

The Use of Capital Ratios to Trigger Intervention in Problem Banks: Too Little, Too Late

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A wave of depository institution failures and dramatic losses to deposit insurance funds occurred in the 1980s and continued into the early 1990s. In response, the Congress passed a series of bank regulatory acts intended to address the problems that led to the crisis and prevent its recurrence. The Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) was the capstone of this transformation of banking legislation. Two key provisions of FDICIA were designed specifically to reduce the cost of troubled banks to the deposit insurance fund—early closure of failing institutions and early supervisory intervention in problem banks, the latter referred to as prompt corrective action.

The prompt corrective action (PCA) legislation was intended to supplement existing supervisory authority and make intervention by bank supervisors both more timely and less discretionary. To limit supervisory forbearance, delay or failure to take appropriate action at financially troubled banks, the legislation requires mandatory action by bank regulators at those problem banks that potentially could risk deposit insurance funds. One important requirement for effective early intervention is the ability to identify problem banks early enough to give supervisory intervention an opportunity to affect bank behavior before it is “too late.”

A second requirement is to act on that identification in a timely manner. By legislating mandatory intervention, PCA is intended to fill the gaps in the preexisting regulatory intervention framework. In order to minimize the potential for forbearance, mandatory intervention should occur at the time regulators determine that a bank fits the profile of a problem bank with a high probability of failure, putting the deposit insurance fund at risk. Any delay in intervening, once such a problem bank has been identified, is a form of forbearance. Thus, a critical component of PCA is the trigger that initiates mandatory actions by regulators, reported capital ratios. Rules based on such thresholds can be

simple to follow and politically expedient, but several recent studies (for example, Jones and King 1992, 1995) have argued that capital ratios frequently are a lagging indicator of banking problems and often fail to identify severely troubled institutions in a timely manner. If capital ratios do not identify problem institutions early, then prompt corrective action will fall short of its potential for protecting the deposit insurance fund.

This article considers whether the capital ratio thresholds that trigger PCA intervention provide sufficient lead time for successful intervention at troubled banks. The study finds that because PCA is based on a lagging indicator, it is likely to trigger intervention in problem banks only after they have been identified by examiners. Because they rely on far more

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information than the capital ratio, examiners often are aware of problems well before a bank becomes "undercapitalized" as defined by the PCA provisions contained in FDICIA. Since PCA is intended to supplement actions already taken by examiners, it is reassuring that examiners usually identify problems before PCA guidelines are triggered. Ideally, supervisory intervention will occur early enough to avoid more significant problems. By intervening early to alter bank behavior, it is hoped that failures can be prevented, minimizing the need for FDIC assistance, and if not, that failure results in the minimum cost to the deposit insurance fund.

Requiring reported data to more accurately reflect a bank's financial health would improve rules that use reported capital ratios to trigger intervention in problem institutions. Still, no simple capital rule can substitute for examiner judgment based on more comprehensive information. Nonetheless, we find that raising the PCA capital ratio thresholds that identify undercapitalized banks would enable the intervention trig-

gered by PCA to mimic more closely the timing of examiner identification of problem banks.

The first section of the article discusses early intervention in problem banks under PCA. The second section examines the identification of problem banks using examiner ratings. The third section considers alternative triggers and shows that triggers based on CAMEL rating downgrades would be superior to the current PCA capital ratio thresholds for mandatory intervention in problem banks. The fourth section summarizes the policy implications of the findings and the final section presents conclusions.

I. Identification of Problem Institutions under PCA

To be effective, supervisory intervention must occur while enough time remains to alter a problem bank's behavior. Not only must the signal that triggers the need for intervention identify problem banks accurately, it must also be timely. It is easy to identify a problem bank at the time of its failure. The challenge is to identify a problem bank in time to prevent its failure or at least in time to alter its behavior in order to limit the losses to the deposit insurance fund. Thus, an appropriate slogan for early intervention might be "the earlier the better." However, such an approach must be tempered by giving appropriate weight to the costs associated with supervisory intervention in banks that are incorrectly identified as "troubled." Earlier identification of potential problem banks will likely be associated with a larger number of non-troubled banks inadvertently being identified as troubled, and the selection of an appropriate trigger for supervisory intervention must recognize this trade-off.

