

Panel 2

Off-Site Surveillance Systems

Off-Site Surveillance Systems in the 1980s and Lessons for the Future

Robert B. Avery*

Let me begin my discussion by commending the FDIC and its staff for preparing the studies presented as part of this symposium. These represent an extraordinary effort on their part to provide a retrospective evaluation of banking supervision and regulation in the 1980s. The papers present a lot of information that has heretofore not been made public. As one who continually struggles with making sense of bank Call Report data I realize how difficult it is to cull meaningful conclusions from inherently noisy and idiosyncratic data. They are to be commended on their efforts. These are extremely useful and interesting studies.

I want to focus my remarks on two broad questions: (1) what is the purpose of off-site monitoring? and (2) what lessons can be learned from the past 15 years that can be used to improve off-site monitoring in the future? Let me begin with the first question.

The FDIC staff study on off-site monitoring focuses most of its attention on evaluating the success of off-site methods in forecasting long-term bank failure. They examine the ability of statistical models based primarily on Call Report data to forecast bank failure (or problem bank status) two to five years in the future, basing their models on the experience of the 1980s. The models they test are not the models that were actually in place at the time, but ones that have been estimated subsequently. Their evaluation suggests that these models are likely to

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have very limited success; that for every bank correctly forecast as failing in five years we will have eight to 14 that are forecast to fail but don't. I think that is a pretty good indication of the limits of the capability of such models. Augmented with local economic information (as the FDIC is currently initiating), I suspect we can do marginally better. But we are still likely to have substantial "type two" errors, or banks that are forecast to fail and don't.

Does this indicate that off-site long-term forecasting has limited value? Not necessarily, but only if we are willing to act on the basis of long-term forecasts and to tolerate substantial type two errors. That is, if we identify banks that have a higher risk for failure in five years, but are currently solvent, would we be willing to enforce changes in their behavior—to make them hold more capital or make other changes? If regulators are not willing to do that, then there is a real question as to whether or not we should be devoting resources to identifying those banks, even with low type two error rates. In other words, unless we actually act on the information we collect or gather, it may not be worth devoting a lot of time to such an effort.

There is also a question about whether long-term forecasting need be done exclusively off-site. Examination data can be tailored to this objective. Indeed, the new "risk evaluation" procedures are a step in this direction. Long-term forecasting is probably best done combining statistical and examination inputs.

Long-term forecasting needn't be the sole or primary purpose of off-site monitoring. The FDIC staff study also discusses the success of the banking agencies' models used to evaluate each new Call Report filing. These "short run" off-site models sift the data in a number of ways, such as comparisons within peer groups, in an attempt to identify those banks that appear to be reporting a material change in their condition since the previous Call Report or the previous exam. Although the staff study does not spend as much time evaluating success in this area as in long-term forecasting, my casual sense is that the short-run agency models do a pretty good job. It is unlikely that a bank would report a large material change in its Call Report and not get flagged.

The development of off-site monitoring methods has probably suffered because of an ambiguity about whether their purpose is long- or short-run forecasting. If the purpose of such methods is to forecast which banks will fail next year or have CAMEL downgrades, then the models should probably be built around identifying which banks are similar to other banks failing right now or currently

being downgraded. On the other hand, long-run forecasting models are likely to be based more on fundamentals and needn't be continually re-estimated. The information that one would need to address these two objectives is potentially different, and would not necessarily be jointly produced by the same data-gathering system.

There is clearly a need to clarify the primary purpose of off-site monitoring. The answer probably lies in one's faith in the examination system. If one believes that on-site exams provide the most useful and accurate forecasts of long-term bank health, then the purpose of off-site monitoring would likely be seen as complementary to the exam system and very short-run in nature. On the other hand, if exams are thought to be useful primarily in assessing the current condition of a bank, then it might be appropriate to use off-site methods for long-term forecasts. Here, though, the issue of the willingness to act on this information needs to be broached.

I believe that the strongest case for off-site monitoring can be made for short-run forecasting. In an era when federal examiners may visit a bank only once in three years there is a strong need to develop methods to monitor banks between exams. In the remainder of my remarks I want to focus on ways that such a short-run forecasting tool might be improved and what issues need to be addressed before improvements could be made.

The first issue is, what information should be used? Current models are based primarily on Call Report data. This ignores a host of other data sources. These would include: local economic data; data from the previous exam of the bank; data from exams of similar banks; and, data collected from the bank itself, such as internal risk reports; data from market observers, such as prices of the bank's bonds and equity. One obvious question is should these alternative information sources be used, and if so, how?

A second issue is, what structure should off-site monitoring have? Should it be centralized? Done regionally? Or, should it be the responsibility of local examiners? Should the monitoring process differ by the size of bank or institutional structure? Should individual bank activities be separately monitored or should the focus be on monitoring the overall health of the bank?

A potential guide in answering these questions may come from looking at how banks monitor their credits. Banks have very much the same monitoring problem as bank regulators. The Call Report we receive from banks is very simi-

lar to the periodic balance-sheet data banks require their borrowers to supply. Yet, clearly banks require more from their borrowers; indeed examiners would severely criticize a bank that only looked at balance-sheet data. Even if the bank developed elaborate models that worked with balance-sheet data, if that was all that they did it would be viewed as inadequate. Banks require from borrowers more information than just balance sheet data. Examiners also expect banks to independently validate information obtained from borrowers through appraisals or independent evaluations.

Another important feature of bank monitoring systems is that they differ across loan and borrower types. A commercial real estate loan will be monitored differently from an inventory loan. Banks will seek different information from these two types of borrowers. The amount of effort expended on monitoring will also differ across credits. A lot less time will be spent monitoring a loan 100 percent collateralized by a bank CD than loans to borrowers entering Chapter 11.

Also, bank off-site monitoring systems tend to be decentralized. Information such as tax reports and balance-sheet data may be gathered centrally, but the ultimate responsibility for oversight is likely to lie primarily with individual loan officers.

