only 1.6 percent of total assets in the study.

Table 9
The Exceptions: Eleven Failed Banks That Continued to Increase Commercial Real Estate and Commercial and Industrial Loans After Total Nonperforming Assets Exceeded 3 Percent of Total Assets[a]

Failed Bank	Expansion after Nonperforming Assets Exceeded 3% of Total: Number of Quarters	Expansion after Nonperforming Assets Exceeded 3% of Total: Increase as Percent of Assets	Resulting Level of CRE and C&I Loans as Percent of Assets
Mature Commercial Banks			
Bank A	3	27.3	76
Mature Savings Banks			
Bank B	3	6.3	52
Bank C	6	16.9	50
Bank D	3	4.8	59
New Banks			
Bank E	7	18.7	79
Bank F	3	14.0	65
Bank G	5	13.9	70
Bank H	6	31.4	62
Bank I	8	24.8	67
Bank J	3	14.8	65
Bank K	12	16.0	49
Total		10.9% (Equals $251 million in assets, or 4.7 percent of the $2,313 million total assets of the 87 failed banks studied)	

[a]This group excludes banks where loan expansion continued only into the following quarter or the loan increase was negligible. The expansion is measured from the quarter in which total nonperforming assets exceeded 3 percent and remained above that level until failure. Asset size is also taken from the call report for the quarter in which nonperforming assets reached this level.

ceased expansion in troubled loan categories while they were rated in the top two categories by supervisors. Three others did so while rated in the third supervisory rating category, suggesting that most of those banks that curtailed their lending in timely fashion did so on their own initiative.

Comparison to New Banks That Did Not Fail

Table 10 compares the 25 failed new banks to the 55 new banks that have survived, including 27 that received composite supervisory ratings of 4 or 5. While the majority of failed new banks had both high commercial real estate loan concentrations and high nonperforming real estate assets, several failed banks had relatively low commercial real estate exposures, and commercial credits or other factors were the main cause of failure.

Of the banks that have not failed, nine of the 26 banks where commercial real estate loans exceeded 25 percent of assets have avoided adverse composite supervisory ratings (4 or 5). None of these nine had construction and development loans in excess of 10 percent of assets, and none developed high levels of nonperforming real estate assets. As noted earlier, the patterns that are so distinct with the mature banks are somewhat muted in the case of the recently chartered banks.

V. Additional Findings

The following aspects of the study are best reported and discussed without segregation by bank groupings.

Timing of Supervisory Concerns about Failing Banks

The level of supervisory concern is reflected in the ratings assigned individual banks. The CAMEL ratings were obtained for 76 of the 87 banks in the study and the timing of changes in the composite rating was analyzed, relative to the quarter in which the level of nonperforming real estate assets (commercial and industrial loans for some banks) exceeded the 1 percent of assets threshold.[15] As shown in Table 11, no bank received a composite 5 (likely to fail) until after the threshold quarter, and only three banks (two of them related) received a composite rating of 4 (marginal) before the threshold. Most of the 13 banks that received a less serious 3 rating (fair) before the threshold did so because of weaknesses unrelated to the developing credit problems. In general, these early downgrades do not appear to have foreshadowed the serious problems to come. Nearly all rating downgrades to levels of concern occurred after evidence of actual loan problems began to emerge. At this point, loan concentrations were already fully developed. This timing indicates that supervisory evaluations focus on actual deterioration in loan performance, but not on risk concentrations.

In the threshold quarter six banks were rated 4 (marginal), five having previously been rated 2 (sat-

[15] The asset quality component of the CAMEL rating was also examined, but it generally moved in lockstep with the composite.

Table 10
New England Banks Chartered in 1984 or Later Reaching Specified Levels of Commercial Real Estate Loan Concentrations and Nonperforming Real Estate Assets, 1986 to 1992[a]
Number of Banks

Peak CRE Loan Concentration (Percent of Assets)	Peak in Nonperforming Real Estate Assets as Percent of Total Assets						
	Failed Banks		Current Banks				
			Troubled[b]		All Other		
	<6%	≥6%	<6%	≥6%	<6%	≥6%	Total
≥40%		5	1	4	2		12
30–39.9%		4	6	4	3		17
20–29.9%	2	7	6	2	8		25
10–19.9%	2		2	2	6		12
0–9.9%	3	2			9		14
Total	7	18	15	12	28	0	80

[a]Excludes federal savings banks. Peak levels were determined from quarterly reports over the 1986 to 1992 span, except that the second highest level was used to avoid data distortions.
[b]Had a composite CAMEL rating of 4 or 5 at some point during the period studied.