Prompt corrective action as defined in FDICIA identifies a problem bank in need of intervention on the basis of its reported capital ratio.¹ Table 1 highlights the major features of the prompt corrective action provisions. Banks are classified according to their capital adequacy. Banks with total risk-based

¹ Capital thresholds are stated in the prompt corrective action provisions of FDICIA in terms of both leverage ratios and risk-based capital ratios. This study focuses only on leverage ratio thresholds. First, risk-based capital ratios are not available before 1990. Second, for the period in New England under study here, a 6 percent leverage ratio, as generally mandated in formal regulatory actions for troubled institutions, tended to be the binding constraint on capital-constrained banks, rather than the risk-based capital ratios. This is consistent with evidence on nationwide samples that leverage ratios and not risk-based capital ratios affected bank behavior (for example, Hancock and Wilcox 1994).

Table 1
Prompt Corrective Action

This table highlights the major features of prompt corrective action contained in FDICIA. Banks are classified according to their capital adequacy. Only major restrictions are described; other restrictions and discretionary actions by supervisors can be applied.

Categories	Capital Thresholds ^a	Major Restrictions
1. Well Capitalized	RBC \geq 10% and LR \geq 5%	None
2. Adequately Capitalized	RBC \geq 8% and LR \geq 4%	None
3. Undercapitalized	RBC < 8% or LR < 4%	<ol style="list-style-type: none"> 1. Capital restoration plan 2. Suspend dividends 3. Restrict asset growth 4. Prior approval for expansion
4. Significantly Undercapitalized	RBC < 6% or LR < 3%	<ol style="list-style-type: none"> 1. Require recapitalization 2. Restrict transactions with affiliates 3. Restrict interest rates paid 4. Further restrict asset growth 5. Prohibit deposits from correspondents 6. Hire, replace senior management
5. Critically Undercapitalized	$\frac{\text{tangible equity}}{\text{total assets}} \leq 2\%$	Receivership or conservatorship within 90 days unless exempted by primary regulator and FDIC

^aRBC = risk-based capital ratio: total capital, including equity, subordinated debt, and preferred stock, divided by risk-weighted assets.

LR = leverage ratio: tier 1 capital, including equity capital, divided by total average assets.

capital ratios of 10 percent or more and (tier 1) leverage ratios equal to or above 5 percent are considered well capitalized and have no significant mandatory restrictions on activities. Banks with total risk-based capital ratios of 8 percent or higher and leverage ratios of 4 percent and above are rated adequately capitalized and have no substantial mandatory restrictions on activities. Banks with risk-based capital ratios below 8 percent or leverage ratios below 4 percent are considered undercapitalized; they have restrictions on dividends and on asset growth, and they must provide a capital restoration plan. Banks with risk-based capital ratios below 6 percent or leverage ratios below 3 percent are rated significantly undercapitalized and, in addition to the restrictions for undercapitalized banks, face further restrictions on asset growth and on interest rates paid. They also must recapitalize and senior management may be replaced.

PCA is likely to be most effective if the specific capital targets are set so as to trigger intervention that is sufficiently prompt to reduce the costs to the Federal Deposit Insurance Corporation (FDIC). However, a number of studies have indicated that the leverage ratio can better be described as a lagging indicator of

a bank's financial health, rather than a leading or even coincident one. (See, for example, Jones and King 1992, 1995.) Because capital is a lagging indicator and examiners utilize information beyond capital ratios when taking supervisory action, the PCA triggers rarely identify problem institutions before examiners.