Lastly, and perhaps most importantly, bank monitoring is forward-looking. Banks ask questions about what might happen to a creditor. They want early indicators of credits having problems. They don't necessarily wait until a credit is nonperforming before they start serious oversight.

A number of these features of bank monitoring systems would appear to offer potential improvements to the process of off-site regulatory bank monitoring. Perhaps the most compelling case can be made for making regulatory exams also forward looking. When an examiner completes an exam, they should be asked: In what areas is this bank most vulnerable to risk? What information would be most useful to have between exams in assessing this bank's health? What signals would most likely indicate a downturn in this bank's condition? My suspicion is that the answers that examiners would give to these questions would differ from bank to bank, and their information requests would almost surely not be restricted to Call Report data.

Another potential lesson we might learn from the banks is to decentralize; to assign examiners specific responsibility for off-site monitoring between exams. My own agency is moving in this direction, and similar efforts are afoot at the

other agencies. Clearly, unless someone has the specific responsibility to monitor each bank, information is likely to fall between the cracks.

Another lesson that might be learned from banks is to utilize information gleaned from the oversight of one credit (or bank) in the monitoring of others. Bank exams tend to be done in isolation. Arguably some information does get disseminated, but channels of communication tend to be ad hoc and are particularly weak across agencies. There may be great value in sharing exam results, particularly if exam information can be systematized. The development of a joint examiner workstation just agreed to by the FDIC and Federal Reserve holds great promise for moving in this direction. Not only will the work station systematize exam reporting, but it also will allow the direct processing of individual bank loan data. If banks supplied loan files on a periodic basis between exams, it would allow us to detect changes in performance by industry and loan type. Internal bank ratings would also give clues as to changes in bank underwriting standards. There are many ways that such information could be utilized to vastly improve our off-site surveillance.

Alternative data sources also need to be developed. The FDIC's new Division of Insurance is moving in this direction. Such information can range from the macro, such as DRI forecasts, to the very localized, such as real estate reports on specific markets. We also need to rethink the information we obtain from banks. We could ask banks to fill out supplementary reports between exams that address items of specific relevance to that bank. These needn't be the same for each bank and could be tailored to their own situation.

In sum, I believe that there are a number of ways that off-site bank monitoring can be improved. None of these are likely to come to fruition, however, unless off-site monitoring is made an agency priority. It isn't enough to simply ask examiners to keep an eye on banks between exams or to compute a variety of peer group comparisons with Call Report data. We need to make it an area of focus for those in the policymaking parts of our agencies. We need to ask if we are supplying examiners and other off-site monitors with the tools and information with which to do their job. I think these are all areas in which we have much to learn and where there is much room for improvement.

Off-Site Surveillance Systems

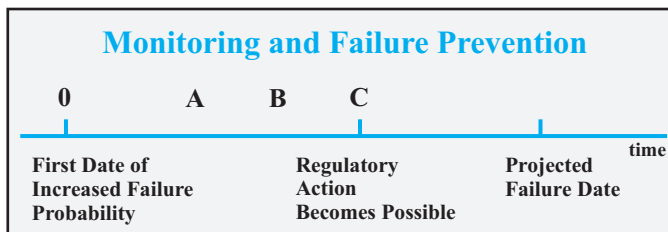
Mark J. Flannery*

Jack Reidhill and John O’Keefe (FDIC [1997]) have provided an extensive review of the issues associated with off-site supervision for U.S. commercial banks. I am impressed—even awed—by the informational detail underlying their analysis, and join the earlier speakers in congratulating the FDIC on its retrospective evaluation of this important, but not always flattering, decade in our financial history.

I would like to begin my discussion by presenting a schematic interpretation of the main concern in this paper. Figure 1 summarizes the process of identifying a problem bank and producing a regulatory response. The first relevant date is when the bank initiates the policies that will eventually place it in danger of failing. While this event passes unnoticed at the time, regulatory oversight seeks to identify such changes in bank condition or risk exposure as soon as possible.

Suppose a system of on-site examinations would identify the bank’s increased failure probability at the point B. We can describe the time from 0 to B as the exam system’s *Recognition Lag*. Anecdotal evidence strongly suggests that examiners and their supervisors cannot usually impose corrective action at B, but must wait until subsequent developments have made it obvious that the bank has a real problem. Call this interval the *Action Lag*.¹ Reidhill and O’Keefe’s paper extensively discusses whether off-site statistical modeling of banks’ quarterly Report of Condition data could shorten the Recognition Lag from [0, B] to [0, A], and this is an important question. However, policymakers should primarily be

Figure 1



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¹ The Action Lag may reflect administrative delays within the agency, or examiners’ reluctance to impose costly oversight on a bank while its accounting condition remains “good.”

concerned with the *sum* of the Recognition and Action Lags. Unless supervisors can implement corrective actions earlier than time *C*, the gains from shortening the Recognition Lag seem limited.

Reidhill and O’Keefe provide extensive analysis of several off-site monitoring systems (GMS, CAEL, FIMS) in terms of a loss function that values the number of Type I and Type II errors. Rather than evaluating the *number* of banks that are correctly identified, I would aim for a system that correctly identifies the largest proportion of problem bank *assets*. The best system for forecasting the *average* bank’s problems is unlikely to be optimal for forecasting the *largest* banks’ problems. Given that the costs of bank failures are (at least) proportional to the bank’s size, we should reconsider the paper’s equally-weighted objective function for evaluating off-site surveillance systems.

Still another question raised by Reidhill and O’Keefe (FDIC [1997]) concerns the role of on-site examinations in ensuring the accuracy of Report of Condition data. Gilbert (1993) argues that on-site bank exams materially improve the accuracy of Report of Condition data. Dahl, Hanweck, and O’Keefe (1995) find that examiners more effectively force managers to recognize loan losses than auditors do. An important question remains, however, whether private auditors could be induced to provide effective oversight in this regard. Would this be a cheaper means of producing accurate data?

