Accounting for Loss Contingencies:

The FDIC's Policies and Practices 1992–2004

FDIC Staff Study*

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Executive Summary

To maintain public confidence in the deposit insurance system, the FDIC has to assess its current financial condition accurately. Depositors need to know that their deposits are insured and that the FDIC has sufficient resources to resolve insured-institution failures in a timely manner. Similarly, insured institutions, Congress, and the Corporation itself require accurate information in order to allocate the resources necessary for maintaining public confidence in the deposit insurance system.

The single largest source of uncertainty about the condition of a deposit insurer is the insurance loss associated with the failure of insured institutions. The Financial Accounting Standards Board's Statement of Financial Accounting Standards 5, "Accounting for Contingencies" (FAS 5), published in 1975, calls for the establishment of a reserve for loss contingencies when it is probable that a liability *has been incurred*, it is probable that the fact of the loss will be confirmed by future events, and the amount of loss can be reasonably estimated. The interpretation of FAS 5 has evolved since the statement was published. Accordingly, the FDIC's policies and practices for accounting for loss contingencies have changed over time as well.

As part of the recent deposit insurance reform legislation, Congress directed the FDIC to study the methodology and accounting practices the Corporation has used for maintaining and establishing reserves for loss contingencies associated with insured-institution failures.[1] Specifically, Congress made four requests of this study. It asked the Corporation to (1) study the overall effectiveness and accuracy of the methodology used in establishing and maintaining reserves and estimating and accounting for losses at insured depository institutions during the period 1992–2004; (2) study the appropriateness and reliability of the information and criteria used in determining whether an institution was in a troubled condition and the amount of any loss anticipated at such institution; (3) analyze the actual historical loss experience for the period 1992–

[1] Federal Deposit Insurance Reform Conforming Amendments Act of 2005, Public Law 109-173, 119 Stat. 3601.

2004 and the causes of the exceptionally high rate of losses in the final three years of that period (2002–2004); and (4) rate the efforts of the Corporation to reduce losses in that three-year period to minimally acceptable levels and to historical levels.

Methodology—Overall Effectiveness and Accuracy

The FDIC began reserving for loss contingencies, arising from the failure of insured institutions, in 1988. The contingent loss reserve established then was for institutions that were deemed imminent failures and whose expected failure the FDIC was deciding how best to resolve. However, concurrently with the banking crisis of the late 1980s and early 1990s, the FDIC's reserving policies broadened. By year-end 1991, the contingent loss reserve included loss contingencies for institutions that were projected to become insolvent. For such institutions, reserves were established for the full estimated deposit insurance loss.

By year-end 1992 the banking crisis had largely abated, the interest rate environment was favorable, and regulatory reforms had been adopted. The dramatic changes in banking market conditions, together with the FDIC's broadening of its reserving practices, resulted in a significant increase in the FDIC's contingent loss reserves between 1988 and 1992. Between 1992 and 1993, bank failures and deposit-insurance losses declined dramatically, and the contingent loss reserves held large excesses. Although the reserves diminished as the banking crisis drew to a close, until year-end 1994 reserves exceeded actual insurance losses by over $1 billion. In assessing the accuracy of the FDIC's reserving methodology it is important to note that the FDIC follows generally accepted accounting principles and establishes reserves for insured institution failures that are likely to occur under the economic and regulatory conditions that exist as of the time when reserves are established. Accordingly, the reserving methodology should not attempt to predict exogenous future events that can alter an insured institution's likelihood of failure, such as changes in economic conditions and financial market regulation.

In the third quarter of 1997 the FDIC adopted a new reserving methodology, one that involved the use of statistical modeling and the discretion to deviate from model estimates when circumstances warranted. Under this methodology, the number of times reserves were greater than subsequent deposit insurance losses has approximately equaled the number of times reserves were less; thus, there has been no tendency for overreserving. (During one period, in 2002, reserves exceeded subsequent losses by a large amount. Most of this overreserving was due to the belief that one large institution was near failure, but the institution ultimately did not fail.)

In September 2003, the FDIC adopted new reserving policies that limited the Corporation's use of discretion in setting the amount to be reserved for particular institutions. A set of guidelines was adopted restricting both the circumstances under which reserves would deviate from model estimates and the magnitude of that deviation. From September 2003 on, reserves have been somewhat larger than subsequent losses.

All three of the methodologies used during the study period—1991–1997, 1997–2003, and 2003–2006—display some degree of inaccuracy (in the sense of reserves not equaling subsequent losses). This study finds that the largest cause of inaccuracy has been an overestimation of failures, which leads to a tendency for reserves to exceed subsequent losses.

Appropriateness and Reliability of Information and Criteria Used to Identify Troubled Institutions and Their Anticipated Loss

Specific guidance on the information and criteria to use in establishing a reserve for loss contingencies is presented in the American Institute of Certified Public Accountants Audit and Accounting Guide for Depository and Lending Institutions. According to this document, methodologies should (1) include a detailed and regular analysis of all credit risks, include procedures for timely identification of problem credits, (2) be used consistently, (3) consider all known factors that may affect collectibility, (4) consider the particular risks associated with different types of lending, (5) be based on current and

reliable data, and (6) be well documented. The FDIC believes that its methodology of establishing loss reserves meets each of these conditions.

Analysis of Loss Experience 1992–2004

Insured-institution failures between 1992 and 2004 led to total losses of $6.4 billion to the deposit insurance funds. Failures costs during the last three years of this period are much smaller: 18 institutions failed between 2002 and 2004, causing $521 million in losses to the insurance funds. Although costly, the loss for all 18 of these failures is less than the loss from either of the two most expensive failures between 1992 and 2004.[2] The most costly failure since 2002 is Nextbank, NA,[3] but it is only the 9th most costly failure out of 229 during the entire study period. In terms of loss rates (failure-resolution costs as a percentage of failed-bank assets), the worst failure during the period 2002–2004 is Oakwood Deposit Bank Company; which is also the worst loss-rate failure over the entire study period. However, Oakwood's *actual cost* to the Bank Insurance Fund (BIF) makes it only the 22nd most costly failure in that 13-year period. Over the three years 2002–2004, the six worst loss-rate failures[4] had much in common in terms of the causes of failure. Weak internal controls, poor oversight by the institution's board of directors, and fraud contributed to several of these failures.

Evaluation of the Efforts to Reduce Losses, 2002–2004

The FDIC's efforts to reduce losses to the insurance fund(s) are broad and evolving and occur on two fronts. First, the supervisory process seeks to prevent, detect, and subsequently punish fraud, insider abuse, and unsafe business practices. Fraud and insider abuse have been associated with recent losses to the funds, and average loss rates among failures where fraud was a primary or contributing factor are substantially greater than those for failures where fraud was not present. Similarly, unsafe business practices (for instance, excessive loan concentrations or dramatic changes in lending strategies) can

[2] CrossLand Savings Bank failed in 1992 and cost $754 million to resolve. First National Bank of Keystone failed in 1999 and cost $567 million to resolve. Both were insured by the BIF.
[3] Nextbank failed in 2002 and resulted in $146 million in losses to the BIF.
[4] Oakwood Deposit Bank Company, Bank of Sierra Blanca, The First National Bank of Blanchardville, The Farmers Bank & Trust of Cheneyville, New Century Bank, and Nextbank. All had loss rates greater than 20 percent.

lead to costly institution failures. An example of supervisory efforts is the issuance of informal and formal enforcement actions to institutions exhibiting moderate to severe weaknesses that need to be addressed by more than normal supervision.

Second, if supervisory efforts do not prevent a failure, the FDIC has always been required to resolve failures in a manner that will reduce the cost to the insurance fund(s). The passage of the Federal Deposit Insurance Corporation Improvement Act of 1991 clarified this policy by requiring the FDIC to consider the costs of all failure-resolution methods and choose the one that imposes the least cost on the insurance fund(s). In most cases, the least costly method for resolving an institution failure is the "purchase" of some or all of the failed institution's assets by an acquiring institution in return for the "assumption" of the failed institution's liabilities—a method known as a purchase and assumption transaction.

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After a brief introduction (Section 1), Section 2 summarizes the accounting principles the FDIC uses in deciding whether an estimated loss from a loss contingency should be reported in the Corporation's financial statements. Section 3 surveys the Corporation's contingent loss reserving policies and procedures from pre-1988 to the present. Section 4 discusses the accuracy of the contingent loss reserves for the BIF and the Savings Association Insurance Fund (SAIF) from 1992 through 2004. Section 5 discusses the information and criteria used to establish the loss reserve. Section 6 discusses the Corporation's loss experience from bank failures from 1992 through 2004, with special attention to the final three years of the period. Section 7 discusses the FDIC's efforts to avert or mitigate fraud, insider abuse, and unsafe business practices as they contribute to bank failure and loss to the deposit insurance funds. And Section 8 examines the loss reserving practices of other types of financial institutions (other U.S. government insurers, two foreign deposit insurers, and property and casualty insurers).

1. Introduction

In 2001 the FDIC recommended changes to the deposit insurance system that would allow the Corporation greater flexibility both in managing the deposit insurance funds and in pricing deposit insurance.[5] Most of the recommendations were subsequently adopted by Congress in the Federal Deposit Insurance Reform Act of 2005, which became law on February 8, 2006, and the Federal Deposit Insurance Reform Conforming Amendments Act of 2005, which became law on February 15, 2006.[6]

The second of the two laws, in addition to adopting some of the changes the FDIC had requested, requires the FDIC to conduct a study of the methodology and accounting practices the Corporation used to establish loss reserves for potentially failing insured institutions during the period 1992–2004. (Since 1988 the FDIC has established reserves for loss contingencies that might arise because of the failure of insured institutions in the near future.)[7] In requiring the study of methodology and accounting practices, Congress directed the FDIC specifically to

- consider the overall effectiveness and accuracy of the methodology used by the Corporation for establishing and maintaining reserves and estimating and accounting for losses at insured depository institutions during the period described [above];
- consider the appropriateness and reliability of information and criteria used by the Corporation in determining whether an institution was in a troubled condition and the amount of any loss anticipated at such institution;
- analyze the actual historical loss experience over the period described [above] and the causes of the exceptionally high rate of losses experienced by the Corporation in the final 3 years of that period; and
- rate the efforts of the Corporation to reduce losses in such 3-year period to minimally acceptable levels and to historical levels.[8]

This study is the one required by Congress. Section 2 sets forth the accounting principles the FDIC uses when establishing contingent loss reserves. Section 3 describes the FDIC's

[5] Federal Deposit Insurance Corporation (2001).
[6] Federal Deposit Insurance Reform Act of 2005, Public Law 109-171, 120 Stat. 9; Federal Deposit Insurance Reform Conforming Amendments Act of 2005, Public Law 109-173, 119 Stat. 3601.
[7] These loss contingencies are influenced by three factors: (1) the probability of an insured institution's failure, (2) the severity of the loss should the institution fail, and (3) the asset size of potential failures.
[8] Federal Deposit Insurance Reform Conforming Amendments Act of 2005, Public Law 109-173, 119 Stat. 3601.

past and current policies and practices for establishing reserves. Section 4 analyzes the accuracy of the methodology for establishing reserves, and Section 5 discusses the information and criteria used by these methodologies. Section 6 surveys the least costly resolution methods and then reviews the loss experience of the FDIC for the period 1992–2004, particularly the loss rates of failed banks for 2002–2004 and the failures resulting in large charges to the insurance fund during the same three-year period; the section also reviews common causes of bank failure. Fraud, insider abuse, and high-risk business strategies have historically contributed to high-cost failures, and the FDIC's efforts to mitigate losses due to fraud and insider abuse as well as unsafe business practices are discussed in Section 7. Section 8 describes the loss-reserving practices of other types of financial institutions (other U.S. government insurers, foreign deposit insurers, and commercial insurance companies).

2. Generally Accepted Accounting Principles

The main goal of financial reporting is to provide information useful to investors, creditors, and others for making informed decisions about the allocation of economic resources.[9] The two primary qualities that make accounting information useful in the decision-making process are relevance and reliability.[10] To be relevant, information must be timely and it must have predictive value *or* feedback value or both.[11] To be reliable, accounting information must be verifiable and directly related to the economic resources and obligations of an enterprise, as well as to transactions or events that change those resources or obligations. To satisfy this and other objectives of financial statement presentation, accountants work by rules that are commonly known as generally accepted accounting principles, or GAAP.[12]

The FDIC, created in 1933 to insure bank deposits, uses GAAP when it prepares the financial statements for the insurance fund(s).[13] Users of these financial statements, including the U.S. Congress, insured financial institutions, financial trade groups, the financial press, and the general public, all rely on these data to evaluate the adequacy of the FDIC's resources and financial health. The U.S. Government Accountability Office (GAO)—until 2004, the U.S. General Accounting Office—performs an annual audit of the financial statements of the insurance fund(s), and as part of this process, the GAO issues an opinion as to whether the FDIC's financial statements are "presented fairly, in all material respects in conformity with U.S. generally accepted accounting principles."[14]

This section summarizes the accounting principles that are used in the analysis of whether an estimated loss from a loss contingency should be reported in the financial statements. The section starts with a general definition of loss contingencies and then

[9] Financial Accounting Standards Board (FASB) (1978).
[10] FASB (1980).
[11] Ibid.
[12] American Institute of Certified Public Accountants (AICPA) (1992).
[13] Per the FDI Act (as amended), the FDIC produced separate financial statements for the Bank Insurance Fund (BIF) and the Saving Association Insurance Fund (SAIF) until the BIF and the SAIF were merged to form a single insurance fund, the Deposit Insurance Fund (DIF), on March 31, 2006 as required by the Federal Deposit Insurance Reform Act of 2005.
[14] FDIC. (2006), 94

discusses, first, the concept and goal of loss recognition, with emphasis on the key terms of FAS 5 (the governing document); and second, the guidance available on methods to use in estimating a loss. The section ends by summarizing the core concepts of FAS 5 on the treatment of loss contingencies.

2.1 General Definition of Loss Contingencies

In compliance with accounting requirements, the FDIC accrues an estimated loss when it is probable that a loss has been incurred from a loss contingency. A loss contingency is an existing uncertainty that may result in the impairment of an asset or the incurrence of a liability. The evaluation of loss contingencies is a critical element in determining the financial health of an enterprise, and generally accepted accounting principles require that these contingencies be properly accounted for and reported in financial statements.

The FDIC's main contingencies are "Anticipated failure of insured institutions" and "Litigation and other losses."[15] Increases or decreases to these liability accounts flow through the FDIC's income statement as either a charge or a credit to the "Provision for insurance losses." Because the focus of this study is the liability for "Anticipated failure of FDIC insured institutions," we will make no further reference to other types of loss contingencies.[16]

The estimated cost for "anticipated failure of insured institutions" is defined as the "contingent liability and loss provision for . . . insured institutions . . . that are likely to fail within one year of the reporting date, absent some favorable event such as obtaining additional capital or merging."[17]

[15] Ibid., 43, 61.
[16] The contingency for "Litigation losses" and "Other contingencies" includes the liability for "unresolved legal cases . . . to the extent those losses are considered probable and reasonably estimated" and "representations and warranties, and guarantees" related to assets sold during the resolution of a failed institution.
[17] FDIC. (2006), 53. 73.

2.2 Concept and Goal of Loss Recognition: FAS 5 and Key Terms

Thirty years after its initial issue, Financial Accounting Standards Board (FASB) Statement No. 5, "Accounting for Contingencies" (FAS 5), is still considered to be one of the most significant of all accounting standards.[18] It provides the fundamental guidance for recognition of estimated losses from virtually all loss contingencies except some specifically defined liabilities.

The key concept of the statement is that

> An estimated loss from a loss contingency . . . shall be accrued by a charge to income if *both* of the following conditions are met: (a) Information prior to the issuance of the financial statements indicates that it is *probable* that an asset had been impaired or a liability had been incurred at the date of the financial statements . . . and it is probable that one or more future events will occur confirming the fact of the loss . . . (b) The amount of loss can be *reasonably estimated*.[19]

A basic concept of financial reporting is to reflect financial transactions and events that have already happened.[20] A loss contingency is "an existing condition, situation, or set of circumstances involving uncertainty as to possible . . . loss . . . that will ultimately be resolved when one or more future events occur or fail to occur."[21] Note that according to the definition, the event that creates a contingency is a historical event, an "existing condition," rather than the expectation of a future event. To minimize any chance that this point would be misinterpreted or overlooked, the FASB went on to say, "A liability is the result of a transaction of the past, not the future,"[22] and further emphasized this point by saying, "Anticipation of . . . liabilities or losses . . . that do not relate to the current or prior period is not justified by the matching concept."[23]

With this rationale in mind, the FASB denied loss accruals to insurance companies for situations involving catastrophes. Because the conditions giving rise to a catastrophe and its effects happen almost simultaneously, the FASB argued that to accrue a loss today for

[18] FASB (1975).
[19] Ibid., ¶ 8.
[20] FASB (1978), ¶ 21.
[21] FASB (1975),. ¶ 1.
[22] Ibid., ¶ 70.
[23] Ibid., ¶ 86.

a catastrophe likely to occur at some point in the future would be to report as fact an event which had yet to occur.[24,25]

To recapitulate: if at the date of the financial statements it is probable that an event has occurred that has caused a loss, and it is *probable* that a future event will confirm that a loss occurred, and the probable loss can be *reasonably estimated*, then a contingent loss must be accrued and an asset impairment or liability must be recognized in the financial statements.

2.2.1 Example of Probable Incurrence of a Loss

In the realm of banking, an example of a loss contingency covered by FAS 5 could be the uncertain collectibility of loans resulting from defaults caused by unemployment. To illustrate this we use a hypothetical situation of a bank experiencing loan losses. Suppose that on October 15, 1999, the major employer in a small town, a pleasure-boat manufacturer, announced that it would relocate its entire facility to a distant state on December 15 of that year. Although all employees were offered employment at the new site, most preferred to remain in town and left their jobs. All employees who left their jobs were given two weeks of severance pay. For simplicity, assume the residents of the town do most of their borrowing from one local bank and that most of these borrowings

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[24] Ibid., ¶ 93,

> The fact that over the long term catastrophes are certain to occur does not justify accrual before the catastrophes occur. As stated in paragraph 59, the purpose of the conditions for accrual mentioned in paragraph 8 is to require accrual of losses if they are reasonably estimable and relate to the current period or a prior period. An enterprise may know with certainty, for example, next year's administrative salaries, but that does not justify accrual in the current accounting period because those salaries do not relate to that period. As indicated in paragraphs 67–68, financial accounting and reporting reflects primarily the effects of past transaction and existing conditions, not future transactions or conditions; accrual for losses from catastrophes that are expected to occur beyond the terms of insurance policies in force would amount to accrual of a liability before one has been incurred. Existing policyholders are insured only during the period covered by their insurance contracts; an insurance company is not presently obligated to policyholders for catastrophes that may occur after expiration of their policies. Accrual for those catastrophe losses would record a liability that is inconsistent with the concept of a liability discussed in paragraphs 69–73.

25 Ibid., ¶ 94,

> The Board recognizes that the costs of catastrophes to insurance companies are large and are incurred irregularly and that insurance companies recoup those costs in the long run through periodic adjustments in the premiums charged to policyholders. It is the view of the Board, however, that the long-run nature of the pricing of premiums should not be a determinant of the time when a liability is recorded.

are either smaller-balance consumer loans or residential mortgages. It is probable that many of the workers who left their jobs will find new employment either locally or elsewhere and will continue to make payments on their debt. However, it is also probable that some of the displaced workers will not find new jobs, will be unable to make loan payments, and will finally declare personal bankruptcy. The bank becomes aware of a probable loss on its consumer loans that did not exist until the employer announced the relocation of its facility. One form in which confirmation of a loan loss would occur would be after a former boat worker stopped making payments on the debt and the consumer loan reached the specified cumulative number of days past due at which, in accordance with regulatory policy, the loan is classified Loss and is charged off.[26] However, many months can pass between the time of the relocation announcement and the time at which the lender writes off the loan. An estimated loss contingency for loan losses should be accrued on the bank's December 31, 1999, financial statements because the loss-causing event (announcement of the manufacturer's relocation) happened (*existed*) prior to the date of the financial statements and because it is *probable* that future events (loan payment delinquencies reaching the specified cumulative number of days past due) will confirm the loss, and because the loss can be *reasonably estimated*. As the bank obtains additional information about its loans to former boat workers, its estimated loss from this loss contingency will likely change over time.

FAS 5 requires that the lender in the situation described above should initially recognize an estimated loss in the period in which the event that generates the loss actually occurs (that is, when the boat manufacturer announces its move to another state), not the period in which the bank confirms that it suffered a loss, which may be much later. Without this principle, the bank's earnings would be overstated in the period in which the loss-causing event occurred, and understated in subsequent periods (all else equal).

[26] According to the federal banking agencies' Uniform Retail Credit Classification and Account Management Policy, "[t]he quality of retail credit is best indicated by the repayment performance of individual borrowers." Under this policy, closed-end retail loans that become past due 120 cumulative days and open-end retail loans that become past due 180 cumulative days from the contractual due date should be classified Loss and charged off. Loans in bankruptcy should be classified Loss and charged off within 60 days of receipt of notification of filing from the bankruptcy court or within the time frames specified in this classification policy, whichever is shorter.

At this point in the example the bank has recorded an estimated loss from a loss contingency on its financial statements for the period ending December 31, 1999. However, because of the reasonable prospect of other employment for at least a significant portion of affected workers and also because the bank's previous profitability resulted in an accumulation of a significant level of equity capital, there is no reasonable basis for regulators to expect the viability of the bank to be threatened. Thus, there is no event creating the level of probability at which it would be necessary for the FDIC to record a loss contingency for the bank's failure.

During the next year, no new employers seeking new sources of labor arrived in the town, and many other local businesses went bankrupt. Loan defaults soared, and the bank's equity capital dwindled dramatically as the bank substantially increased its loan-loss allowance through loan-loss provisions, an expense that resulted in a large net loss for the year. Based on an examination completed on December 15, 2000, the bank's composite CAMELS rating was downgraded to a 5.[27] The examination summary concluded, "At the present rate of deterioration unless conditions change or unless there is significant capital injection, the bank is likely to become insolvent within 12 months or less." Information was available prior to the issuance of the FDIC's financial statements (that is, the supervisory downgrade) that indicated that it was *probable* that a liability had been incurred and it was probable that a future event (the bank's insolvency) would confirm the fact of the loss, and the amount of loss could be *reasonably estimated* (this is assumed). Based on these circumstances and the standard set by FAS 5, a loss contingency must be accrued for the anticipated failure of this bank on the FDIC's December 31, 2000, financial statements.

2.2.2 Defining "Probable" Events

As we saw above, the first prerequisite for accrual of an estimated loss from a loss contingency is that it is *probable* that at the financial statement date, an asset has been impaired or a liability has been incurred. The meaning of the term "probable" has been

[27] The acronym CAMELS refers to the Federal Financial Institution Examination Council's (FFIEC's) supervisory rating system. For a more detailed discussion of the composite CAMELS rating, see Section 5.1 and Table 5.1.

the subject of more debate than any other portion of the standard. FAS 5 says that when a loss contingency exists, management must determine the probability that a future event will occur that will confirm the existence, of the asset impairment or liability, on the date of the financial statements. The degrees of probability for a future confirming event can range between *probable, reasonably possible*, and *remote*. The term *probable* means the confirming future event is likely to happen, *reasonably possible* means the chance of the future event's happening is better than remote but less than likely, and the term *remote* means the chance of the future event's happening is slight.[28] The loss is to be accrued, "booked," only when it is *probable* that a future event will confirm the loss (and when the second prerequisite, discussed below, is also met).

The Statement's definition of probable as being "*likely to occur*" has been called too open-ended. The FASB attempted to provide guidance on the definition of probable by saying that "[t]he conditions for accrual in paragraph 8 [of FAS 5] are not inconsistent with the accounting concept of conservatism. Those conditions are not intended to be so rigid that they require *virtual certainty before a loss is accrued*. They require only that it be probable that . . . a liability has been incurred and that the amount of loss be reasonably estimable."[29]

However, beyond this basic guidance the FASB did not elaborate on the definition of probable. A report issued by the GAO stated that "accounting rules are ambiguous because they require that losses be 'probable' before they are recognized. 'Probable' is too often being improperly interpreted as approaching 'virtually certain.'"[30] The GAO felt that this interpretation led to financial reports that understated losses and overstated the true health of financial institutions. The GAO made the common-sense argument that "more likely than not" would be a clearer standard for recognizing losses because it refers to any likelihood greater than 50 percent.

[28] FASB (1975), ¶ 3.
[29] Ibid., ¶ 84
[30] U.S. GAO (1992).

To address the concern about the meaning of "probable," the GAO recommended in 1991 and again in 1992 that the FASB change the definition of the word from "likely" to "more likely than not."[31] The FASB declined to implement the GAO's recommendation. When the FASB released FAS 114, a 1993 standard that amended FAS 5 and addressed the accounting for loan-loss allowances on certain loans, it retained the same definition of "probable" as FAS 5.[32] We do not know the rationale behind the FASB's rejection of the GAO's recommendation; however, some practitioners believe the GAO standard of 51 percent is too low a threshold. In any case, as one writer put it, "The word 'probable' currently seems to encompass the range of probabilities between 'more likely than not' and 'virtual certainty.'"[33]

2.2.3 Defining "Reasonably Estimable"

The second prerequisite for accrual—that the amount of loss from a loss contingency be *reasonably estimable*—is intended to prevent financial statements from being compromised by recognition of a loss when there is little or no basis for measuring the loss**.** FAS 5 does not give a specific definition of what is a *reasonable* estimate; it says only that "[t]he requirement that the loss be reasonably estimable is intended to prevent accrual in the financial statements of amounts so uncertain as to impair the integrity of those statements."[34] In other words, the amount of confidence the reporting entity has in

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[31] U.S. GAO (1991a and 1992).