This appears to be an accurate characterization of the period surrounding the recent banking crisis in New England. Figure 1 shows, for the period from the first quarter of 1988 to the fourth quarter of 1994, the share of New England banks with non-performing loans (loans more than 90 days past due plus nonaccruing

loans) in excess of 5 percent of their assets, the share of banks with a leverage ratio below 4 percent, and the number of New England bank failures. Clearly, New England banks began having serious problems with their loan portfolios well before those problems were reflected in their capital ratios.

In part, this is because reductions in reported leverage ratios associated with the deterioration in a bank's health are often delayed until the bank undergoes a supervisory examination. Banks tend to be slow to provision for possible loan losses (which, other things equal, reduces their capital), often adding to loan loss reserves only after the problems have been identified, rather than in anticipation of problems. In fact, reported leverage ratios for troubled banks that have not been subjected to a supervisory examination often overstate the institution's financial health. Consequently, many banks experience a large reduction in their reported capital ratios as a consequence of requirements to charge off loans and replenish loan loss reserves that are imposed after an examination (Peek and Rosengren 1996).

Thus, it should not be surprising to find, as shown in Figure 1, that reductions in leverage ratios below

the 4 percent threshold tended to lag behind the deterioration in bank health. But, perhaps more important, the share of banks with a leverage ratio below the 4 percent “undercapitalized” threshold barely leads the wave of bank failures. This is particularly troubling insofar as the official failure date of a bank often occurs well after its economic failure. Regulators often delay official closure after the decision has been made to allow the FDIC time to arrange the disposition of the failed bank.

It should also be noted that the number of failures may substantially understate the magnitude of the banking crisis. In many cases, as the health of individual banks deteriorates, multibank holding companies choose, or are induced by regulators, to consolidate banks within their holding company. For example, Bank of New England Corporation had 11 commercial and savings bank subsidiaries in the first quarter of 1988. By the time of its failure in January 1991, the holding company had, through affiliate mergers, reduced the number of its subsidiaries from 11 to only three. Thus, the three failures of Bank of New England Corporation subsidiaries recorded in 1991:I in a sense understate by eight the number of bank failures.

II. Identification of Problem Banks through CAMEL Ratings

Supervisory ratings of banks are another means of identifying problem banks, although the ratings are not made public. Bank supervisors rate the financial condition of a bank considering the capital adequacy, asset quality, management quality, earnings potential, and liquidity of the institution (CAMEL). Each component is evaluated on a scale from 1 to 5, with 1 the highest rating and 5 the lowest. The composite CAMEL rating, which also ranges from 1 to 5, provides an assessment by examiners of the overall strength of a banking institution.² Banks with a com-

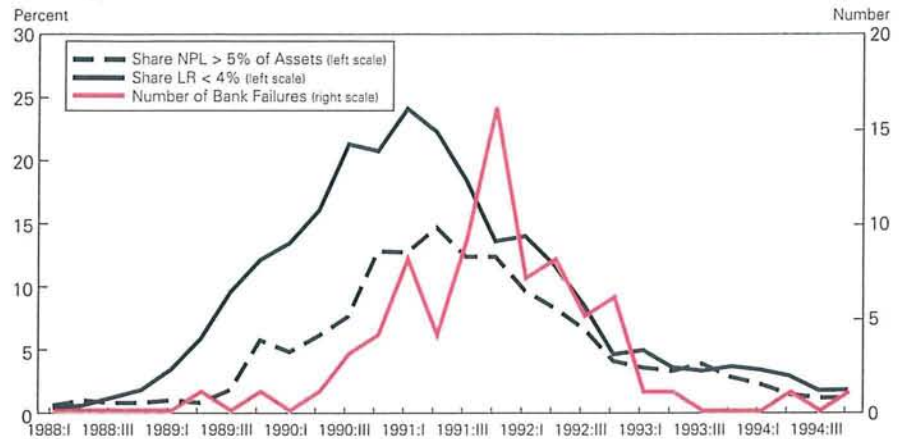
posite rating of 1 (sound in every respect, flawless performance) and 2 (fundamentally sound, only minor correctable weaknesses in performance) are resistant to external economic and financial disturbances and are not likely to be constrained by regulatory oversight. As a bank’s composite rating falls to 3 (remote probability of failure, flawed performance), 4 (potential of failure, performance could impair viability), or 5 (high probability of failure, critically deficient performance), the supervisor’s assessment of the likelihood of failure increases.