These three points are little more than quibbles about a basically informative analysis of the FDIC’s supervisory efforts. The main issue I would like to discuss concerns not what the paper says, but rather what it does *not* say. I was surprised and disappointed to find no mention of a vast source of skilled workers whose talents could arguably be used to the advantage of federal bank supervisors. What is more, these analysts’ opinions could be had for free! The FDIC’s apparent failure to recognize this off-site source of opinion and judgment about individual banks’ financial conditions disquiets me, as it should all taxpayers and bank creditors.

The analysts I have in mind already customize their evaluations to reflect the varying situations of specific banks—something Reidhill and O’Keefe point out that statistical models have not done very well. Moreover, these analysts intensify their efforts when economic conditions make it most difficult to understand the condition of financial firms: when macroeconomic conditions are less predictable, or in geographic areas threatened or beset by regional recession. These

analysts are, of course, market investors and their advisers: rating agencies, stock analysts, brokers, and investment underwriters.

The FDIC's internal efforts to predict bank problems do not exist in a vacuum. Many private analysts grapple daily with the same problem, and their conclusions get reflected in bank security prices, bond ratings, institutional portfolio compositions, bank insiders' portfolio holdings, and so forth. An important policy issue concerns whether federal regulators could systematically use some of this market information to complement their own methods of identifying changes in bank condition or risk exposure. I am not suggesting that supervisors casually "look at" market data, which they clearly do for at least the largest banks. Rather, I propose that a formal integration of selected market data into the regulatory agencies' analytical systems could substantially improve the quality of the oversight they can provide.

I hope to convince you today that this question warrants serious, substantial investigation.

A. "If You Build It, They Will Come ..."

Some preliminary evidence that bank debenture-holders can identify bank risk exposures is provided in Flannery and Sorescu (1996). We collected yield data on all fixed-rate bank debentures outstanding during the period 1983–1991, and computed option-adjusted spreads over Treasury (SPREAD) as proxies for the market's assessment of individual bank failure probabilities.² Recall that Continental Illinois' crisis occurred during the summer of 1984, and precipitated the Comptroller's "too big to fail" testimony before Congress that September. The TBTF policy *de facto* applied to bank debentures until the late 1980s, when pressures on the bank insurance fund led regulators to impose losses on debenture-holders in an increasing number of problem bank resolutions.

Figure 2 plots the mean (median) value of our sample's risk premium at each year-end in the sample period. Until 1989, the typical debenture SPREAD is relatively small, but it rises sharply once debenture-holders become exposed to default losses. Similarly, Figure 3 reveals that the cross-sectional variation in SPREAD (measured as its standard deviation or the inter-quartile range) also rose after 1988.

² Avery, Belton and Goldberg (1988) and Gorton and Santomero (1990) previously evaluated the determinants of debenture risk premia for the relatively quiescent 1983–84 period.

Figure 2
Option-Adjusted SPREADs on
Subordinated Debentures

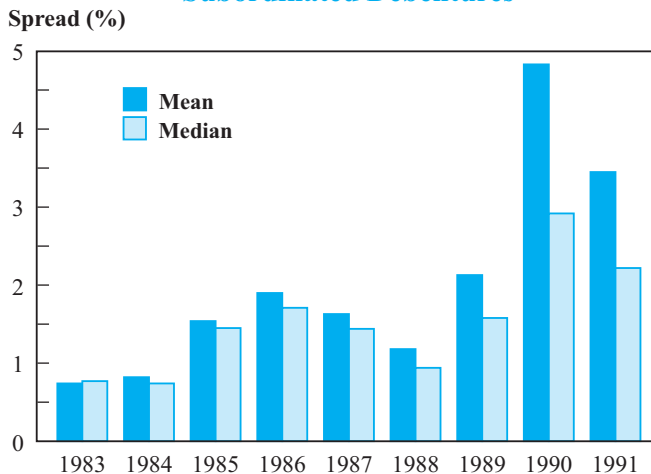
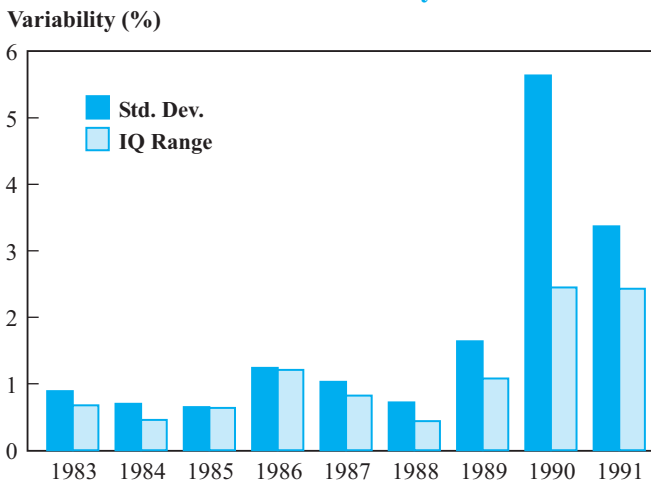


Figure 3
Cross-Sectional Variability in SPREAD



B. Do Sufficient Market Data Exist?

When the question arises whether market-based information could supplement the regulatory agencies' traditional methods, I frequently encounter two practical objections.

1. Market data are unavailable for the vast majority of U.S. banks.
2. Market assessments of a bank's condition are likely to be inferior and out-of-date, because on-site examinations uncover important inside information that outsiders cannot obtain.

I contend that the first objection is not materially correct, and that the second one has never been seriously tested.

