
FRBSF WEEKLY LETTER

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Reduced Deposit Insurance Risk

Public policy toward financial liberalization has often been cautious. This year is not likely to be an exception, as the Congress considers proposals to remove long-standing barriers separating commercial banking from investment banking, insurance activities, and even nonfinancial activities.

One key issue that has made policymakers take a cautious approach is concern that expanded bank powers may add to the strains on the federal deposit insurance funds. Fortunately, several developments in recent years have worked to reduce bank risk and the liability of the deposit insurance system substantially. Most prominent among these is the improvement in capital positions of banks.

This *Letter* analyzes trends in bank risk over the past several years and the implications for the deposit insurance system. The analysis suggests that, while the risk associated with bank assets and activities has increased, bank capital positions have soared, pushing down estimates of the federal deposit insurance liability to relatively moderate levels. In the public policy debate, the improvement in the health of banks and of the deposit system should allow more weight to be given to the potential gains in efficiency from further removing the barriers separating banks from other financial institutions.

Deposit insurance risk

Public policy concern over the risk exposure of the federal deposit insurance system is not surprising in light of the sizeable tab taxpayers picked up in the thrift crisis and the heavy losses to the FDIC from bank failures in recent years. These events have focused attention on the moral hazard problems that can stem from deposit insurance. Moral hazard arises when the existence of insurance severs the connection between a bank's risk-taking and its cost of financing, thereby removing a natural check on risk-taking. Without the proper safeguards, banks may then take excessive risks.

Two broad types of banking risk can be affected by moral hazard. The first is operating risk, which

can be measured most directly in terms of the volatility of the rate of return on a bank's assets. All else equal, a bank with a higher volatility of returns is more likely to fail, and if it fails it is more likely to impose a larger loss on the insurance fund. The second broad type of risk is leverage or financial risk, which depends inversely on a bank's capital ratio (the ratio of capital to total assets). For a given level of asset volatility, a bank with a lower capital ratio is more likely to fail.

Addressing the problem

In recent years, several legislative and regulatory measures have been implemented to deal with risk in banking and the exposure of the deposit insurance system. One element they have in common is the goal of putting the consequences of bank decisionmaking, the downside and the upside, on the shoulders of the banks and some of their liability holders. These measures include Prompt Corrective Action for troubled banks, rules that make uninsured depositors and other creditors regularly bear losses when banks fail, explicit accounting for changes in the market value of some bank assets and liabilities, and deposit insurance premiums that depend on bank risk.

The most far-reaching change, though, has been the recapitalization of banking. The capital position of the banking industry today is far stronger than it was just three years ago. Banks have responded to regulatory efforts and market pressure by issuing equity and longer-term debt and using retained earnings to rebuild capital ratios. In addition, strengthened balance sheets and an improved outlook for banking have been reflected in the rise in bank stock prices from the depressed levels of the early 1990s. The effect has been a marked turnaround in bank capitalization that has muted the effects of a rise in bank operating risk and has increased tremendously the buffer between potential private losses in banking and the deposit insurance system.

Assessing risk

We can evaluate the net impact of the changes in the two broad types of bank risk—operating risk

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and financial risk—on the deposit insurance system's liability by using analytical tools that incorporate information from financial market data. Market prices succinctly capture a huge amount of diverse information, reflecting consensus opinions of many market participants. Financial models have been created to use this market information to gauge the condition of banks. In particular, models have been developed to infer the market value of capital and assets (financial risk) and the volatility of returns (operating risk), by working backwards from the stock prices of banks. These models are based on "contingent claim" analysis: The level and volatility of bank stock prices are used to divine bank capital ratios and the standard deviation of the rate of return on assets as well as to filter out any effects deposit insurance might have on stock prices.

Contingent claim analysis was applied to about 300 U.S. bank holding companies, using data from January 1989 through September 1994. These firms tend to be larger than the industry average, and thus may not be completely representative. However, they give direct information about an important segment of the industry, and probably serve as a barometer for U.S. banking as a whole.

Market capital ratios and the volatility of returns were computed quarterly for each bank; results for each date were then averaged, with individual bank results weighted by bank asset size. Financial risk rises if the average market capital ratio falls; operating risk goes up if average volatility increases. The estimated capital ratios and volatilities of returns also were combined to examine the net effect of the two basic types of risk on the deposit insurance liability. (The deposit insurance contract is in effect another contingent claim, the value of which can be estimated from asset volatility and capital ratios.) For further discussion of the computation of the three measures, see Furlong (1988).

Trends in operating risk and financial risk

Figure 1 shows the evolution of bank operating risk during the 1990s. The most striking feature of these estimates is the sharp rise in the industry's operating risk from mid-1990 to mid-1991. This jump roughly coincides with the recession. However, during the subsequent recovery, the estimates show a decline in average operating risk that has only partially reversed the initial jump. This suggests the possibility of a longer-lasting shift in bank operating risk. In fact, viewed over the entire period, the rise in operating risk in the

1990s roughly matches the rate of increase Furlong (1988) and Levonian (1991) find for 1981–1989.

Figure 2 shows the weighted-average market capital ratio. The low point in bank capital ratios—and hence the high point in financial risk—coincides with the beginning of the sharp rise in operating risk in 1990. However, as asset volatility rose, market capital ratios began a sustained increase that continued even after operating risk stabilized. The average market-value capital ratio for this sample of banks rose nearly fivefold from the third quarter of 1990 to early 1993. Since then, the average capital ratio has receded some, but is still high relative to the extremely low level in the early 1990s.