[32] FASB (1993a). ¶ 10 includes the FAS 5 definition word for word, even the warning against interpreting probable as meaning "virtual certainty." But in ¶ 49 the FASB clearly recognized the GAO recommendation, saying that,

> The Board also considered whether the loss threshold for recognition of loan impairment should be changed from the Statement 5 definition of probable to some other threshold. The United States General Accounting Office asserted in its April 1991 report, *Failed Banks: Accounting and Auditing Reforms Urgently Needed*, that "'probable' . . . has, in the case of banks, come to mean 'virtually certain,' rather than 'more likely than not,' " and "the probable requirement as it is sometimes applied has unduly delayed loss recognition . . . of problem assets." The Board did not intend "probable" to mean "virtually certain to occur." The Statement 5 definition of probable states that "the future event or events are *likely to occur*" (emphasis added). The Board recognizes that application of the term probable in practice requires judgment, and to clarify its intent the Board has reiterated the guidance in paragraph 84 [which contains the prohibition against use of virtual certainty as the standard] of Statement 5 in paragraph 10 of this Statement. The term probable is used in this Statement consistent with its use in Statement 5.

[33] Baskin (1992), 100.

[34] FASB (1975), ¶ 59.

an estimate is a reflection of what is reasonable. If there is little faith in the amount estimated, the estimate is not reasonable.

One year after issuing FAS 5, the FASB provided additional guidance to the meaning of "reasonably estimated" by issuing Financial Interpretation No. 14 (FIN 14), "Reasonable Estimation of the Amount of a Loss."[35] FIN 14 states, "[W]hen some amount within the range appears at the time to be a better estimate than any other amount within the range, that amount should be accrued. When no amount within the range is a better estimate than any other amount, however, the minimum amount in the range shall be accrued."

2.3 GAAP Guidance on Methods to Use in Estimating a Loss

FAS 5 is a general standard that establishes the concept and goal of loss recognition for loss contingencies; it does not specifically identify which methods should be used to estimate a loss. When an accounting standard does not address a specific situation, guidance comes from other authoritative sources. The Statement on Auditing Standards (SAS) No. 69 establishes the hierarchy that is used to determine which source to follow. The standard establishes five levels, from most authoritative to least authoritative sources of GAAP (see Table 2.1). The highest applicable level in the hierarchy that specifically addresses the given issue is used to establish GAAP.[36] In the case of estimating losses from loss contingencies that are similar to the "Anticipated failure of insured institutions,"[37] the highest level of additional guidance is provided by the appropriate American Institute of Certified Public Accountants (AICPA) industry audit and

[35] FASB (1976a).

[36] If the accounting treatment for a transaction or event is not specified by a pronouncement described in categories (a)–(d) of Table 2.1,

> the auditor of financial statements . . . may consider other accounting literature, depending on its relevance in the circumstances. Other accounting literature includes, for example, FASB Statements of Financial Accounting Concepts; APB Statements; AICPA Issues papers; International Accounting Standards of the International Accounting Standards Committee; Government Accounting Standards Board (GASB) Statements, Interpretations, and Technical Bulletins; pronouncements of other professional associations or regulatory agencies; Technical Information Service Inquiries and Replies included in AICPA Technical Practice Aids; and accounting textbooks, handbooks, and articles (AICPA [1992], ¶11).

[37] FDIC. (2006), 53. 73.

accounting guides.[38] The guides that are most applicable to the FDIC are entitled "Audit and Accounting Guide for Depository and Lending Institutions" and "Audit and Accounting Guide for Property and Liability Insurance Companies."[39]

Table 2.1

Hierarchy of Generally Accepted Accounting Principles (GAAP)

(from most authoritative to least authoritative)

(a) FASB Statements of Financial Accounting Standards and Interpretations, Accounting Principles Board Opinions and AICPA Accounting Research Bulletins.

(b) FASB Technical Bulletins and, if cleared by the FASB, AICPA Industry Audit and Accounting Guides and AICPA Statements of Position.

(c) AICPA Accounting Standards Executive Committee (AcSEC) Practice Bulletins that have been cleared by the FASB and consensus positions of the FASB Emerging Issues Task Force (EITF).

(d) AICPA accounting interpretation and implementation guides ("Q&As") published by the FASB staff, practices that are widely recognized and prevalent either generally or in the industry.

Source: AICPA (1992), ¶ 10.

Note: AICPA. 1992. SAS No. 69. The Meaning of: Present Fairly in Conformity with Generally Accepted Accounting Principles. ¶ 10. In April 2005 the FASB issued a proposed revision of the GAAP hierarchy. As of the date of this study, the proposal is still pending. For purposes of interpreting category (b) and category (c), the word *cleared* means that the FASB does not object to the pronouncement's issuance. An auditor should assume that such pronouncements have been cleared by the FASB unless the pronouncement indicates otherwise.

[38] This is not true for all types of loss contingencies. For example, FAS 114—which is a level "a". GAAP ("a" is the highest in the five-level GAAP hierarchy)—provides guidance for estimating losses on certain loans, that is, loans that have been individually evaluated for collectibility and determined to be impaired.

In the five-level GAAP hierarchy, the AICPA audit guides have level "b" authority. FAS 5 has level "a". authority.

[39] AICPA. (2005 and 2004).

2.3.1 Guide for Depository and Lending Institutions (Banks and Savings Institutions, Credit Unions, Finance Companies, and Mortgage Companies)

The allowance for credit losses is management's estimate of the amount of probable credit losses in the loan portfolio that have been incurred as of the date of the financial statements. Estimating credit losses is unavoidably subjective, and therefore management must make careful judgments about collectibility and estimates of losses. Management should consider micro- and macroeconomic factors; past, current, and anticipated events based on facts in evidence at the balance-sheet date; and the courses of action it expects to take.[40] The lending institution audit guide does not specify any particular method for estimating credit losses. Instead, it provides a list of elements that should be part of any estimation process, going on to say:

> [A]lthough different institutions may use different methods, there are certain common elements that should be included in any methodology for it to be effective. The method should:
>
> - Include a detailed and regular analysis of the loan portfolio and off-balance-sheet instruments with credit risk.
> - Include procedures for timely identification of problem credits.
> - Be used consistently.
> - Consider all known relevant internal and external factors that may affect collectibility.
> - Consider all loans (whether on an individual or pool-of-loan basis) and other relevant credit exposure.
> - Consider the particular risks inherent in the different kinds of lending.
> - Be based on current and reliable data.
> - Be well documented, with clear explanations of the supporting analysis and rationale.[41]

The guide emphasizes:

> Methods that rely solely on mathematical calculations, such as a percentage of total loans based on historical experience or the similar allowance percentages of peer institutions, generally fail to contain the essential elements, because they do not involve detailed analysis of an institution's particular transactions or consider the current economic environment.[42]

[40] AICPA. (2005), ¶ 9.04.
[41] Ibid., ¶ 9.05.
[42] Ibid., ¶ 9.06.

For purposes of evaluating loans for collectibility, creditors normally divide loan portfolios into different segments, with the loans in each segment having similar characteristics (such as risk classification, past-due status, and type of loan).[43] Sorting loans into risk categories uses information about the ability of borrowers to service debt, historical payment experience, credit documentation, public information, and current trends.[44]

To produce estimates of loss, a pooled approach is used for smaller-balance credits with homogeneous characteristics (for example, pools of residential real estate loans, home equity lines of credit, direct consumer loans, credit card loans) and for other credits with similar characteristics. The pooled method generally uses the historical loss experience for the pool as a starting point. Loss experience is adjusted for changes in trends and conditions, such as levels of and trends in recoveries of prior charge-offs; trends in number, amount, and terms of loans; and effects of and changes in lending policies.

The guide's implied methods for estimating loan losses are similar to the methods the FDIC uses to estimate losses from anticipated failures.[45] The guidance suggests that estimated losses for insured institutions could be based on a pooled approach: insured institutions could be placed into groups with similar characteristics (for example, segmented by regulatory risk classification or by CAMELS rating).

2.3.2 Guide for Property and Liability Insurance Companies

The reserves set aside by property and liability insurers for insured losses incurred but not yet reported to the company are analogous to the FDIC's contingent loss reserves.

The section of the guide for property and liability insurance companies entitled "Estimation Methods" refers to approaches for estimating loss reserves, ranging from

[43] Ibid., ¶ 9.07.
[44] Ibid., ¶ 9.08.
[45] The methods used by the FDIC for reserving for anticipated failures are discussed in Section 3 of this study.

simple forecasts to intricate models. Despite the variations, projection methods fall into three basic categories:

- Extrapolation of historical loss dollars
- Projection of separate frequency and severity data (the number of claims that will be paid or closed and the average costs of these claims)
- Use of expected loss ratio (loss as a percentage of earned premiums).

"Within each of these methods, there are a variety of techniques and loss data that may be used; there are also methods that combine features of these basic methods. No single projection method is inherently better than others for all circumstances."[46]

Three of the more common methods for reporting estimated loss are summarized by paragraph 4.43 of the guide:

- Loss Extrapolation Method:

  Paid Loss—Uses only paid losses. Outstanding case reserves are not considered.

  Incurred loss—Uses paid losses plus reserves on outstanding claims.
- Average Severities Method:

  Uses various claim count and average cost per claim data on either a paid or incurred basis.
- Loss Ratio Method:

  Uses various forms of expected losses in relation to premium earned.

The guide provides detailed examples of how the *incurred-loss* and *paid-loss* extrapolation methods would be used to forecast the proper level of loss reserves. These methods estimate the ultimate liability (cost) for accidents or injuries that have already occurred and then compares these costs with the liability that was accrued or paid. The difference between the two is the amount of adjustment that needs to be made to the estimated reserves or the current-year provision for loss.

[46] AICPA. (2004), ¶ 4.42.

Under the heading "Changes in Environment" the guide reminds the user that "an inherent assumption . . . is that historical loss patterns can be used to predict future loss patterns with reasonable accuracy. However, many variables can affect past and future loss patterns; the effect of changes in such variables on the result of loss projections should be carefully considered."[47]

Paragraph 4.65 states that "if changes in variables have occurred, the mechanical application of loss projection methods may result in unreasonable estimates."

Examples of how changes in variables might be considered in the loss reserving process are

- Selection of loss projection methods

  > [I]f management has adopted a policy to defer or accelerate the settlement of claims, a paid-loss extrapolation method will probably produce unreliable results. In that case, an incurred-loss extrapolation or other methods may produce better estimates of ultimate losses.[48]

- Adjustment of underlying historical loss data

  > In certain cases, the effect of changed variables can be isolated and appropriately reflected in the historical loss data used in the loss projection. For example, if policy limits are relatively consistent for all policies in a block of business, and if these limits have recently been reduced by a consistent amount, historical loss data can be adjusted to exclude amounts in excess of the revised policy limits.[49]

- Separate calculation of the effect of variables

  > The effect of certain changes in variables can be isolated and separately computed as an adjustment to the results of other loss projection methods. For example, if claim cost severity has increased (an increase in auto repair costs) or is expected to increase beyond historic trends, an additional reserve can be separately computed to reflect the effect of such actual or anticipated increases.[50]

The guide's appendix titled "Loss Reserves and Claims Cycle" adds the following observations about estimating loss: "[N]ew types of risks generally will add to the

[47] Ibid., ¶ 4.63.
[48] Ibid., ¶ 4.65.
[49] Ibid., ¶ 4.65.
[50] Ibid., ¶ 4.65.

subjectivity of the loss reserving process because of the company's lack of experience . . . and lack of relevant historical data."[51] Furthermore, "catastrophic or unusual losses may distort historical experience. Reserves for catastrophic losses, particularly losses that occur near the end of the period, are difficult to estimate."[52]

Perhaps the most important observation made by the two guides considered here, the one for depository and lending institutions and the one for property and liability insurance companies, is that most estimates of loss are based on history; however, any automatic process that fails to adjust for a changing environment is unacceptable.

2.3.4 Other Authoritative Literature That Affects FAS 5 Concepts for Accounting for Contingencies

The FASB issued the Statement of Financial Accounting Standards No. 114 (FAS 114), "Accounting by Creditors for Impairment of a Loan," in May 1993. This Statement requires "that impaired loans that are within the scope of this Statement be measured based on the present value of expected future cash flows discounted at the loan's effective interest rate or, . . . at the loan's observable market price or the fair value of the loan if the loan is collateral dependent."[53] FAS 114 also amends FAS 5 "to clarify that a creditor should evaluate the collectibility of both *contractual interest* and *contractual principal* of all receivables when assessing the need for a loss accrual."[54]

For purposes of the FDIC's contingent loss estimation, FAS 114 does not offer additional guidance to that already found in FAS 5. Statement 114 applies specifically to individually evaluated loans that are determined to be impaired, whereas the FDIC contingent loss applies to losses on insurance outlays. Because of the numerous

[51] Ibid. appendix A.
[52] Ibid. appendix A.
[53] FAS 114 applies to all loans "except: (a) Large groups of smaller balance homogeneous loans that are collectively evaluated for impairment . . . (b) Loans that are measured at fair value or at the lower of cost or fair value . . . (c) Leases as defined in FASB. FAS No. 13 . . . (d) Debt securities as defined in FASB FAS. No. 115" (¶ 6).
[54] FASB (1993a), ¶ 2.

differences between a loan and a subrogated claim,[55] the FDIC has chosen not to use FAS 114 when estimating contingent loss from the failure of insured institutions.

The AICPA issued Statement of Position 94-6 (SOP 94-6), "Disclosure of Certain Significant Risks and Uncertainties," on December 30, 1994. Disclosure requirements under SOP 94-6 are much the same as, or overlap with, the disclosure requirements under FAS 5 but with one significant difference: the reference to "near term." The requirements for disclosure under FAS 5 make no reference to a time horizon, such as "near term," with respect to the occurrence of the future events that will confirm that a loss has been incurred. In contrast, SOP 94-6 focuses "primarily on risk and uncertainties that could significantly affect the amounts reported in the financial statements in the near term or the near term functioning of the reporting entity."[56] "Near term" is defined as a period of time *not to exceed one year* from the date of the financial statements. The FDIC believes that the AICPA limited disclosure requirements to one year because of the difficulty associated with estimating risks and uncertainties further out than 12 months. In 1997, the FDIC reduced the time horizon for estimating its loss contingency from six quarters to 12 months.

2.4 Summary: Core Concepts of FAS 5 on the Treatment of Loss Contingencies

To summarize, here is the guidance offered by FAS 5 on the estimation of losses from loss contingencies. Everything that follows in this subsection relates to the date of the financial statements.

If a *loss contingency exists* and a loss from the contingency is *probable* and, in addition, its amount is *reasonably estimable*, a charge *should be accrued* to income, and an asset impairment or a liability *should be recognized* on the balance sheet.

Disclosure, including the nature of the loss accrued on the loss contingency, is required.[57]

[55] The FDIC "subrogated claim" is the right to recover costs (paid depositor claims) from the assets of a failed institution.
[56] AICPA (1994), ¶ .02.
[57] FASB (1975), ¶ 8–9.

If a *loss contingency exists* and a loss from the contingency is *probable* but its amount is *not reasonably estimable*, disclosure is required. *Disclosure* should include the *nature* of the contingency and an estimate of *the possible loss or range of possible loss, or a statement that such an estimate cannot be made*. However, *no accrual* of a charge to income or recognition of an asset impairment or a liability on the balance sheet should be made.[58]

If a *loss contingency exists* and a loss from the contingency is *reasonably possible but not probable*, disclosure is required. *Disclosure* should include the *nature* of the contingency and an estimate of *the possible loss or range of loss or a statement that such an estimate cannot be made*. *No accrual* of a charge to income or recognition of an asset impairment or a liability on the balance sheet should be made.[59]

If a *loss contingency exists* (that is not a guarantee) for which the probability of a loss is *remote*, there should be no financial statement recognition of the event.

When a loss contingency does not meet both the *probable* and *reasonably estimable* conditions for accrual of a loss or if the exposure to loss from a loss contingency exceeds the amount accrued under the standard, a disclosure of the contingency should be made if it is at least reasonably possible that a loss or an additional loss may have been incurred. The disclosure should include a description of the contingency and an estimate of the possible loss or range of possible loss or a statement that such an estimate cannot be made.[60]

[58] Ibid., ¶ 10.
[59] Ibid.
[60] Ibid.

3. Overview of FDIC Contingent Loss Reserving Policies and Practices, Past and Current

Historically the FDIC has followed GAAP for purposes of financial reporting, and this policy of conforming to GAAP has not changed over time.[61] However, as accounting practices and the interpretation of accounting principles have evolved, the FDIC's policies and practices for establishing contingent loss reserves have evolved as well. These policies and practices have also been influenced by the condition of the banking and thrift industries.

This section describes the policies and practices the FDIC has used in the past and those it uses now in reserving for contingent liabilities for the anticipated failures of insured institutions from the early 1980s to the present. In discussing the evolution of FDIC loss reserving policies and practices, we focus on the reasons for the adoption of particular practices and the factors requiring changes in and refinements to practices.

3.1 Policies and Practices pre-1988

During the 1980s, the FDIC's reserving policies and practices were based on a very narrow interpretation of the "probable and reasonably estimable" GAAP guidelines, an interpretation that required a high degree of certainty. The notion was that contingent liabilities for losses due to anticipated failures of insured institutions were impossible to quantify since the contributory factors could be assessed only after the actual failure or assistance.[62] On the basis of this strict interpretation, for the better part of the 1980s the FDIC did not accrue or report a liability for losses due to anticipated failures of insured institutions. Generally no loss was recognized unless an institution failed. During this period the only contingent loss reported by the FDIC was for potential litigation loss.

[61] As discussed in Section 2, GAAP requires recognition of losses in financial statements if it is probable that a liability exists as of the date of the financial statement and if the amount of that liability can be reasonably estimated.

[62] The FDIC also presumed that the entire deposit insurance fund and borrowing authority (from the U.S. Treasury) were available to cover such losses.

3.2 Policies and Practices 1988–1997

In 1988 and 1989, the significant increase in failed-bank assets served as an impetus for a change in policy, and the FDIC began to accrue an estimated loss for large banks that were in the process of being resolved as of the date of the FDIC's financial statement. In other words, the FDIC was now emphasizing materiality and high probability of failure. The disclosure in the 1988 FDIC Annual Report states: "The Corporation records an estimated loss for its future or potential assistance to those banks which the regulatory process has identified as being distressed and where ongoing negotiations and/or current agreement terms indicated that Corporation bank assistance will be necessary."[63] There is a similar disclosure in the 1989 FDIC Annual Report.

After an extensive review and on the basis of guidelines recommended by the GAO in early 1991 requiring earlier recognition of losses for contingent loss accrual and reporting,[64] the FDIC adopted a new contingent loss reserving policy and methodology effective with the 1990 reporting year.

The policy under the new approach was to accrue insurance losses for financial institutions the FDIC determined to be either equity insolvent or in-substance equity insolvent as of the reporting date. An equity-insolvent bank was defined as an institution reporting Tier 1 capital of zero or less.[65] An in-substance equity-insolvent bank was defined as an institution reporting positive Tier 1 capital as of the reporting date but possessing adverse financial characteristics that resulted in an FDIC determination that, in substance, the institution was equity insolvent as of the reporting date. Effective with the 1991 reporting year, the FDIC further expanded its loss recognition policy to include losses from financial institutions that were solvent at the reporting date but were projected by the FDIC to become insolvent in the near future. This change reflected the loss recognition criteria discussed in the GAO report on the Bank Insurance Fund's 1990

[63] FDIC (1989), footnote 5.
[64] U.S. GAO (1991a).
[65] Subsequently, the definition of insolvency was revised from zero or negative equity to equity of less than 2 percent, consistent with the provisions of the Federal Deposit Insurance Corporation Improvement Act of 1991

financial statements.[66] This loss recognition policy and the methodology discussed in the next paragraph were used through the second quarter of 1997.

The methodology used between year-end 1991 and the second quarter of 1997 involved dividing banks into two groups: (1) institutions with total assets of $100 million or more (large banks), and (2) institutions with total assets of less than $100 million (small banks).[67] The total loss reserve was the sum of the estimated losses for large and small banks.

For small banks, a general reserve was established without analysis of individual banks. All small banks with Tier 1 capital-to-asset ratios of less than 3 percent as of their most recent quarterly financial statement were identified.[68] Then total assets of those banks were multiplied by the previous year's failure rate.[69] This provided an estimate of the total failed small-bank assets expected in the next four quarters. To establish an estimated dollar loss from potential failures of small banks, estimated failed assets were then multiplied by the historical average FDIC failure-resolution loss rate for small banks.[70]

Loss reserves for large banks (and all thrifts) involved analysis of individual institutions and represented an all-or-nothing approach, which included the total estimated loss for any institution identified as a probable failure. First, candidates for review were identified on the basis of the following criteria:

- Large banks and all thrifts projected to have less than 2 percent in Tier 1 capital either currently or within the next six quarters.[71] The projection was made by adjusting the bank's ratio of loss reserves to nonperforming assets to a peer-group

[66] U.S. GAO (1991b).
[67] The methodology for establishing the SAIF loss reserves was the same as the methodology used for large banks: all thrifts regardless of size were processed as large banks.
[68] All insured institutions are required to file financial statements with their primary federal bank or thrift regulator at each calendar quarter-end (Call Reports).
[69] The rate at which such banks failed in the previous four quarters based on the ratio of failed-bank assets to total assets.
[70] The percentage of failed-bank assets that was unrecoverable by the FDIC for banks with less than $100 million in total assets.
[71] This differs from the four-quarter time frame used for small banks.

level and extrapolating the bank's average core earnings (core earnings were defined as net income excluding loss provisions) for the last five quarters.

- All large banks that were projected to fail by the FDIC and any thrift regardless of asset size that was classified by the Office of Thrift Supervision (OTS) as Seriously Troubled.
- All large banks and all thrifts that were composite CAMEL 5-rated (regardless of projected solvency);[72] and all institutions that were reserved for as of the most recent quarter regardless of asset size.

Second, supervisory comments from the FDIC and all other available information were used to determine whether an institution on the review list was likely to fail over the next six quarters. Institutions identified as probable failures were included on the reserve list.

Finally, if institution-specific loss estimates were available from the FDIC's resolutions staff, those estimates were used as the contingent loss reserve. If they were not available, the reserve was calculated with use of the FDIC's historical loss rates based on institutions' asset size: each individual bank's total assets were multiplied by the applicable historical loss rate.[73] The large-bank loss reserve was computed by summing the reserve amounts of the individual banks.

3.3 Policies and Practices 1997–2006

From 1992 through 1997, the BIF contingent loss reserves were consistently higher than the actual losses experienced. To improve the accuracy of the reserves and reduce the volatility of the financial statements, the FDIC adopted a new methodology for calculating the contingent loss reserve in the third quarter 1997. That methodology, although modified, is still in use and is based on a statistical approach that considers the

[72] The S-rating (Sensitivity to market risk) was added to the CAMEL rating in 1997. For this study, we refer to a CAMEL rating when discussing examination ratings prior to 1997, a CAMELS rating when referring to examinations after 1997, and a CAMEL(S) rating when referring to examinations that may span both time periods. For a detailed discussion of the CAMELS rating, see Section 5.1 and Table 5.1.

[73] In 1996, three loss rates were used based on historical averages: 20% for banks under $500 million, 15% for banks between $500 million and $5 billion, and 10% for banks larger than $5 billion. The loss rate used for small banks was the same as the rate used for the smallest category of large banks (20%). The historical loss rates were updated annually.

probability of institutions failing within the next 12 months. The contingent liability is derived by applying expected failure rates and historical loss rates to groups of institutions with two shared characteristics: supervisory rating and projected capital level. An interdivisional FDIC committee—the Financial Risk Committee (FRC)—is responsible for this process. The FRC meets quarterly with the other federal banking regulators to ensure that the most current supervisory information is used in the calculation of reserves. The methodology is applied each quarter in a three-step process.

In the first step, the FRC identifies five groups of institutions for review and analysis. One group includes institutions designated as imminent failures—those critically undercapitalized or with a scheduled closing date. The other four groups include institutions with a composite CAMELS rating of 4 or 5, subdivided on the basis of projected capital levels.[74]

In the second step, for institutions within each group an expected failure rate is applied to project anticipated failed assets. For the critically undercapitalized group, an expected failure rate of 100 percent is used in calculating the expected failed assets. For each of the other four groups, the average annual failure rate for institutions in that group over the prior two years is used as the expected failure rate.[75] If there have not been any failures for one of the four groups, the FRC may look as far beyond the previous two years as is necessary to have some failure experience in that group. The FRC has the responsibility for determining the appropriateness of the applicable expected failure rate for each group. Before the second quarter 2003, the FRC had total discretion to change the expected failure rate for any of the four groups on the basis of the outlook for economic and industry conditions over the next four quarters.[76] In the second quarter 2003, the FRC

[74] Composite CAMELS ratings are based on federal or state examinations and off-site ratings by the FDIC, and capital projections are from an FDIC internally developed model (Pro Forma model). The Pro Forma model projects banks' capital using reported financial data and produces a list of four groups of banks based on examination ratings ("4" and "5") and projected capital ("exceeding 2 percent" and "below 2 percent").

[75] Methodology used in calculating the two-year average failure rates for the four risk groups has changed over time. From 1997Q3 through 2003Q1, a 2-point average method was used, in 2003Q2, a 5-point average method was used, and since 2003Q3, an overall, unweighted rate has been used.

[76] From 1997Q3 through 1998Q3, the most recent two-year average failure rates were used. From 1998Q4 through 2003Q1, the FRC chose to use rates other than the two-year average rates, but applied rates that

adopted a new policy to constrain deviations from the expected failure rates to a 90 percent confidence interval around the expected rate; and in March 2004, the FRC adopted explicit guidelines specifying the criteria to be used for deviating from the expected failure rates. However, the guidelines apply only to the general application of failure rates to the four risk groups, and the FRC retains the option of deviating from the methodology in the following cases:

- Institutions in the 100 percent projected failure category
- Institutions that represent the top ten contributors to the reserve
- Institutions with $500 million or more in total assets
- Institutions that are designated as subprime lenders and have $200 million or more in total assets.