Market Data Exist for Firms Controlling the Majority of Banking Assets

While the majority of U.S. banking companies do not have publicly traded stock or bonds, this is not true for the majority of banking system *assets*. M. Nimalendran, Simon Kwan, and I (1997) have recently assembled an extensive data set for banks with publicly traded stock.³ Coverage of the banking system for the third quarter of 1995 is illustrated in Table 1. We find that more than 15 percent of all banks are associated with holding companies whose equity shares trade on the NYSE, AMEX, or NASDAQ exchanges. More importantly, these 1,599 banks hold more than three trillion dollars in assets, comprising fully three-quarters of the U.S. banking system. Despite the fact that most banks by number have no traded equity, the banks that collectively pose the most important challenge to federal regulators' supervisory abilities are not included in that group. The fact

Table 1
Market Data Availability for U.S. Banking Firms

Sample of 344 bank holding companies with traded equity shares as of September 30, 1995.
(data from Flannery, Kwan, and Nimalendran [1997])

Primary Regulator	Number of Banks	Percentage of all U.S. Banks	Bank Assets	Percentage of U.S. Bank Assets
OCC	639	6.2%	\$1,866 billion	45.1%
Federal Reserve	246	2.4%	\$ 828 billion	20.0%
FDIC	590	5.7%	\$ 336 billion	8.1%
Other (e.g. Edge)	124	1.2%	\$ 69 billion	1.7%
Total	1599	15.4%	\$3,099 billion	75.0%

³ I am grateful to Simon Kwan for providing the numbers in Table 1.

that market data are not available for many banks does not justify ignoring them for the largest banking firms, which control 75 percent of all U.S. banking assets.

Are Private Assessments Lagging Indicators of Bank Quality?

Hard information on the relative timeliness of private vs. government information about bank quality is difficult to obtain, in large part because the regulatory agencies have generally been unwilling to share their quality assessments with academic researchers.⁴ Two Federal Reserve Board economists and I have collaborated on a research project that compares public and regulatory assessments of bank holding company condition (Berger, Davies, and Flannery [1997]). For a sample of about 180 large bank holding companies, we gathered quarterly data on market assessments of bank condition:

1. abnormal stock return,
2. proportion of common equity shares held by insiders,
3. proportion of common equity shares held by institutional (13-F) investors, and
4. the Moody's rating on outstanding debentures.

We matched these data with BOPEC ratings, the dates of on-site holding company inspections, and accounting (Y-9) information over the period 1988–1992.⁵

As one part of our analysis, Berger, Davies, and I evaluated whether market or regulatory agents could better predict future changes in three key indicators of bank condition: the fraction of outstanding loans that were nonperforming, the return on assets, and the equity capital ratio. Specifically, we regressed each bank variable on lagged values of our market assessments of bank condition, the lagged BOPEC rating, lagged dummies for the existence of an on-site examination, and lagged values of the bank's accounting ratios. If the Fed has superior information about BHC condition, we should find that BOPEC ratings change before market assessments do, and that on-site inspections tend to be scheduled before accounting data indicate potential problems.

⁴ Regulators have been reluctant to disclose current CAMEL ratings, for example, because they fear that publication of any negative assessments could become self-fulfilling prophecies, causing the affected banks to suffer even greater difficulties. While the potential publication of current CAMEL ratings raises a host of difficult questions, providing historical ratings to disinterested researchers under a pledge of confidentiality seems less problematic.

⁵ In order to ensure the confidentiality of BOPEC ratings, I was not permitted to see the raw data, but only the results of our analysis and tests, which were undertaken at the Federal Reserve Board.

The qualitative results are reported in Figures 4–6. Each figure identifies the statistically significant coefficients on lagged assessments. Rather than reporting the (relatively meaningless) coefficient values themselves, I show the proportion of the cumulative lagged effect that occurs in each quarter.

Figure 4a shows several important points about the ability of market variables to predict changes in reported ROA.

1. The BHC's abnormal stock return rises (falls) significantly one and three quarters prior to an increase (decline) in reported ROA.
2. Officers and directors change the proportion of outstanding stock in their own portfolios in each of the second, third, and fourth quarters preceding the change in ROA.
3. Institutional holdings of a BHC's stock show no change in anticipation of a change in reported ROA.

In sum, two observable market assessments of bank quality seem to predict changes in ROA.

How about regulatory assessments? These are illustrated in Figure 4b. BOPEC DN and BOPEC UP are dummy variables equal to unity if the BOPEC rating was lowered or raised (respectively) during the calendar quarter.⁶ EXAM is a dummy variable equal to unity if an on-site holding company inspection occurred during the quarter. Figure 4b indicates that only BOPEC *reductions* significantly lead changes in ROA, by one and two quarters. We find no evidence that BOPEC improvements or on-site inspections systematically precede a change in ROA.

Figures 5a and 5b report results for changes in bank NPL ratios—the ratio of nonperforming loans to total loans outstanding. Abnormal stock returns lead dNPL by one and two quarters, while insiders' and institutions' shareholdings both lead changes in NPL by two and four quarters. By contrast, EXAM has a small predictive effect at quarters t-1 and t-2, while BOPEC DN exhibits (puzzling) offsetting effects in quarters t-2 and t-3. Once again, our results indicate

⁶ The cardinal scaling of BOPEC ratings—with “1” being “best” and “5” being “worst”—inevitably creates semantic difficulties. We interpret BOPEC UP to mean an improvement in the firm's condition—e.g., a change from BOPEC=3 to BOPEC=2.

