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# FRBSF WEEKLY LETTER

March 8, 1991

## Recapitalizing the Banking System

The banking safety net has allowed banks and thrifts to operate with little (and sometimes, negative) net worth before authorities intervene. Consequently, the claims on the insurance fund tend to be large, and the premia necessary to finance this fund correspondingly large even in good times.

An alternative to maintaining a large insurance fund is to increase the capital requirements for insured banks. However, bankers argue that capital is "too expensive," and that higher requirements would compromise their competitive vigor. Others argue that "now is not the time" to raise capital requirements.

This *Weekly Letter* offers the case for increased capital requirements as a means of reforming the banking safety net. A system of higher capital requirements will be *no more costly* to banks than one that relies on low capital and a big insurance fund with high premia. It offers the advantage, however, of putting the greatest burden of reform on banks exploiting the safety net.

### **The role of bank capital**

The role of capital in an insured bank is to provide a "cushion" that protects the insurance fund (and other uninsured liability holders) from decreases in the value of the bank's assets. Options theory reveals that the expected claim on the insurance fund with banks at a 15 percent capital/asset ratio is 60 times smaller than at a 1 percent ratio. Just as importantly, higher capital requirements reduce the value to the bank of deposit insurance coverage and, hence, the incremental benefit of risk-taking at the expense of the safety net.

But would not higher capital requirements increase bank costs? The answer is that they need not. Indeed, were it not for distortions introduced by tax policy and the deposit insurance system itself, banks likely would prefer to hold far more capital than they do today. To see this point, it is necessary to understand a bit of finance theory.

Banks, like other firms, finance their assets with a mixture of equity and debt (mainly

deposit debt). A famous theorem in finance known as the Modigliani-Miller (M-M) irrelevance proposition says that the value of a firm (or a bank) should be unaffected by its financial structure, in the absence of any market imperfections. By implication, the market would charge the same, on the margin, for a bank's debt or for its equity.

If there are market imperfections, the M-M proposition may not hold, causing banks to prefer either debt or equity. For example, deadweight costs to bankruptcy (legal fees, losses on sales of assets, etc.) would produce a bias in favor of *equity*. This is because equity protects against bankruptcy and, hence, the deadweight costs it imposes. Leland and Pyle have argued that a bank's owners may hold more equity to signal to bank depositors that they have faith in the quality of the asset portfolio. These informational benefits to equity are not accounted for in the M-M proposition.

### **Tax policy and subordinated debt as capital**

Tax policy and deposit insurance, in contrast, have tended to offset the bias in favor of equity. Let us turn first to the effects of tax policy. Because of the comparative treatment of debt and equity in the corporate and personal income tax laws, equity is made more costly than debt on a tax-adjusted basis. (For example, interest costs of debt are tax-deductible by corporations, but dividends are not.) In banks (and other firms), this contributes to the bias in favor of debt.

Bank regulators recognize this bias and have permitted certain types of debt to be counted as part of regulatory capital. In particular, under present international regulatory agreements, 2 percentage points of the 8 percent capital requirement can be in the form of subordinated debt (SD). This does not fully eliminate the bias, however, and expanded use of SD would permit it to function more fully as a buffer for the deposit insurance fund.

For SD to perform this function correctly, however, certain conditions must be met. First, the debt must be long-term so holders cannot

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"run" by redeeming the debt at the bank. If they could redeem the debt on short notice, only equity capital would remain as an effective buffer for the insurance fund.

Second, the SD must not be insured. Although this is an obvious point, a subtlety in regulatory practice inadvertently causes subordinated debt to be partly insured even if the debt is strictly at risk: SD holders and the insurer have the same seniority in liquidation, and losses are shared. This reduces the "downside" risk faced by SD holders, and thereby imparts partial deposit insurance coverage to this debt, regardless of its explicit status. To make SD equivalent to equity capital as an insurance fund buffer, SD holders must have a claim on the bank that is *junior* to the claim of the insurance fund.