To estimate the level of projected failed assets for each institution, the FRC multiplies total assets of the institution by the appropriate expected failure rate as determined by the FRC.

In the third step, different expected loss rates are applied to each institution on the basis of the FDIC's historical experience. From third quarter 1997 through second quarter 2003, different loss rates were used for five different categories of institutions based on asset size.[77] Those loss rates reflected the FDIC's historical loss experience for banks of different sizes, starting with a base year of 1986 and running through the most current data available. Since the third quarter 2003, an internally developed model—the Research Model—has been used for estimating losses for individual institutions in the five risk groups on the basis of each institution's asset and liability composition.[78] In addition, if they are available, the FRC uses loss estimates prepared by the FDIC's resolutions staff on the basis of asset valuation reviews. Further, the FRC has the discretion to revise loss

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were within the range of the FDIC's historical experience. Since 2003Q2 the FRC has consistently applied the two-year average rates.

[77] Loss rates used in the second quarter of 2003 were: 24% for institutions under $100 million; 23% for institutions between $100 million and $500 million; 19% for institutions between $500 million and $1 billion; 13% for institutions between $1billion and $5 billion; and 8% for institutions larger than $5 billion.

[78] For a detailed discussion of the Research Model, see Section 5.3.

estimates for the following groups if supervisory or other information exists to justify a different loss estimate:

- Institutions in the 100 percent projected failure category
- Institutions that represent the top 10 contributors to the reserve
- Institutions with $500 million or more in total assets
- Institutions that are designated as subprime and have $200 million or more in total assets.

3.4 McKinsey & Company Review, 2003

As of December 31, 2002, the BIF reserve ratio had dropped to 1.27 percent, only slightly above the statutory threshold of 1.25 percent.[79] In early 2003, the FDIC concluded that there was a reasonable probability that the reserve ratio would fall below 1.25 percent by year-end. At the same time, deposit insurance reform legislation was being considered that would give the FDIC substantially more latitude and discretion in managing the deposit insurance fund. Given the growing importance of risk and risk management in the banking industry, the FDIC initiated a comprehensive review of the contingent loss reserving process to address any concerns associated with accuracy, robustness, and transparency. In early 2003, the FDIC commissioned an independent evaluation of the process and selected McKinsey & Company (McKinsey) to provide the assessment. McKinsey broadly endorsed the existing methodology used by the FDIC in calculating contingent loss reserve. Among the changes and refinements McKinsey recommended were to adhere to average two-year historical failure rates in calculating the reserve, specifying when to deviate from historical failure rates, and to constrain subjective deviations in failure rates to a 90 percent confidence interval of the two-year historical average. McKinsey also recommended changing the methodology used for estimating losses for potential failures by incorporating the asset and liability structures of individual institutions (that is, by adopting the Research Model). McKinsey also recommended improvements in the process. Among these were the adoption of a clear mission statement, formal voting and attendance to enhance decision making and

[79] The Financial Institutions Reform, Recovery and Enforcement Act of 1989 established a 1.25 percent Designated Reserve Ratio.

accountability, and development of formal and systematic feedback loops. The FRC adopted these recommendations in September 2003.

In addition to the short-term improvements to the contingent loss methodology and process, McKinsey suggested that the FDIC accelerate the development of the Loss Distribution Model, a credit-risk model, to eventually replace the contingent loss reserving methodology. At this time, the FDIC is studying and analyzing ways to measure the loss distribution for the insurance fund and how it can inform the reserving process.

4. Accuracy of the FDIC Contingent Loss Reserves, BIF and SAIF, 1992–2004

During the 1992–2004 study period, the FDIC managed two separate deposit insurance funds.[80] Both of them—the BIF and the SAIF—were established in 1989 by the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA). However, the Resolution Trust Corporation (RTC), which was also established by FIRREA, was responsible for all savings association failures until June 30, 1995, so the first SAIF-institution failure did not occur until after that date.[81] Since then, six SAIF-insured institutions have failed, all before 2005. By contrast, since the inception of the BIF, 519 BIF-insured institutions have failed, 223 of them between 1992 and 2004.

This section analyzes the effectiveness and accuracy of the reserving process for each insurance fund. (Subsequent to the time period of this study, the BIF and SAIF funds were merged into one fund, effective March 31, 2006.) After summarizing the condition of the banking industry and banking regulation during the period 1992–2004, we look at the accuracy of BIF loss reserves under each of the FDIC's three reserving methodologies, and then at the accuracy of SAIF loss reserves. There are a number of alternative statistical measures for assessing the accuracy of the reserving process, and we look at BIF and SAIF reserving accuracy using two of these measures—the average error and the average absolute error. Then we decompose the loss reserve for both funds into two components—failure probabilities and losses given failure—and evaluate how the accuracy of each component affects the accuracy of the reserve. We find that the majority of the inaccuracies in the loss reserve are due to misjudging the probability of failure; therefore, we conclude the section by focusing on errors in estimating failure probabilities.

[80] As of year-end 2004 there were 7,935 BIF-insured institutions and $2,677 billion in BIF-insured deposits. At the same time there were 1,181 SAIF-insured institutions and $951 billion in SAIF-insured deposits (FDIC [2005]).

[81] The Resolution Trust Corporation, formed in 1989 by FIRREA, was given the task of handling the resolution of any failed thrifts placed under conservatorship or receivership through August 9, 1992.The Resolution Trust Corporation Refinancing, Restructuring, and Improvement Act of 1991extended that date to October 1, 1993. The Resolution Trust Corporation Completion Act of 1993 extended that still further, to a date between January 1, 1995, and July 1, 1995. The secretary of the treasury set the date at June 30, 1995.

4.1 Emergence from Crisis into Stability

The bank and thrift industries have undergone dramatic changes since 1992. These changes reflect the initially adverse and volatile market conditions of the early 1990s, subsequent advances in financial markets, and changes in state and federal bank regulation and supervision. Although a full recounting of these events is outside the scope of the present study, it is important to remember that these events influenced the ability of the FDIC to anticipate and reserve for insured-institution failures.

The early 1990s were dominated by the ongoing bank and thrift crises, in part caused by historically high interest rates.[82] The weakening of most regional commercial real estate markets in the late 1980s and early 1990s contributed to widespread losses on commercial real estate loans, resulting in the insolvency of 511 thrifts insured by the Federal Savings and Loan Insurance Corporation (FSLIC) by 1989 and the insolvency of an additional 747 thrifts whose failures were resolved by the RTC. BIF-insured banks were in significant trouble as well (1,470 failures from 1983 to 1992), with banks in the Southwest and New England also experiencing heavy losses in commercial real estate, especially construction and land development loans.

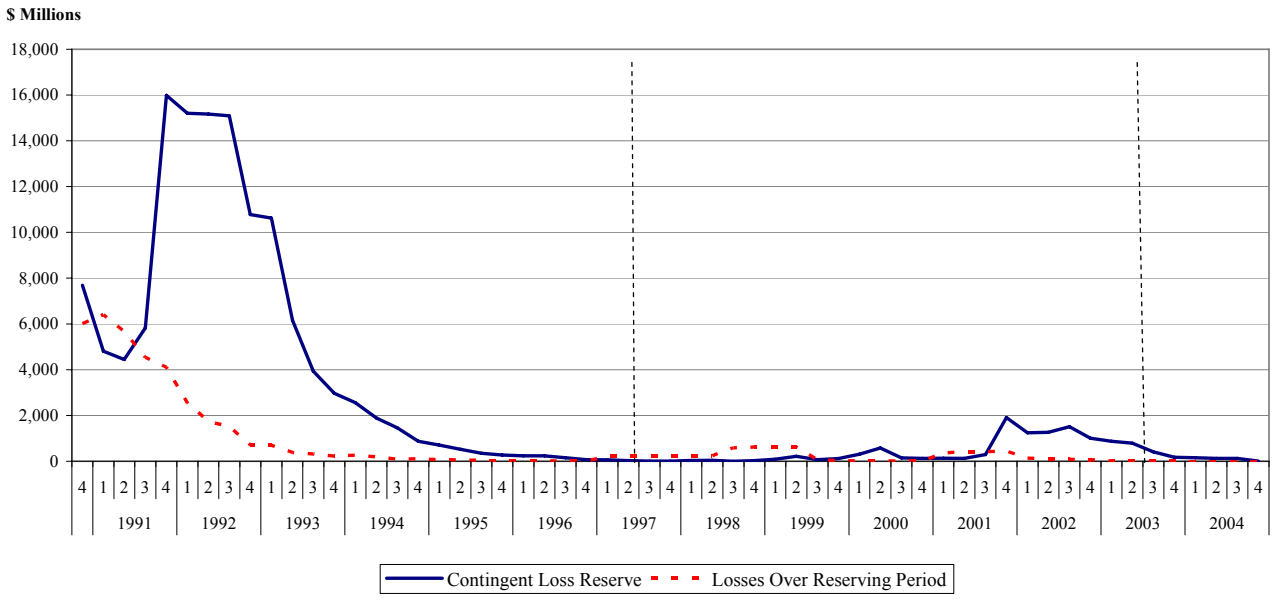
As the interest rate environment became more favorable and the losses on commercial real estate slowed, losses to the BIF declined dramatically in 1992 (see Figure 4.1). Since 1992, bank and thrift market conditions have continued to improve. The acquisition of financially weak institutions by stronger competitors without government assistance contributed to the recovery of the banking and thrift industries. Additionally, Congress and financial regulators enacted measures intended to strengthen the two industries. The adoption of risk-based capital standards in 1991 enhanced capital standards. Also in 1991, the Federal Deposit Insurance Corporation Improvement Act (FDICIA) included minimum leverage-capital standards, and it required regulators to take prompt corrective action if banks and thrifts failed to meet those standards. Industry consolidation accelerated with passage of the Reigle-Neal Interstate Banking and Branching Efficiency

[82] A discussion of the savings and loan crisis is presented in "The Savings and Loan Crisis and Its Relationship to Banking." In FDIC (1997).

Act of 1994, which lowered barriers to interstate branching and banking. Finally, the Gramm-Leach-Bliley Act of 1999 permitted banks to engage in expanded financial activities, such as the sale of securities and insurance, through affiliations with well-capitalized financial holding companies. This expansion of business activity reduced risk in the industry by allowing institutions to more fully diversify their product lines. The improvement of market conditions within the banking and thrift industries resulted in dramatic reductions in the number of failed institutions and in BIF and SAIF outlays.

Figure 4.1

Bank Insurance Fund Losses and Loss Reserves, 1991–2004



4.2 BIF Loss Reserves versus Subsequent BIF Losses

The representation in Figure 4.1 of the overall accuracy of BIF loss reserves covers the three periods whose methodologies are described above in Section 3: (1) before September 1997, (2) September 1997 through June 2003, and (3) the current

methodology, first implemented in September 2003.[83] That the period under consideration saw three different reserving methodologies is of particular importance. Each methodology—and time period—yields different results, and thus different levels of accuracy.

For the purposes of this study, we use to the term "over-reserving" ("under-reserving") to indicate that contingent loss reserves are greater than (less than) actual insurance losses for the reserving period. Similarly, we use the terms "error" or "inaccuracy" to indicate that contingent loss reserves do not equal actual insurance losses for the reserving period. As discussed in Section 2, the FDIC's contingent loss reserves for insured institution failures are for failures that are likely to occur absent some exogenous event that alters the institution's likelihood of failure, such as the institution's receiving an external capital injection or merger with a healthy institution. As a consequence, our numerical estimates of reserve accuracy are *ex-post* measures that do not address the appropriateness of reserves absent exogenous events (that is, *ex ante* appropriateness). To address the *ex ante* appropriateness of reserves, we discuss the sources of reserve error in this section and the appropriateness of the information and criteria used to establish reserves in Section 5.

4.2.1 Accuracy under the 1991–1997 Methodology

Before the end of 1990 the FDIC had interpreted the term "probable" in the accounting guidelines to mean "virtually certain," so that the FDIC established a reserve for losses only if the probability of confirming the loss in the future was so high as to make the need for reserving a foregone conclusion. Additionally the FDIC took the position that, since the information necessary to reasonably estimate the loss was available only *after* actual failure or assistance, quantifying a contingent liability before failure was not possible. This meant that, in general, a reserve was established only for institutions that

[83] As explained in Section 3, from the fourth quarter 1991 through the second quarter 1997, reserves for banks over $100 million in assets were made on the basis of expected failures over the subsequent six quarters. Since anticipated losses from these larger banks constituted 96 percent of the contingent loss reserve from the fourth quarter 1991 through the second quarter 1997 the six-quarter time horizon is the appropriate "actual" value to use for purposes of comparison. For this period, therefore, the red line in Figure 4.1 displays the aggregate of the next six quarters of losses to the BIF, whereas during all other periods the red line displays the aggregate of the next four quarters of losses.

were already in the resolution process. By year-end 1990 the FDIC began reserving for institutions whose probability of failure was high, but not so high as to make the loss a virtual certainty. This change in methodology led to an increase in reserves starting at year-end 1990. But because 1991 was the height of the banking crisis, not until the third quarter of 1991 were the FDIC's increases in reserves generally adequate to cover actual losses.[84]

At year-end 1991, the FDIC expanded the scope of insured institutions for which contingent loss reserves would need to be established. The following, taken from a footnote in the FDIC annual report for 1991, explains the new methodology:

> In 1991, the FDIC has taken a new view of what constitutes an accountable event for purposes of recognizing an estimated loss for future bank failures. Specifically, the FDIC has expanded its concept of banks considered to be in-substance insolvent for 1991 to include those that are solvent at year end, but which have adverse financial trends and, absent some favorable event (such as obtaining additional capital or a merger), will probably become equity deficient in 1992 or thereafter.[85]

The FDIC's decision to expand the concept of an accountable event and the abatement of the banking crisis resulted in the 1991 contingent loss reserve substantially exceeding subsequent BIF losses. At year-end 1991, reserves were 3.9 times larger than actual losses. Reserving continued to exceed subsequent losses by more than a billion dollars through the third quarter of 1994. However, from year-end 1992 until year-end 1997, as institutions began to improve their financial condition and the banking crisis came to an end, the reserve shrank steadily.

4.2.2 Accuracy under the September 1997 to June 2003 Methodology

A new reserve methodology was introduced in the third quarter of 1997. It involved the use of statistical techniques to estimate loss given failure and to estimate the probability of failure. These statistical techniques produced estimates of how much to reserve for all problem institutions, and the FRC used these estimates as guidelines for setting the final loss reserve. However, the FRC gave itself discretion to deviate from the estimated

[84] Historical information on the FDIC's interpretation of the relevant accounting guidance was provided the by FDIC's division of finance.
[85] FDIC (1992), 57.

reserve amount when it felt that particular circumstances surrounding the potential failure of an institution warranted additional reserves. Under this methodology the reserving process no longer exhibited a strong upward bias. During the period from the third quarter 1997 through the second quarter 2003, there were 13 quarters when the loss reserve overstated subsequent failure costs and 11 quarters when it understated them (Figure 4.1).

Most deviations between reserve amounts and subsequent losses can be attributed to estimates related to a few large institutions. Underestimates of annual BIF losses during the period from the third quarter 1998 through the second quarter 1999 were largely attributable to the failure in September 1999 of Keystone Bank (West Virginia), which had reported assets of $1 billion at failure.[86] Keystone was not considered to be a likely failure until the second quarter of 1999, and even then the loss projections were less than the subsequent actual losses. When fraud occurs, as it did with Keystone, failure and the extent of potential loss are hard to predict. Fraud was also involved in the earlier failure of Bestbank (Colorado), accounting for the underestimation of losses in 1997 and early 1998.

The 4th quarter of 2001 calls for special attention since the largest overreserving under this methodology occurred that quarter. Projections in the 4th quarter 2001 listed seven BIF-insured institutions as having a 100 percent probability of failing within one year. Six of those institutions actually failed within that time horizon. Another institution, Southern Pacific Bank, with assets of $1.1 billion, was listed as having a 50 percent probability of failing within one year; however, Southern Pacific Bank took slightly more than one year to fail, accounting for part of the overreserving. Most of the overreserving resulted from one large institution that did not subsequently fail. This institution continued to account for an average of 73 percent of the overreserving that occurred for the next 11 quarters.

[86] Keystone failed during the third quarter of 1999. Consequently, the measure of "losses over the reserving period" includes losses from Keystone beginning in the third quarter of 1998 through the second quarter of 1999.

To summarize:

- During the period September 1997 through June 2003, reserving no longer exhibited the strong upward bias.
- Underreserving during the period from late 1997 through early 1999 was due to the failure of two institutions, Keystone and Bestbank.
- Most of the overreserving between year-end 2001 and the third quarter 2004 is accounted for by the reserving for one large institution that was troubled but nevertheless survived. Other failures during this period had appropriate reserves.

4.2.3 Accuracy since September 2003

In September 2003, the FRC limited its use of discretion in changing the amount to be reserved for individual institutions. In particular, it adopted a set of guidelines restricting both the circumstance under which it would deviate from model estimates and the magnitude of that deviation.[87] One effect of these restrictions has been a reduction in the overestimation of losses (Figure 4.1). Institution failures have resulted in small losses ($5.7 million) and the amount of over-reserving is smaller over this time period (figure 1).

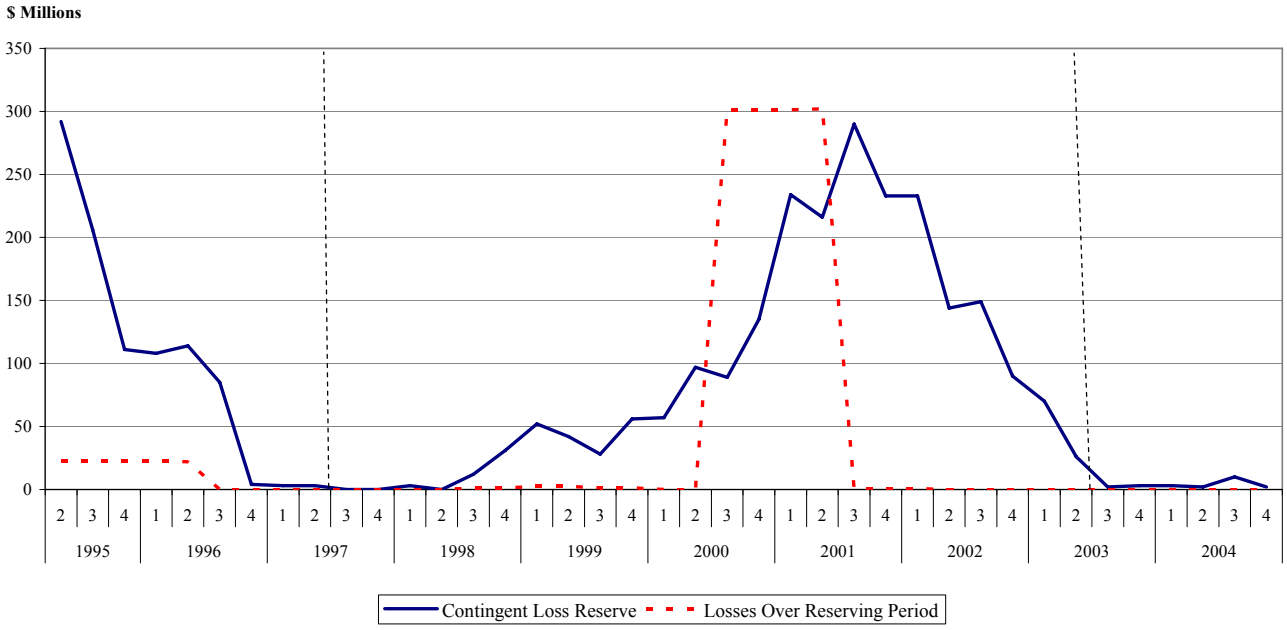
4.3 SAIF Loss Reserves versus Subsequent SAIF Losses

Figure 4.2 shows the contingent loss reserve and subsequent losses for the SAIF.[88] The figure begins with the second quarter of 1995, since until then all losses for thrift institutions were covered by the RTC or the FSLIC. The figure shows that during the quarters when the pre-September 1997 methodology was in use, there was a tendency to overestimate losses.

[87] These guidelines were proposed in McKinsey & Company (2003).
[88] For the third quarter 1997 and later, all "actual" values are the losses associated with failures over the subsequent four quarters. For the earlier quarters, a six-quarter horizon is used for actual values.

Figure 4.2

Savings Association Insurance Fund Losses and Loss Reserves, 1995–2004



Under the post-September 1997 methodology, the only substantial loss to the SAIF was due to the failure of Superior Bank (Illinois, $2.2 billion in assets) in July 2001. Figure 4.2 shows that in the four quarters just before this failure, there was a major increase in the contingent loss reserve, which provided an appropriate allowance for the impending loss. Since the implementation of the current methodology in September 2003, there have been no actual losses to the SAIF fund, and contingent loss reserves for SAIF institutions have been correspondingly low.

4.4 Quantitative Measures of Accuracy

There are two measures of the accuracy of the contingent loss reserves. We calculated them separately for the BIF and the SAIF, and for each of the three major methodologies. The two measures—average error and average absolute error—provide information on two statistical concepts of accuracy: consistency and efficiency.

An estimate is considered consistent if individual errors (differences between estimates and outcomes) tend to cancel each other out so that over time the average estimate is very close to the actual outcome. If, however, estimates are consistently larger or smaller than actual outcomes, the estimate is inconsistent or biased. A measure of the consistency of the loss reserve is the average error.

But a consistent estimator can significantly over- or underestimate any single outcome. To account for this possibility, we include a measure of the magnitude of error or efficiency. The efficiency of an estimator increases as the magnitude of error declines. An estimator that tends to have small magnitude error is usually preferable to one with large magnitude error, even if the estimator is biased. We measure the magnitude of error with the average absolute value of errors.

Table 4.1 shows the two measures of accuracy for the three methodologies for the BIF, and Table 4.2 does the same for the SAIF. Both tables show that the recent reserve methodologies are more accurate than earlier methodologies, with the current methodology exhibiting the smallest average error. All three methodologies result in overestimation of subsequent losses, as is indicated by the positive average error for all three.

Table 4.1
BIF Average Error Measures under the Three Methodologies
($ Millions)

Methodology	Average Error	Average Absolute Error
Pre-September 1997	3,402	3,638
Post-September 1997	224	522
Current	167	167

Table 4.2
SAIF Average Error Measures under the Three Methodologies
($ Millions)

Methodology	Average Error	Average Absolute Error
Pre-September 1997	90	90
Post-September 1997	45	89
Current	4	4

4.5 Identification of Sources of Error

Behind the loss reserve established for each institution there are two separate processes at work: (1) the process of evaluating the likelihood of failure for that institution,[89] and (2) the process of determining the likely loss to the FDIC, given failure.

We performed an exercise to measure the extent to which these two processes contribute to error in the loss reserve: for each quarter, we determined how much the loss reserve would have changed if the estimate for the loss given failure had been exactly correct for each bank that subsequently failed. The extent to which this adjustment improves reserve accuracy provides a measure of the degree to which errors in estimating loss given failure contribute to inaccuracies in the reserve. From this information we can deduce that the portion of error that is not accounted for by inaccuracies in calculating loss given failure is caused by inaccuracies in calculating failure probabilities.

Table 4.3 shows how the average error and average absolute error for the BIF are altered when the estimated loss rate given failure is correct for all banks that subsequently failed.[90] From 1997 to 2004, the average absolute error decreases by 8 percent from $451 million to $415 million. Thus, although an improvement in the estimated loss rate given failure would improve the accuracy of the contingent loss reserve, the greater determinant of loss reserve inaccuracy has been the precision of estimates of probability of failure. As discussed above, incorrect estimation of the failure probability of a few large institutions accounts for much of the error in loss reserves.

[89] In actuality there is an additional process that comes first: the process through which an institution is placed on the reserve list. However, one can interpret a decision not to place an institution on the reserve list as a determination that the probability of failure is zero. Under this interpretation, the decision to place an institution on the reserve list is subsumed within the process of determining probability of failure.

[90] Because the pre-September 1997 methodology did not decompose each institution's reserve into probability of failure and loss given failure, the "adjusted" loss reserve cannot be constructed for the period before September 1997.

Table 4.3

BIF: Measuring Effects of Loss-Given-Failure Errors on Loss Reserve Errors

($ Millions)

Year	Quarter	Used Contingent Loss Reserve (CLR)	Contingent Loss Reserve with Adjustment for Correct Loss Rate	Actual Losses over Subsequent Four Quarters	Error Using Original Methodology	Error using Adjusted CLR	Absolute Error Using Original Methodology	Absolute Error Using Adjusted CLR
1997	3	10	9	231	-221	-222	221	222
1997	4	11	4	226	-215	-221	215	221
1998	1	41	35	226	-185	-191	185	191
1998	2	47	40	235	-188	-195	188	195
1998	3	2	1	583	-581	-581	581	581
1998	4	32	34	625	-593	-590	593	590
1999	1	88	82	636	-548	-555	548	555
1999	2	219	632	625	-406	8	406	8
1999	3	72	85	70	2	15	2	15
1999	4	120	130	31	89	99	89	99
2000	1	314	308	20	294	288	294	288
2000	2	581	576	20	561	556	561	556
2000	3	147	135	8	139	126	139	126
2000	4	133	123	6	127	118	127	118
2001	1	139	130	367	-228	-237	228	237
2001	2	126	114	422	-296	-307	296	307
2001	3	297	267	419	-122	-152	122	152
2001	4	1,911	1,589	440	1,471	1,149	1,471	1,149
2002	1	1,252	1,205	138	1,114	1,067	1,114	1,067
2002	2	1,266	1,198	97	1,169	1,101	1,169	1,101
2002	3	1,518	1,274	96	1,422	1,178	1,422	1,178
2002	4	1,008	943	75	933	869	933	869
2003	1	872	871	16	856	855	856	855
2003	2	785	785	6	779	779	779	779
2003	3	417	416	6	411	410	411	410
2003	4	178	178	5	173	173	173	173
2004	1	156	156	3	153	153	153	153
2004	2	129	129	0	129	129	129	129
2004	3	128	128	0	128	128	128	128
2004	4	8	8	0	8	8	8	8
Average					**213**	**199**	**451**	**415**

Table 4.4 shows the equivalent calculations for SAIF institutions. From 1997 to 2007, when estimated loss given failure is adjusted to the correct value for all institutions that

subsequently failed, the average absolute error is reduced by 4.4 percent from $72 million to $69 million.