Figure 4a
dROA After Changes in Market Variables
(Only Significant Effects Shown)

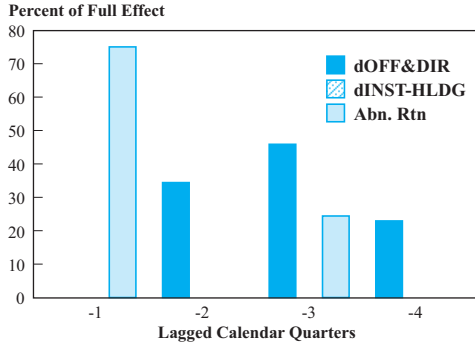


Figure 4b
dROA After Changes in Regulatory Variables
(Only Significant Effects Shown)

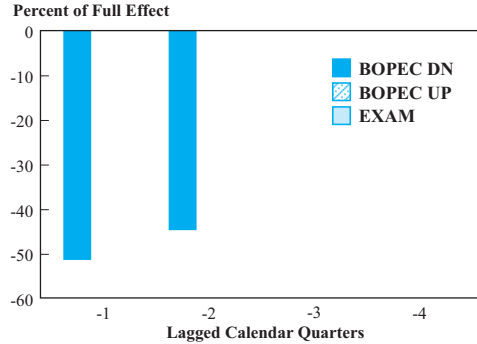


Figure 5a
dNPL After Changes in Market Variables
(Only Significant Effects Shown)

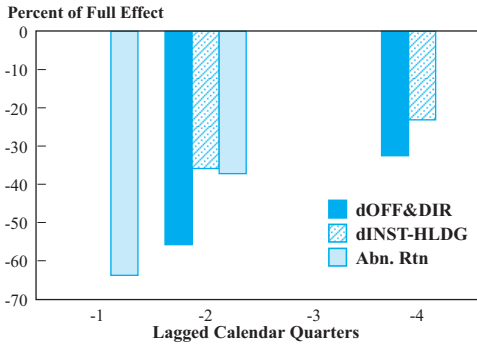


Figure 5b
dNPL After Changes in Regulatory Variables
(Only Significant Effects Shown)

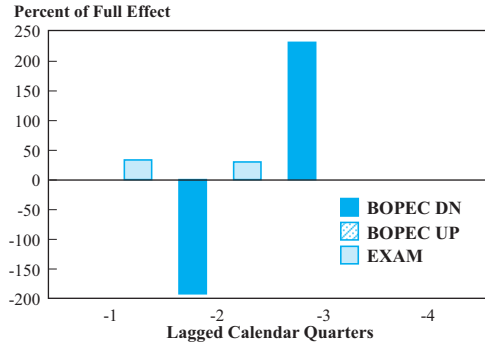


Figure 6a
dCAPITAL After Changes in Market Variables
(Only Significant Effects Shown)

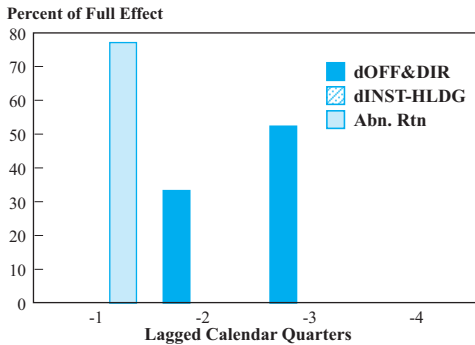
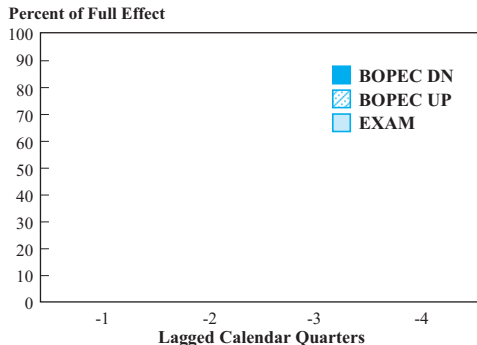


Figure 6b
dCAPITAL After Changes in Regulatory Variables
(Only Significant Effects Shown)



that market assessments of bank condition are, if anything, more predictive of changes in bank condition.

Figures 6a and 6b present similar results for changes in a bank's CAPITAL ratio (book value of equity capital divided by total assets). A high abnormal stock return tends to predict higher CAPITAL in the subsequent quarter, while the insiders' shareholdings lead changes in CAPITAL by two and three quarters. In contrast, Figure 6b shows that *none* of our regulatory variables significantly predicts changes in CAPITAL.

Taken all together, the results in Figures 4–6 suggest that market assessments of bank condition *do not* lag behind regulatory assessments. If anything, the converse appears to hold. One possibility consistent with these findings is that BOPEC ratings are not generally revised without an on-site inspection, and these inspections take time to schedule and implement. Our data cannot rule out the possibility that regulators “knew” of changes in a bank's condition, but chose to postpone formally changing the BOPEC. This possibility raises several further questions about the true meaning of BOPEC (or CAMEL) ratings. However, my basic point is that market assessments appear to have at least a plausible chance of providing timely, accurate information that supplements the supervisory agencies' traditional ways of gathering and assessing information about bank quality.

C. Conclusion

Market signals about bank quality are available for much of the banking industry, though we have no conclusive evidence that markets provide the most useful information available about traded bank holding companies and their subsidiaries. Only a substantial research program can determine whether or how market information may complement supervisors' current procedures. This research must recognize that the presence and quality of market signals vary with creditors' perceived exposure to default risk. Because failure resolution policies blunted market incentives for much of the 1980s, we must interpret empirical evidence from that period—when we had our greatest number of large bank failures—with great care. I do believe, however, that the data and research I have described this morning suggest that the market assessments of banks warrant serious consideration within the regulatory agencies.

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Keynote Address

Remarks by Ricki Helfer, Chairman, Federal Deposit Insurance Corporation*

It has been said that experience is a tough teacher—first you get the test, then you learn the lesson. In the banking crisis of the 1980s and early 1990s, banking regulators were tested, and from their experience they learned lessons. Did we learn the correct lessons?

When I became FDIC Chairman, I initiated a project to find the answer to that question, an answer based on objective analysis. The result is a series of 13 papers we will publish over the coming year. The purpose of this symposium is to discuss the first three papers in this series, which focus on supervisory issues.