While capital is a critical component of CAMEL ratings, other elements also play a significant role. The capital position of the bank is considered in relation to the riskiness of its assets, the extent of problem assets in the bank, the severity of its problems with past due loans, the bank’s policies and controls for evaluating and monitoring interest rate and credit risk, the availability of earnings to meet the needs for growth and to cover expected losses, and the ability to meet liquidity needs based on the stability and maturity of the assets and liabilities of the bank. Even the C in the CAMEL rating considers more than the regulatory

² The composite CAMEL rating and each of the components are always evaluated at the end of a comprehensive examination. In addition, the composite CAMEL rating may be changed between examinations if off-site monitoring indicates a significant change in the financial condition of the bank.

Figure 1

Early Warning Indicators for the New England Banking Crisis



capital standards; for example, capital is considered relative to the size and type of institution.

A large number of FDIC-insured New England savings and commercial banks fell below the 4 percent leverage ratio threshold during the period from the first quarter of 1988 through the fourth quarter of 1994. Table 2 shows the CAMEL ratings at those banks at the time they fell below the 4 percent leverage ratio threshold, consistent with entering the PCA undercapitalized category. By the time banks became undercapitalized by this definition, nearly all had been previously recognized by supervisors as having serious problems. Of the 136 institutions that fell below the 4 percent leverage ratio threshold, 76 percent had CAMEL ratings of 4 or 5, indicating a high probability of failure. Even so, the CAMEL ratings were not perfect indicators, for 10 banks had a CAMEL rating of 1 or 2 at the time they fell below the 4 percent threshold.³

Table 3 shows the leverage ratio at the time of a CAMEL downgrade for all FDIC-insured New England savings and commercial banks that were downgraded to a rating of 3, 4, or 5 during the period from the first quarter of 1988 through the fourth quarter of 1994. Banks that get downgraded to a CAMEL rating of 3 or 4 tend to be adequately or well capitalized under the PCA guidelines. Particularly striking is the fact that only 15 of the 182 banks downgraded to a CAMEL 4 rating had fallen below the 4 percent leverage ratio threshold. Thus, most banks classified as having a "possibility of failure" would not have been identified as problem banks using the PCA capital thresholds.

Not only were more than two-thirds of the banks downgraded to a CAMEL 4 rating considered well capitalized at the time of the downgrade, but 31 of the banks had leverage ratios equal to or exceeding 8 percent, twice the threshold for undercapitalized banks. Even in the case of banks with a CAMEL 5 rating, representing a "high probability of failure," the problems were not fully reflected in reported capital

Table 2

CAMEL Ratings at Banks When Crossing 4 Percent Leverage Ratio

The sample of banks included in this table are all FDIC-insured New England savings and commercial banks that fell below the 4 percent leverage ratio threshold between 1988:I and 1994:IV.

CAMEL Rating	Number of Banks
1	1
2	9
3	23
4	57
5	46

ratios. Of the 115 banks downgraded to a CAMEL 5 rating, 27 had leverage ratios exceeding 4 percent. However, by the time supervisors classified banks as having a high probability of failure, most were at least undercapitalized by PCA standards.

