

ECONOMIC COMMENTARY

Alternative Methods for Assessing Risk-Based Deposit-Insurance Premiums

by James B. Thomson

The primary advantage of this system is that it could be adopted easily. To implement it would require only slight modifications of the FDIC's existing powers. Ex post pricing schemes based on performance would allow the FDIC to identify and price, after the fact, previously unregulated forms of risk that insured banks may be exploiting. The most severe problem associated with ex post pricing stems from the loose relationship between ex post performance and expected (ex ante) risk.

A bank that performed poorly in the past, for example, might be a conservatively run bank that poses little threat to the FDIC's insurance fund. The profitable bank, on the other hand, might

11. There is evidence that uninsured depositors exert some discipline over bank risk-taking by charging riskier banks higher premiums for funds. This is evident in the market for large certificates of deposit (CDs) where there appears to be a tiering of CD rates according to the risk of the bank. See, Herbert Baer and Elijah Brewer. "Uninsured Deposits as a Source of Market Discipline: Some New Evidence." *Economic Perspectives*, vol. X, issue 5, September/October 1986, Federal Reserve Bank of Chicago, pp. 23-31.

12. See, Paul M. Horvitz. "The Case Against Risk-Related Deposit Insurance Premiums." *Housing Finance Review*, July 1983, pp. 253-63.

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be a risky institution that happened to bet correctly on oil prices or interest-rate movements. Yet, under the ex post deposit-insurance pricing system, the safe bank would pay higher premiums than the risky bank. However, one would not expect this inconsistency to persist over the long run because the aggregate losses, and therefore the aggregate deposit-insurance premiums paid by the risky bank, should exceed those of the conservatively run bank.

Conclusion

There are at least six general methods for adjusting the cost of the FDIC's deposit guarantees to insured banks. Each method has its advantages and disadvantages and, for simplicity, has

13. See for example Edward J. Kane, "A Six-Point Program for Deposit Insurance-Reform," *Housing Finance Review*, July 1983, pp. 269-278; Edward J. Kane, "Appearance and Reality in Deposit Insurance." *Journal of Banking and Finance* vol. 10, no. 2, June 1986, pp. 175-88, and Herbert Baer, "Private Prices, Public Insurance: The Pricing of Federal Deposit Insurance," *Economic Perspectives*, vol. 9, no. 5 (September/October 1985) Federal Reserve Bank of Chicago, pp. 45-57. For a discussion of the potential problems with private deposit insurance, see Tim S. Campbell and David Glenn. "Deposit Insurance in a Deregulated Environment," *Journal of Finance*, vol. 39, no. 3, (July 1984) pp. 775-87.

been presented here as a competing method for pricing deposit guarantees. However, in practice, many of these methods could be combined to achieve a pricing system that would be superior to any of the separate pricing mechanisms by itself. Indeed, almost all of the current deposit-insurance reform proposals rely on some combination of these methods. The role that we want federal deposit insurance to play in our financial system in the future will be the ultimate deciding factor in determining which combination of the generic methods is adopted.

14. There is nothing magical about \$10,000. We could easily argue that the federally insured limits should be set at \$5,000 or \$25,000.

15. See for example, Robert B. Avery, Gerald A. Hanweck, and Myron L. Kwast, "An Analysis of Risk-Based Deposit Insurance for Commercial Banks," *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, Chicago, Illinois, 1985, pp. 217-250.

16. See for example, David P. Rochester and David A. Walker. "A Risk-Based Deposit Insurance System," Unpublished Manuscript 1985.

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One of the most widely debated topics in the political arena is the proposal to give the Federal Deposit Insurance Corporation (FDIC) the power to vary the cost of deposit-insurance on the basis of risk.¹

The FDIC was created in 1933 and today is considered an integral part of the federal banking safety net whose purpose is to protect the savings and transactions balances of small savers and to help stabilize the banking system.