Table 11
Timing of the Deterioration in Failed Banks' Composite CAMEL Ratings
Number of Banks

New CAMEL Rating	Quarter When Rating Dropped, Relative to Threshold Quarter[a]					
	More Than a Year Earlier	−4 to −1	Threshold Quarter	+1 to +4	+5 to +6	More Than 18 Months Later
3 (Fair)	4	9	4	12	3	
4 (Marginal)		3	6	18	7	7
5 (Likely to Fail)				19	13	41

[a]For most banks, the quarter in which the bank's nonperforming real estate assets exceeded 1 percent of total assets.

isfactory). In the year following the threshold quarter, numerous ratings were downgraded. Only two failures occurred, however, as most failures took place in the second or third year after the threshold quarter (Table 12). All but three of the banks for which ratings data were available eventually received a 5 rating before failure, but more than half of these ratings were given at least seven quarters after the threshold quarter.

Few banks passed through each rating level as they deteriorated, and 17 of the 76 banks for which CAMEL ratings were available went directly from a rating of 2 (satisfactory) to a 5 (likely to fail). Eight of them were new banks. The plunge in ratings appears to have been more the result of long intervals between examinations than a sudden deterioration in asset quality. Most of the two- or three-level drops in ratings followed examination intervals of at least six quarters. The intervals were particularly long for new banks, the longest noted being 10, 11, and 12 quarters. A tenet of bank supervision is that new banks should receive more frequent examinations.

The Cost of Bank Failures

In order to gain some perspective on the extent of ultimate losses to the BIF as a result of these failures, the loss estimates prepared by the FDIC liquidators at the time of failure and updated periodically were obtained for all but one of the banks

studied.[16] FDIC officials report that relatively recent estimates are proving to be valid, at least for groups of failed banks if not for individual banks. Since it takes some time to liquidate banks, it is difficult to say now whether current estimation techniques are optimal for the particular loan problems of New England banks. Nonetheless, these estimates can be used to make some broad generalizations.

For purposes of this article a new measure was introduced, the ratio of equity capital plus loan loss reserves (gross equity capital) minus nonperforming assets, to total assets. The validity of deducting 100 percent of nonperforming assets might be questioned, since losses on such assets historically have probably been much lower. We can test this validity by relating equity capital plus the loan loss reserve just prior to failure to the FDIC estimate of loss. If the difference between the two equaled nonperforming assets, it would mean that the deduction of 100 percent of nonperforming assets was just right. It turns out that the difference is well over 100 percent of nonperforming assets for most failed New England banks. The median is 143 percent of nonperforming assets, the mean 156 percent, and the range is from 31 to 587 percent. This wide range implies that gross equity capital less nonperforming assets is not a reliable indicator of ultimate losses in *individual* failed banks (assuming the FDIC estimates are reasonable). But the fact that the difference between gross capital and estimated losses substantially exceeds nonperforming assets in the great majority of failed banks also demonstrates that the deduction of 100 percent of nonperforming assets in computing the adjusted capital ratio for this study certainly did not understate adjusted capital.

The adjusted capital ratio is used in this article as a tool for generalizing about the real capital ratios for failing New England banks. It shows (in Tables 4, 6, and 8) that for nearly all such banks, capital-to-asset ratios did not become weak (as defined here) before the actual credit problems became evident, even when capital was adjusted for reserves and nonperforming assets.

Adequacy of Reserves for Loan Losses

Accounting theory suggests that the reserve for loan losses should equal the anticipated future loan losses in the current loan portfolio. These failed banks did not build up their reserves in response to the developing concentrations in commercial real estate loans or emerging concerns about overbuilding. This is not just a generalization: no individual failed bank attempted to compensate for the abnormal risk by increasing reserves prior to the buildup in nonperforming loans.

Table 12
Timing of Bank Failures Relative to the Threshold Quarter[a]
Number of Banks

Number of Quarters after Threshold	Commercial Banks	Savings Banks	New Banks	Total Banks
+1 to +4		2		2
+5 to +8	12	10	10	32
+9 to +12	6	11	10	27
+13 or more	5	16	5	26
Totals	23	39	25	87

[a]For most banks, the quarter in which the bank's nonperforming real estate assets exceeded 1 percent of total assets.

The first abnormal loan loss provisions began to appear about the time that nonperforming assets first exceeded their usual range. But the increased provisions barely covered net loan losses in many banks, and the level of reserves did not keep pace with rapidly rising levels of nonperforming loans in most banks. In those banks where reserves did for a time essentially keep up with nonperforming loans, it was because so many properties were seized and the loans on them transformed into foreclosed property, which is not included in loans. Reserves against foreclosed property were generally minimal, and the ultimate losses in disposing of foreclosed property reportedly were high, despite the write-downs absorbed by the loan loss reserves at the time of foreclosure.[17]

The ratios of loan loss reserves to nonperforming loans just prior to failure had a median value of 0.44, with 80 percent of the observations falling between 0.25 and 0.71. In general, savings banks had lower reserves relative to nonperforming loans than did commercial banks. Since, as shown earlier, the ultimate losses for these failed banks will substantially exceed total nonperforming assets, while reserves typically covered less than half of the nonperforming

[16] These loss estimates are shown for individual banks in Appendix B, and are summarized by bank grouping in Table 1 in terms of dollars and as a percent of bank assets.