This afternoon, I want to focus my remarks on the role of Federal deposit insurance in our banking and financial system. One of the lessons of the 1980s and early 1990s is that deposit insurance was eminently successful in maintaining stability in the banking system during the crisis. A second lesson is that this success came at enormous cost to the insurance funds, to the taxpayer, to the surviving institutions, and to their customers.

Our experience in the crisis reminded us that guaranteeing savings can be a costly business, although it may be necessary to stabilize the banking system in times of stress to prevent runs on individual banks from spreading to become banking panics.

One event toward the end of the most recent banking crisis underscored how quickly public confidence can evaporate—and the importance of deposit insurance in maintaining public confidence in the banking system.

In early 1991—just six years ago—the *New York Times* described recent events at the Bank of New England in this way:

* Ricki Helfer left her position as Chairman of the FDIC in May 1997.

“Frantic depositors pulled nearly \$1 billion out of the bank in two days; small savers trooped through the lobbies with their money in wallets, bulging envelopes and briefcases, and money managers yanked out multimillion-dollar deposits by remote control with computer and telex orders.

“Some local crooks even tried to get in on the action. The Federal Bureau of Investigation said it foiled a plan by six men who had hoped to rob an armored car they figured would be loaded with cash for all the withdrawals.”

The *New York Times* story concluded: “Yet as soon as Washington stepped in, with the Federal Deposit Insurance Corporation taking over the bank on Sunday, the panic subsided.”

Bank of New England customers may have had doubts about their bank—but their doubts were not contagious. Because Federal deposit insurance maintained public confidence in the banking system, a run on the Bank of New England did not spread to other banks or into a general banking panic, with depositors at other banks demanding their funds, too.

How costly was this protection?

From 1980 through 1994—1,617 banks failed or received financial assistance from the FDIC. These failures severely tested the FDIC insurance fund. During the same period, nearly 1,300 savings and loans failed. These failures more than bankrupted the old savings and loan insurance fund and directly cost the taxpayers of America \$125 billion, and billions more in indirect costs.

As a result of the experience of the 1980s and early 1990s, deposit insurance has become part of the continuing debate on how the banking industry should be modernized—and at the center of the discussion of deposit insurance is the problem of moral hazard.

The problem of moral hazard occurs when insurance induces the insured to take more risk than they would take if they were not insured. Any deposit insurance fund—any form of insurance, in fact—faces the problem of moral hazard. With deposit insurance, the insured party is the depositor. Insurance permits insured depositors to ignore the condition of their institutions. Even fundamentally unsound institutions may have little difficulty obtaining funds. Because insured depositors may no longer have an incentive to monitor and discipline their institutions, the managers of those institutions may take more risks than they otherwise would. In short, deposit insurance can create opportunities for managers to

make high risk/high return investments, without the market discipline of having to pay creditors to take that risk.

Moreover, as the paper that is the subject of the next panel states: “with respect to the basic tradeoff between promoting stability and controlling moral hazard, bank regulators (in the 1980s) showed a preference for solutions that tipped the balance toward stability, a policy that was apparent in the treatment of large-bank failures.

“This contributed to the success of the deposit insurance system in avoiding bank runs and disruptive interruptions in credit flows. . . . (But) By protecting uninsured depositors, the methods used to resolve large-bank failures removed a source of market discipline that could have reinforced supervisory efforts to constrain risk.”

To inform the debate over deposit insurance in the context of modernizing the banking charter, today I want to ask a number of fundamental questions, beginning with a question based on our experience in the 1980s and 1990s.

Did the problem of moral hazard created by Federal deposit insurance lead to a large number of failures of insured institutions in the 1980s and early 1990s, causing massive losses in the insurance funds?

To answer that question, moral hazard has to be broken into two components. First, in the case of a solvent institution, deposit insurance may lessen—or may eliminate—the incentive for insured creditors to monitor the activities of management and owners. Second, where a banking organization is insolvent or is approaching insolvency, deposit insurance may provide an incentive to bank management to take abnormal risks, thus magnifying losses to the insurance fund.

For the thrift industry in the 1980s, moral hazard contributed to huge losses in the savings and loan insurance fund, to its ultimate failure, and to substantial costs to the taxpayer. What began as an asset/liability mismatch problem, aggravated by rapidly rising interest rates in the beginning of the decade, became an enormous credit problem as real estate markets collapsed.

Weak regulatory oversight and the lack of resources to close insolvent thrifts encouraged some institutions to speculate widely in real estate and other ill-conceived efforts to “grow” out of their problems.

For banks in the 1980s and early 1990s, the role that moral hazard played in the significant losses to the insurance fund is not as clear. Certainly, deposit insurance did remove the incentive for insured creditors to monitor a bank's activities, but its effect is difficult to measure.

Moreover, the moral hazard that arises when banks approached insolvency and owners had less and less at stake was effectively restrained to a much greater extent than was the case with savings and loans by supervision of problem institutions. As will be detailed this afternoon, this restraint is indicated by the dividend, capital, and asset growth behavior of problem banks at that time.

Higher prudential standards for banks and more immediate regulatory attention to serious problems—as well as a solvent bank insurance fund with the resources to solve problems as they were identified—accounted for the difference in the experience of banks and thrifts. This difference should inform the debate over the role of deposit insurance in banking's future.

As this debate has developed, two alternatives to the current system have been offered: The first is to privatize the deposit insurance system. The second is to reduce the scope of the current system, and thus rely more on the markets to discipline the banking system. The two alternatives are, of course, not mutually exclusive.

Let's briefly analyze these proposals by seeking answers to four questions: One, what led Congress to make deposit insurance the responsibility of the Federal government? Two, can deposit insurance effectively be provided by another supplier? Three, how much less than the equivalent of a "full faith and credit" pledge by the Federal government will the public accept? Four, would reducing the scope of the deposit insurance system bring positive results?