Table 4.4

SAIF: Measuring Effects of Loss-Given-Failure Errors on Loss Reserve Errors

($ Millions)

Year	Quarter	Used Contingent Loss Reserve (CLR)	Contingent Loss Reserve with Adjustment for Correct Loss Rate	Actual Losses over Subsequent Four Quarters	Error Using Original Methodology	Error using Adjusted CLR	Absolute Error Using Original Methodology	Absolute Error Using Adjusted CLR
1997	3	0	0	0	0	0	0	0
1997	4	0	0	0	0	0	0	0
1998	1	3	3	0	3	3	3	3
1998	2	0	0	0	0	0	0	0
1998	3	12	1	1	11	0	11	0
1998	4	31	20	1	30	19	30	19
1999	1	52	40	3	49	37	49	37
1999	2	42	27	3	39	24	39	24
1999	3	28	20	1	27	19	27	19
1999	4	56	49	1	55	47	55	47
2000	1	57	57	0	57	57	57	57
2000	2	97	103	0	97	103	97	103
2000	3	89	39	301	-212	-262	212	262
2000	4	135	139	301	-166	-162	166	162
2001	1	234	271	301	-67	-31	67	31
2001	2	216	247	302	-86	-55	86	55
2001	3	290	290	0	289	289	289	289
2001	4	233	230	1	232	230	232	230
2002	1	233	230	1	232	230	232	230
2002	2	144	142	0	144	142	144	142
2002	3	149	147	0	149	147	149	147
2002	4	90	89	0	90	89	90	89
2003	1	70	68	0	70	68	70	68
2003	2	26	25	0	26	25	26	25
2003	3	2	2	0	2	2	2	2
2003	4	3	3	0	3	3	3	3
2004	1	3	3	0	3	3	3	3
2004	2	2	2	0	2	2	2	2
2004	3	10	10	0	10	10	10	10
2004	4	2	2	0	2	2	2	2
Average					**36**	**35**	**72**	**69**

Tables 4.3 and 4.4 indicate that the primary determinant of the accuracy of the loss reserve is the identification of insured institutions that are likely to fail. In most instances, errors in the estimation of loss given failure are a secondary influence or less quantitatively important. However, in certain cases the estimate of loss given failure can be the most important source of error. For example, for the BIF loss reserves in the second quarter of 1999, Table 4.3 indicates that the error would have changed from $406 million to $8 million if the loss given failure had been exactly correct. In this instance, the error is the result of an underestimation of the loss given failure for Keystone Bank, which failed in the subsequent quarter.

4.6 Components of Errors in Failure Probability Estimation

Subsection 4.5 concludes that for the BIF and SAIF loss reserves, the primary source of error is in the estimation of the probability of failure. Here we examine this issue in detail for the period 1998 to 2004. We chose this period for detailed analysis because of the availability of historical information on institutions identified as potential failures and because this period has greater relevance to the FDIC's current reserving practices.

4.6.1 Identification of Potentially Failing Institutions

The first step in the reserving process is to identify institutions that are considered to be most likely to fail. The FRC places these institutions (hereafter "problem banks") into one of five groups for further review and analysis, as described in Section 3. Table 4.5 provides a measure of the accuracy of this phase of the reserving process for the BIF. Between year-ends 1998 and 2004, 119 BIF-insured banks failed within one year of each quarter end.[91] Of these 119 banks, the FRC had correctly identified 77 (65 percent) as problem banks. Very similar results are found for the SAIF: Table 4.6 shows that the FRC correctly identified 58 percent of SAIF failures between 1998 and 2004 as problem banks.

[91] Note that the number 119 counts bank failures multiple times. For example, a bank failure occurring in January 2001 would be counted as a failure within one year for four separate quarters: 2000 quarter 1, 2000 quarter 2, 2000 quarter 3, and 2000 quarter 4.

Table 4.5

BIF-Insured Institutions Correctly Identified as Potential Failures Compared with Actual Failures within One Year

Year	Quarter	Banks Correctly Flagged	Actual Failures within One Year	Percentage of Correct Flags
1998	4	6	7	86%
1999	1	5	7	71%
1999	2	5	6	83%
1999	3	2	6	33%
1999	4	3	6	50%
2000	1	3	6	50%
2000	2	5	6	83%
2000	3	3	5	60%
2000	4	2	3	67%
2001	1	5	8	63%
2001	2	5	8	63%
2001	3	6	8	75%
2001	4	8	10	80%
2002	1	3	5	60%
2002	2	3	5	60%
2002	3	2	4	50%
2002	4	1	3	33%
2003	1	1	4	25%
2003	2	2	4	50%
2003	3	3	4	75%
2003	4	3	3	100%
2004	1	1	1	100%
2004	2	0	0	---
2004	3	0	0	---
2004	4	0	0	---
Total		**77**	**119**	**65%**

Table 4.6

SAIF-Insured Institutions Correctly Identified as Potential Failures Compared with Actual Failures within One Year

Year	Quarter	Savings Associations Correctly Flagged	Actual Failures within One Year	Percentage of Correct Flags
1998	4	1	1	100%
1999	1	2	2	100%
1999	2	2	2	100%
1999	3	1	1	100%
1999	4	1	1	100%
2000	1	0	0	---
2000	2	0	0	---
2000	3	1	1	100%
2000	4	1	1	100%
2001	1	1	1	100%
2001	2	1	2	50%
2001	3	0	1	0%
2001	4	0	1	0%
2002	1	0	1	0%
2002	2	0	0	---
2002	3	0	0	---
2002	4	0	0	---
2003	1	0	1	0%
2003	2	0	1	0%
2003	3	0	1	0%
2003	4	0	1	0%
2004	1	0	0	---
2004	2	0	0	---
2004	3	0	0	---
2004	4	0	0	---
Total		**11**	**19**	**58%**

4.6.2 Probability of Failure Estimation

The previous paragraph addresses the question of whether institutions that failed had been put on the FRC reserve list. Now we address the question of whether institutions that are placed on the reserve list actually go on to fail during the period for which reserves are established. As discussed in Section 3, the next phase of the reserving process is to estimate a probability of failure for each institution identified as a problem bank. To gauge the accuracy of this phase of the reserving process, we "predict" the number of failed institutions by summing the failure probabilities assigned to each problem bank and comparing this sum with the actual number of failed institutions. Figure 4.3 presents these comparisons for BIF-insured institutions. In most quarters this measure of the estimated number of failures exceeds actual failures. Similar results are found for the SAIF (see Figure 4.4).

Figure 4.3

BIF: FRC Estimated Failures over the Next Four Quarters vs. Actual Number of Failures from Institutions on the Reserve List over the Next Four Quarters

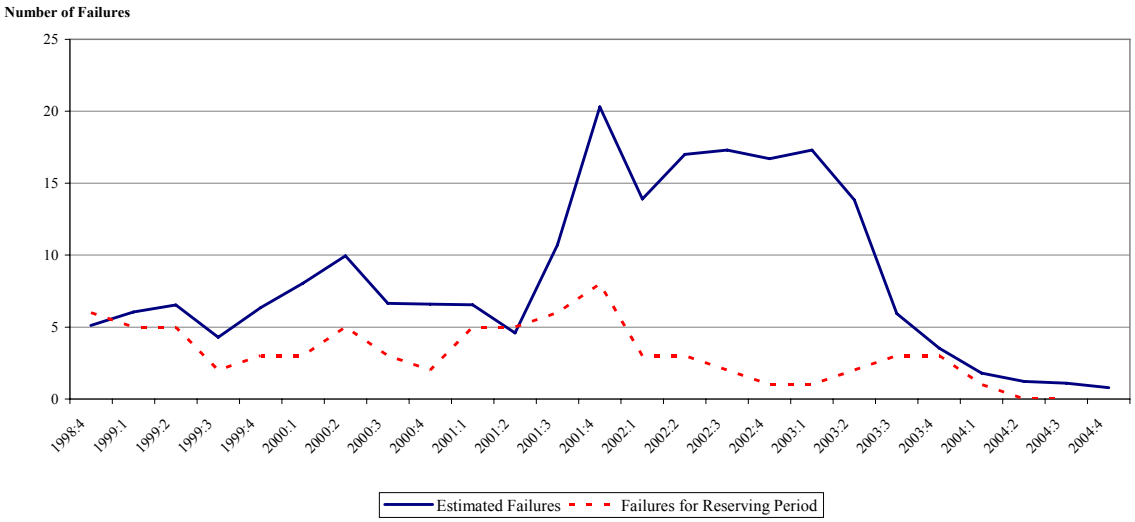
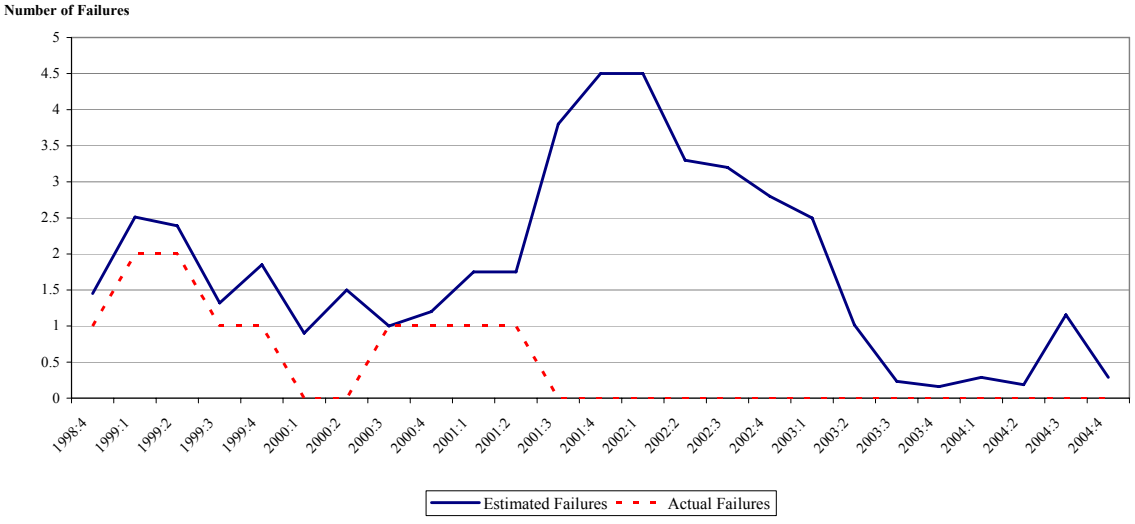


Figure 4.4

SAIF: FRC Estimated Failures over the Next Four Quarters vs. Actual Number of Failures from Institutions on the Reserve List over the Next Four Quarters



4.6.3 Failure Estimates by Risk Category

As discussed in Section 3, the FRC places problem banks into five groups for the purpose of assigning failure probabilities: (1) banks assigned a 100 percent probability of failure,

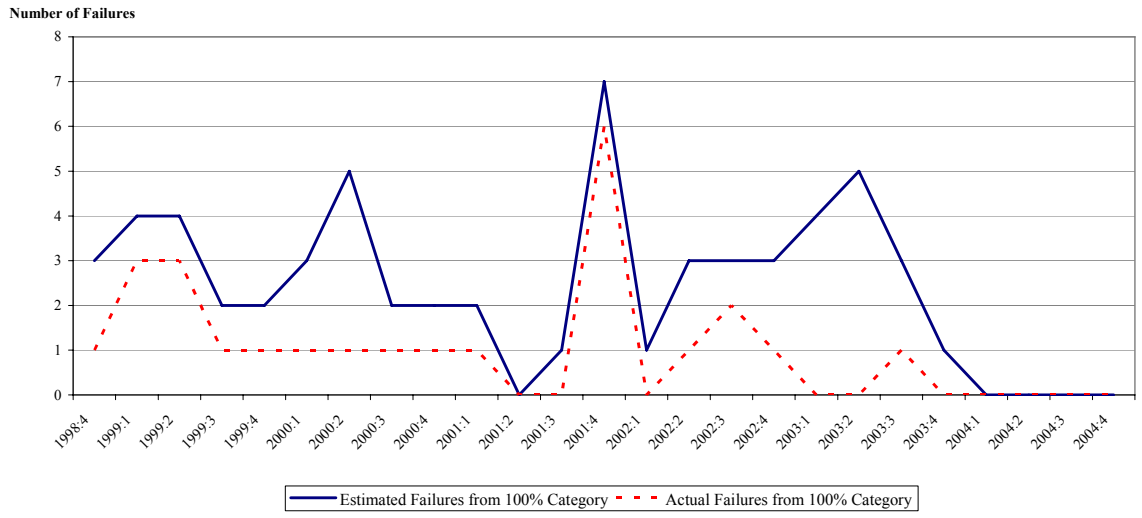
(2) CAMELS composite (hereafter "CAMELS") 5-rated banks whose capital projection is less than 2 percent, (3) CAMELS 5-rated banks whose capital projection is greater than 2 percent, (4) CAMELS 4-rated banks whose capital projection is less than 2 percent, and (5) CAMELS 4-rated banks whose capital projection is greater than 2 percent. Here we investigate the accuracy of the failure rates assigned to these five groups of problem banks, using the same approach we used in Figures 4.3 and 4.4.

Figure 4.5 compares the number of estimated and actual failures for the 100 percent failure category for BIF-insured institutions. In most cases the number of estimated failures exceeds the actual number of failures (one should keep in mind that for the 100 percent failure probability category, it is mathematically impossible to underestimate expected failures).

Figure 4.5

BIF 100% Category

Estimated Failures vs. Actual Failures over Next Four Quarters



Figures 4.6 through 4.9 provide similar comparisons for the remaining BIF problem-bank groups. In the case of CAMELS 5-rated institutions whose capital projection is under 2 percent (Figure 4.6), failure estimates appear unbiased, in the sense that failures are

overestimated as often as they are underestimated. Similar results are seen for CAMELS 4-rated institutions whose capital projection is below 2 percent (Figure 4.8). However, for banks with capital projections above 2 percent (Figures 4.7 and 4.9) there is a strong tendency for overestimation of failures.

Figure 4.6

BIF CAMELS 5 < 2% Capital Category
Estimated Failures vs. Actual Failures over Next Four Quarters

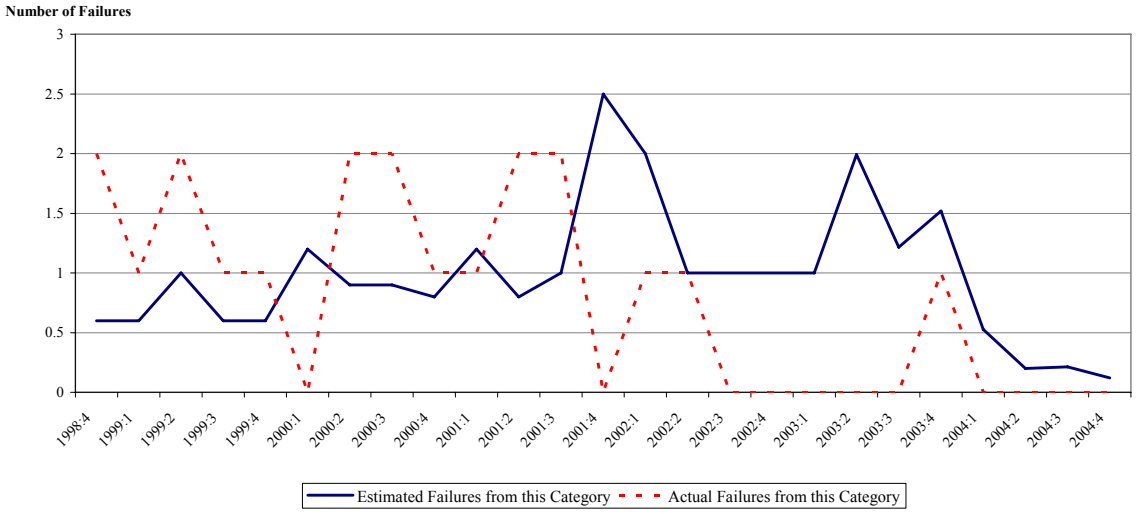


Figure 4.7

BIF CAMELS 5 > 2% Capital Category

Estimated Failures vs. Actual Failures over Next Four Quarters

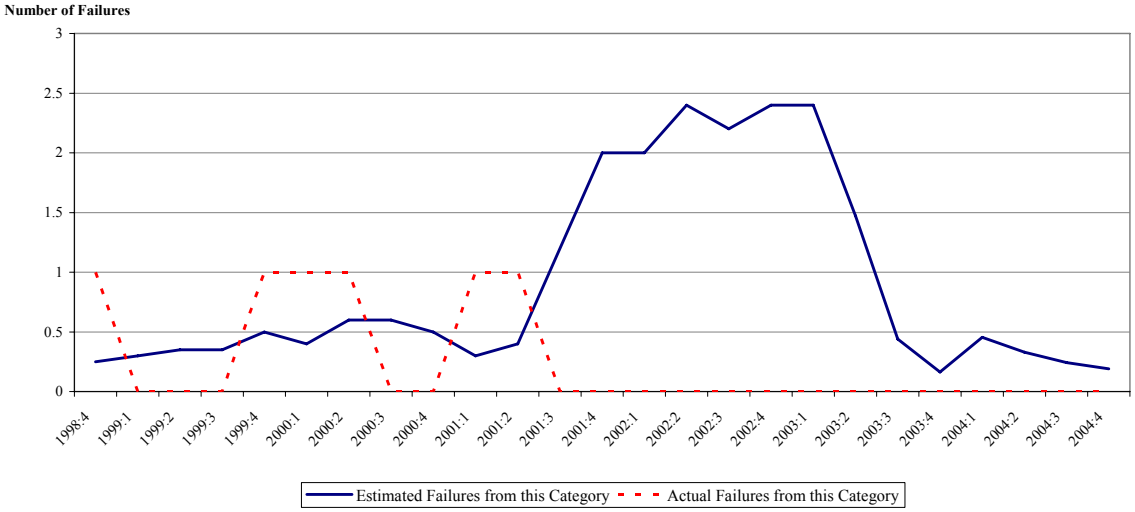


Figure 4.8

BIF CAMELS 4 < 2% Capital Category

Estimated Failures vs. Actual Failures over Next Four Quarters

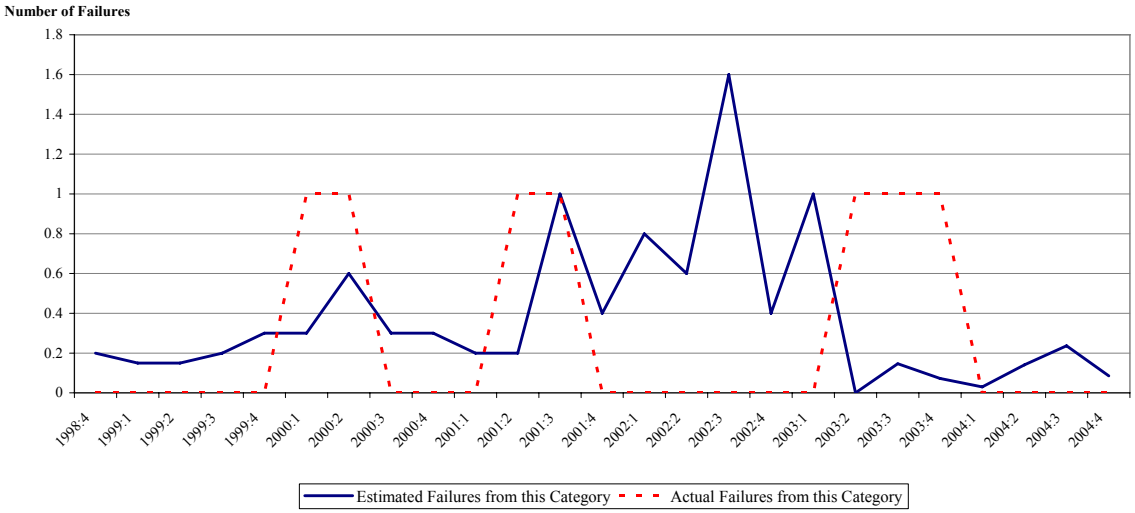
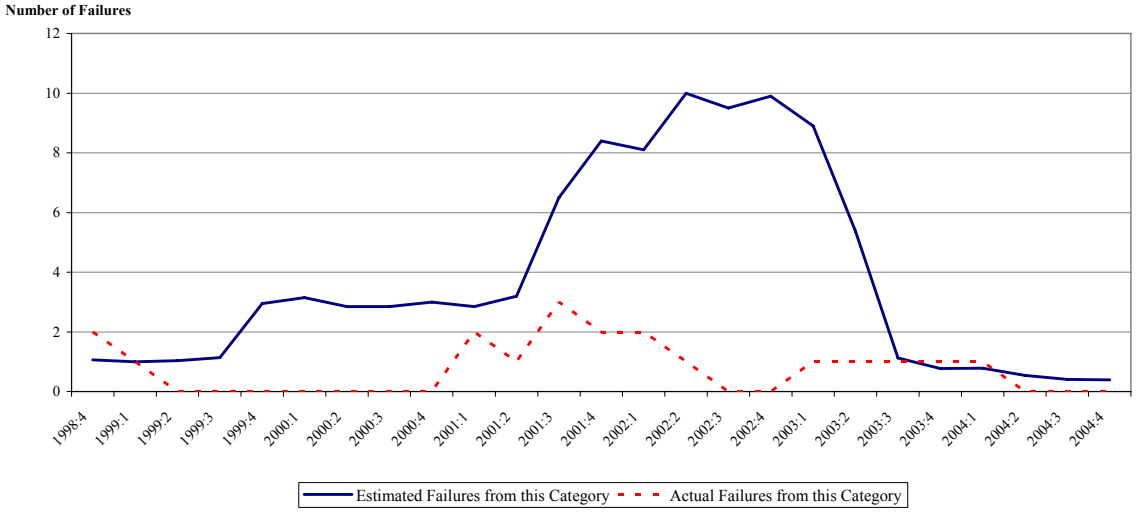


Figure 4.9

BIF CAMELS 4 > 2% Capital Category

Estimated Failures vs. Actual Failures over Next Four Quarters



For the SAIF-insured institutions (see Figures 4.10 through 4.14), there has also been a tendency for overestimation of failures for the CAMELS 4-rated institutions and CAMELS 5-rated institutions (Figures 4.11 through 4.14).