[17] For most banks, the costs of carrying and administering foreclosed property reportedly are greater than the write-downs taken after the initial charge at the time of foreclosure.

loans and none of the foreclosed property, it seems reasonable to conclude that the banks were severely underreserved at the time of failure. It is in part because of the general underreserving, as well as the inconsistency among banks in reserving, that this study has used a capital measure that adds the reserve for bad debts back into capital. Thus, the adjusted capital measure is unaffected by the level of reserving.[18]

Mismanagement and Fraud

This study did not focus on the mismanagement and fraud aspects of recent failures, but a few observations can be made. The emphasis on concentrations in commercial real estate loans here is not meant to imply that bank losses came solely from providing too much credit to a sector that became overbuilt. In the process of accommodating so many builders, developers, and speculators, these banks, as well as others that have not failed, often lowered underwriting standards and failed to exercise prudent loan administration. Anecdotal evidence suggests that the aggressive actions of converted savings banks may have contributed significantly to a liberalizing spiral of easier terms on construction loans. A number of banks were reported to have financed 100 percent of costs and advanced even more to cover interest payments.

A significant increase in fraud occurred during this period. For the most part, the banks were victims of fraud by outsiders, sometimes with an officer or employee involved. Instances of fraudulent behavior on the part of senior bank management and directors apparently were rare. In one notable case, top officials of one savings and loan and six banks, including four of the new banks in this study, are currently subject to civil enforcement actions for an alleged series of crisscrossing insider loans that contributed to heavy credit losses. In another case, a stockbroker specializing in new-issue stocks of converted savings banks reportedly developed a network of interlocking stock ownerships among such banks leading to investment losses at several institutions.[19] While mismanagement by bankers and bank vulnerability to fraud by outsiders undoubtedly were important contributors to loan losses in New England failed banks, they were another manifestation of the overaggressive lending psychology that produced this costly banking cycle.

A pattern of risk-taking and subsequent severe credit problems was characteristic of the S&L crisis and of current banking problems in some foreign countries, as well as the New England and Southwest crises.

VI. Comparison with Other Recent Banking Crises

The New England banking crisis shares several fundamental features with other recent banking traumas, including the overexposure of the money center banks to lending to less developed countries (LDCs) at the beginning of the 1980s and the high concentrations in energy and real estate lending by commercial banks in the Southwest in the mid 1980s. In each of these situations, a significant segment of the banking industry engaged for several years in exceptional risk-taking, becoming heavily exposed to borrowers with common vulnerabilities. This occurred in an atmosphere of exuberance and competitive pressures on the banks not to miss the parade. In each case such lending led to excessive expansion in particular sectors, and often to the financing of uneconomic projects. The eventual result was a major correction that caused heavy loan losses.

In a sense, these events were akin to the financing of a speculative bubble that eventually burst, although the timing of the recognition of these problems was not instantaneous or uniform among institutions. But in each case, severe damage to the banks was essentially built in and inevitable well before the

[18] Prior to the recent introduction of the risk-based capital measure, supervisors fully included loan loss reserves in capital. Under the new guidelines, such reserves are not included in tier 1 capital (essentially the equity of the bank) and only 40 percent is included in tier 2. (The balance of tier 2 consists of debt instruments.)

[19] At least two of the banks in this study were severely damaged as a consequence of involvement in this network, although the principal cause of failure was commercial real estate. It has been suggested that savings banks damaged by losses on their investments in other such banks took a second gamble by rapidly increasing their real estate exposure after the value of bank shares fell in mid-1987. While some bankers were probably motivated by recouping earlier losses, it does not appear that losses on stocks alone threatened the survival of any of these banks.

turn of the cycle. This pattern of risk-taking and subsequent severe credit problems was also in many respects a characteristic of the savings and loan crisis of the mid 1980s and of current banking problems in such countries as Australia, Canada, Japan, and Norway. Furthermore, such boom and bust patterns in financial institutions and markets are not a new phenomenon, although we have seen an exceptional number in recent years. Charles Kindleberger, in his history of financial crises, *Manias, Panics, and Crashes*, demonstrates the persistency of such crises in the Western world over more than two and one-half centuries.