Figure 1
Average Standard Deviation
of Return on Bank Assets

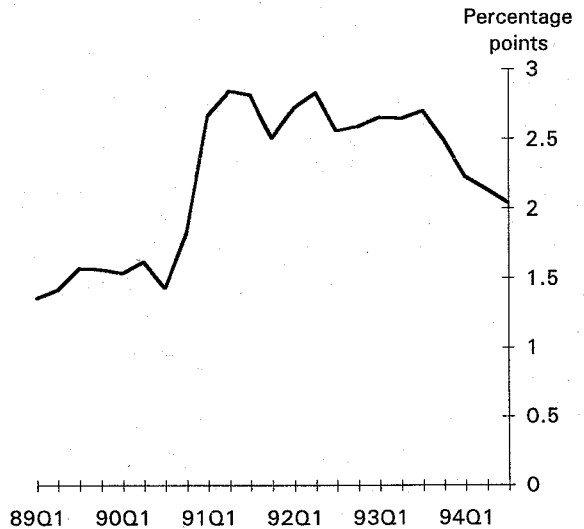
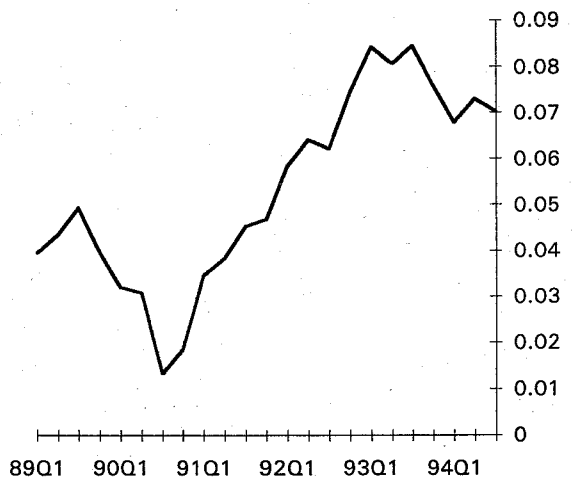


Figure 2
Average Market Equity Capital Ratio



Since the early part of the 1990s, then, trends in the two broad measures of bank risk have pushed the deposit insurance liability in opposite directions. Operating risk generally has increased the liability, while the decline in financial risk has worked to protect the deposit insurance system. With these changes at least partially offsetting one another, a summary measure of risk is indispensable.

Deposit insurance exposure

Figure 3 shows the average deposit insurance liability based on the estimates of bank asset-return volatility and capital. The estimate, expressed in cents per hundred dollars of deposits, reflects the economic cost of insuring bank deposits. As discussed above, it is not only a direct reflection of the risk of losses to the deposit insurance fund, but also a summary measure of bank risk that subsumes both operating risk and financial risk. The figures are sensitive to certain assumptions made in the modeling; as a result, the time pattern is more trustworthy than the precise dollar amounts, and it is the appropriate focus of attention.

Risk to the deposit insurance fund began to go up in the third quarter of 1989 as capital ratios began to fall, and soared markedly in mid-1990. Figure 2 showed that bank capital was at very low levels at that time. As operating risk began its

sharp rise—perhaps partly as a result of the recession—the position of the deposit insurance fund became increasingly precarious. However, once the increase in asset volatility stabilized, the improving capital ratios brought the insurance liability down sharply through early 1993. Since then, the liability of the deposit insurance system has edged down further still, as modest declines in average capital ratios have been more than offset by falling operating risk. Consistent with this trend, bank failures in 1993 and 1994 were well below earlier FDIC projections. According to the estimates in Figure 3, the liability of the deposit insurance system was only a few cents per hundred dollars of deposits in September 1994, compared with over 90 cents in the early 1990s. This represents a substantial reduction in the risk exposure of the deposit insurance system.

Conclusion

Banks have been increasing the riskiness of their business since at least the beginning of the 1980s. Moreover, a jump in asset risk in mid-1990, combined with the depressed capital ratios prevailing at that time, caused a substantial increase in overall banking risk, as reflected in the potential for deposit insurance fund losses. However, a subsequent marked increase in the average capital ratio and small decline in operating risk has meant a substantial reduction in the liability of the deposit insurance system.

This recent decline in the risk faced by the deposit insurance system may help shape the debate in 1995, as the Congress considers removing legal barriers between banking and other activities. In particular, it should mitigate concerns over the deposit insurance system, and may help tip the balance of the legislative agenda toward the potential gains from removing barriers separating banking from other financial activities.

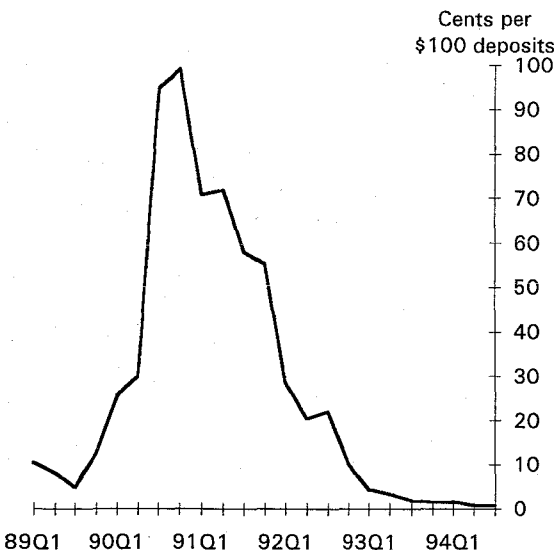
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Figure 3
Average Deposit Insurance Liability




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