Fortunately, supervisory intervention also occurs independent of PCA triggers. Both informal and formal regulatory actions have been imposed by regulators on many banks, particularly in recent years in New England (Peek and Rosengren 1995, 1996). Furthermore, Peek and Rosengren (1996) find that bank

Table 3

Leverage Ratio at Time of CAMEL Downgrade

Leverage Ratio	Number of N.E. Banks Where CAMEL Downgraded to: ^a		
	3	4	5
Less than 2.0	1	4	43
2.0-2.5	0	1	10
2.5-3.0	1	4	14
3.0-3.5	0	2	14
3.5-4.0	2	4	7
4.0-4.5	6	19	8
4.5-5.0	11	23	6
5.0-5.5	11	21	1
5.5-6.0	17	23	2
6.0-6.5	31	15	6
6.5-7.0	29	14	2
7.0-7.5	24	13	0
7.5-8.0	17	8	0
Greater than or equal to 8.0	86	31	2
Total	236	182	115

^aCAMEL ratings include interim changes between exams.

³ The 10 banks with a CAMEL rating of either 1 or 2 at the time they crossed the 4 percent leverage ratio threshold appear puzzling at first glance. However, this pattern can be explained in large part by the infrequent examinations at many banks prior to FDICIA, which mandated annual examinations at banks. All 10 instances occurred before the end of the second quarter of 1991. The elapsed time between the most recent examination and the crossing of the leverage ratio threshold at these banks ranged from five to 11 quarters. In the seven cases where a subsequent examination occurred prior to the bank's failure or acquisition, two banks were downgraded to a CAMEL 4 rating and five were downgraded to a CAMEL 5 rating.

Table 4

Timing of CAMEL Downgrades Relative to Crossing 4 Percent Leverage Ratio

All FDIC-insured commercial and savings banks in New England are classified as crossing a 4 percent leverage ratio or never dropping below a 4 percent leverage ratio during the 1988:I to 1994:IV period. For banks that cross a 4 percent leverage ratio, spans of eight quarters before and after crossing the threshold are examined. Negative numbers indicate the number of quarters that the CAMEL downgrade preceded the leverage ratio falling below 4 percent, while positive numbers indicate the number of quarters the CAMEL downgrade followed the leverage ratio falling below 4 percent.

Quarters until Downgrade, Relative to Crossing 4% Leverage Ratio	CAMEL Rating	
	4 ^a	5
-8	1	0
-7	2	0
-6	3	0
-5	9	1
-4	11	2
-3	12	0
-2	16	4
-1	17	8
0	25	30
1	15	28
2	5	11
3	4	10
4	0	8
5	0	1
6	0	1
7	0	0
8	0	0
Already at that rating	6	1
Already at lower rating	1	NA
Failed or acquired before reaching rating	8	10
Remained above rating	1	21
Never dropped below 4% LR	399	
But go as low as CAMEL 4	99	
But go as low as CAMEL 5	9	

^aBanks that skipped a 4 rating because they were downgraded from 3 or higher to 5 in a single quarter are included in this column, as well as in the next column.

supervisors do tend to implement formal actions prior to banks becoming undercapitalized as defined by PCA provisions. This discrepancy between the PCA thresholds and the capital ratio at which most supervisory intervention occurs suggests that examiners do not view capital alone as a sufficient statistic for bank health.

For New England commercial and savings banks, Table 4 shows the timing of CAMEL downgrades

relative to crossing the 4 percent leverage ratio threshold. The analysis considers a window that spans eight quarters before and eight quarters after a bank crosses the 4 percent leverage ratio threshold. Negative numbers indicate the number of quarters that the CAMEL downgrade preceded the leverage ratio falling below 4 percent, while positive numbers indicate the number of quarters that the CAMEL downgrade followed the leverage ratio falling below 4 percent. Of the 136 New England banks that fell below the 4 percent leverage

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ratio threshold, 78 (57 percent) of the banks (including seven already at that rating or below more than eight quarters prior to the downgrade) were downgraded to a CAMEL 4 rating before crossing the capital threshold and 25 banks (18 percent) crossed the threshold in the same quarter.⁴

Many of the downgrades occurred substantially before the reported loss of capital, with 33 banks (including the seven already at that rating or below more than eight quarters prior to the downgrade) downgraded as long as one year prior to crossing the 4 percent leverage ratio threshold. Only 24 banks (18 percent) were downgraded after crossing the capital threshold, and all of these downgrades occurred within three quarters of crossing the 4 percent leverage ratio threshold. On the other hand, many banks were viewed as problems by supervisors even though they never became undercapitalized, as defined by the 4 percent leverage ratio threshold. In fact, 99 banks that received a CAMEL 4 (or lower) rating did not fall below the 4 percent leverage ratio threshold during the sample period.