In the problem recognition phase of each of the U.S. banking problems, managements generally pulled back from further aggressive risk-taking and prepared to ride out a period of stress.[20] These actions are in sharp contrast to the behavior attributed to many savings and loans in the mid 1980s. A number of such thrifts sought to grow their way out of their credit problems by engaging in a new wave of risk-taking, which added significantly to the cost of resolving several of these thrifts.

In each of the U.S. banking crises, once the cycle turned, the credit problems escalated rapidly. Yet bank managements and supervisors were uncertain about how much more the situation would deteriorate, and they were slow to realize that in many cases the wounds were fatal. Both New England and the Southwest endured a long period of uncertainty as to which banks would survive and which would fail.

The LDC crisis differed in that the exposure was largely sovereign risk and the perception was widespread that countries seldom repudiate their debt. Moreover, the uncertainties were so protracted that the money center banks were able to absorb the losses over a decade, avoiding any failures. In retrospect, it is evident that the eventual loan write-downs were very high for some money center banks at the point where LDC lending was discontinued. One issue in the current New England bank crisis is whether some damaged banks will be forced into failure even though they might be viable given sufficient time to recover.

Another common feature of the three recent waves of distress in U.S. banks is that capital ratios did not deteriorate until after the risk concentrations were fully developed and a change in the economic environment had begun to produce sharp increases in nonperforming loans, loan loss provisions, and write-offs. Table 13 compares the failed New England banks with five of the large Texas bank holding companies (BHCs) that failed in the 1980s, in terms of the timing of the first sign of capital weakness relative to the development of serious credit deterioration.[21] The 5.2 percent threshold of tier 1 capital to assets used earlier was applied to the Texas BHCs. The table shows when each institution's capital ratio fell below 5.2 percent, relative to the quarter in which nonperforming assets exceeded first 3 percent, then 6 percent, and then 9 percent of total assets.

Table 13 demonstrates that capital weaknesses seldom appeared before nonperforming assets exceeded 3 percent of assets, which would be a very high level in normal times.[22] Of the 23 mature New England commercial banks, one saw its capital-to-asset ratio fall below 5.2 percent a year before nonperforming loans exceeded 3 percent. Thirteen dropped below 5.2 percent within a quarter, plus or minus, of nonperforming loans passing the 3 percent mark; but nine did not see capital ratios fall below 5.2 percent until two or more quarters after nonperforming loans exceeded 3 percent of assets. Six did not experience low capital ratios until more than a year after passing the 3 percent threshold. Mature savings banks and new banks were even later in experiencing weak capital. Of 39 mature savings banks, 30 did not have weak capital ratios until at least two quarters after nonperforming assets exceeded 3 percent of total assets; 23 did not have weak capital ratios until two or more quarters after nonperforming loans exceeded 6 percent, and a fair number still had strong capital positions when nonperforming loans surpassed 9 percent.

The lag was particularly long in the Texas BHCs, which had reported high levels of nonperforming energy loans for a time before losses on real estate loans overwhelmed capital. The first of the five large Texas failed BHCs to experience a decline in the capital ratio below 5.2 percent did so three quarters after nonperforming assets exceeded 3 percent. At the point when nonperforming assets reached 6 percent of total assets, four of the five still had capital ratios in excess of 5.2 percent. Erosion of capital comes very late in cyclical banking problems. It can, perhaps, be characterized as the first revolution of a bank's death spiral.

---

[20] One might question whether this was so in the case of the large Texas banks, to the extent that they continued to finance speculative real estate after the energy boom abruptly ended.

[21] The Texas BHCs are First City Bancorp, First RepublicBank, MCorp, National Bancshares, and Texas American Bancshares.

[22] As noted earlier, the 1 percent of assets threshold was chosen for most banks because it was well above the normal range of nonperforming assets.

Table 13

Comparison of New England Failed Banks and Five Large Texas Failed Bank Holding Companies: Timing of Decline in Tier 1 Capital below 5.2 Percent of Assets,[a] Relative to Quarter in Which Total Nonperforming Assets Exceeded 3, 6, or 9 Percent of Assets

Number of Institutions

Group	Percent of Nonperforming Assets	Timing of Decline in Capital Ratio below 5.2 Percent of Assets (Quarters Before or After Nonperforming Assets Exceeded Level Indicated)												
		Earlier	−5	−4	−3	−2	−1	0	+1	+2	+3	+4	+5	+6	Later
New England Failed Banks															
23 Mature Commercial Banks[b]	3			1			4	5	4	2	1		3		3
	6	1	2		3	2	3	5	3		1		1		1
	9	3	1	1	4	2	2	2	2		1				1
39 Mature Savings Banks[b]	3			1			2	2	4	3	8	4	3	2	10
	6	1				1	4	3	6	5	6	2	4	1	5
	9	1	1	2	2	2	3	6	6	4	1	6		3	1
25 New Banks[b]	3						3	2	1	3	6	2		1	7
	6			1	1	2	1	6	3	6	1	1		1	2
	9		1	2	3	1	4	7	1	2	1	2			
Five Large Texas Failed Bank Holding Companies	3										1	1	1	1	1
	6						1		3			1			
	9		1	1	1			1	1						

Note: The first signs of capital weakness seldom appeared until after nonperforming assets reached the abnormally high level of 3 percent of assets. Capital weakness often became evident about the time that nonperforming assets reached 6 percent. This was not just a New England phenomenon, but was clearly evident in the large Texas banking institutions as well.