First, what led Congress to make deposit insurance the responsibility of the Federal government?

Recurring and worsening banking panics marked the history of banking in the United States until the creation of the Federal Deposit Insurance Corporation in 1933. Nine thousand banks suspended operations from 1930 through 1933. The year after the FDIC was created, nine insured banks failed.

Even though the banking crisis of the 1980s and early 1990s resulted in a dramatically high number of bank failures, there was no banking panic—no con-

tagion that could have threatened sound banks—and public confidence in the banking system held steady.

Today the banking industry is healthy and the economy is strong. Because the memories in good times can be short, it is important to remember the lessons of history.

It was the historical experience in the 1930s that has led a broad range of economists to conclude that Federal deposit insurance solved a problem that had plagued the banking system—and the economy—for more than a century, the problem of maintaining public confidence in a banking system marked by liabilities that were liquid and assets that were illiquid.

For example, in his *The Great Crash, 1929*, John Kenneth Galbraith observed: “Federal insurance of bank deposits, even to this day, has not been given full credit for the revolution that it has worked in the nation’s banking structure. With this one piece of legislation, the fear which operated so efficiently to transmit weakness was dissolved. As a result one grievous defect of the old system, by which failure begot failure, was cured. Rarely has so much been accomplished by a single law.”

In their *A Monetary History of the United States, 1867-1960*, Milton Friedman and Anna J. Schwartz similarly laud the role of deposit insurance in stabilizing the banking system: “Federal insurance of bank deposits was the most important structural change in the banking system to result from the 1933 panic and, indeed in our view, the structural change most conducive to monetary stability since state banknote issues were taxed out of existence immediately after the Civil War.”

More recently, Federal Reserve Board Governor Janet Yellen, who has been nominated to become Chairwoman of the Council of Economic Advisors, addressed the issue also by reminding us of history. She said: “Deposit insurance was introduced both to protect individual depositors and to prevent panics surrounding individual banks from spreading throughout the financial system.

“Would we be better off as a country giving that up?” Governor Yellen asked rhetorically. “I don’t think it is obvious that we would be. We would have to think through very carefully what implications the reduction or elimination of deposit insurance would have for systemic risk. The Depression taught us a lesson.”

These tributes to Federal deposit insurance, however, do not address the question of whether a supplier other than the Federal government can provide essential depositor protection. In answering that question, the experience of private and state insurance providers in the banking crisis of the 1980s and early 1990s should give us some guidance.

As recently as 1982, there were 32 deposit insurance funds in operation. Only eight survived the crisis. Six operate today, three cover state credit unions and three are very limited in scope or are being phased out. Almost all the other funds collapsed because of the failure of one or more institutions. Most of the funds were state-sponsored, although the state did not usually provide any financial guarantees to the fund. These funds typically were mutual insurance funds with a board of directors drawn from the insured institutions.

In response to the failure of state deposit insurance plans in Ohio and Maryland, those states required state-chartered institutions to obtain Federal deposit insurance. Approximately 150 institutions were added to FDIC coverage in 1985 as a result.

Federal Reserve Chairman Alan Greenspan has observed: “Confidence in the stability of the banking and payments system has been the major reason why the United States has not suffered a financial panic or systemic bank run in the last half century.”

It is my belief that deposit insurance can help maintain stability in the banking system only if depositors have confidence in the insurance plan. To inspire confidence during a period of turmoil, deposit insurance must be a certainty for the insured depositor.

The experience with private and state-sponsored insurance plans in the 1980s and early 1990s suggests that the limited pool of resources on which they can draw inspires less confidence than does the unlimited pool of resources of the Federal government. Bank failures may come in waves, because the performance of the industry is closely tied to the performance of the economy.

While it may be possible to design private insurance funds that could handle isolated failures successfully, our experience in the 1980s in Ohio and in Maryland suggests that limited plans have difficulty handling failures in waves.

Further, if private insurance is substituted for Federal deposit insurance, a private insurance plan facing depletion of its fund during a crisis would likely

have to seek financing from the banking industry or other private sources of funds at the same time that the economy may be weak and the banking industry is having difficulties. Moreover, if the private insurance supplier fails, the Congress may have to act to restore public confidence. That would take time, and based upon the experience during the savings and loan crisis, Congressional action might occur only after serious damage has been done and costs have been significantly increased.

In considering privatizing Federal deposit insurance, therefore, the serious question becomes: How much less than the equivalent of a “full faith and credit” pledge by the Federal government will the public accept—in other words, how much less would fully protect the banking system in times of crisis? We do not know the answer, but history suggests that we cannot predict the depth or duration of a crisis, and that should make us wary.

The final question I want to ask today is: Would reducing the scope of deposit insurance bring positive results?

In this regard, one observer, former FDIC Chairman Bill Isaac, recently wrote in the *American Banker*: “What’s needed is more private-sector discipline. This will come about once the scope of depositor protection is curtailed sharply, including abandonment of the ‘too big to fail’ doctrine. Millions of organizations and sophisticated individuals must be given the incentive to understand, monitor, and control the risks in the financial system.”

I agree that market discipline is an important element of a sound deposit insurance system. Our goal is to assure the stability of the banking system in times of great stress, not to eliminate all bank failures. An effort to eliminate all bank failures would involve over-regulation of banks that would lessen their effectiveness in providing financial intermediation in the economy.

The question remains: What has been done to encourage market discipline and what more can be done? I will discuss these issues more in a moment, but first let’s consider the issue of the scope of deposit insurance.

In terms of insuring individual deposits, the scope of coverage increased until 1980 and then declined, in terms of today’s dollars. Let me explain.

As of January 1, 1934, the FDIC insured deposits up to \$2,500. In 1996 dollars, however, that \$2,500 is the equivalent of \$30,000 today. Six months later, the insurance limit was raised to \$5,000, which is almost \$60,000 in today’s dollars.