Federally-insured banks currently pay a flat fee for the FDIC guarantee of the first \$100,000 of each deposit account in the bank. Critics do not think this is fair or efficient because banks that take excessive risks with their depositor's money pay exactly the same rate for FDIC insurance as banks that are more conservative in their operations.²

As a result, there are currently at least two dozen proposals for adjusting deposit-insurance premia on the basis of risk. Of these, there are at least six different general proposals for reforming the current system by using some form of risk-based pricing. This *Economic Commentary* provides an overview of the various risk-based proposals.

A fragmented approach is used in our discussion in order to highlight the features of each general proposal. With a basic understanding of the intricacies of the basic pricing methods, one can better evaluate and understand the relative advantages and disadvantages of the various reform proposals.

Before discussing any of the pricing system proposals, we should review the system currently used by the FDIC, which features a flat-rate premium levied against the total domestic deposits of the bank. The FDIC charges each

insured bank an annual premium equal to a partially rebatable 1/12 of 1 percent of total deposits, regardless of the risk of the bank's portfolio. The size of the rebate returned to the bank is determined by the FDIC's losses and other expenses over the past year. The size of the rebate per dollar of deposits is the same for all banks regardless of risk.³

The FDIC attempts to minimize its exposure to risky institutions by increasing regulatory pressure on banks that are thought to be excessively risky. The increased regulatory interference represents an implicit premium adjustment that serves to reduce the value of the bank.⁴ However, deregulation and technological innovations have increased the ability of banks to circumvent the current regulatory structure and thereby have decreased the ability of the FDIC to use regulation to adjust the total (explicit plus implicit) deposit-insurance premium on the basis of risk.⁵ In contrast to the FDIC's current pricing system, the proposed risk-adjusted systems rely more heavily on the use of incentives other than regulatory interference to force banks to bear more of the costs of the deposit guarantees.

There are two primary ways in which the FDIC could equate the premium it charges with the value of the deposit guarantees received by the bank. The first method is to charge a risk-adjusted deposit-insurance premium that fully compensates the FDIC for the risk-bearing services it provides. This type of premium adjustment is referred to as an explicit premium adjustment. The second method is to

alter the value of the guarantee so that its value to the bank equals the deposit-insurance premium. This is known as an implicit premium adjustment. Our discussion in this *Economic Commentary* will examine proposals for implicit and explicit risk-adjusted deposit-insurance premiums.

Implicit Risk-Adjusted Premiums

Implicit risk-adjustment schemes seek to change the underlying risk-reward incentive structure for the insured bank. As we shall see, the majority of implicit risk-adjusted premium proposals are aimed at reestablishing some form of market discipline over the managers of insured banks. In the proposals we discuss, either the stockholders or the subordinated creditors of the bank are relied upon to rein in a bank's risk taking.⁶ The second feature of these implicit premium adjustments is that they insulate the FDIC insurance fund from losses on the bank's portfolio.

Increased Capital Requirements. One way of increasing stockholder discipline over a bank's risk-taking is to raise the costs of higher levels of bank risk to bank stockholders through increased capital requirements. Higher levels of capital increase the amount of money that stockholders have at risk in the bank, thus making risky loan and investment strategies pursued by bank managers more costly and less attractive to stockholders. Increased capital requirements thus serve to increase the incentives for bank stockholders to discipline the risk-taking behavior of bank managers.⁷

In addition, increased bank capital requirements protect the FDIC's insur-

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1. See Jay Rosenstein and Bartlett Naylor, "Garn Bill Would Expand Bank Securities Powers," *American Banker*, vol. 151, No. 124, June 25, 1986.

2. See, James B. Thomson. "Equity, Efficiency, and Mispriced Deposit Guarantees." *Economic Commentary*, July 15, 1986, Federal Reserve Bank of Cleveland.

3. After deducting operating expenses and insurance losses from the gross insurance assessment, the FDIC rebates 60 percent of the remaining assessment income back to the banks. See *Federal Deposit Insurance Corporation: The First Fifty Years*. The Federal Deposit Insurance Corporation 1984, Washington, D.C., pp. 60-61.

ance fund from losses on bank asset portfolios because bank capital is the first line of defense against losses on the bank's assets. The greater the portion of any loss that is absorbed by bank capital, the smaller the loss the FDIC incurs. Higher levels of bank capital also increase the FDIC's ability to alter bank risk-taking behavior through regulatory interference by giving the FDIC more time to detect problems and to take the appropriate regulatory actions.