Figure 4.10

SAIF 100% Category

Estimated Failures vs. Actual Failures over Next Four Quarters

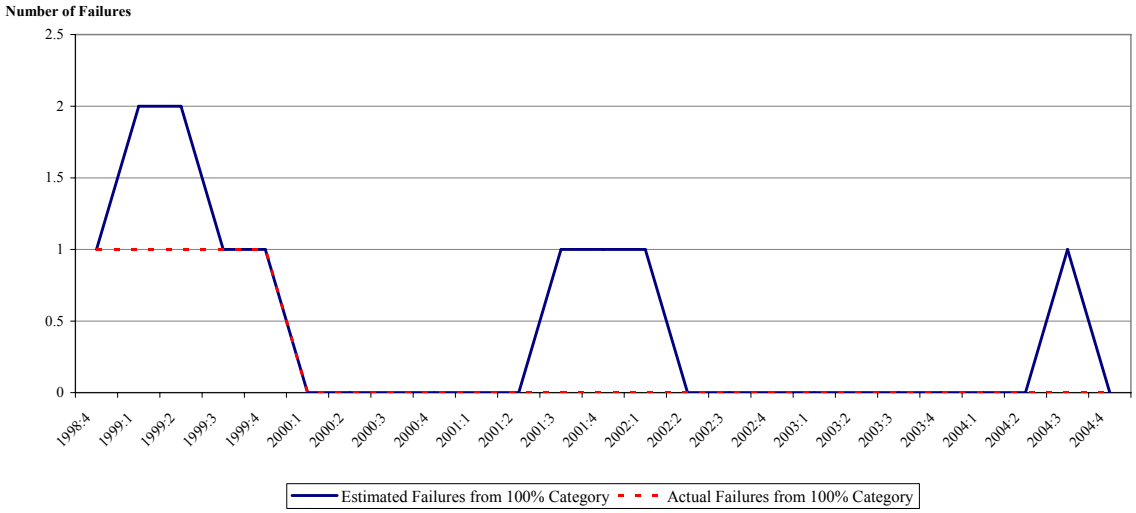


Figure 4.11

SAIF CAMELS 5 < 2% Capital Category
Estimated Failures vs. Actual Failures over Next Four Quarters

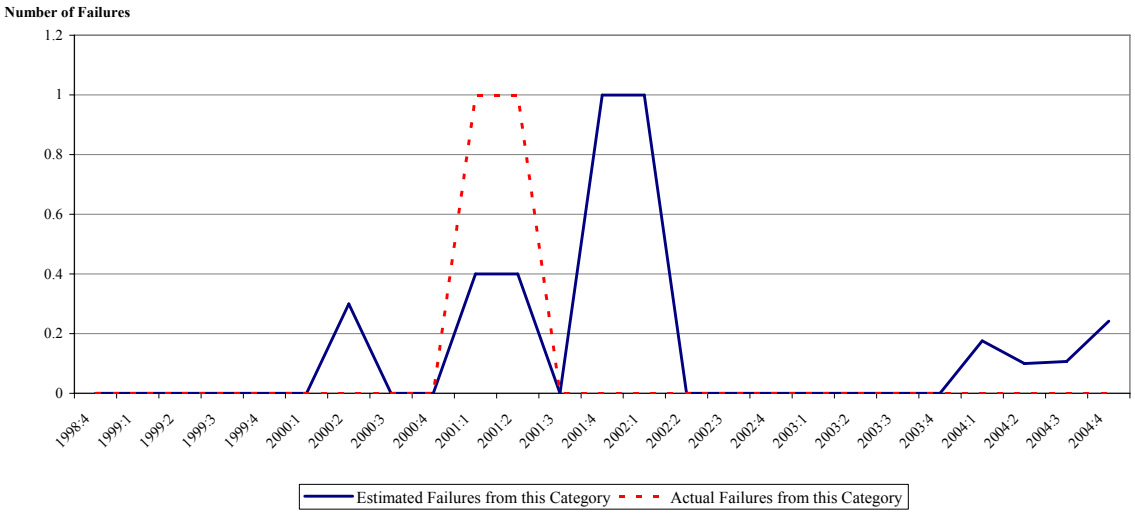


Figure 4.12

SAIF CAMELS 5 > 2% Capital Category
Estimated Failures vs. Actual Failures over Next Four Quarters

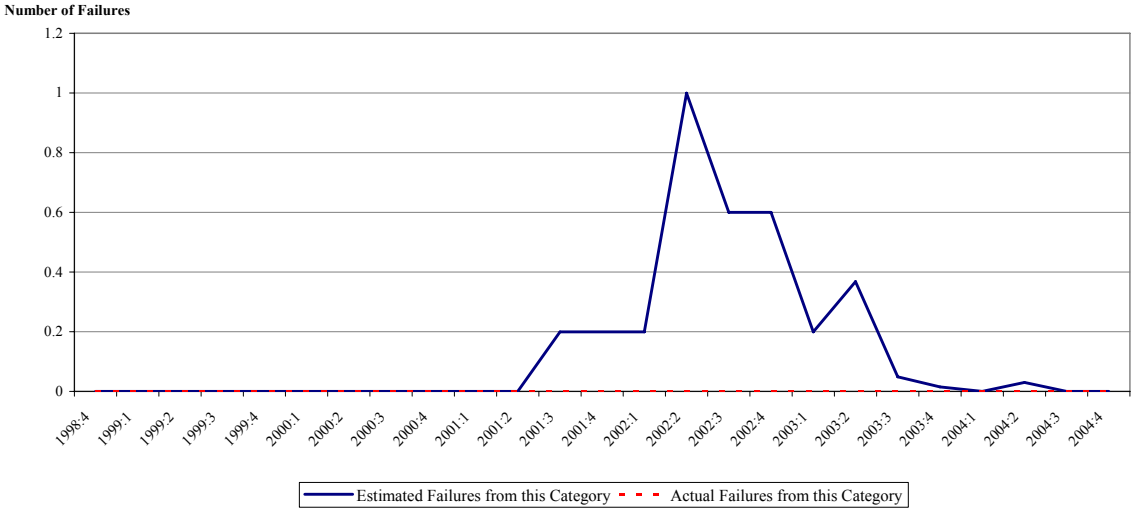


Figure 4.13

SAIF CAMELS 4 < 2% Capital Category
Estimated Failures vs. Actual Failures over Next Four Quarters

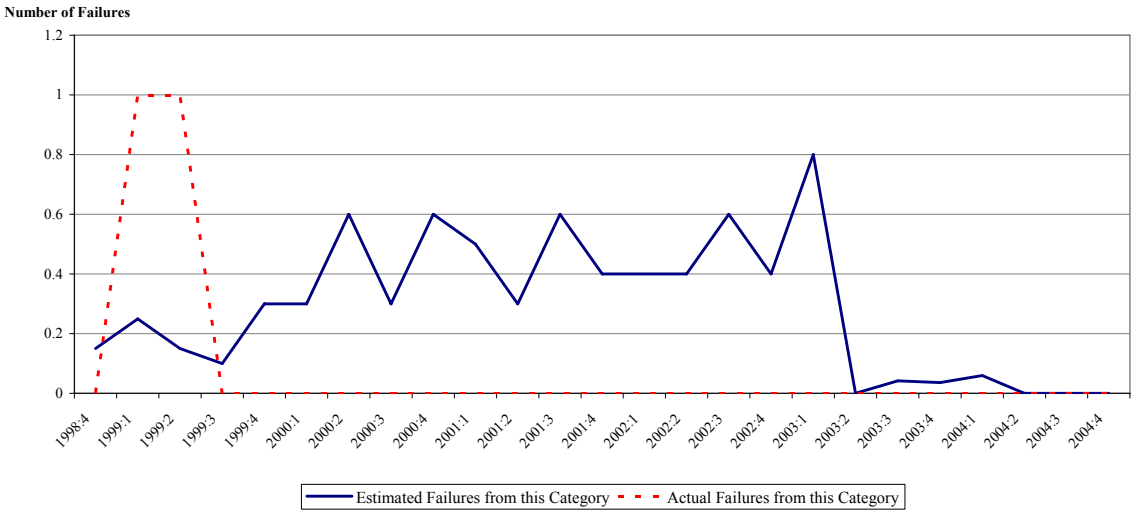
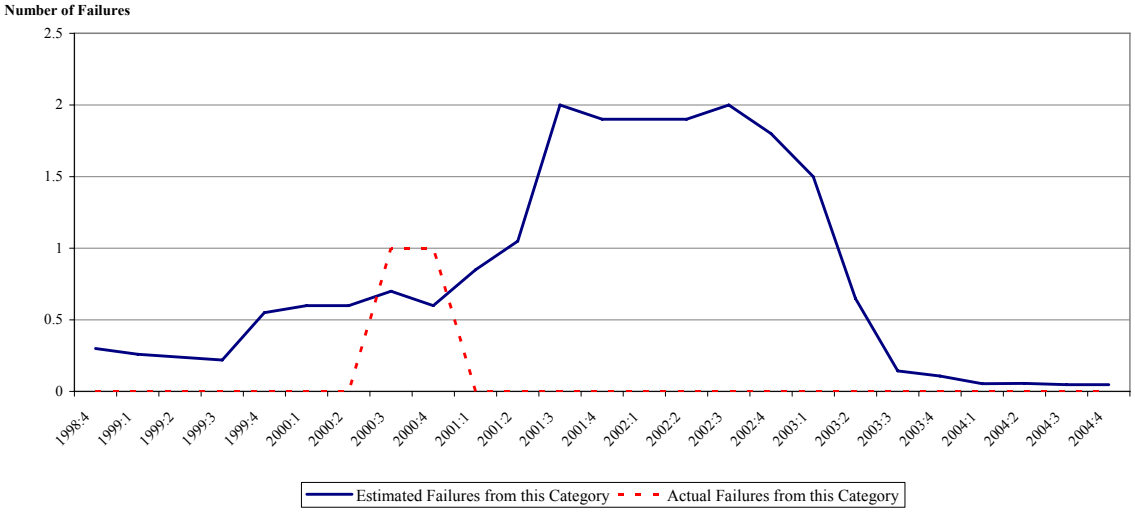


Figure 4.14

SAIF CAMELS 4 > 2% Capital Category
Estimated Failures vs. Actual Failures over Next Four Quarters



5. Information and Criteria Used to Establish the FDIC Loss Reserves

The methodologies that the FDIC used to establish contingent loss reserves for the period 1992–2004 are discussed above in Section 2. Here we discuss the information and criteria used by the methodologies, and specifically their appropriateness and reliability.

Although the methodologies used by the FDIC to establish the contingent loss reserve have changed substantially since 1992, the underlying information and criteria have remained relatively unchanged. This is partly because of the wide array of information used to establish the contingent loss reserve for insured-institution failures—information that is both quantitative and qualitative. The quantitative information includes, but is not limited to, the financial statements that insured institutions file each quarter with the primary federal regulator, and data on local, national, and international economic conditions. The qualitative information includes, but is not limited to, state and federal bank regulators' risk assessments of institutions' safety and soundness, and expert opinion on economic conditions. Here we discuss the information and criteria used to identify troubled institutions, to estimate the probability of failure, and to estimate loss given failure; and we conclude by relating this information and these criteria to GAAP guidance on reserving for loss contingencies.

5.1 Identifying Troubled Institutions

The most critical step in the reserving process is the identification of insured institutions that are vulnerable to failure. For this purpose, the FDIC has relied primarily on safety-and-soundness examination ratings issued by federal and state regulators, as well as on insured institutions' current and projected equity capitalization rates. At the conclusion of each examination, an institution is assigned a composite safety-and-soundness rating, or composite CAMEL(S) rating.[92] The acronym is based on the six areas of performance evaluated: **C**apital adequacy, **A**sset quality, **M**anagement, **E**arnings, **L**iquidity, and **S**ensitivity to market risk (added in 1997). Composite CAMEL(S) ratings range in integer

[92] As mentioned above, the "S" rating (Sensitivity to market risk) was added in 1997. For this study, we refer to a CAMEL rating when discussing examination ratings before 1997, a CAMELS rating when referring to examinations after 1997, and a CAMEL(S) rating when referring to examinations that may span both time periods.

values from 1 (best) to 5 (worst). (See Table 5.1 for a definition of each rating.) FDICIA mandated that most insured institutions receive annual safety-and-soundness examinations.[93] Examinations typically become more frequent as an institution's CAMEL(S) rating gets worse. CAMEL(S) 4- or 5-rated institutions are considered "problem institutions" by federal and state supervisors and receive increased supervisory scrutiny. During the reserving process, the Financial Risk Committee maintains close contact with examination personnel to ensure that the most recent CAMEL(S) ratings are applied for reserving purposes.

[93] To reduce regulatory burden, FDICIA required examinations every 18 months for institutions that are composite CAMEL(S) 1-rated as of their most recent examination and have total assets under $100 million. The Reigle Community Development and Regulatory Improvement Act (CDRI) of 1994 amended the examination requirement further, mandating examinations every 18 months for CAMEL(S) 1-rated institutions with total assets less than $250 million and allowing the appropriate federal banking agencies to extend the exam cycle for 2-rated institutions with total assets of $250 million if the agency determines that the extension would be consistent with safety-and-soundness principles.

Table 5.1

Safety-and-Soundness/Risk Management Examination Composite Ratings

Rating	Rating Definition
One (1)	Financial institutions in this group are sound in every respect and generally have components rated 1 or 2. Any weaknesses are minor and can be handled in a routine manner by the board of directors and management. These financial institutions are the most capable of withstanding the vagaries of business conditions and are resistant to outside influences such as economic instability in their trade area. These financial institutions are in substantial compliance with laws and regulations. As a result, these financial institutions exhibit the strongest performance and risk management practices relative to the institution's size, complexity, and risk profile, and give no cause for supervisory concern.
Two (2)	Financial institutions in this group are fundamentally sound. For a financial institution to receive this rating, generally no component rating should be more severe than 3. Only moderate weaknesses are present and are well within the board of directors' and management's capabilities and willingness to correct. These financial institutions are stable and are capable of withstanding business fluctuations. These financial institutions are in substantial compliance with laws and regulations. Overall risk management practices are satisfactory relative to the institution's size, complexity, and risk profile. There are no material supervisory concerns and, as a result, the supervisory response is informal and limited.
Three (3)	Financial institutions in this group exhibit some degree of supervisory concern in one or more of the component areas. These financial institutions exhibit a combination of weaknesses that may range from moderate to severe; however, the magnitude of the deficiencies generally will not cause a component to be rated more severely than 4. Management may lack the ability or willingness to effectively address weaknesses within appropriate time frames. Financial institutions in this group generally are less capable of withstanding business fluctuations and are more vulnerable to outside influences than those institutions rated a composite 1 or 2. Additionally, these financial institutions may be in significant noncompliance with laws and regulations. Risk management practices may be less than satisfactory relative to the institution's size, complexity, and risk profile. These financial institutions require more than normal supervision, which may include formal or informal enforcement actions. Failure appears unlikely, however, given the overall strength and financial capacity of these institutions.
Four (4)	Financial institutions in this group generally exhibit unsafe and unsound practices or conditions. There are serious financial or managerial deficiencies that result in unsatisfactory performance. The problems range from severe to critically deficient. The weaknesses and problems are not being satisfactorily addressed or resolved by the board of directors and management. Financial institutions in this group generally are not capable of withstanding business fluctuations. There may be significant noncompliance with laws and regulations. Risk management practices are generally unacceptable relative to the institution's size, complexity, and risk profile. Close supervisory attention is required, which means, in most cases, formal enforcement action is necessary to address the problems. Institutions in this group pose a risk to the deposit insurance fund. Failure is a distinct possibility if the problems and weaknesses are not satisfactorily addressed and resolved.
Five (5)	Financial institutions in this group exhibit extremely unsafe and unsound practices or conditions; exhibit a critically deficient performance; often contain inadequate risk management practices relative to the institution's size, complexity, and risk profile; and are of the greatest supervisory concern. The volume and severity of problems are beyond management's ability or willingness to control or correct. Immediate outside financial or other assistance is needed in order for the financial institution to be viable. Ongoing supervisory attention is necessary. Institutions in this group pose a significant risk to the deposit insurance fund and failure is highly probable.

Source: http://www.fdic.gov/regulations/examinations/ratings/index.html.

Table 5.2 shows the percentage of institutions that failed within five years, sorted by initial CAMEL(S) ratings for the 1992–1999 period.[94,] Failure rates increase as CAMEL(S) ratings worsen. As expected, the frequency of failure is substantially greater among problem institutions than among nonproblem institutions

Table 5.2
Historical Five-Year Failure Rate by CAMEL(S) Rating Group, 1992–1999

Composite CAMEL(S)	Percentage of CAMEL(S) Group Failing
1	0.03%
2	0.16%
3	0.85%
4	3.52%
5	26.68%

Notes: Includes failures in which fraud was determined to be a primary or contributing factor. CAMEL(S) ratings as of each year-end are used for failure rate calculations. The Federal Financial Institutions Examination Council added Sensitivity to market risk (the "S" rating) to the CAMEL rating in 1997.

Since the third quarter of 1997 the FDIC has reserved only for problem institutions (CAMELS 4- and 5-rated institutions). This practice is consistent with FAS 5. McKinsey & Company noted in its review of the FDIC loss reserving practices: "Although institutions with composite CAMELS ratings 1–3 represent a substantial fraction of failures, losses from these failures do not appear to be 'probable and reasonably estimable' in any given year, since the annual loss is usually either zero or a large amount."[95]

Between year-end 1991 and the second quarter of 1997, the FDIC reserved for all small institutions (assets under $100 million) with less than 3 percent equity capitalization and for large institutions (assets over $100 million) with current or projected Tier 1 capitalization of less than 2 percent. In addition to these small- and large-institution groups, the FDIC reserved for large composite CAMEL 5-rated institutions and large

[94] The period 1992–1999 allows for a five-year window for every failure during the 1992–2004 period under consideration.
[95] McKinsey & Company (2003), 18.

institutions projected to fail by bank and thrift supervisors. Although the reserving methodology has changed significantly over time, the use of CAMEL(S) ratings and equity capitalization to identify troubled institutions remains an accepted approach. For example, capitalization measures and CAMEL(S) ratings have been used to determine risk-based deposit insurance assessments since 1993,[96] and equity capitalization rates form the basis of prompt corrective action requirements for the rapid closure of severely undercapitalized institutions.

5.2 Estimating Failure Probabilities

Since 1991 the FDIC has used an actuarial approach to estimating the failure probabilities of troubled institutions. More specifically, in order to improve risk classifications the FDIC has placed troubled institutions into groups based on asset size, current and projected equity capitalization, and CAMEL(S) ratings. Historical average failure rates for each group are used as estimates of future failure probabilities, where all institutions within a group are assigned the same historical average failure probability. Between 1992 and June 1997 (as discussed in Section 3), the prior year's failure rates were used to estimate the current probability of failure for small banks. For large banks, failure rates were assumed to be 100 percent, and the entire amount of estimated loss was set aside in the reserve. Since September 1997, failure probabilities based on the two most recent years' experience are used as estimates of group failure risk, with two exceptions: (1) in periods when there is no failure experience for any subgroup during the previous two years, failure probabilities are calculated by looking back until there is sufficient failure experience in the subgroup, and (2) for all critically undercapitalized institutions, the FDIC assumes a 100 percent failure probability.

As discussed in Section 2, the FDIC also uses expert opinion from supervisory staff and analysts inside and outside the Corporation on the appropriateness of these historical failure probabilities and the FDIC has reserved the option of amending or altering these probabilities for the purpose of establishing loss reserves. As discussed in Section 4, the wide latitude the FRC had in assigning failure probabilities contributed to substantial

[96] FDIC (1993), p. 64

overreserving. The FDIC addressed this issue in 2003 by limiting the discretion to amend failure probabilities for loss reserving—limiting it to a statistically based range of failure probabilities. More specifically, since 2003 the FRC may amend failure probabilities for reserving groups only within the 90 percent confidence interval for each subgroup's failure probability.[97]

5.3 Estimating Loss Rates Given Failure

FDIC estimates of loss given failure, like failure probabilities, have been based on the actual loss experience of the groups of institutions for which reserves have been established. As discussed in Section 3, between year-end 1991 and June 2003 the FDIC used average historical loss rates on failed-bank assets for BIF-insured banks. Since September 2003 the FDIC's Research Model has been used to estimate loss given failure. The Research Model uses information from previous sales of FDIC receivership assets to estimate losses for the institution in question. The estimated loss to the entire institution is distributed among estimated claimant classes as taken from liability information on the institution's most recently filed financial statement. The loss to the class of insured depositors is assumed to be the potential loss to the FDIC. Here we describe the Research Model in greater detail.

The loss to the receivership comprises two parts: the loss on assets and the cost of servicing the receivership.[98] The loss on assets is estimated by the use of historical average loss rates for six asset categories (consumer loans, commercial loans, mortgages, securities, other real estate owned, and other assets) and the current level of assets for each category taken from the institution's most recent financial statement. Historical losses are calculated as the initial estimated value of assets in receivership (plus expenses incurred from holding and selling the assets) less funds recouped from asset sales. These losses are calculated for each asset category and divided by initial assets to get a loss rate, and the loss rate is then averaged across two different types of institutions in the

[97] For details on how such a 90 percent confidence interval is calculated, see McKinsey & Company (2003), 16, footnote 11.

[98] The FDIC treats administrative costs as an expense to be netted from receivership assets prior to distributing those assets to claimants. Consequently, the Research Model includes estimated service costs into the estimate of loss to the receivership.

historical sample: (1) institutions whose failures are considered to have been anticipated, and (2) institutions whose failures are considered to have been unanticipated. Unanticipated failures are failures where the CAMEL(S) rating for the institution was 3 or better within one year of failure. Anticipated failures are failures where the CAMEL(S) ratings were 4 or 5 for at least one year. These loss rates are then multiplied by the amount of assets taken from the most recent financial statement and added together to get an estimate of loss from the sale of assets for the whole institution. Whether the anticipated or unanticipated loss rates are used depends on whether the institution in question had a CAMELS rating one year ago of worse than 3 (in other words, a rating of 4 or 5). If the institution had a rating of 4 or 5, the anticipated loss rates would be used; otherwise, the unanticipated loss rates would be used.

The cost of servicing the receivership is estimated from an algorithm that uses characteristics of the institution obtained from the financial statement (number of employees, branches, and so forth) and the costs that these characteristics represent. Information on expenses charged to receiverships is supplied by staff within the FDIC.[99] The expenses charged to receiverships are based on standard billing rates and fees specific to each program area.[100] Adding together the estimated servicing costs for all program areas gives the total estimated service cost and adding this cost to the estimated loss from the sale of assets gives the estimate of loss to the receivership

Once an estimate of the loss to the receivership is calculated, the liabilities listed on the institution's most recent financial statement are used to construct estimates of all relevant claimant classes. In descending order of seniority, the claimant classes are as follows:

[99] The Federal Deposit Insurance Act permits the FDIC to charge its receiverships all of the expenses of liquidation as determined by the FDIC. The FDIC has adopted and implemented a regulation governing administrative expenses of a receivership, stating that such expenses shall include obligations that the receiver determines are necessary and appropriate to facilitate the smooth and orderly liquidation or other resolution of the institution. The Receivership Management Program, primarily involving the FDIC's Legal Division and the Division of Resolutions and Receiverships, is responsible for administering these expenses charged to receiverships.

[100] Standard billing rates and fees for each program area (for example, asset management, franchise marketing, claims) are based on private sector benchmarks (analogues). When private sector benchmarks do not exist or are not applicable, the approaches are cost based, using both internal FDIC cost estimates and expert opinion.

secured creditors, insured and uninsured depositors,[101] general creditors, and subordinated creditors. The size of each claim is estimated by looking at the dollar value of liabilities on the most recent financial statement within each claimant class. Once the claimant classes are estimated, the loss to the receivership is distributed according to seniority. The loss apportioned to insured depositors is the estimate of loss to the insurance fund, given failure.

To summarize, the information used to generate an estimate of loss given failure consists of

- Historical data from previous failures on average loss rates for consumer loans, commercial loans, mortgages, securities, other real estate owned, and other assets
- Historical data from previous failures on the examination rating one year before failure—in order to divide the sample into anticipated and unanticipated failures
- For each institution being reserved for, examination information from one year before—in order to classify the particular potential failure as anticipated or unanticipated
- For each institution being reserved for, information from the previous financial statement—in order to establish the level of current assets, the current structure of claimants, and characteristics of the institution affecting servicing cost
- For all institutions being reserved for, information from FDIC staff on how servicing costs vary with institution attributes.

5.4 Comparing the Information and Criteria Used to Establish the Contingent Loss Reserve with GAAP Guidance on Reserving for Loss Contingencies

Here we examine how the information and criteria the FDIC uses to establish the loss reserve relate to GAAP requirements (discussed in Section 2). We examine the AICPA Audit and Accounting Guide for Depository and Lending Institutions (hereafter "the

[101] Insured and uninsured depositors have equal seniority and are part of the more general "depositor" class. When assets are distributed to the depositor class, they are distributed to insured and uninsured deposits on a pro rata basis.

guide") [102] and discuss how the FDIC methodology for setting the loss reserve meets the conditions set forth in the guide. The guide is directed at financial institutions' reserving for problem credits, and we discuss how its requirements apply to the FDIC's reserving for problem financial institutions.

The guide states that any method for establishing a loss reserve should have a particular set of features common to all methods. Here we list each of those features discussed in Section 2.3.1 and describe its analogue in the loss reserve methodology.

- "Include a detailed and regular analysis of the loan portfolio and off-balance-sheet instruments with credit risk."
  The FDIC's portfolio consists of banks and thrifts. A detailed and regular analysis of institutions' risk is based on safety-and-soundness examination reports. Additionally, current financial information reported by institutions to their primary federal regulator is used to help calculate expected loss for each institution and to create risk categories.
- "Include procedures for timely identification of problem credits."
  Safety- and-soundness examinations identify problem banks and thrifts and are performed on a timely and regular basis. Examination frequency generally increases the poorer an institution's financial condition. In addition, the FDIC holds quarterly discussions with each institution's primary federal regulator to help identify institutions that should be added to or removed from the reserve list.
- "[Use the procedures] consistently."
  The FDIC has a well-defined reserving process that is applied uniformly over time.
- "Consider all known relevant internal and external factors that may affect collectibility."
  When factors have been identified that have a predictable effect on insurance losses, they are included in the loss-given-failure model. Additionally, the FRC

[102] AICPA (2005). Other accounting guides listed in Section 2 require similar information and are therefore not discussed here.

establishes a guideline for deviating from model projections on the basis of information not considered in the model.

- "Consider all loans (whether on an individual or pool-of-loan basis) and other relevant credit exposure."

  Safety-and-soundness examinations are conducted for all FDIC-insured financial institutions. By examining all institutions, selecting those with a 4 or 5 rating to place on the reserve list, and adjusting that list if need be, the FRC considers all possible insurance-loss exposures.
- "Consider the particular risks inherent in the different kinds of lending."

  The loss-given-failure model calculates expected loss rates by asset category. Asset groups with higher risk have higher loss rates and are captured by the model. Additionally, the FRC can use its discretionary power when it thinks particular institutions have concentrations (for example, subprime loans) in higher-risk loan categories.
- "Be based on current and reliable data."

  Information from insured-institution financial statements are current and, generally, reliable. Safety-and-soundness examinations of CAMELS 4- and 5-rated banks are current and reliable. Additionally, the models used to establish the loss reserve undergo periodic review for accuracy and reliability.
- "Be well documented, with clear explanations of the supporting analysis and rationale."[103]

  The FRC documents the procedures it used to establish loss reserves and the instances in which it used discretion.

Besides listing the features that any reserving methodology should have, the guide states:

> Methods that rely solely on mathematical calculations, such as a percentage of total loans based on historical experience or the similar allowance percentages of peer institutions, generally fail to contain the essential elements, because they do not involve detailed analysis of an institution's particular transactions or consider the current economic environment.[104]

[103] AICPA. (2005), ¶ 9.05.
[104] Ibid. ¶ 9.04.

The FRC process uses mathematical calculations but also allows for the exercise of discretion.

Additionally, the guide states, “Institutions generally analyze large loans and loans not conducive to pool analysis on an individual basis by classifying the loans as to credit risk and estimating specific losses.” The FRC uses discretion and establishes individual institution reserves for institutions in the 100 percent reserve group and, in certain circumstances, for other institutions that meet previously established FRC criteria.

6. Loss Experience Due to Institution Failures, 1992–2004

As discussed above, the FDIC uses estimates of failure probabilities and of loss given failure to determine contingent loss reserves. Once an institution's failure has been resolved, however, we are able to determine the actual cost to the insurance fund and to describe the causes of the failure more completely. This section explains the "least-cost" requirement for resolutions and then analyzes the FDIC's loss experience between 1992 and 2004, with special focus on the experiences of the last three years of the period. This section concludes with a discussion of the common causes of bank failure, (Section 7 focuses on strategies to discourage or mitigate conditions that cause bank failure.)