[a]A capital ratio below 5.2 percent was used for three New England banks with chronically weak ratios.

[b]Some rows do not add to total number of banks because nonperforming assets never reached 6 percent of assets in two New England banks, and never reached 9 percent in four others.

References

Brown, Richard and Seth Epstein. 1992. "Resolution Costs of Bank Failures: An Update of the FDIC Historical Loss Model." *FDIC Banking Review*, vol. 5, no. 1, Spring/Summer, pp. 1–16.

Browne, Lynn E. and Eric S. Rosengren. 1992. "Real Estate and the Credit Crunch: An Overview." *New England Economic Review*, November/December, pp. 23–36.

Federal Deposit Insurance Corporation, Division of Research and Statistics. 1992. *Quarterly Banking Profile*. Second Quarter.

Gilbert, R. Alton. 1992. "The Effects of Legislating Prompt Corrective Action on the Bank Insurance Fund." Federal Reserve Bank of St. Louis, *Review*, July/August, pp. 3–21.

Kindleberger, Charles P. 1989. *Manias, Panics, and Crashes: A History of Financial Crises*. Revised edition. New York: Basic Books, Inc.

Minsky, Hyman P. 1982. *Can "It" Happen Again?* Armonk, N.Y.: M.E. Sharpe, Inc.

———. 1986. *Stabilizing an Unstable Economy*. Twentieth Century Fund report. New Haven: Yale University Press.

Mortgage Bankers Association of America. *National Delinquency Survey*. Issues containing year-end data for 1989–1991 (February 28, 1989; February 22, 1990; February 27, 1991; and March 4, 1992).

Peek, Joe and Eric S. Rosengren. 1992. "The Capital Crunch in New England." *New England Economic Review*, May/June, pp. 21–31.

Randall, Richard E. 1989. "Can the Market Evaluate Asset Quality Exposure in Banks?" *New England Economic Review*, July/August, pp. 3–24.

———. 1990. "The Need to Protect Depositors of Large Banks, and the Implications for Bank Powers and Ownership." *New England Economic Review*, September/October, pp. 63–75.

Syron, Richard F. and Richard E. Randall. 1992. "The Procyclical Application of Bank Capital Requirements." Federal Reserve Bank of Boston, *Annual Report 1991*.

Appendix A: Methodology of the Study

An individual analysis was made of each of 87 New England banks that failed in the 1989 to 1992 period. The study included all failed Bank Insurance Fund-insured commercial banks, savings banks, and Massachusetts co-operative banks. Two failed BIF-insured federal savings banks were excluded because of reporting differences.

The cause of bank failure was determined by considering the level just prior to failure of nonperforming real estate loans (including foreclosed property) plus the cumulative write-offs of real estate loans, net of recoveries, for the previous three years. (No data were available on the losses incurred in disposing of foreclosed property.) While the bank reporting system did not distinguish commercial real estate loans from residential in terms of nonperforming loans and write-offs of loans until recently, New England banks had few problems with home mortgages until very late in the period under study. Based on the evidence presented in Appendix C, nonperforming real estate assets and losses on real estate loans were assumed to stem from commercial real estate, including construction loans.[23] The sum of nonperforming loans and cumulative write-offs on real estate loans was compared to the corresponding calculation for the probable losses on commercial and industrial loans, in order to determine the relative importance of each. In only one case was it necessary to examine additional categories of loans in order to explain the bulk of the bank's total nonperforming loans or loan write-offs. Loan problems were serious enough in every case to fully explain the bank's failure and a large measure of the expected losses to the BIF.

The study examined the timing of various phases of the developing problem, using quarterly call report data (required reports of bank condition to supervisors) from March 1984 to the final report before failure. Periods of rapid growth and subsequent run-off of commercial real estate loans, commercial and industrial loans, and total loans were identified by inspection of quarterly loan data. These periods were related to the appearance in the call report of abnormal levels of nonperforming assets and net write-offs for the same loan categories. They were also related to abnormal provisions of reserves for loan losses and to any sharp declines in net income, both before and after considering the provision for loan losses. All items were measured as percentages of total assets except when determining periods of loan growth or shrinkage, when dollar changes by quarter were examined.