A major drawback of a uniform increase in bank capital requirements is that it does not discriminate among banks on the basis of risk. Banks that aggressively exploit risky profit opportunities will face the same capital requirement as conservatively managed banks. Although one can argue that increased capital requirements change the risk incentive structure for risky banks more than for conservatively managed banks, it is doubtful that such requirements change incentives enough to remove all significant differences in the risk of their asset portfolios.⁸ Furthermore, if the increased bank capital requirements are binding on the conservatively managed banks, the use of this tool to discipline the "high fliers" of the banking industry has the undesired effect of punishing safe banks.

Risk-Adjusted Capital Requirements. Banking regulators are considering risk-based capital requirements as a means of altering risk-taking behavior of banks.⁹ A flat-rate deposit-insurance premium, for example, combined with risk-adjusted capital requirements, may have effects equivalent to assessment of a risk-adjusted deposit-insurance premium. With risk-adjusted capital requirements, the level of capital a bank is required to hold is directly related to the riskiness of its portfolio. Under this method, the riskiness of the bank would be reassessed periodically, at least as often as the bank is examined, and if the bank's risk increased since the last reassessment of its capital adequacy, it would be required to increase its level of capital.

Risk-adjusted capital increases, in concept, are a better disciplinary tool than uniform capital increases. First, they change the risk-reward incentive

structure for risky banks without punishing conservatively managed banks. Second, they protect the FDIC's insurance fund from risky banks by increasing the amount of potential losses stockholders bear as the risk of the bank increases.

However, there are some practical problems associated with implementing a risk-based capital requirement. The most obvious—and common—problem is the necessity of measuring the risk of the bank's portfolio. (See box.) If the procedures used to evaluate the risk of the bank's portfolio are subject to systematic errors, then adjusting bank capital (deposit-insurance premiums) on the basis of the perceived riskiness of the bank may be less accurate and less effective than uniform capital increases (flat-rate deposit-insurance premiums). In fact, Pyle contends that potential pricing errors associated with risk-adjusted pricing (either risk-adjusted capital or deposit-insurance premiums) may provide banks with perverse risk-taking incentives that make risk-adjusted pricing systems less effective, and potentially less stable, than the current pricing system.¹⁰

Subordinated Debt. One of the potential flaws in the idea of using stockholders to discipline the bank's risk-taking is the fact that stockholders can profit if the risky strategy pays off. Therefore, raising equity capital to place more of the losses on the stockholders may not always reduce the attractiveness of risky ventures to bank managers. Also, one cannot rely solely on depositors to exert discipline on a bank because of the ability of large uninsured depositors to withdraw or set off their deposits by borrowing (that is, by running) at the first sign of trouble.¹¹ Uninsured depositors who believe that the FDIC will provide them with 100 percent de facto insurance of their deposits if their bank fails have very little incentive to exert discipline over bank risk taking.

The subordinated debt holder, however, is one class of creditor that does have strong incentives to exert discipline over bank risk-taking—and there are advantages to using subordinated debt as a means of increasing market discipline over banks. Unlike the stockholder, the subordinated debt

Measuring Risk

Risk is the degree of uncertainty associated with future outcomes of today's decisions. In a financial context, risk refers to the degree of uncertainty of future income. The more uncertain the outcome, the greater the risk. Measuring the risk of the insured banks is the most important ingredient in many of the risk-adjusted deposit-insurance proposals. Unfortunately, measuring the risk of insured banks is very difficult to do.