6.1 Least Costly Resolution Methods

The FDIC has always been required to resolve failures in a manner that will reduce the cost to the insurance fund(s). The passage of FDICIA in 1991 clarified this policy by requiring the FDIC to consider the costs of all failure-resolution methods and to choose the method that imposes the least cost on the insurance fund(s).[105]

When a chartering authority decides to close an FDIC-insured institution because it fails to meet the prescribed capital or safety-and-soundness requirements, the FDIC is appointed receiver and becomes responsible for settling the affairs of the failed bank.[106] This duty includes balancing accounts, collecting on the bank's assets, and satisfying claims against those assets. Here we discuss the methods the FDIC uses to resolve insured institution failures.

In general, the FDIC has two alternative means of resolving an institution failure: deposit payoff, and purchase and assumption (P&A) transactions. In a deposit payoff, the FDIC pays all insured depositors the full amount of their claims and liquidates the assets of the failed bank. Uninsured depositors and other creditors typically do not receive immediate

[105] There is an exception to the least-cost requirement in the case of failures that may pose a systemic risk. However, this exception can be invoked only after a two-thirds vote of approval from the FDIC Board of Directors and the Board of Governors of the Federal Reserve System, followed by a recommendation of the secretary of the treasury in explicit consultation with the president of the United States (§ 141(a), ¶(4)(G)(i)). To date, the systemic-risk exception has not been invoked.

[106] It should be noted that the FDIC has the authority to revoke deposit insurance and place an institution in receivership without receiving a request by the institution's primary state or federal regulator.

or full reimbursement of their claims. In a P&A transaction, an interested bidder steps forward to "purchase" some or all of the failed bank's assets and to "assume" some or all of its liabilities. This approach is often the least costly alternative to the FDIC and least disruptive to the community, since many of the failed bank's former borrowers and creditors will have another institution with which to conduct business.

Table 6.1 shows the distribution of bank failures by the type of resolution—deposit payoff and P&A—for the years 1992–2004. The P&A transaction is the method most frequently used, representing 183 of the 229 bank failures, or about 80 percent over the 13-year period. When the resolution process is completed, the loss rate is measured as the ratio of the cost to the deposit insurance fund(s) divided by the bank's total assets at the time of failure resolution.[107] It is common to use the loss on assets to indicate the cost of a bank failure because it allows banks of different sizes to be compared with one another in a meaningful way. As shown in Table 6.1, the average loss rate when a failure is resolved through a deposit payoff is 23 percent—two and one-half times the loss rate when the failure is resolved through a P&A transaction.

Table 6.1
Actual and Estimated Loss on Assets and Cost to FDIC of Bank Failures
By Type of Transaction, 1992–2004

	Payoff	**P&A**
Loss on Assets	23%	9%
$ Cost to FDIC	$1.7 billion	$4.7 billion
No. of Banks	46	183

Note: Until a receivership is officially closed, losses and assets are estimates subject to change. As of the writing of this study, some of the failure data used to construct this table involve open receiverships. The data used for this table is current as of June 2006

[107] Total assets at failure resolution are available in FDIC failed-bank receivership data.

The deposit payoff method is selected when there are no bidders for the failed institution's assets. A lack of bidders may be due to the quality and composition of assets and liabilities, the off-balance-sheet commitments, or the franchise value of the institution. Business activities, branch structure, and past administration of the institution's affairs are also significant factors for bidders. For all these reasons, the deposit payoff is typically more expensive than a P&A. In determining the potential costs of each method of resolution, the FDIC must also consider the fact that assets retained by the FDIC—through either a deposit payoff or a P&A transaction—are typically of lower quality and therefore of lower value than assets sold to another entity.

To select the least costly resolution method, the FDIC must estimate the expected cost of failure. The reason for having to rely on an estimate is that the true cost of any bank failure is not known with certainty until the receivership is closed out and the realized value of assets can be known. Estimating the loss serves two purposes. First, it identifies the portion of the insurance fund(s) to be set aside in reserve to meet the resolution cost. Second, it provides information on the price the FDIC should be willing to accept if a potential acquirer presented a bid for a failed bank's assets.

The work of on-site bank examiners and FDIC failure-resolution staff, as well as the estimate of loss, is an essential part of the process by which the FDIC selects a resolution method.

6.2 The Actual Loss Experience

Bank failures between 1992 and 2004 resulted in $6.4 billion in failure-resolution costs. These costs represent approximately 11 percent of 1992–2004 failed-bank assets at the time of resolution. Here we discuss the actual losses and analyze some of the biggest bank failures during this period, with special focus on the failures that occurred between 2002 and 2004.

Before a bank is closed, FDIC failure-resolution experts estimate the potential failure loss, given the type and quality of the bank's assets, to determine the least costly method

of failure resolution. The estimate is updated as the resolution proceeds, until the FDIC is able to state the actual cost of each bank's failure.[108] After a bank is closed, FDIC bank liquidators evaluate the bank's portfolio, balance its accounts, collect on its assets, and satisfy claims against those assets.

For the years 1992–2004, the most costly bank failure, in terms of the cost to the insurance fund(s), was that of CrossLand Savings Bank, a federal savings bank located in New York, which was closed in 1992. Before failure, CrossLand held assets in excess of $7 billion, and its failure resulted in insurance costs of $753.8 million (a loss on failed-bank assets of approximately 10 percent). Bank failures during the last three years of this period, however, were much smaller both in the initial obligation of corporate insurance and in the final actual cost to the insurance fund.

6.2.1 Loss Rates for Failed Banks and Causes of High-Loss-Rate Failures, 2002–2004

Table 6.2 ranks failed banks by their respective loss rates and shows assets, cost of failure, and loss rate for banks that failed over the years 2002–2004. For these years, the loss rates ranged from 0 to 110 percent. Table 6.2 also shows the loss rate ranking, for these institutions, among all failed banks over the years 1992–2004. For example, Oakwood Deposit Bank Company has a loss rate of 110 percent, the highest loss rate of all banks that failed between 1992 and 2004.

[108] Prior to the completed resolution, an estimated cost of failure is used. Estimated costs are based on asset valuation reviews of potentially failing institutions' assets. The accounting process used to estimate prospective losses involves a sampling methodology. In addition, the actual cost/estimated loss reflects unpaid principal amounts deemed unrecoverable and does not include the interest that may be due should the principal amounts on the subrogated claim of the insurance fund(s) be repaid in full.

Table 6.2

Loss on Assets for Failed Banks 2002–2004 Ranked among All Failed Banks 1992–2004

Institution Name	Res. Type	Fail Year	Actual or Estimated Loss*	Total Assets*	Loss On Assets	Rank
Oakwood Deposit Bank Company	PA	2002	68	62	110%	1
Bank of Sierra Blanca	PA	2002	5	11	43%	11
The First National Bank of Blanchardville	PA	2003	13	35	38%	18
The Farmers Bank & Trust of Cheneyville	PA	2002	12	35	34%	24
New Century Bank	PO	2002	4	19	24%	54
NextBank, NA	PO	2002	146	669	22%	64
Bank of Alamo	PO	2002	9	60	16%	109
Connecticut Bank of Commerce	PA	2002	55	379	15%	117
Amtrade International Bank of Georgia	PO	2002	1	10	14%	123
Hamilton Bank, NA	PA	2002	140	1,232	11%	140
Pulaski Savings Bank	PA	2003	1	9	8%	158
Bank of Ephraim	PA	2004	3	46	7%	163
Reliance Bank	PA	2004	2	27	6%	165
Southern Pacific Bank	PA	2003	61	1,052	6%	168
Universal Federal Savings Bank	PA	2002	1	50	1%	193
Net First National Bank	PA	2002	0	33	0%	213.5
Guaranty National Bank of Tallahasse	PA	2004	0	77	0%	213.5
Dollar Savings Bank	PO	2004	0	15	0%	213.5

Source: FDIC Failed Bank Cost Analysis Data Bank and Estimated Loss Report.
Notes: Resolution type is the method used to resolve the bank. PO is a payoff and PA is a purchase and assumption. Rank denotes the failed bank's place on a list of failed banks for the years 1992–2004 ordered from highest to lowest in terms of loss on assets. Until a receivership is officially closed, losses and assets are estimates subject to change. As of the writing of this study, some of the failure data used to construct this table involve open receiverships. The data used for this table is current as of June 2006
* In $ millions (rounded to the nearest million).

The loss rate for Oakwood Deposit Bank Company is unusually high and was caused primarily by large-scale fraud in which a senior bank officer diverted certificates of deposit collected over the Internet to personal use and concealed the transaction from the bank's financial records. Oakwood's failure and the five other high-loss-rate failures that occurred between 2002 and 2004 (Bank of Sierra Blanca in Texas, the First National Bank of Blanchardville in Wisconsin, the Farmers Bank & Trust of Cheneyville in Louisiana, New Century Bank in Michigan, and NextBank in Arizona) had much in common in terms of the causes of failure. Weak internal controls, poor oversight by the bank's board of directors, and fraud contributed to several of them.

Specifically, the following factors contributed to one or more of these six failures[109]:

- Weak or ineffective corporate governance and an inadequate internal control structure that created an environment that allowed a trusted senior executive to perpetrate a massive and pervasive fraud
- The presence of dominant bank officials who were able to exploit the bank's weak internal control structure and inadequate separation of duties to systematically manipulate the bank's accounting systems and reports and to conceal the fraudulent activity
- Poor lending practices as well as inadequate oversight by the bank's board of directors
- Illiquidity arising from possible fraud and safety-and-soundness issues
- Questionable lending practices arising from possible fraud-related issues
- Improperly managed rapid growth, which led to unacceptably high levels of credit risk, losses, and operational problems
- Lending problems partly obscured by deficient accounting practices
- Funding restricted to high-cost volatile deposits that pressured interest margins and exposed the bank to a heightened liquidity squeeze to meet depositors' demands
- A change in business strategy that increased lending concentrations in high-risk loans (or in loans to volatile industries).

6.2.2 Large Charges Against the Insurance Fund from Failed Banks, 2002–2004

Table 6.3 ranks failed banks by their resolution costs to the insurance fund and shows total assets and the loss rate for banks that failed over the years 2002-2004. For these years, the charges ranged from $0 to $146 million. Table 6.3 also shows each institution's failure-resolution-cost ranking among all failures between 1992 and 2004. During the years 2002–2004 18 banks failed, resulting in a total cost to the FDIC of $520.5 million.

[109] These factors are drawn from FDIC (2003a and 2003b), FDIC OIG (2004a), Federal Reserve System OIG (2002), Office of the Comptroller of the Currency (2006), U.S. Department of Justice (2006), and U.S. Department of Treasury OIG (2002a).

Five of these banks were resolved by deposit payoff, with the remainder resolved by some form of purchase and assumption. Although costly, the cost to resolve banks that failed in the last three years of the period is not excessively high when compared with the cost to resolve all institutions that failed during the years 1992–2004. For example, the most costly bank failure between 2002 and 2004—NextBank, which failed in 2002 and resulted in a charge of $145.5 million against the insurance fund—is the ninth most costly bank failure of 229 failures during the years 1992–2004.

Table 6.3
Actual Loss to the Deposit Insurance Fund from Failed Banks 2002-2004 Ranked among All Failed Banks 1992–2004

Institution Name	Res. Type	Fail Year	Actual or Estimated Loss*	Total Assets*	Loss On Assets	Rank
NextBank	PO	2002	146	669	22%	9
Hamilton Bank	PA	2002	140	1,232	11%	10
Oakwood Deposit Bank Company	PA	2002	68	62	110%	22
Southern Pacific Bank	PA	2003	61	1,052	6%	24
Connecticut Bank of Commerce	PA	2002	55	379	15%	27
The First National Bank of Blanchardville	PA	2003	13	35	38%	75
The Farmers Bank and Trust of Chenyville	PA	2002	12	35	34%	79
Bank of Alamo	PO	2002	9	60	16%	92
Bank of Sierra Blanca	PA	2002	5	11	43%	131
New Century Bank	PO	2002	4	19	24%	133
Bank of Ephraim	PA	2004	3	46	7%	144
Reliance Bank	PA	2004	2	27	6%	164
Amtrade International Bank of Georgia	PO	2002	1	10	14%	173
Universal Federal Savings Bank	PA	2002	1	50	1%	184
Pulaski Savings Bank	PA	2003	1	9	8%	188
Net First National Bank	PA	2002	0	33	0%	213.5
Guaranty National Bank of Tallahasse	PA	2004	0	77	0%	213.5
Dollar Savings Bank	PO	2004	0	15	0%	213.5

Source: FDIC Failed Bank Cost Analysis Data Bank and Estimated Loss Report
Notes: Resolution Type is the method used to resolve the bank. PO is a Payoff and PA is a Purchase and Assumption. Rank denotes the failed bank's place on a list of failed banks over the years 1992-2004 ordered from highest to lowest in terms of Actual Loss. Until a receivership is officially closed, losses and assets are estimates subject to change. As of the writing of this study, some of the failure data used to construct this table involves open receiverships. The data used for this table is current as of June 2006
* in $ millions (rounded to the nearest million)

For the years 2002–2004, the six most costly bank failures are NextBank, Hamilton Bank, Oakwood Deposit Bank Company, Southern Pacific Bank, Connecticut Bank of

Commerce, and the First National Bank of Blanchardville. The causes of these six failures are very similar to the causes (discussed above) of the high-loss-rate failures.[110]

6.3 Common Causes of Bank Failure

Investigations into previous bank failures have identified four business practices that serve as enabling factors in a failure:

1. Lack of fundamental knowledge or understanding of the strategic, functional, or other requirements for critical business activities
2. Lack of understanding of the potential risks related to a particular business activity or process
3. Motives that may not be consistent with an institution's best interest
4. Weak or ineffective risk management programs.

The unacceptable practices were reflected in a 2004 report by the FDIC OIG that presented observations from an analysis of the ten statutorily required material-loss reviews performed by the OIG during the period 1993–2003. The OIG analyzed each material-loss review to determine the root causes of failure and to ascertain whether there were any indicators of problems before the financial condition of the bank deteriorated. The OIG then aggregated the information to determine whether there were any trends or common characteristics among the failed institutions. The report concluded that

> the major causes of failure were inadequate corporate governance, poor risk management, and lack of risk diversification. Bank management took risks that were not mitigated by systems to adequately identify, measure, monitor, and most importantly, control the risks. As a result, bank management did not adequately fulfill its responsibility to ensure that the banks operated in a safe and sound manner. Although economic conditions may have contributed to failure and the resulting material loss, the economy was not the sole cause of failure.[111]

The OIG report also described four stages through which the ten institutions progressed:

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[110] Information on the causes of failure for these institutions is drawn from FDIC OIG (2003a, 2003b, and 2004a), Federal Reserve System OIG (2002), Office of the Comptroller of the Currency (2006), and U.S. Department of Treasury OIG (2002a and 2002b).

[111] FDIC OIG (2004b), p.5.

1. Strategy—The banks typically underwent a change in philosophy and developed aggressive business plans, usually in a high-risk lending niche. Characteristics of a bank in this stage included the emergence of a dominant person, a lack of expertise in the niche area, and high-risk lending with liberal underwriting and weak internal controls.
2. Growth—The banks appeared financially strong because of rapid growth in their niche area. High levels of fee income were reported, but bank portfolios were not sufficiently aged to show losses resulting from poor lending decisions and weak credit administration. Violations of laws and regulations and insider abuse occurred, and examiners' concerns were not fully addressed. Poor risk management and inadequate diversification were evident.
3. Deterioration—The banks' overall financial condition declined. Characteristics of a bank in this stage included resistance to supervisory concerns, overvaluation of assets, plateau or decline in earnings, inadequate allowance for loan and lease losses (ALLL), impaired capital, significant concentrations of credit, and loan problems that were exacerbated when the economy declined.
4. Failure—Massive loan losses occurred, the ALLL was severely deficient, significant capital depletion occurred, enforcement actions were issued by the FDIC, and key management officials departed. A massive capital infusion was needed for the bank to survive.

Beyond the general descriptions above, the OIG identified a number of attributes during each stage of the institutions' progression. These attributes, and the stages with which the attributes were associated, are presented in Table 6.4.

Table 6.4

Numerous factors mirror the OIG findings in its Review of 10 Material Loss Reviews.

Four Stages of a Bank Failure			
Stage I	**Stage II**	**Stage III**	**Stage IV**
Strategy	**Growth**	**Deterioration**	**Failing**
Corporate Governance ▪ Change in philosophy ▪ Aggressive business plan ▪ Inattentive Board of Directors ▪ Emergence of a dominant person ▪ High-Risk lending ▪ Lack of expertise in high-risk (niche) lending area **Risk Management** ▪ Lack of strategic plan ▪ Weak risk management **Lending Concentration** ▪ Liberal underwriting ▪ Weak internal controls ▪ Aggressive growth	**Corporate Governance** ▪ Some violations of laws and regulations ▪ Insider abuse ▪ Disregard for examiners' concerns **Risk Management** ▪ Poor risk diversification ▪ Financially strong image **Lending Concentration** ▪ Rapid growth in niche (high-risk) area ▪ High level of fee income, but portfolio does not show loss rates ▪ Poor credit administration	**Corporate Governance** ▪ Increased resistance to supervisory concerns ▪ Independent public accountant problems ▪ Memorandum of Agreement/Board of Directors Resolutions **Risk Management** • Earnings plateau/decline • Inadequate Allowance for Loan and Lease Losses • Capital impaired **Lending Concentration** ▪ Significant loan amounts by type ▪ Growth plateaus ▪ Emergence of loan problems worsened by a declining economy	**Corporate Governance** • Enforcement actions issued by regulatory agency • Departure of key officials **Risk Management** ▪ Severely deficient Allowance for Loan and Lease Losses ▪ Significant depletion of capital ▪ Need for massive capital infusion for bank to survive **Lending Concentration** ▪ Massive loan losses

Observations from FDIC OIG Material Loss Reviews Conducted 1993 through 2003; Report Number 04-004; January 22, 2004

The risk elements listed in Table 6.4 may include inadequate administration and oversight, strategic planning deficiencies, an aggressive culture, or weaknesses in internal control programs. These stages described in the OIG report are instructive about the progression and potential effect of a problem situation faced by a financial institution. The OIG report also makes the following observations about bank failures:

- Banks that fail often exhibit warning signs even though they appear to be financially strong.
- Banks that fail often assume more risk than bank management is capable of handling.
- An inattentive or passive board of directors is a precursor to most problems.

- Banks that fail reach a point at which problems become serious and ultimately intractable, with failure unavoidable in the absence of a significant capital contribution.

7. Strategies to Discourage or Mitigate Fraud, Insider Abuse, and Unsafe Business Practices

As just discussed, fraud and insider abuse have been associated with recent losses to the deposit insurance funds. Table 7.1 shows that between 1992 and 2004, fraud and insider abuse were present in 28 percent of failed banks. And such failures—those due at least partly to fraud and insider abuse—have caused significant losses to the funds. Table 7.1 also presents average FDIC loss rates on failed-bank assets between 1992 and 2004. Average loss rates among failures where fraud or insider abuse was a primary contributing factor in the failure are substantially greater than average loss rates among failures where fraud was not present—22.6 percent and 15.5 percent, respectively.[112]

Table 7.1

The Incidence of Fraud/Insider Abuse and Average Loss Rate among Failed FDIC-Insured Institutions, 1992–2004

Category	No. of Failures	Loss Rate
Fraud/insider abuse was a primary cause of failure	31	22.6%
Fraud/insider abuse was a contributing factor (includes failures where fraud was a primary cause).	64	19.4%
No fraud/insider abuse was found.	165	15.5%
Total Failures	229	

* Loss to FDIC as a percentage of failed-bank assets.

Insider abuse encompasses "a wide range of misconduct by officers, directors, and insiders of financial institutions committed with the intent to enrich themselves without regard for the safety and soundness of institutions they control, in violation of civil banking laws and regulations and perhaps also in violation of criminal banking laws."[113]

[112] To assess whether fraud or insider abuse was either a contributing or a primary factor in failure, the FDIC reviewed the histories of BIF-insured banks and thrifts that failed between 1990 and 2006. Table 7.1 is based on these assessments of fraud and insider abuse among failed banks. In fact, fraud has been an important characteristic of failures even further back historically. For example, the FDIC found that fraud and insider abuse were widely present in bank and thrift failures between 1980 and 1994 and were a contributing factor in some of those failures (FDIC [1997], 34).

[113] As cited in Gup (1990), 7.

Insider abuse can be distinguished from fraud by the presence of a legal ruling that declares the insider abuse behavior as illegal (and hence fraudulent) in a court of law.

Similarly, unsafe business practices have the potential to ultimately impose losses on the FDIC. Excessive loan concentrations or dramatic changes in lending strategies, for instance, can lead to costly bank failures.[114] Thus, to protect the fund from losses attributable to unsafe business practices, the FDIC remains vigilant toward the business practices adopted by financial institutions.

At the same time, however, the FDIC recognizes that the assumption of risk is not per se problematic. Financial institutions are profit-maximizing entities that assume risk to achieve returns. Business practices become unsafe only in the absence of appropriate pricing, internal controls, proper underwriting, and prudent management. Accordingly, the FDIC evaluates bank risk in the context of the bank's practices, policies, and controls.

To protect the Deposit Insurance Fund from losses due to fraud, insider abuse, and unsafe business practices, the FDIC relies on the prudent practices of boards of directors in conjunction with strong internal controls. At the same time, the FDIC has aggressively encouraged managers and directors of financial institutions to pursue strategies that minimize fraud and insider abuse and limit excessive risk taking.

The FDIC combats fraud, insider abuse, and unsafe business practices on three fronts: prevention, detection, and enforcement. Similar efforts are made by other state and federal bank and thrift regulators. Here we focus on the FDIC's efforts among the state-chartered nonmember banks that the Corporation supervises; and where appropriate, we point out where these efforts involve other bank and thrift regulators.

7.1 Prevention

The FDIC, along with the other financial regulators, issues guidance to institutions in its efforts to maintain and promote sound banking practices. The guidance often takes the

[114] For example, see FDIC (1997).

form of Financial Institution Letters (FILs) and Special Alerts. FILs are advisories to bank executives that describe recent developments in policies and procedures. Special Alerts concern counterfeit financial instruments, illegal entities, and fraud. In addition, manuals of examination policies provide guidance to the financial institution about what regulators deem to be unsafe practices; the manuals can help institutions avoid engaging in such activities. And the FDIC participates in and sponsors conferences, seminars, and symposia that can encourage safe business practices.

7.2 Detection

It is hard to detect fraud early, particularly when bank employees or officers are complicit in the fraud. Likewise, examiners often find it hard to detect whether an institution's lending practices are prudent until the loan portfolio begins to deteriorate—possibly many years after the imprudent lending practices are instituted. The FDIC continually seeks ways of improving its ability to detect fraud, insider abuse, and unsafe business practices by improving on-site and off-site bank monitoring systems as well as by using traditional legal and supervisory programs. Some key detection programs and initiatives are safety-and-soundness examinations, off-site monitoring, and Suspicious Activity Reports.

7.2.1 Safety-and-Soundness Examinations

An important component of preventing fraud, insider abuse, and unsafe business practices is the use of the FDIC's examination process to properly evaluate internal controls and risk management programs. A 1999 FDIC study concluded that downgrades of examination ratings and the issuing of formal enforcement actions affected the performance of distressed financial institutions in important ways, leading to changes in operating policies, a reduction in asset growth rates, and an increased rate of external capital injections.[115] And because management's ability to exercise control grows more constrained as a problem situation becomes worse, the FDIC seeks to have objectionable

[115] See Curry, O'Keefe, Coburn, and Montgomery (1999).

practices corrected as soon as possible. If corrective action is not taken until after conditions have deteriorated, loss elements increase.[116]

Over time, the FDIC has modified its examination program to reflect developments in the banking environment. These modifications have included a renewed emphasis on corporate governance, on internal controls, and on risk management. In addition, in 1997 the banking agencies adopted changes in the Uniform Financial Institutions Rating System that focused on institution practices. By 2003, such modifications resulted in a more risk-focused approach to FDIC safety-and-soundness examinations. Under the new risk-focused approach, a thorough assessment of the bank's management system takes precedence and determines which areas should be considered for further investigation. Consequently, the emphasis on the bank's risk management and monitoring practices has the potential to serve as a new avenue for detecting vulnerabilities in the bank's internal controls. Such an approach also reallocates resources more efficiently by targeting them toward higher-risk areas.[117]

7.2.2 Off-site Monitoring Efforts

In conjunction with on-site efforts, the FDIC has been seeking off-site approaches to identifying institutions that may be susceptible to fraud and insider abuse. Most recently, the FDIC has been developing an off-site monitoring model to assess an FDIC-insured institution's internal controls. In developing this system, the FDIC analyzed financial-institution failures and near failures since 1990 to identify common characteristics. When the system is complete, it will look for these characteristics to estimate the quality of an institution's internal controls. Institutions deemed to have weak internal controls are considered to be at higher risk of fraud and insider abuse.

In addition to this new system for assessing internal controls, for some time the FDIC has been using off-site monitoring systems designed to flag institutions that might be

[116] See FDIC (n.d.).
[117] Jackwood (2004).

engaging in unsafe business practices. Such off-site models focus on two areas: sudden and dramatic increases in growth rates, and scenario-based stress testing.