In order to demonstrate that commercial real estate loan concentrations were closely associated with the development of credit problems that led to problem status and often to failure, failed banks were compared to all surviving banks, both those that became problems and those that did not, in terms of commercial real estate loan concentrations and nonperforming real estate assets. Changes in capital ratios were analyzed using the ratio of tier 1 capital to assets.[24] A modified measure was also employed, adding the full reserve for bad debts to capital and deducting nonperforming assets, as a percentage of total assets. Changes in supervisory ratings were obtained for most banks in the study and related to the timing of other events. In addition, FDIC loss estimates were obtained for most failed banks and related to final call report data just prior to failure. Stock price changes before and after the nonperforming asset threshold were examined for those few institutions where data were readily available, as described in Appendix D.

[23] Data are reported separately in the call report for construction and land development loans and for real estate loans on nonfarm, nonresidential properties. In theory, a more sensitive measure of concentrations in particularly risky loans would focus on the construction and land development component. Much project financing is reported in the nonresidential properties component, however, and "commercial real estate loans" as used in this study is the combination of the two. Multifamily properties (5 or more units) are included in commercial real estate, although this was a major component in few banks.

[24] Tier 1 capital is essentially equity capital; it excludes loan loss reserves (reserves established against possible loan losses).

Appendix B:
Listing of Failed Banks Studied

Bank Name	Location	Nonperforming Threshold[a]	Asset Size at Threshold ($ millions)	Month of Failure	Estimated Cost to FDIC ($ millions)
Mature Commercial Banks					
Housatonic B&TC	Ansonia, CT	March 1989	$ 90	July 1991	$ 15
Citytrust	Bridgeport, CT	June 1989	2,567	August 1991	490
National Ind Bk of Conn	Meriden, CT	March 1988	77	November 1989	9
Merchants B&TC	Norwalk, CT	March 1989	335	February 1991	89
Fairfield County TC	Stamford, CT	March 1988	166	April 1992	19
Bank of New England[b]	Boston, MA	March 1989	15,030	January 1991	626
Connecticut B&TC NA[b]	Hartford, CT	September 1989	9,906	January 1991	417
Maine NB[b]	Portland, ME	September 1989	1,290	January 1991	35
Capitol B&TC	Boston, MA	December 1986	607	December 1990	163
Coolidge B&TC	Boston, MA	March 1989	385	October 1991	67
Massachusetts B&TC	Brockton, MA	December 1990	89	July 1992	7
University Bk NA	Cambridge, MA	June 1989	396	May 1991	117
Merchants NB	Leominster, MA	September 1989	198	December 1991	36
Malden TC	Malden, MA	March 1988	332	May 1992	18
Home NB of Milford	Milford, MA	June 1988	508	June 1990	90
Guaranty–First TC	Waltham, MA	March 1988	483	November 1992	55
Family B&TC	Allenstown, NH	September 1989	44	September 1991	10
City B&TC	Claremont, NH	December 1988	131	March 1991	43
Durham TC	Durham, NH	March 1989	80	November 1991	9
Bank Meridian NA	Hampton, NH	June 1989	136	October 1991	20
Nashua TC	Nashua, NH	June 1989	391	October 1991	65
Somersworth Bk	Somersworth NH	September 1989	163	June 1992	16
Eastland Bk	Woonsocket, RI	September 1989	129	December 1992	0[c]
Mature Savings Banks					
Bank Mart	Bridgeport, CT	December 1988	712	December 1991	87
Burritt Interfinancial Bancorp	New Britain, CT	September 1990	701	December 1992	60
Connecticut Svg Bk	New Haven, CT	March 1989	1,270	November 1991	112
Bank Five for Svg	Arlington, MA	September 1989	472	September 1991	97
First Mutual Bk for Svg	Boston, MA	March 1989	1,361	June 1991	223
Merchants Bk of Boston	Boston, MA	March 1989	496	May 1990	105
Workingmens Co-op Bk	Boston, MA	June 1988	254	May 1992	13
Beacon Co-op Bk	Brighton, MA	March 1989	31	June 1991	6
Coolidge Corner Co-op Bk	Brookline, MA	September 1988	97	March 1991	14
New England AllBk for Svg	Gardner, MA	March 1986	203	December 1990	34
Central Svg Bk	Lowell, MA	December 1988	424	February 1992	64
Milford Svg Bk	Milford, MA	September 1988	349	July 1990	142
Granite Co-op Bk	North Quincy, MA	March 1989	130	December 1991	39
Randolph Co-op Bk	Randolph, MA	December 1987	51	July 1989	0[d]
Winchendon Svg Bk	Winchendon, MA	September 1988	88	August 1992	5
Maine Svg Bk	Portland, ME	September 1988	1,748	February 1991	215
New Hampshire Svg Bk	Concord, NH	September 1988	1,104	October 1991	197
Amoskeag Bk	Manchester, NH	June 1988	1,494	October 1991	150
Bankeast	Manchester, NH	March 1989	1,085	October 1991	105
Dartmouth Bk	Manchester, NH	March 1988	535	October 1991	336
Iona Svg Bk	Tilton, NH	December 1989	36	October 1991	5
Attleboro–Pawtucket Svg Bk	Pawtucket, RI	December 1987	809	August 1992	60