The risk of an insured bank to the FDIC's insurance fund is typically measured by the variation of its future income streams. Because we do not observe the set of possible future outcomes of decisions made by bank managers today, we do not directly observe the risk of the bank. The most common way of measuring the risk of the bank is to look at its past performance, such as the historical variation of its earnings, and use that as an estimate of the variability of the bank's earnings in the future. In addition, bank regulators periodically examine insured banks and rate the bank's riskiness according to the results of the examination. The rating the bank receives is referred to as its CAMEL rating. CAMEL stands for the criteria on which bank examiners base their risk ratings: Capital, Asset Quality, Management, Earnings, and Liquidity.

holder does not receive profits from risky ventures. Unlike the uninsured depositor, the subordinated debt holder can be cut off from any de facto deposit guarantee if the FDIC chooses not to liquidate a bank when it fails, and cannot withdraw his or her funds from the bank at the first sign of trouble. Therefore, the subordinated debt holder's fortunes are inextricably linked to the risk of the bank's portfolio.

Another advantage of forcing banks to issue a significant amount of subordinated debt (Horvitz argues for a 3 percent subordinated debt capital requirement in addition to primary bank capital) is the additional protection that subordinated debt affords the

FDIC's insurance fund. The FDIC is protected because subordinated debt holders do not have a claim on the assets of the bank until the FDIC, uninsured depositors, and general creditors of the bank are paid.¹²

The practical disadvantage of the subordinated debt proposal is the feasibility of its use for medium-size banks. Large banks with access to capital markets theoretically would not have trouble placing subordinated debt issues. Small community banks probably could sell their issues in their communities. But medium-size banks that are too large to sell an entire issue in their community, but too small to tap national capital markets could have trouble issuing enough subordinated debt to meet mandated standards. This problem is exacerbated by the necessity that the subordinated debt be short-term debt that requires frequent refinancing.

Explicit Risk-Adjusted Premiums

The goal of this major category of pricing system proposals is to charge the bank for the risks it imposes on the FDIC. Unlike implicit risk-adjusted premiums, explicit premiums are a form of direct discipline on insured banks. That is, the FDIC increases the cost of its guarantees to the bank directly, as opposed to relying on third parties (such as stockholders and subordinated creditors), to limit excessive risk-taking. There are three primary types of explicit premiums.

Private Reinsurance of Deposit Guarantees. Private reinsurance of the federal deposit guarantees is a way of using the market's estimate of the value of deposit guarantees to adjust the deposit-insurance premium.¹³ The basic concept behind the private reinsurance program is the extension of FDIC guarantees to cover all deposits. The FDIC then would assume direct responsibility for the first \$10,000 or so of any deposit liability and private companies would assume direct responsibility for each additional \$10,000 layer or tranche of any deposit.¹⁴ This procedure places private capital at risk for any portion of an insured deposit above the base FDIC insurance limit.

The bank's total deposit-insurance premium would be determined by the firms in the private deposit-insurance market. The premiums the bank pays to the private insurers for their guarantees presumably would reflect the risks to the private insurers arising from those guarantees. The FDIC guarantee on the first \$10,000 of deposits would be tied to the premiums paid to private insurers for their guarantees.

For the private insurance system to provide the correct premium structure, the government must allow private deposit insurers to fail when they cannot meet their obligations. In such cases, the FDIC would be responsible for guaranteeing the deposits previously guaranteed by the defunct private deposit insurer. This approach also requires sharing information on the condition of banks between the private insurance industry and the FDIC. Finally, private insurers would have to be indemnified against losses that would result if public policy allows a bank to continue to operate after it becomes insolvent.

The current lack of interest, and some would argue, lack of resources of the insurance industry in providing deposit guarantees may make private reinsurance infeasible. However, if profit opportunities were available for market participants who provide deposit guarantees, then one would expect a private insurance industry to develop. If a private deposit-insurance industry were to develop, it probably would be necessary to extend some form of capital regulation to the private insurers to ensure that they could reasonably meet their obligations. (Managers of private deposit insurers with little of their stockholders' money at risk may be less likely to correctly price their deposit guarantees.)