7.2.3 Suspicious Activity Reports

The FDIC and other primary federal bank regulators use Suspicious Activity Reports (SARs) in their efforts to detect fraud and insider abuse. Under FDIC rules and regulations, an insured state-nonmember bank is required to submit a SAR when the bank detects a known or suspected violation of federal law. A SAR is to be submitted to the Financial Crimes Enforcement Network (FinCEN) of the U.S. Department of the Treasury under several circumstances, including whenever a bank

> detects any known or suspected federal criminal violation, or pattern of criminal violations, committed or attempted against the bank or involving a transaction or transactions conducted through the bank, where the bank believes it was either an actual or potential victim of a criminal violation or series of criminal violations, or that the bank was used to facilitate a criminal transaction, and the bank has a substantial basis for identifying one of the bank's directors, officers, employees, agents, or other institution-affiliated parties as having committed or aided in the commission of the criminal violation, regardless of the amount involved in the violation.[118]

Through FinCEN, the FDIC has the submitted SARs at its disposal and is able to use them to help its examiners assess bank compliance programs. The FDIC currently has processes in place to acquire the data included in the SARs and use the SARs data in its supervisory activities. The investigations of alleged abuses may eventually lead to the issuance of an enforcement action.[119]

7.3 Enforcement

Bank regulators are authorized to take corrective or punitive action against banks and their employees responsible for significant violations of banking law as well as for unsafe and unsound banking practices. Enforcement actions can serve as an effective mechanism for dealing with perpetrators of fraud and insider abuse and forcing institutions to improve their risk management. In areas over which management has had some measure

[118] 12 CFR 353.3(a)(1) (2000).
[119] Patterson and Nienus (2005).

of control, formal enforcement actions have led to statistically significant differences in performance.[120]

Section 8 of the Federal Deposit Insurance Act (FDI Act) affords the Corporation the authority to issue enforcement actions against the institution or certain individuals (institution-affiliated parties, or IAPs) that engage in a violation of law or regulation, a breach of fiduciary responsibility, or unsafe practices.[121] Specifically, section 8 of the FDI Act authorizes the FDIC to pursue the following actions:

- Section 8(b)(6)(a) of the FDI Act authorizes the FDIC to issue a cease–and-desist order requiring an IAP to make restitution to the bank if the abuse was a reckless violation of the law or regulation or a violation of a prior order. The restitution authority also applies if the IAP was unjustly enriched by the practice. Additionally, the institution may be issued a cease-and-desist order if it is engaging in unsafe business practices. Such cease-and-desist orders prohibit the bank from engaging in certain practices and generally place demands upon a bank to rectify any violations noted in the order.[122]
- Section 8(e)(1) of the FDI Act authorizes the FDIC to remove an IAP from a bank and to prohibit the IAP from participating in any banking matters. The FDIC can administer a "removal and prohibition" order once it can demonstrate each of the following: misconduct, effect of misconduct, and culpability.
- Section 8(i)(2) of the FDI Act authorizes the FDIC to impose civil monetary penalties against an institution or an IAP.

In addition, section 38 of the FDI Act, as amended (prompt corrective action, or PCA) provides a set of required leverage and risk-adjusted capital standards. Institutions that fail to meet these standards are subject to restrictions that become more severe as capital ratios decline. PCA also includes the power to require divestitures and to dismiss directors and senior officers. To the extent that fraud, insider abuse, or unsafe business

[120] Curry, O'Keefe, Coburn, and Montgomery (1999).
[121] Patterson and Nienus (2005).
[122] Curry, O'Keefe, Coburn, and Montgomery (1999).

practices cause an institution's capital ratios to decline, PCA gives the FDIC another avenue for enforcement.

In less-severe situations, the FDIC may pursue informal actions, such as board resolutions and memoranda of understanding. A board resolution reflects a statement from the bank's board in which the board recognizes the safety-and-soundness issues and outlines the approach it will take in addressing them. A memorandum of understanding is an agreement between the regulator and the bank that more explicitly describes specific actions to be completed by a given deadline to satisfy safety-and-soundness concerns.

Enforcement actions have become an important tool with which the FDIC penalizes perpetrators of unsafe or abusive business practices. The number of civil monetary penalty actions increased substantially between 2002 and 2004, going from 29 to 40. The number of removal and prohibition actions increased threefold over the same period, from 21 to 65. Moreover, 61 of the 65 removal and prohibition actions in 2004 involved fraud and insider abuse.

Although the effects of these efforts are hard to measure, taken together the efforts have served to minimize the deposit insurance fund's exposure to high-cost failures. The FDIC has recognized that early prevention of abuse and unsafe business practices can lower its exposure to costly failures. Thus, the Corporation has aggressively sought to prevent failures due to abuse and unsafe business practices: it uses educational efforts such as FILS, Special Alerts, and conferences and symposia; actively engages in deterring such failures through on-site and off-site examination efforts; pursues deterrence activities such as the use of SARs to mitigate loss exposure; and discourages future incidents of abuse and unsafe practices by vigorously pursuing numerous enforcement actions against perpetrators of fraud and insider abuse and against institutions engaging in unsafe business practices.

8. Loss Reserving Practices of Other Types of Financial Institutions

In this section, we examine the loss reserving methodologies of a number of different types of entities: other U.S. government insurers, deposit insurers in two foreign countries, and commercial insurance companies. Each of these types of financial institutions faces potential losses that are similar to some of the potential losses faced by the FDIC. Thus, information about these institutions' loss reserving methodologies helps us to analyze the appropriateness and reliability of the information and criteria the FDIC uses in determining whether an institution is in a troubled condition and how much loss should be anticipated at such institution.

We find that all of the types of financial institutions that we examine reserve for at least some types of contingent losses. We also find that while there are some differences in loss reserving methodology across financial institution types, there are more similarities. The FDIC's loss reserving methodology uses information similar to the types of information used by other types of financial institutions in their reserving process. And like most of the other types of financial institutions, the FDIC follows GAAP accounting standards in reserving for losses.

For each type of financial institution, we first describe the ways in which the institution's potential losses are similar to the FDIC's potential losses. We explore whether the institution reserves for contingent losses and, if not, why not. If the institution does reserve for contingent losses, we describe the method or range of methods used, including the types of contingent losses for which the institution reserves. We also discuss the reasons behind the institution's adoption of the particular methodology, and describe any evolution of that methodology over time. We end our discussion of each type of institution by comparing its loss reserving methodology with the FDIC's.

8.1 Other U.S. Government Insurers

The other U.S. government insurers that we look at are the National Credit Union Share Insurance Fund (NCUSIF) and the Pension Benefit Guarantee Corporation (PBGC). Like the FDIC, the NCUSIF and the PBGC are public entities that collect insurance premiums

and, in return, insure or guarantee shares and share drafts (NCUSIF) or pensions (PBGC) up to a certain statutory limit per depositor or pension benefit participant.

8.1.1 National Credit Union Share Insurance Fund

Currently, the National Credit Union Share Insurance Fund (NCUSIF) and the Deposit Insurance Fund are the only other U.S. federal deposit insurance funds.[123] Established by Congress in 1970, it insures deposits in all federal and most state-chartered credit unions.[124] It is administered by the National Credit Union Administration (NCUA), which charters and regulates federal credit unions. As of December 31, 2005, the NCUSIF insured an estimated 98 percent of all credit unions.[125,126]

The NCUSIF is capitalized by cash deposits in the fund equal to 1 percent of insured shares, adjusted at least annually. As long as a credit union is federally insured, the deposit must be maintained in the fund. If a credit union leaves federal insurance, the deposit with the NCUSIF is refunded. However, if the NCUA's board assesses additional premiums to maintain the NCUSIF's minimum required equity ratio, the additional premiums are not refunded.

Like the FDIC, the NCUSIF faces potential losses when an insured credit union fails, and the NCUSIF maintains a contingent liability account (reserves) for losses incurred when credit unions fail. This account is maintained in accordance with GAAP, specifically FAS 5.

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[123] Between 1989 and March 2006, there were three U.S. federal deposit insurance funds: the BIF and the SAIF, administered by the FDIC, and the National Credit Union Share Insurance Fund. The BIF and the SAIF were merged in March 2006 to form the Deposit Insurance Fund (DIF).

[124] As of December 31, 2005, almost 61 percent of the almost 8,900 credit unions were federally chartered, and the rest (about 39 percent) were state chartered. (National Association of State Credit Union Supervisors, 2006).

[125] Eight states permit credit unions to purchase private share insurance as an alternative to federal share insurance: Alabama, California, Idaho, Illinois, Indiana, Maryland, Nevada, and Ohio. As of December 31, 2005, there were 183 privately insured state-chartered credit unions (representing about 5 percent of the nation's state-chartered credit unions). There is only one private share insurer—American Share Insurance (ASI). Besides insuring deposits in the 183 credit unions, ASI extends excess NCUSIF share insurance to credit unions.

[126] 98 percent estimate from author's calculations using data contained in National Association of State Credit Union Supervisors 2006.

In December 2005, the NCUSIF's contingent liability for losses on credit union failures was $72.98 million,[127] and the NCUSIF insured a total of $515.6 billion in insured shares in 8,695 federally insured credit unions.[128] The NCUSIF fund balance in December 2005 was $6.702 billion.[129] In December 2004, the NCUSIF's contingent liability for losses on credit union failures was $67.13 million,[130] and the NCUSIF insured a total of $499 billion in insured shares in 9,014 federally insured credit unions.[131] The NCUSIF fund balance in December 2004 was $6.440 billion.[132]

8.1.1.1 Current NCUSIF Methodology for Estimating Contingent Liability for Losses on Credit Union Failures

The NCUSIF'S current methodology for computing contingent liability for losses on credit union failures is modeled on the FDIC's methodology for computing contingent loss reserves. The current NCUSIF methodology was adopted in December 2004 in response to a GAO audit that suggested changes to the agency's previous methodology.[133]

The NCUSIF estimate of contingent liability for losses on credit union failures is computed using a five-step procedure.[134] In the first step, credit unions are placed into one of nine categories, or pools, on the basis of two risk factors: composite CAMEL (hereafter CAMEL) ratings[135] and net worth. The nine pools are as follows:

- 1: Institutions with 100% probability of failure, or in liquidation
- 2: CAMEL 2 rating and net worth <2%

[127] NCUA 2006b.
[128] NCUA 2006a.
[129] Direct communication from NCUA.
[130] NCUA 2006b.
[131] NCUA 2005.
[132] Direct communication from NCUA.
[133] U.S. General Accounting Office (2003).
[134] Information from NCUA 2004 and also from direct communication from NCUA.
[135] Credit unions are rated according to a CAMEL rating system that is very similar to the system of composite CAMELS ratings. The main difference is that credit unions are not rated for sensitivity to market risk (the "S" rating), as banks and thrifts have been since 1997. For a discussion of composite CAMELS ratings, see Section 5.1 ("Identifying Troubled Institutions") and Table 5.1. Both the NCUA and the FDIC, as members of the Federal Financial Institutions Examinations Council (FFIEC), follow the Universal Financial Institutions Rating System (UFIRS) and therefore define each component of the CAMEL(S) rating in the same manner.

- 3: CAMEL 2 rating and net worth >=2%
- 4: CAMEL 3 rating and net worth <2%
- 5: CAMEL 3 rating and net worth >=2%
- 6: CAMEL 4 rating and net worth <2%
- 7: CAMEL 4 rating and net worth >=2%
- 8: CAMEL 5 rating and net worth <2%
- 9: CAMEL 5 rating and net worth >=2%

Institution-specific reserves (known as specific case reserves) are put aside for institutions in the first risk pool. Institutions are placed into the first risk pool based on the scheduled closing date for the institution or on both the identification of the institution as an imminent failure and the projected cost to complete the liquidation. For institutions in the remaining eight risk pools, estimates of non-institution-specific reserves (known as nonspecific case reserves) are then computed.

In the second step of the computation of the NCUSIF estimate of contingent liability for losses on credit union failures, a projected level of failed assets is estimated for each of the remaining eight risk pools. To do this requires an expected failure rate to be estimated for each of the pools. For each risk pool, the expected failure rate is estimated by annualizing the total number of failures in the previous two-year period within that risk pool and dividing by the total number of institutions in that risk pool.[136] The projected level of failed assets (measured in dollars) for each risk pool is then computed as the expected failure rate multiplied by the total assets in each pool.

In the third step, the estimated dollar amount of reserves needed for nonspecific cases (risk pools two through nine) is computed as total projected level of failed assets multiplied by the ten-year average loss experience rate. The ten-year overall average loss experience rate is based on the NCUSIF's actual losses for failed institutions in the

[136] In 2005, the NCUSIF also computed failure rates using one-year and three-year look-back periods and did not find results that materially differed from the results using the two-year look-back period.

previous ten years.[137] The ten-year average loss experience rate (from 1996 through 2005) is 15.99 percent of a credit union's assets at the time of failure.

In the fourth step, specific case reserves and estimates of the nonspecific case reserves are added together to derive the contingent loss reserve estimate.

In the fifth and final step, a 90 percent confidence interval is computed for the expected failure rate for each of the eight risk pools. The upper bound of the 90 percent confidence interval is multiplied by the total assets in each pool to generate the upper bound of a 90 percent confidence interval for assets subject to failure in each risk pool. This upper bound is then multiplied by the ten-year average loss experience rate to produce an estimate of the upper bound of the 90 percent confidence interval for nonspecific case reserves.

The difference in magnitude between the estimates for nonspecific case reserves using the mean expected failure rate and those using the upper bound of the 90 percent confidence interval for the expected failure rate can be quite large. For example, in June 2004 the estimated nonspecific case reserve using the mean expected failure rate for each of the eight risk pools is $50.69 million. For the same period, the estimated nonspecific case reserve using the upper bound of the 90 percent confidence interval of the expected failure rate for each of the eight risk pools is $97.61 million.

The NCUSIF maintains nonspecific case reserves within the range bounded by the mean and the upper bound of the 90 percent confidence interval estimates. The actual reserve amount to be held is determined by the Director of Examination and Insurance, with input from the NCUSIF Investment Committee. The considerations for maintaining nonspecific case reserves at a higher level than the mean estimate include trends in actual losses, trends in CAMEL 4- and 5-rated institutions, economic conditions affecting

[137] Using a ten-year horizon for the loss experience rate allows time for the liquidation process to be completed and for the losses to be reflected in the loss experience rate.

federally insured credit unions, and the NCUSIF Investment Committee's belief that an imminent increase in actual losses is likely.

Estimates of specific case reserves (for institutions in the first risk pool) are revised monthly. Nonspecific case reserve estimates are computed twice a year by the Office of Examination and Insurance, using mid-year and year-end data.

8.1.1.2 Differences between the NCUSIF's Methodology and the FDIC's Methodology

The NCUSIF's methodology for estimating contingent losses on insured shares is based on the FDIC's methodology for estimating contingent losses on insured deposits. However, there are some differences between the two methodologies.

One is that the FDIC sets aside contingent loss reserves only for institutions with a CAMELS rating of 4 or 5, whereas the NCUSIF also sets aside contingent loss reserves for credit unions with a CAMEL rating of 2 or 3. According to the NCUA, the reason for its practice is that the incidence of failure of credit unions with a CAMEL rating of 2 or 3 is higher than the incidence of failure of FDIC-insured financial institutions with a CAMELS rating of 2 or 3. If estimates from June 30, 2004, are used, the inclusion of CAMEL 2-rated credit unions in the contingent loss reserve increased reserves by $6.7 million, and the inclusion of CAMEL 3-rated credit unions in the contingent loss reserve increased reserves by $10.9 million.[138]

Another difference between the two methodologies, NCUSIF's and FDIC's, is that the NCUSIF applies a single loss experience rate to all the insured credit unions, whereas the FDIC estimates different expected loss rates for individual institutions based on each institution's asset type and liability structure. The primary reason for the NCUSIF to use only a single loss experience rate is that it does not have enough data to compute loss experience rates separately for different asset types. To assess its single historical loss

[138] If the upper bound of the 90 percent confidence interval is used, the equivalent figures are an increase in reserves of $16.1 million for CAMEL 2-rated credit unions and an increase in reserves of $17.2 million for CAMEL 3-rated credit unions.

experience rate, the NCUA estimated in 2004 that using the FDIC's loss rates for specific types of assets within each pool would produce results within 20 percent of the NCUSIF's overall historical loss rates.

8.1.2 Pension Benefit Guaranty Corporation

The Pension Benefit Guaranty Corporation (PBGC) is a wholly owned federal government corporation established in 1974 by the Employee Retirement Income Security Act (ERISA). ERISA requires that sponsors of tax-deferred, defined-benefit pension plans have their plans insured by the PBGC.[139]

As of September 30, 2005, the PBGC guaranteed the basic pension benefits of 44.1 million workers and retirees participating in 30,336 private sector defined-benefit pension plans. The PBGC administers two separate pension insurance programs: the single-employer program and the multi-employer program. As of September 30, 2005, the single-employer program covered about 34.2 million workers and retirees in 28,769 insured plans, and the multi-employer program covered about 9.9 million workers and retirees in 1,567 insured plans.[140]

Like the FDIC, the PBGC receives no funds from general tax revenues. Instead, the PBGC collects insurance premiums from employer sponsors of defined-benefit plans,[141] invests those premiums, and uses the investment returns and the assets of terminated plans to pay the retirement benefits to retirees covered by these terminated plans.

As of September 30, 2005, the two pension insurance programs had combined assets of about $57.7 billion, offset by total combined liabilities of approximately $80.7 billion.[142]

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[139] The law sets limits on the PBGC benefit guarantee. The limit varies depending on the year of plan termination and on the age at which a participant first receives a benefit payment from PBGC. For plans that terminate in 2006, the current limit ranges from $47,659 annually per participant for participants age 65 and older to $11,915 annually per participant for participants age 45. For plans that terminated in 2005, the current limit ranges from $45,614 annually per participant for participants age 65 and older to $11,403 annually per participant for participants age 45. In addition to these benefit limits, benefit increases from plan amendments in the five years immediately preceding plan termination are not fully guaranteed.

[140] PBGC 2005a.

[141] The premiums charged by the PBGC are set by statute.

[142] PBGC 2005a.

As of September 30, 2005, PBGC reported a deficit of $22.76 billion for the single-employer program and a deficit of $335 million for the multi-employer program.[143]

8.1.2.1. Current PBGC Methodology for Estimating Contingent Liability for Losses on Pension Plan Failures

The PBGC, like the FDIC and the NCUSIF, reserves for contingent losses in accordance with FAS 5. As of September 30, 2005, the PBGC's estimated net claims for probable terminations were $10.47 billion, which resulted in a reserve of $10.47 billion for the single-employer program and no reserve for the multiemployer program. The estimated net claim for probable terminations was $16.9 billion in September 2004.[144,145]

In accordance with FAS 5, the PBGC's recognition of net claims for probable terminations represents the PBGC's best estimates of the losses, net of plan assets and the present value of expected recoveries, for plans that are likely to terminate within 12 months of the financial statement issuance date.[146] This estimate is based on conditions that existed as of PBGC's fiscal year-end.

In addition, the PBGC values its financial assets and liabilities according to standards for pension plans contained in FAS 35. In accordance with paragraph 21 of FAS 35, the PBGC values its liabilities for the present value of future benefits using assumptions derived from annuity prices from insurance companies, and also selects retirement ages and the cost of administrative expenses using its best estimate of anticipated events. The estimate of net claims for probable termination is a component of the estimated present value of future benefits and is adjusted to reflect the time value of money (through

[143] Ibid.
[144] PBGC 2005b.
[145] The $6.4 billion reduction in estimated net claim for probable terminations between 2004 and 2005 resulted primarily from the transfer of $10.6 billion of previously accrued claims to pending termination or trusteeship or trusted status, offset by the addition of new probable claims of $4.7 billion.
[146] In addition to reserving for estimated net claims for probable terminations, the PBGC reports, in its financial statement, estimates of aggregate unfunded vested benefits for single-employer plans that are classified as reasonably possible terminations (and not as probable terminations) because the sponsor's financial condition and other factors did not indicate that termination of the plans was likely as of year-end. As of September 30, 2005, PBGC's estimate of aggregate unfunded vested benefits for single-employer plans that are classified as reasonably possible terminations was $108 billion. The comparable estimate for fiscal year 2004 was $96 billion; and for fiscal year 2003, $82 billion (PBGC 2005b).

discounting) and also to reflect the probability of payment (by means of decrements, such as for death or retirement of the plan participant).

According to PBGC's 2005 Annual Report,[147]

> PBGC identifies a plan as high risk if the plan sponsor meets one or more criteria that include, but are not limited to, the following conditions: sponsor is in Chapter 11 proceedings; sponsor received a minimum funding waiver within the past five years; sponsor granted security to an unsecured creditor as part of a renegotiation of debt within the past two years; sponsor is known to have been in default on existing debt within the past two years (regardless of whether it received a waiver of default); or sponsor's unsecured debt is rated CCC+ or Caa1 or lower by S&P or Moody's, respectively. PBGC specifically reviews each plan identified as high risk and classifies those plans as probable if, based on available evidence, PBGC concludes that plan termination is likely. Otherwise, high risk plans are classified as reasonably possible.[148]

According to PBGC's 2005 Annual Report,

> Criteria used for classifying a specific plan as a probable termination include, but are not limited to, one or more of the following conditions: the plan sponsor is in liquidation or comparable state insolvency proceeding with no known solvent controlled group member; sponsor has filed or intends to file for distress plan termination; or PBGC seeks involuntary plan termination.[149]

The PBGC also takes into account other economic events and factors in making judgments about the classification of a plan as a probable termination. Among these events and factors may be the following:

> plan sponsor is in bankruptcy or has indicated that a bankruptcy filing is imminent; the plan sponsor has stated that plan termination is likely; the plan sponsor has

[147] PBGC 2005a, p. 29.

[148] According to PBGC's 2005 annual report (2005a, p 29),

> In order for a plan sponsor to be specifically classified as reasonably possible, it must first have $5 million or more of underfunding, as well as additional criteria. Criteria used for classifying a company as reasonably possible include, but are not limited to, one or more of the following conditions: the plan sponsor is in Chapter 11 reorganization; funding waiver pending or outstanding with the Internal Revenue Service (IRS); sponsor missed minimum funding contribution; sponsor's bond rating is below investment grade for Standard & Poor's (BB+) or Moody's (Ba1); sponsor has no bond rating but unsecured debt is below investment grade; or sponsor had no bond rating but the ratio of long-term debt plus unfunded benefit liability to market value of shares is 1.5 or greater.

[149] PBGC 2005a, p. 29.

> received a going concern opinion from its independent auditors; or the plan sponsor is in default under existing credit agreement(s).[150]

Once plans are identified as probable terminations, the PBGC uses information from a variety of sources to monitor them and determine the potential future claims they represent. These sources include information from plan sponsors, information from ERISA section 4010 filings,[151] reportable event and distress termination filings, and information from other sources, such as Form 5500 filings[152] and news sources. ERISA section 4010 filings and Form 5500 filings, while detailed, are updated only once a year, whereas information from other sources, such as news sources, may be updated more frequently.

PBGC staff contact sponsors of each plan identified as a probable termination to obtain information from the plan, including the plan's most recent Form 5500 filing and actuarial valuation report. PBGC staff also find out from the sponsor of a plan its intentions with regard to its pension plan, obtain estimates of due and unpaid employer contributions and unfunded benefits, and perform a risk analysis of the plan.

For each identified probable plan termination,[153] PBGC actuaries estimate date of plan termination and the present value of each plan's net claim. All probable claim estimates are reviewed by the PBGC's Contingency Working Group, which is responsible for approving probable plan classifications and probable loss amounts. The PBGC updates its estimates of probable claims three times a year (March 31, June 30, and September 30).

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[150] Ibid. p. 29.

[151] ERISA section 4010 requires certain controlled groups maintaining plans with large amounts of underfunding to submit detailed financial and actuarial information annually to the PBGC. Each year, approximately 80 to 100 controlled groups (the number varies from year to year) are required to file section 4010 reports. A "gateway" calculation determines whether there is $50 million of underfunding among all the underfunded plans in the controlled group. If the $50 million threshold is met, the controlled group is a section 4010 filer.

[152] The Form 5500 Annual Return/Report of Employee Benefit Plan must be filed each year by any administrator or sponsor of an employee benefit plan subject to ERISA. Plans covered by the PBGC have special additional filing requirements, including the filing of Annual Premium Payment and the reporting of certain transactions directly to the PBGC.

[153] From 1987 to 2004, a total of 344 plans were classified as probable terminations. Of these, 79% have terminated, 19% have been dropped from the probable termination classification, and the remaining 2% have neither terminated nor been dropped from the probable termination classification.

To estimate the present value of probable claims, the PBGC uses an automated system known as the Integrated Present Value of Future Benefits (IPVFB) system. The IPVFB system estimates probable losses in accordance with GAAP and FAS 5. Information from Form 5500 filings, asset statements, annuity purchases, contributions, and estimated dates of plan termination are entered into the IPVFB system. The system adjusts the plan's assumptions (such as mortality, interest, and expected retirement age) to fit the PBGC's standard assumptions, and generates estimates of the present value of probable claims.[154]

According to notes in its financial statement, the PBGC also records a reserve for large unidentified probable losses; this reserve is based on actual PBGC experience and on historical industry bond default rates. To develop the reserve, the PBGC segregates certain plan sponsors—those listed on the contingency list that have plan funding ratios less than or equal to 80 percent, with aggregate underfunding equal to or greater than $50 million—into risk bands that reflect their level of credit risk.

Also according to its financial statement, the PBGC records a reserve for small unidentified probable losses and incurred but not reported (IBNR) claims. This reserve is based on an actuarial loss development methodology (triangulation method).

8.1.2.2 Differences between the PBGC's Methodology and the FDIC's Methodology

Like the FDIC, the PBGC uses plan-specific criteria to categorize pension insurance plans as high risk and probable terminations, and then to estimate potential future claims arising from these probable terminations. Unlike the FDIC, the PBGC computes actuarial estimates of the present value of each plan's net claim.

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[154] The PBGC develops the interest rate factors that it uses for present value calculations from surveys of insurance companies conducted for the PBGC and the IRS by the American Council of Life Insurers. The survey asks insurers to provide the net annuity price for annuity contracts for plan terminations. Using the survey information and actuarial assumptions, the PBGC produces interest rate factors that are adjusted to the end of the year, using an average of the Moody's Corporate Bond Indices for Aa and A-rated corporate bonds for the last five trading days of the month. The adjusted interest rate factors are published in mid-December for use in January. Using the average of the Moody's bond indices, the PBGC then further adjusts the interest rate factors each subsequent month of the year.