Appendix B:
Listing of Failed Banks Studied continued

Bank Name	Location	Nonpeforming Threshold[a]	Asset Size at Threshold ($ millions)	Month of Failure	Estimated Cost to FDIC ($ millions)
Recently Converted Savings Banks					
Brooklyn Svg Bk	Danielson, CT	September 1989	150	October 1990	25
Central Bk	Meriden, CT	December 1989	800	October 1991	222
First Constitution Bk	New Haven, CT	March 1989	2,336	October 1992	127
Suffield Bk	Suffield, CT	June 1989	353	September 1991	96
Eliot Svg Bk	Boston, MA	December 1988	529	June 1990	223
1st American Bk for Svg	Boston, MA	December 1987	688	October 1990	182
Southstate Bk for Svg	Brockton, MA	December 1988	343	April 1992	16
Heritage Bk for Svg	Holyoke, MA	June 1989	1,906	December 1992	15
Vanguard Svg Bk	Holyoke, MA	December 1988	516	March 1992	102
First Service Bk for Svg	Leominster, MA	December 1987	785	March 1989	265
Lowell Inst for Svg	Lowell, MA	September 1988	470	August 1991	127
Bank for Svg	Malden, MA	March 1988	452	March 1992	12
Plymouth Five Cents Svg	Plymouth, MA	December 1988	339	September 1992	10
Landmark Bk for Svg	Whitman, MA	June 1988	94	June 1992	10
Woburn Five Cents Svg Bk	Woburn, MA	March 1988	268	June 1991	68
Seacoast Svg Bk	Dover, NH	March 1989	107	August 1992	4
Eastland Svg Bk	Woonsocket, RI	September 1989	855	December 1992	48
New Banks					
Greenwood Bk of Bethel	Bethel, CT	June 1990	35	November 1992	8
Harbor NB CT	Branford, CT	March 1990	29	October 1991	4
Brookfield Bk	Brookfield, CT	September 1989	62	May 1992	22
Connecticut Valley Bk	Cromwell, CT	March 1990	33	October 1991	10
Bank of East Hartford	East Hartford, CT	September 1990	53	December 1991	13
Enfield NB	Enfield, CT	June 1990	31	August 1991	5
Community NB	Glastonbury, CT	March 1988	107	January 1991	28
Whitney B&TC	Hamden, CT	December 1989	52	April 1991	30
Landmark Bk	Hartford, CT	September 1989	286	March 1991	51
Sentinel Bk	Hartford, CT	September 1989	97	January 1992	17
Norwalk Bk	Norwalk, CT	March 1990	88	April 1992	8
Saybrook B&TC	Old Saybrook, CT	September 1988	103	December 1991	23
Summit NB	Torrington, CT	September 1989	94	April 1992	23
Vernon Bk	Vernon, CT	December 1989	26	June 1992	2
Colony Svg Bk	Wallingford, CT	September 1988	46	February 1992	7
Blackstone B&TC	Boston, MA	June 1989	68	March 1991	15
Boston Trade Bk	Boston, MA	June 1989	351	May 1991	143
Olympic Intl B&TC	Boston, MA	June 1989	226	June 1992	39
New Heritage Bk	Lawrence, MA	March 1989	70	March 1992	12
Shore B&TC	Lynn, MA	March 1989	156	April 1992	17
Midcounty B&TC	Norwood, MA	March 1988	37	September 1991	21
Hillsborough B&TC	Milford, NH	September 1989	64	August 1991	34
Atlantic TC	Newington, NH	June 1987	19	January 1992	8
United States Svg Bk	Seabrook, NH	March 1987	12	July 1990	2
Valley Bk	White River Jnct, VT	June 1989	43	September 1991	13
Totals			$60,162		$6,588

[a]Quarter end when nonperforming commercial real estate assets (commercial and industrial loans or the total of the two categories in some cases) should have been recognized as above the normal range.
[b]Bank of New England Corporation subsidiary.
[c]Apparently included in cost for affiliated Eastland Savings Bank.
[d]A Massachusetts private insurer will absorb the entire loss in this case.