Premiums Based on Ex Ante Risk Measures. An alternative method of assessing risk-adjusted premiums is to base the premiums on current expectations as to the performance of the bank over the next rating period. That is, to set up a model that predicts the riskiness of the bank and to use the model to set the criteria upon which the deposit-insurance premiums are assessed.¹⁵ These economic models attempt to estimate the risk exposure of the FDIC to an insured bank. With such estimates,

administrative prices could be set to determine the aggregate risk levels for the insured industry. Individual institutions would be allowed to determine the level of risk that is appropriate for their institution, given the administrative price set for the deposit insurance.

The main advantage of an ex ante pricing system is that, like the risk-based capital proposals, it directly affects the risk-taking incentives of insured banks. The primary disadvantage is that we have to be able to measure the riskiness of insured banks. As with risk-based capital guidelines, systematic errors in measuring bank risk can make ex ante risk-adjusted premium systems unstable. In addition, if the model is not flexible and forward-looking, banks may seek to exploit new forms of unregulated risks. The growth of off-balance-sheet risks is an example of how banks can avoid regulations intended to limit risk taking.

Ex Post Premiums. An alternative way of risk-adjusting deposit-insurance premiums is to base them on the actual (ex post) performance of the bank. This would increase the costs of risk-taking by bank managers by charging banks a deposit-insurance premium that is inversely related to the bank's performance. Typically, ex post risk-adjusted pricing proposals would levy a flat-rate deposit-insurance premium on the insured bank at the beginning of the period over which the premium is assessed. The ex post risk adjustment to the insurance premium comes in the form of either a surcharge or a rebate to the insured banks, depending upon the quality of their actual performance.

The size of the premium surcharge or rebate that the bank either pays or receives would be adjusted according to the riskiness of the bank's operations relative to the banking industry as a whole. The total deposit-insurance premium paid by the banking industry would be set to compensate the FDIC for its risk exposure to the banking industry as a whole. The system of rebates and surcharges, however, would allocate the burden of the insurance premium on individual banks on the basis of their performance over the rating period.¹⁶

4. Buser, Chen and Kane refer to this type of implicit premium adjustment as a regulatory tax. The FDIC uses increased regulatory interference to tax away part of the gains the bank receives by holding a riskier portfolio. See, Steven A. Buser, Andrew C. Chen, and Edward J. Kane. "Federal Deposit Insurance, Regulatory Policy, and Optimal Bank Capital." *Journal of Finance* 36 (March 1981), pp. 51-60.

5. The FDIC presents a similar argument in its study of risk-adjusted insurance premiums. See, Federal Deposit Insurance Corporation. *Deposit Insurance in a Changing Environment*, Washington, D.C., April 1983. For a discussion of why the current system of federal deposit guarantees needs to be reformed see, Edward J. Kane. *The Gathering Crisis in Federal Deposit Insurance*, MIT Press, 1985.

6. The subordinated creditors of the bank are investors with a claim on the assets of the bank that is secondary to the claims of depositors, the FDIC, and general creditors. In other words, if the bank fails, and is liquidated, the subordinated creditors do not have a claim against the bank until the claims of the its uninsured depositors, general creditors, and the FDIC are paid in full.

7. See George J. Benston, Robert A. Eisenbeis, Paul M. Horvitz, Edward J. Kane, and George G. Kaufman. *Perspectives on Safe and Sound Banking: Past, Present, and Future*, MIT Press, Cambridge, MA: 1986.

8. It is possible that increases in capital requirements may have perverse effects on the risk incentives of banks, causing them to increase the risk of their portfolios. See Anthony M. Santomero and Ronald D. Watson, "Determining an Optimal Capital Standard for the Banking Industry." *Journal of Finance*, vol. 32, no. 4 (September 1977), pp. 1267-82.

9. See Robert M. Garson. "Comptroller Says Regulators May Issue One Risk-Based Capital Proposal by Fall." *American Banker*, vol. 151, no. 135 (July 11, 1986).

10. See, David H. Pyle, "Pricing Deposit Insurance: The Effects of Mismeasurement" Federal Reserve Bank of San Francisco, *Working Paper* 8305, October 1983.