In 1969, the limit was raised to \$20,000, which is about \$85,000 in today's dollars. When the limit was raised to \$40,000 in 1974, that was the equivalent of \$127,000 today.

From its very beginning, deposit insurance covered more than just the average American's "food and rent" money—it was sufficient to cover some savings.

Moreover, depositors today are insured up to \$100,000—a limit that has been in place since 1980. The dollars of 1980 are not the dollars of 1996, however—\$100,000 in 1980 was the equivalent of \$190,000 today. In this sense, for the individual depositor, the scope of deposit insurance coverage has declined by almost half since 1980.

I am not advocating any change in the level of today's coverage for deposits—the marketplace has already done that. Of course, the other side of the scope of insurance coverage is uninsured depositors and the so-called 'too big to fail' doctrine, as Bill Isaac points out. The Federal Deposit Insurance Corporation Improvement Act, however, significantly reduced the authority regulators have to deal with large institutions that are failing. It leaves us with enough flexibility, with appropriate oversight by Congress, to achieve a solution where the failure would present a genuine risk to the system. This can occur, however, only if the Secretary of the Treasury—in consultation with the President—determines that there would be "serious adverse effects on economic conditions or financial stability." Such a decision would be undertaken only after written favorable recommendations from both the FDIC Board of Directors and the Board of Governors of the Federal Reserve System, with at least two-thirds of the members of each body voting in favor of the recommendation. That is a high standard, particularly when one considers that the recommendation would have to be defended to the Congress.

Moreover, the FDIC has been required by law since 1991 to accept the proposal from a potential purchaser that is the least costly to the insurance fund of all the proposals we receive. In more than half of the failures in 1992—66 out of 120—uninsured depositors received less than 100 cents on each dollar above the \$100,000. That was a significant increase in uninsured depositors experiencing losses from 1991, when fewer than 20 percent of the failures involved a loss for uninsured depositors. While the number of bank failures in 1992 was lower than in previous years, the number of uninsured depositors experiencing a loss was significantly greater. Moreover, as the paper that is the subject of the next panel points out, resolution with losses to uninsured depositors have not produced large-scale withdrawals at other institutions—though, in the years since 1992,

with record levels of bank profits, failures slowing to a trickle, and no major bank threatened with failure, the system has not come under stress.

Further, I would ask, can depositors be expected to impose market discipline on banks? After all, it was this approach that led to the recurring banking panics that marked most of our history until 1933. A number of years ago, banking analyst Karen Shaw Petrou concisely described why the Congress created the FDIC to benefit individual Americans: “After the collapse of the early 1930s, it was agreed that individual savers should have a protected right to place a limited amount of money in a financial institution without having to worry that it could be lost. Individual depositors should not have to read a detailed report of a bank’s condition before deciding where to deposit their retirement or other savings, since most depositors would be hard pressed to interpret such information. To solve the problem, the government took upon itself the obligation to interpret the financial condition of banks for depositors, and to back up its judgments with limited federal deposit insurance.”

In standing in the place of the depositor, banking supervisors seek to mitigate the problem of moral hazard created by Federal deposit insurance through examinations and safety-and-soundness regulations.

The challenge to the regulators is to develop safety-and-soundness regulation that comes as close as possible to market discipline, without imposing inefficient, ineffective regulations on banks, regulations that unduly inhibit the important function of financial intermediation that they perform for the economy. Market discipline, however, does have a critical role in addressing the problem of moral hazard that deposit insurance creates—that discipline, however, can perhaps more effectively be imposed by large creditors and shareholders of banks.

At least since the least cost test has been imposed on the FDIC, large creditors should understand the potential for losses on their exposures to banks. That was perhaps less true with respect to earlier large-bank resolutions. In addition, over the past few years, we have undertaken two reforms in deposit insurance that give shareholders a greater incentive to curb excessive risk taking at their institutions: one is higher, risk-based, capital standards; the second is risk-related insurance premiums.

Higher risk-based capital standards expose shareholders of an institution to greater loss, and risk-based standards expose shareholders to greater loss as the institution’s risks increase. Not incidentally, the regulations that put higher mini-

mum capital standards into effect impose restrictions on dividend payments and other capital distributions if an institution falls below the minimum.

Similarly, risk-based premiums are designed to reduce income in institutions that take on excessive risk, and that reduction in income is aimed at giving shareholders reason to curb the excesses. As you know, in 1993, the FDIC established risk-based deposit insurance premiums. Banks and thrift institutions were divided into nine groups, depending upon the risks they present to their insurance fund.

Part of that risk calculation is based on capital and part on supervisory factors such as asset quality, loan underwriting standards, and management. We are now analyzing whether other factors are relevant to risk—and whether our current 27-basis point spread is sufficient to price the risks to the insurance fund posed by individual institutions. Making it more costly for banks to take on excessive risk will impose more economic discipline on their judgments.

In conclusion, in the 1980s and early 1990s, deposit insurance helped maintain financial stability, but at great cost, particularly with respect to the savings and loan industry.

We should learn from that experience.

Those lessons could lead us to continue to improve our current Federal deposit insurance system—as we have begun to do—to make it more sensitive and responsive to the marketplace—finding even better regulatory surrogates and incentives for marketplace discipline.

Some say that those lessons should lead us to replace the current system with a privatized approach. But before we take that course, we should agree on the answers to the questions: What would happen if there were no Federal deposit insurance program? Can a supplier other than the Federal government bear the costs necessary to provide deposit insurance coverage sufficient to maintain stability in the banking system in times of extreme stress? How much less than the equivalent of a “full faith and credit” pledge by the Federal government will the public accept?

Without firm answers to those questions, in privatizing Federal deposit insurance we may be putting the banking system at risk. We know Federal deposit insurance works to stabilize the banking system in times of great stress. Can we be sure that another approach will work as well?

Thank you.