Appendix C: Evidence on the Relative Contributions of Commercial and Residential Real Estate to New England Bank Credit Problems

Bank call reports (quarterly reports of condition to supervisors) began in March 1991 to show nonperforming and charge-off (write-off) data for real estate loans by type of property. These data were examined for the 62 banks that failed after filing at least one report following the change. The data confirmed for 34 of these banks that commercial real estate was far greater a problem than residential real estate. In one bank, the mix of nonperforming real estate assets was relatively balanced, 40 percent in one- to four-family residential, 9 percent in multifamily, and 51 percent in other commercial real estate loans and properties. Six new banks included in the 62 banks reporting were primarily damaged by commercial and industrial loans, but the data confirmed that secondary real estate problems in two of these were attributable to commercial real estate loans.

The new data were not sufficient to confirm the type of real estate that caused the failure of the remaining 21. The new data began so late in the development of these problems that most of the nonperforming loans were already in the form of foreclosed property, for which no breakdown was available, and major real estate write-offs were not taken in the final quarters before failure. Since each of these 21 banks had a very high concentration in commercial real estate loans prior to the surge in nonperforming real estate, a strong basis exists for the assumption that commercial real estate loans were the cause of their failure.

Additional direct evidence obtained from annual reports of bank holding companies demonstrated the dominance of commercial real estate problems in five more banks, and various supervisory materials and press reports show the same for additional failed banks. No evidence was found that any of the banks failed because of residential real estate problems, although that cannot be ruled out entirely.

Indirect evidence on the subject includes the following:

1. Annual report schedules for several of the larger surviving bank holding companies that experienced severe real estate loan problems show breakdowns by type of property for nonperforming loans, foreclosed property, and/or write-offs. In each case the damage was overwhelmingly attributable to commercial real estate loans.

2. FDIC data (*Quarterly Banking Profile*) show that noncurrent loans and charge-offs in banks in the Northeast region were much higher for commercial real estate loans than for residential loans in the past three years. Also, a disaggregation of foreclosed property, incorporated into call reports in June 1992, shows a preponderance of commercial property.

3. Residential mortgage delinquency data published by the Mortgage Bankers Association (*National Delinquency Survey*) show that New England had the lowest delinquency and foreclosure rates in the country in 1988 and 1989. Although these measures deteriorated steadily in New England from 1988 to 1991, the region's delinquency rate was still below the national average at the end of 1991, although by that time the foreclosure statistics had moved above the average.

To some extent the earlier deterioration in these statistics may reflect problems with investor-owned condominiums. By 1991, the regional recession, with widespread layoffs and an illiquid housing market, was causing higher numbers of foreclosures. Thus, most of the problems related to owner-occupied residential properties came after the banks in this study were close to failure.

Appendix D: Stock Market Reaction

In an earlier study the author demonstrated that stockholders and debt rating agencies consistently failed to act against risk concentrations until actual credit problems emerged (Randall 1989). That study covered 40 large BHCs that failed or experienced serious difficulties in the period from late 1979 to mid 1987. The current study of New England bank failures did not systematically analyze the timing of stockholder reactions or debt rating changes. Sixteen banks with assets of approximately $4.3 billion were mutual institutions, and several others were relatively small banks whose stock prices were not readily available. Nonetheless, some observations can be made based on a review of seven failing New England BHCs whose bank assets represent 62 percent of the assets of all stockholder-owned banks in the study.[25] In each case all, or nearly all, of the ultimate decline in stock prices took place after the level of nonperforming assets had moved above the thresholds used in this study.

Bank of New England's average stock price was generally somewhat lower in 1988 than in the previous two years, but did not penetrate the lows of those years until late in 1989, about the time that its shockingly large loan loss provision was announced, and well after the March 1989 nonperforming threshold used here. Two New Hampshire BHCs experienced sharp drops in the price of their stocks in late 1987 as a result of losses in equity investments unrelated to their subsequent credit problems, but the big declines came after the credit problems emerged. Another experienced a similar drop in stock price in late 1987, apparently for the same reason.

While this analysis of stock prices was not rigorous, the results are consistent with the earlier study, in that no evidence was found that the stock market anticipated major credit problems despite the heavy loan concentrations and increasingly overbuilt real estate markets.

[25] The seven BHCs are Amoskeag Bank Shares, Inc., Manchester, NH; Bank of New England Corporation, Boston, MA; BankEast Corporation, Manchester, NH; City Trust Bancorp, Inc., Bridgeport, CT; Dartmouth Bancorp, Inc., Hooksett, NH; 1st American Bancorp, Inc., Boston, MA; and New Hampshire Savings Bank Corporation, Concord, NH.