Banks are generally downgraded to a CAMEL 5 rating only after becoming undercapitalized. However, 16 banks were downgraded to a CAMEL 5 before

⁴ Banks are clustered concurrently with the downgrade because many banks are forced to reserve for loan losses (which reduces capital) as a consequence of the examination that resulted in the downgrade.

becoming undercapitalized, with another 30 banks downgraded in the same quarter that they crossed the threshold. Since a CAMEL 5 rating indicates a high probability of failure, these are the banks where the mandatory PCA restrictions should already have been in place in order to minimize the risks and costs of failure, as was intended in the PCA provisions. Nine additional banks were downgraded to a CAMEL 5 rating without ever crossing the 4 percent leverage ratio.

With the implementation of the FDICIA requirement of annual supervisory examinations, CAMEL downgrades should perform even better than in the period prior to FDICIA. With more frequent exams, CAMEL ratings will better reflect the current health of banks. Thus, as a bank's financial health deteriorates, CAMEL downgrades will tend to occur sooner. The more frequent exams should also mitigate the extent to which reported capital ratios diverge from values that accurately reflect the bank's financial health.

III. The Timing of Alternative Triggers

The regulatory intervention component of FDICIA included two changes designed to reduce the cost of troubled banks to the deposit insurance fund. The first was early closure of banks that could not be turned around, before management could undertake second bets resulting in even larger losses. The second was early intervention, changing banks' behavior early enough to ensure that they did not fail or, if they did fail, that failure resulted in minimum cost to the deposit insurance fund. Preventing failure is obviously preferable, because it avoids using any FDIC funds. However, it requires identification and intervention early enough to change bank behavior in a way that will avoid failure.

Table 5 shows the differences in the timing by which banks that eventually failed would have been identified, using five alternative criteria.⁵ We focus

⁵ The leverage threshold crossings analyzed in Table 5 are based only on data reported in the quarterly call reports. Thus, if a bank's capital declines between the time it files its last call report and the time it fails, perhaps because of examiner requirements that the bank substantially increase its loan loss reserves, that decline will not be reflected in this table. Similarly, if a bank's financial health deteriorates rapidly or if the bank is examined infrequently, the failure can occur before an examination that would reflect the weaker condition of the bank, so that the bank's CAMEL rating never reflects the poor condition of the bank. These factors likely account for the fact that the total number of failed banks that cross the 3 percent and 4 percent leverage ratio thresholds or receive a

Table 5
Timing of Identification of Failed Banks

For the 77 New England commercial and savings banks that failed between 1988:I and 1994:IV, the timing of crossing various thresholds is shown.

Quarters Identified before Failure	CAMEL Rating = 4	CAMEL Rating = 5	Leverage Ratio = 5	Leverage Ratio = 4	Leverage Ratio = 3
1-4	17	44	22	35	47
5-8	44	29	44	35	25
9-12	7	1	9	4	1
>12	7	1	2	1	1
Total	75	75	77	75	74

on failed banks to confirm that timing differences occurred for banks that were clearly troubled.⁶ Since more banks are identified as problem banks with CAMEL ratings than under PCA guidelines, we do not want timing differences to be attributed to possible misclassification of healthy banks as troubled. Ideally, the identification would have resulted in actions that prevented failure altogether.