8.2. Foreign Deposit Insurers

As of 2003, a total of 88 countries had explicit deposit insurance schemes in place. Of these, a total of 74 countries had deposit insurance systems that are funded.[155] Here we examine the loss reserving methodologies of two foreign deposit insurers whose economies and/or banking systems are similar to those in the United States and that responded to our requests for information on their loss reserving practices: the Canada Deposit Insurance Corporation and the Korea Deposit Insurance Corporation.

8.2.1 Canada Deposit Insurance Corporation

The Canada Deposit Insurance Corporation (CDIC), established in 1967, insures eligible deposits at member institutions up to a limit of C$100,000 per depositor if the institution fails.[156] As of April 30, 2006, CDIC-insured deposits in 82 member institutions totaled approximately C$455 billion. The CDIC is funded by premiums assessed on its member institutions and does not receive federal tax dollars.

As of March 31, 2006, the balance of the deposit insurance fund was C$1.445 billion, compared with a balance of C$1.339 billion as of March 31, 2005. The CDIC's target range for the insurance fund balance is between 40 and 50 basis points of insured deposits. The balance as of March 31, 2006, represented 33 basis points of insured deposits. The balance as of March 31, 2005 represented 36 basis points of insured deposits.[157]

The CDIC sets aside a reserve for insurance losses, which represents CDIC's best estimate of the losses it is likely to incur as a result of insuring deposits of member institutions. As of March 31, 2006, the reserve for insurance losses was C$600 million,

[155] From Demirgüç-Kunt, Asli et al. (2005).
[156] Eligible deposits must be in Canadian currency and be payable in Canada. Term deposits must be payable no later than five years from the date of deposit. In 1967, when the CDIC was established, deposits in federal member institutions were automatically insured by the CDIC, and provincial institutions could apply for deposit insurance coverage from the CDIC. In 1987, the law was amended to require that all institutions, federal and provincial, must apply for acceptance by the CDIC and obtain a deposit insurance policy. Existing member institutions were grandfathered for the purposes of this amendment.
[157] From CDIC 2004, CDIC 2005a and CDIC 2006.

compared with C$550 million in March 2005 and C$550 million in March 2004.[158] The C$50 million increase in reserve for insurance losses from 2005 to 2006 is primarily due to the increase in the deposit insurance limit from C$60,000 to C$100,000 per depositor.[159] Currently the CDIC's reserve for insurance losses is computed annually. The CDIC is currently considering changing to a quarterly computation.

The CDIC's reserve for insurance losses comprises two components: a reserve for member institutions that are on the watch list, and a general reserve for the nonwatch list member institutions. The general reserve is used as a proxy for measuring the aggregate risk in the system.

8.2.1.1 Computation of the Watch List Reserve for Insurance Losses

The watch list reserve for insurance losses is computed as exposure multiplied by the probability of failure over a five-year time horizon, multiplied by the expected loss given failure, plus or minus an optional qualitative adjustment.[160]

For the watch list reserve for insurance losses, exposure is the sum of insured deposits held in each institution that is on the watch list, determined on the basis of members' reported insured deposits as of April 30 each year.

The probability of failure that is used to compute the watch list reserve for insurance losses is based on the CDIC's historical failure experience of watch list members within the first five years of being placed on the watch list. This single estimated historical probability of failure is applied to all institutions that are on the watch list. Loss given failure for the watch list institutions is 17 percent, which is the cumulative unweighted average loss sustained by the CDIC for member failures since 1987.[161]

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[158] Ibid.
[159] The amount of deposits insured by the CDIC between 2005 and 2006 increased 16 percent, mainly because of the increase in the deposit coverage limit..
[160] Details of the watchlist reserve computation were communicated by CDIC staff.
[161] In 1987, legislation was passed that requires the CDIC to minimize its exposure to loss. Hence losses associated with failures since 1987 are significantly lower than losses incurred by the CDIC before 1987, and are more indicative of the losses the CDIC can expect to incur in the future.

The CDIC conducts a documented risk assessment of each member institution at least annually in conjunction with CDIC's meetings with the regulator. In addition, the CDIC reviews key financial information on each member institution every quarter. Member institutions are most commonly added to or removed from the watch list during these reviews.

There are no formal qualitative triggers for placing an institution on the watch list. An institution is placed on the watch list if it is considered high risk on the basis of the CDIC's qualitative review of financial, market, and environmental information, along with its review of reports received from the institution's regulator. The watch list is updated whenever relevant information is received and is formally reported to CDIC's board of directors at its quarterly meetings.

8.2.1.2 Computation of the General Reserve for Insurance Losses

The general reserve for insurance losses is used as a proxy for measuring the aggregate risk in the system and is computed as exposure multiplied by the probability of default over a five-year horizon,[162] multiplied by the expected loss given default, plus or minus an optional adjustment.[163]

For the general reserve for insurance losses, exposure is the sum of insured deposits held in each institution that is not on the watch list. That amount is determined on the basis of the members' reported insured deposits as of April 30 each year.

The probability of default (or the expected default frequency) over a five-year time horizon is derived by using both a historical component (weighted 75 percent) and a forward-looking component (weighted 25 percent).[164] The historical default probability component is computed by using default statistics from both Moody's and Standard and

[162] The term "probability of default" is used rather than "probability of failure" because the probability measure used by the CDIC is not historical bank failure rates but corporate default rates (called "expected default frequencies," or EDFs) from Moody's and Standard and Poor's, as detailed below.
[163] Details of the computation of the general reserve were communicated by CDIC staff.
[164] The forward-looking component is weighted only 25 percent to allow the data to provide forward-looking signals without having the forward-looking data drive the computed default probability.

Poor's (equally weighted), which are derived from 30-year averages. The forward-looking component of the default probability is derived by using a 24-month rolling average of the data in Moody's KMV.

Loss given default is the same for both the general reserve and the watch list reserve for insurance losses and is 17 percent, which is the cumulative unweighted average loss sustained by the CDIC for member failures since 1987.

The general reserve for insurance losses is computed on an institution-by-institution basis, and the results are then aggregated. The institution-by-institution computation allows the selection of the appropriate Moody's and Standard and Poor's default statistic to be used in the computation. The appropriate default statistic is based on the institution's own credit rating.[165]

The general reserve for insurance losses for a specific institution that has, for example, C$500,000 in insured deposits and a specified credit rating would therefore be computed in the following way:

(1a) Backward-looking loss reserve estimate based on Standard and Poor's default statistics
= C$500,000 in insured deposits * 0.34 percent (probability of default in 5 years) * 17.0 percent loss given default
= C$289 loss reserve estimate (historical component)

(1b) Backward-looking loss reserve estimate based on Moody's default statistics
= C$500,000 in insured deposits * 0.42 percent (probability of default in 5 years) * 17.0 percent loss given default
= C$357 loss reserve estimate (historical component)

(2) Forward-looking loss reserve estimate based on Moody's KMV default statistics

[165] Moody's and Standard and Poor's default statistics are reported by rating class.

= C$500,000 in insured deposits * 0.88 percent (probability of default in 5 years) * 17.0 percent loss given default
= C$748 loss reserve estimate (forward-looking component)

(3) Loss reserve for this institution that will be included in the general reserve
= ((C$289 + C$357) / 2) * 0.75 + (C$748 * 0.25)
= (C$323 * 0.75) + (C$748 * 0.25)
= C$429

If a member institution is not rated by Moody's or Standard and Poor's, the appropriate Moody's and Standard and Poor's probability of default statistic to use is guided by a number of rules. A key attribute that is considered in these rules is the institution's premium category in the CDIC's differential-premium system.

The qualitative adjustment to the general reserve for insurance losses allows management to adjust the computed results on the basis of its knowledge of the industry and of any company-specific issues.

8.2.1.3 Differences between the CDIC's Methodology and the FDIC's Methodology
The CDIC's methodology for reserving for contingent losses is very different from the FDIC's in a number of ways.

One difference is that whereas the FDIC sets aside contingent loss reserves only for institutions with a CAMELS rating of 4 or 5, the CDIC does not rely upon regulatory risk ratings and sets aside reserves for institutions that are on the watch list and also sets aside a general reserve for insurance losses that serves as a proxy for measuring the aggregate risk in the system. In addition, the general reserve for insurance losses incorporates both a backward looking component and a forward-looking component of probability of default, whereas the FDIC's estimated probability of default is an entirely backward-looking measure.

Another difference is that whereas the FDIC estimates different expected loss rates for individual institutions based on each institution's asset class and liability structure, the CDIC uses a single historical loss rate to apply to all institutions, whether or not the institution is on the watch list. Finally, whereas the FDIC uses an estimated probability of failure within the next 12 months, the CDIC uses a probability of failure (or default) within the next five years.

8.2.2 Korea Deposit Insurance Corporation

The Korea Deposit Insurance Corporation (KDIC), established in 1996, insures eligible deposits[166] at specific types of financial institutions up to a limit of 50 million won per depositor, which is approximately US$53,270 at the current exchange rate of US$1 to 938.618 South Korean won. The financial institutions eligible for deposit insurance protection are banks, securities companies, insurance companies (life and nonlife insurance), merchant banks, and mutual savings banks.[167] As of the end of 2004, the total amount of insured deposits was 480 trillion won (US$511.4 billion) in 55 commercial banks, 16 trillion won (US$17.0 billion) in 56 securities companies, 122 trillion won (US$130 billion) in 43 insurance companies, 32.5 trillion won (US$34.6 billion) in 113 mutual savings banks, and 0.5 trillion won (US$532.7 million) in 2 merchant banks.[168,169]

8.2.2.1 Reserving for Contingent Losses

The General Act of Fund Management stipulates that the Minister of Finance and Economy establish guidelines on the accounting method to be used by the KDIC. The guidelines specify that the KDIC should rely on the generally accepted accounting principles of Korea in preparing its financial statements. Thus, when contingent losses fulfill certain criteria as specified by GAAP of Korea, they are recognized by the KDIC.

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[166] Insured deposits are those deposits on which insurance premiums are levied, as stipulated in the Depositor Protection Act of 1995.
[167] Credit unions were eligible for deposit insurance protection before the end of 2003; beginning January 2004, they have been excluded.
[168] From KDIC 2004.
[169] In 2004, the 269 insured institutions in the six financial sectors paid a total of 951.3 billion won in premiums, which is approximately US$1.014 billion at the current exchange rate of US$1 to 938.618 South Korean won.

These criteria include the fact that the losses are probable and that the expected amount of losses can be reasonably estimated.

Through fiscal year 2005, contingent losses were estimated on an annual basis. Beginning in fiscal year 2006, contingent losses are estimated on a semiannual basis.

The KDIC recognizes three types of contingent losses in its financial statements:

1. Expected amount of losses to the deposit insurance fund arising from unsettled lawsuits
2. Expected amount of losses to the deposit insurance fund arising from the purchase and assumption of failed financial institutions or post-closing adjustments between the buyers of the failed financial institutions and the KDIC
3. Expected amount of losses to the deposit insurance fund arising from insured financial institutions that have failed but for which the resolution method has not been determined.

The probability of a loss is estimated on a case-by-case basis. In the case of contingent loss type 3 above, the amount of the probable losses is estimated by an independent accounting firm.

There is a fourth type of contingent loss that the KDIC does not currently recognize in its financial statements: the expected amount of losses to the deposit insurance fund arising from the probable occurrence of an insured event. This is because the KDIC currently does not have enough past data and experience to develop a model to measure the probability of an insured event occurring and to calculate the expected amount of losses, given the occurrence of the insured event. In the long run, the KDIC intends to develop such a model.[170]

[170] Not reserving for the probable occurrence of an insured event is not in violation of Korean GAAP because the KDIC does not feel it has enough data to form a reasonable estimate.

8.2.2.2 Differences between the KDIC's Methodology and the FDIC's Methodology

The KDIC's methodology for reserving for contingent losses differs from the FDIC's primarily in the fact that the KDIC reserves for expected losses only when the insured event has already occurred and does not currently reserve for expected losses due to probable occurrences of insured events.

8.3 Commercial Insurance Companies: Property and Casualty Insurers

The FDIC is often compared with private sector insurers in policy discussions, particularly in the areas of risk measurement and insurance pricing. Here we discuss the loss reserving practices of private sector property and casualty insurers.

8.3.1 Loss Reserves, Unearned Premium Reserves and Contingency Reserves

In 2005, nearly 3,000 property and casualty insurers had approximately $450 billion in net written premiums. Property and casualty insurers are regulated by states and are required to maintain loss reserves. The insurance laws and regulations of each state specify the method by which these reserves are to be computed. Every state requires that property and casualty insurers follow the reserving methods in the National Association of Insurance Commissioners (NAIC) Statement of Statutory Accounting Principles (SSAP) Number 55, which covers unpaid claims, losses, and loss adjustment expenses for property and casualty insurance contracts.[171] SSAP 55 applies to the recording of liabilities for unpaid losses and loss adjustment expenses for property and casualty insurance contracts, and stipulates that losses and loss adjustment expenses be recognized as expenses when a covered or insured event occurs, even when payment and related expenses are made subsequent to the occurrence of the covered or insured event.

SSAP 55 requires that the reserve for unpaid losses and loss adjustment expenses be based on the estimated ultimate cost of settling the claims, including the effects of inflation and other social and economic factors. The estimate is to be based on past

[171] Statements of Statutory Accounting Principles represent the top level of requirements in the statutory hierarchy of accounting requirements and are included in the NAIC Accounting Practices and Procedures Manual. Some states have made some modifications to the requirements specified in SSAP No. 55, but according to the NAIC (which tracks these modifications), the modifications are believed to be minor. For example, some states allow more use of discounting than in SSAP No. 55.

experience, adjusted for current trends and any other factors that would modify past experience, and the results of more than one method should be considered in the projecting of loss reserves. SSAP 55 also requires that management's analysis of the reasonableness of the loss or loss adjustment expense reserve include an analysis of the amount of variability in the estimate.

In addition to requiring the use of SSAP 55 in computing loss and loss adjustment expense reserves, all states require that property and casualty insurers submit a public Statement of Actuarial Opinion that must include relevant comments from the appointed actuary on the following two issues:

- Risk of material adverse deviation: The actuary must explicitly state whether or not he or she reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation. If such risk exists, the actuary should include an explanatory paragraph to describe the major factors, combination of factors, or particular conditions underlying the risks and uncertainties that the actuary reasonably believes could result in material adverse deviation.
- Methods and assumptions: If there has been a significant change in the actuarial assumptions and/or methods from those used previously, the change should be described.

Most states also require that property and casualty insurers submit a confidential Actuarial Opinion Summary supplement. It should be signed and dated by the appointed actuary and should contain at least the appointed actuary's range of reasonable estimates and/or point estimates for loss and loss adjustment expense reserves, and the company's recorded loss and loss adjustment expense reserves.

Property and casualty insurers that are publicly traded are also subject to the regulations of the Securities and Exchange Commission (SEC). SEC regulations require that annual financial reports be filed in accordance with GAAP, and reserve requirements would therefore have to accord with FAS 5.

In addition to loss reserves, property and casualty insurers must book unearned premium reserve liabilities. These reserves are intended to cover the cost of claims for accidents that have not yet occurred but that will occur during the remainder of the time until the policy expires (typically the remainder of the 6 months or year of the policy term). These reserves are based on the premiums charged, and the premiums charged are based on estimates of the probability of occurrence and the amounts to be paid. Unearned premium reserves are described in SSAP Number 53: "Property Casualty Contracts – Premiums".

In addition to loss reserves covered by SSAP 55 and unearned premium reserves covered by SSAP Number 53, property and casualty companies can also set aside contingency reserves that are separate from loss reserves. A loss reserve can be established only for an event that has occurred. Contingency reserves are set aside for the possibility that a catastrophe might occur in the future. Any specific catastrophe reserves set aside for future potential catastrophes are established as special surplus funds (segregations of capital). Contingency reserves are often established on the basis of catastrophe modeling and pricing inputs.

8.3.2 Differences in Loss Reserving Methodologies between Property and Casualty Insurers and the FDIC

The FDIC contingent loss reserves include reserves for losses where the loss event has not yet been confirmed while the loss reserves of property and casualty insurers are for unpaid losses and loss adjustment expenses related to loss events that have already been confirmed. Even though the loss event has occurred *and* been confirmed, property and casualty insurers may need to estimate the number and dollar amount of possible claims arising from the loss event and some claims may not be known for years.

Bibliography

American Institute of Certified Public Accountants (AICPA). 1992. Statement on Auditing Standards (SAS) No. 69. The Meaning of: Present Fairly in Conformity with Generally Accepted Accounting Principles.

———. 1994. Statement of Position 94-6. Disclosure of Certain Significant Risks and Uncertainties.

———. 2004. Audit and Accounting Guide for Property and Liability Insurance Companies.

———. 2005. Audit and Accounting Guide for Depository and Lending Institutions.

Baskin, Dorsey L., Jr. 1992. The Allowance for Loan Losses: Understanding and Applying FASB 5. *Journal of Accountancy* 174, no. 4:94–100.

Bervid, Louis J. 2005. The FDIC's Relationship Manager Program: A Win/Win Situation. *Supervisory Insights* 2, no. 2:22–26.

Bloecher, Eric P., Gary A. Seale, and Robert D. Vilim. 2003. Options for Pricing Federal Deposit Insurance. *FDIC Banking Review* 15, no. 4:1–17.

Bovenzi, John F., and Maureen E. Muldoon. 1990. Failure-Resolution Methods and Policy Considerations. *FDIC Banking Review* 3, no. 1:1–11.

Bovenzi, John F., and Arthur J. Murton. 1988. Resolution Costs of Bank Failures. *FDIC Banking Review* 1, no. 1:1–13.

Brickman, Christine M. 2005. Fraud in the Banking Industry: Definition, Causes, and Defenses. Unpublished manuscript. Federal Deposit Insurance Corporation.

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

Canada Deposit Insurance Corporation (CDIC). 2004. *2004 Annual Report*. CDIC.

———. 2005a. *2005 Annual Report*. CDIC.

———. 2005b. *CDIC Summary of the Corporate Plan 2005/2006 to 2009/2010*. CDIC

———. 2006. *2006 Annual Report.* CDIC.

Congressional Budget Office. 2005. *A Guide to Understanding the Pension Benefit Guarantee Corporation*. Washington, D.C.

Curry, Timothy J., John P. O'Keefe, Jane Coburn, and Lynn Montgomery. 1999. Financially Distressed Banks: How Effective are Enforcement Actions in the Supervision Process? *FDIC Banking Review* 12, no. 2:19–38.

Demirgüç-Kunt, Asli, et al. 2005. Deposit Insurance Around the World: A Comprehensive Database. Policy Research Working Paper 3628. World Bank.

Federal Deposit Insurance Corporation (FDIC). 1981. *1980 Annual Report.* FDIC.

———. 1982. *1981 Annual Report.* 2 vols. FDIC.

———. 1983. *1982 Annual Report*. FDIC.

———. 1984. *1983 Annual Report*. FDIC.

———. 1985. *1984 Annual Report.* FDIC.

———. 1986. *1985 Annual Report.* FDIC.

———. 1987. *1986 Annual Report*. FDIC.

———. 1988. *1987 Annual Report.* FDIC.

———. 1989. *1988 Annual Report.* FDIC.

———. 1990. *1989 Annual Report*. FDIC.

———. 1991. *1990 Annual Report*. FDIC.

———. 1992. *1991 Annual Report*. FDIC.

———. 1993. *1992 Annual Report*. FDIC.

———. 1997. *History of the Eighties, Lessons for the Future.* 2 vols. Vol. 1: *An Examination of the Banking Crises of the 1980s and Early 1990s.* FDIC.

———. 2001. *Keeping the Promise: Recommendations for Deposit Insurance Reform.*

———. 2003a. *Docket No. FDIC-03-135e*. FDIC Enforcement Decisions and Orders. http://www.fdic.gov/bank/individual/enforcement/12117.html (accessed January 29, 2007).

———. 2003b. *FDIC Makes Public October Enforcement Actions; No Administrative Hearings Scheduled*. FDIC Press Releases. http://fcx.fdic.gov/news/news/press/2003/pr11403.html (accessed January 20, 2007).

———. 2005a. *Quarterly Banking Profile.* March.

———. 2005b. *Annual Report 2004.* FDIC.

———. 2006. *Annual Report 2005.* FDIC.

———. n.d. *Formal and Informal Action Procedures (FIAP) Manual.* http://fdic01.prod.fdic.gov/division/dsc/RM/fiap_manual/.

FDIC Office of Inspector General (OIG). 2003a. Material Loss Review of the Failure of the Connecticut Bank of Commerce. OIG Audit Report No. 03-017.

———. 2003b. Material Loss Review of the Failure of Southern Pacific Bank. OIG Audit Report No. 03-036.

———. 2004a. *Former Bank President Sentenced for Fraud that Resulted in Bank Failure.* FDIC Office of Inspector General. http://www.fdicoig.gov/press/pr07-21-06.shtml (accessed January 29, 2007).

———. 2004b. *Observations from FDIC OIG Material Loss Reviews Conducted 1993 through 2003.* Report No. 04-004.

Federal Reserve System Office of the Inspector General (OIG). 2002. *Material Loss Review of Oakwood Deposit Bank Company.* OIG Report No. A0202.

Financial Accounting Standards Board (FASB). 1975. Statement of Financial Accounting Standards No. 5 (FAS 5). Accounting for Contingencies.

———. 1976a. Interpretation No. 14. Reasonable Estimation of the Amount of a Loss: An interpretation of FASB Statement No. 5.

———. 1976b. Statement of Financial Accounting Standards No. 13 (FAS 13). Accounting for Leases.

———. 1978. Statement of Financial Accounting Concepts (SFAC) No. 1. Objectives of Financial Reporting by Business Enterprises.

———. 1980. Concepts Statement No. 2. Qualitative Characteristics of Accounting Information.

———. 1993a. Statement of Financial Accounting Standards No. 114 (FAS 114). Accounting by Creditors for Impairment of a Loan.

———. 1993b. Statement of Financial Accounting Standards No. 115 (FAS 115). Accounting for Certain Investments in Debt and Equity Securities.

———. 2005 Proposed Statement of Financial Accounting Standards. The Hierarchy of Generally Accepted Accounting Principles.

Gup, Benton E. 1990. *Bank Fraud: Exposing the Hidden Threat to Financial Institutions*. Bankers Publishing Company.

Hanc, George. 1998. The Banking Crises of the 1980s and Early 1990s: Summary and Implications. *FDIC Banking Review*, vol. 11, no. 1:1–55.

Internal Revenue Service (IRS). 2006. *2006 Instructions for Form 5500*. IRS.

Jackwood, John M. 2004. Compliance Examinations: A Change in Focus. *Supervisory Insights* 1, no. 1:14–17.

Korea Deposit Insurance Corporation (KDIC). 2005. *2004 Annual Report*. KDIC.

Krist, Karen. 2000. Required 4010 PBGC Filings for Large Groups. *Enrolled Actuaries Report* 25, no. 1:4–5.

McKinsey & Company. 2003. *Strengthening Financial Risk Management at the FDIC*. Study Commissioned by Federal Deposit Insurance Corporation.

National Association of State Credit Union Supervisors. 2006. *State-Chartered Credit Union System Facts and Figures*.

National Credit Union Administration (NCUA). 2000. NCUA Letter to Credit Unions, Letter No. 00-CU-08 Subject: CAMEL Rating System.

———. 2004. NCUSIF Contingent Liability for Losses on Insured Credit Unions: Final Recommendation.

———. 2005. *2004 Annual Report.* NCUA.

———. 2006a. *2005 Annual Report*. NCUA.

———. 2006b. *National Credit Union Share Insurance Fund: Financial Highlights, December 31, 2005*. NCUA.

———. 2006c. *2005 Year-end Statistics for Federally Insured Credit Unions.* NCUA.

Office of the Comptroller of the Currency. 2006. *OCC Enforcement Actions*. OCC News Release. http://www.occ.treas.gov/ftp/release/2006-18.htm (accessed January 29, 2007).

Patterson, Scott S., and Zachary S. Nienus. 2005. Enforcement Actions against Individuals in Fraud-Related Cases: An Overview. *Supervisory Insights* 2, no. 1:17–22.

Pension Benefit Guarantee Corporation (PBGC). 2005a. *2005 Annual Report.* PBGC.

———. 2005b. *Performance and Accountability Report, Fiscal Year 2005*. PBGC.

U.S. Department of Justice. 2006. *Former Bank Vice President Sentenced to Federal Prison for Embezzling $1.2 Million*. United States Attorney's Office, Western District of Texas Press Releases. http://www.usdoj.gov/usao/txw/press_releases/2006/Sullivan.pdf (accessed January 29, 2007).

U.S. Department of the Treasury. 2002a. Material Loss Review of NextBank, NA. OIG Report No. 03-024.

———. 2002b. Material Loss Review of Hamilton Bank, NA. OIG Report No. 03-032.

U.S. General Accounting Office (GAO). 1991a. *Failed Banks: Accounting and Auditing Reforms Urgently Needed.* GAO/AFMD-91-43.

———. 1991b. *Financial Audit: Bank Insurance Fund's 1990 and 1989 Financial Statements.* GAO/AFMD-92-24.

———. 1992. *Depository Institutions: Flexible Accounting Rules Lead to Inflated Financial Reports.* GAO/AFMD-92-52

———. 2003. *Credit Unions: Financial Condition Has Improved, But Opportunities Exist to Enhance Oversight and Share Insurance Management.* GAO-04-91.

U.S. Government Accountability Office (GAO). 2006. *Private Pensions: Opportunities Exist to Further Improve the Transparency of PBGC's Financial Disclosures.* GAO-06-429.