CAMEL 4 and CAMEL 5 downgrades occurred at 75 of the 77 failed banks. The two exceptions were small banks that had not been examined for nearly two years prior to their failure. Each of the 77 failed banks crossed the 5 percent leverage ratio threshold that delineates "well capitalized" banks from "adequately" capitalized banks. Seventy-five of them also crossed the PCA 4 percent threshold to become "undercapitalized." The two exceptions were members of failed multibank holding companies with much more poorly capitalized affiliates. One additional failed bank was not identified by the 3 percent leverage ratio threshold, a small bank whose leverage ratio had fallen only slightly below 4 percent by the time of its last call report.

While the total number of failed banks identified differs little across these five alternative thresholds, the relative timing of the identification does differ, especially between the two periods one to four quarters and five to eight quarters prior to failure. The CAMEL 4 threshold dominates in terms of identifying

CAMEL 4 or 5 rating is less than the total number of New England banks (77) that failed during this period.

⁶ This study is intended to examine procedures to identify problem banks and prevent failure. While PCA also has early closure provisions, effective early intervention should minimize the need for early closure.

failed banks more than three years prior to failure, with seven banks so identified. Only the 5 percent leverage ratio threshold identifies as many as two. The CAMEL 4 threshold again is the winner for more than two years, with a total of 14 banks. Again, the 5 percent leverage ratio is the runner-up, with 11 banks identified. The PCA leverage ratio threshold of 4 percent for undercapitalized banks manages to identify only five banks more than two years prior to failure.

Each of the alternative thresholds identifies a substantial number of failed banks five to eight quarters prior to their failure. However, the sum of banks identified more than a year prior to failure is still dominated by CAMEL 4 downgrades, with 58 banks identified, and the 5 percent leverage ratio threshold, with 55 banks identified. The PCA 4 percent threshold comes in a distant third, with 40 banks identified. Of the 75 banks that crossed the 4 percent leverage ratio threshold, the minimum capital ratio for supposedly adequately capitalized banks, 35 failed within one year of crossing the threshold. This compares to only 17 of the 75 institutions downgraded to a CAMEL 4 rating that failed within one year of the downgrade.

If one purpose of PCA intervention is to prevent forbearance by regulators that allows second bets at troubled institutions, both a downgrade to a CAMEL 4 rating and the crossing of a 5 percent leverage ratio threshold would seem more appropriate thresholds than the 4 percent leverage ratio now specified for the corrective actions contained in the PCA provisions of FDICIA. Both thresholds identify problem banks much earlier than a 4 percent leverage ratio threshold, with the CAMEL 4 threshold having a slight advantage over the 5 percent leverage ratio. For many banks, falling below the 4 percent leverage ratio threshold, now the minimum capital ratio for a bank to be deemed adequately capitalized, has been quickly followed by failure, before any serious attempt could be made to alter bank behavior. Most of the PCA early intervention restrictions apply only after the bank has fallen below the 4 percent threshold, and supervisory intervention based solely on PCA provisions likely would be too late to prevent failure.

However, raising leverage ratio thresholds for defining problem banks can be costly if too many banks are identified as problem banks. Examiner resources are limited, and it is important to concentrate on banks with high probabilities of failure. Also, to the extent that remedial actions are costly for the

bank, such actions should not be imposed on banks with little likelihood of failure. Unfortunately, it is difficult to identify the number of banks that posed little problem of failure and were falsely identified as problem banks. While 224 banks (of which 75 subsequently failed) in our sample fell to a rating of CAMEL 4, only 183 banks (of which 77 subsequently failed) fell below a leverage ratio of 5 percent. (157 banks received both a CAMEL rating of 4 and a leverage ratio below 5 percent.) It may be that successful intervention by examiners prevented some banks' capital from falling further. While identifying too many banks as problems has a cost and is a potential risk in introducing higher thresholds, we do not have an estimate for the size of these costs.

IV. Policy Implications

Prompt corrective action can best reduce regulatory forbearance by causing regulators to intervene early in problem banks. Examiners evaluate asset quality, management, earnings potential, and liquidity in addition to capital when they identify banks with a high probability of failure. Since examiners use far more information than capital ratios to identify

Because examiners want actions to occur early enough to alter behavior to prevent failure, proposals to raise PCA capital ratio triggers, or to set them based on CAMEL ratings, would still serve only as a supplement to existing examiner actions.

problem banks, it should not be surprising that examiner rating downgrades tend to identify problem banks earlier than the PCA capital ratio thresholds as currently stated. Thus, earlier PCA intervention in problem banks could be achieved by altering the PCA triggers to make them more closely mimic the timing of problem bank identification by examiners.

One possibility is to use CAMEL rating down-

grades, rather than capital ratios, as the trigger for PCA intervention. Reported capital ratios are lagging indicators of bank health, in part because some banks have not fully reflected likely future losses in their loan loss reserve. CAMEL ratings do not suffer from this drawback, since they include an evaluation of the bank's capital ratio as well as an evaluation of other factors that examiners believe indicate whether additional problems exist.

In fact, evidence suggests that examiners do have information that is superior to publicly available data such as reported capital ratios, loan loss reserves, and nonperforming loans. For example, a number of studies have found that CAMEL ratings provide information about troubled banks that is not publicly available (Berger and Davies 1994; Gilbert 1993; Gilbert and Park 1994). This should not be surprising, since banks are a repository of private information about their loan customers (for example, James 1987) and this information can be evaluated only by examining a bank's loan files. Furthermore, given that bank management has an incentive to disclose to the public positive rather than adverse information about bank operations, the informational advantage should be even greater for problem banks. Consistent with this hypothesis, Berger and Davies (1994) have found that examination downgrades reveal unfavorable private information about a bank's condition.

A second possibility for earlier PCA intervention is to raise the leverage ratio threshold that triggers the mandatory PCA intervention, for example, to 5 percent. The current 4 percent trigger appears to be too low, resulting in mandatory intervention that would tend to occur only well after the identification of a problem bank by examiners, substantially limiting the potential for PCA legislation to mitigate any possible supervisory forbearance. Such a change is attractive because it retains the characteristic of being a simple rule that is based on a measure that is publicly available and thus verifiable.

Either of these simple proposals would lower the hurdle for intervening in banks.⁷ Because examiners want actions to occur early enough to alter behavior to prevent failure, these proposals would still serve only as a supplement to existing examiner actions. Ideally, PCA would not be binding, because examiners would

take action well before capital ratios reached even these higher minimum standards.

V. Conclusions

The prompt corrective action provisions of FDICIA are intended to prevent supervisory forbearance by requiring mandatory intervention in problem banks that have an incentive to take second bets. This legislation is intended to supplement rather than replace the preexisting supervisory intervention framework that includes informal and formal regulatory actions. However, should supervisory forbearance occur, the PCA triggers as currently formulated are likely to ensure that the mandatory intervention requirements will fall far short of their potential. Because the capital ratios that are used as the PCA triggers are lagging indicators of a bank's financial health, the intervention will tend to occur well after examiners identify problems at a bank and, in many cases, leave little time for the intervention to affect bank behavior before it is too late. Of the banks that cross the PCA 4 percent leverage ratio threshold that triggers significant restrictions on their behavior, many fail subsequently, and the failure frequently occurs within one year of crossing the threshold.

PCA triggers that more closely mimic the timing of problem bank identification by examiners would result in more timely intervention in problem institutions. Examiners use far more information than just capital ratios to determine a bank's likelihood of failure. Setting PCA triggers based on CAMEL ratings, or raising the PCA capital ratio triggers, are possible changes that could lead to earlier PCA intervention in problem institutions, encouraging preemptive action that would avoid bank failures requiring deposit insurance funds.

⁷ Other, more complicated proposals also have been suggested. For example, Jones and King (1995) suggest adjusting reported risk-based capital ratios to make them more accurately reflect a bank's financial health, by using information on classified loans to adjust the allowance for loan and lease losses (and hence capital) and by raising the risk weights for classified assets. However, even the simple proposals suggested here can provide an improvement over the current PCA triggers.

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