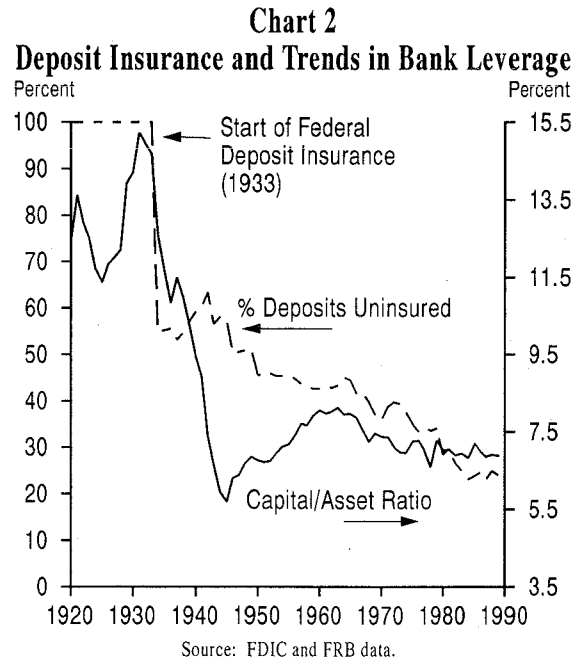
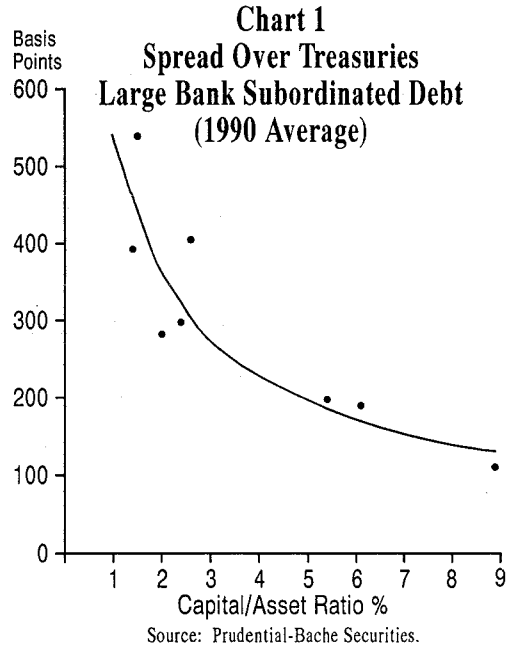
Finally, for such debt to be marketed at feasible yields, the SD holders must be senior to equity holders, and have the power to force augmentation of bank equity or to demand liquidation or sale of the bank. If they do not have this power, then SD holders' wealth is at the mercy of the insurer, whose only interest is in preserving claims against itself, and bank SD likely would not be attractive to investors.

An additional virtue of increasing the use of SD as regulatory capital is that SD holders will have a strong incentive to monitor the condition of the banking firm. Indeed, with claims junior to the insurance fund, they will wish to see the equity of the bank maintained at safe levels. Even today, with some implicit insurance of SD, the marketplace asserts some discipline by charging significant premia over riskless rates for the SD issued by undercapitalized institutions. (See Chart 1.)

## Deposit insurance and bank capital

Deposit insurance itself also is a major source of bias in favor of bank *debt*. Specifically, if deposit insurance premia underprice risk for a particular institution, deposits will appear cheaper than at-risk equity, and insured banks will seek to minimize capital.

The historical data suggest clearly that this has been the case. As indicated by Chart 2, the passage of the deposit insurance law in 1933 immediately caused a significant decrease in bank capital/asset ratios from an average of 12-15 percent before deposit insurance to about 5.5 percent in less than 10 years. Reductions in the



amount of uninsured deposits have continued to depress capital ratios.

To correct this bias, either premia must be raised, or the banks must raise capital sufficiently to lower the probability of imposing a burden on the fund. Simple finance theory can show that *either approach is equally costly*. That is, if a bank is enjoying a subsidy on its deposit insurance, its costs will go up if higher capital requirements are imposed. Its costs will go up an equivalent amount if, alternatively, the proper risk-based premia are implemented to eliminate the subsidy.

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### **Practical considerations favor capital**

As a practical matter, however, higher capital requirements with low premia may be preferable to a lower capital standard and higher premia (and a larger fund). First, capital standards can be implemented aggressively with less risk of burdening banks than is the case with the high premia approach. In particular, imagine that the capital requirement is inadvertently set so high that there is no longer any value to the deposit insurance. If tax biases have been corrected by SD policy, there is no burden to the bank's wealth of this high capital requirement except the (low) premium. That is, the bank's value is indifferent, in the M-M sense, to the level of equity, so that conservative errors in capital regulation are not costly. Inadvertently high premia, on the other hand, depress bank value in direct proportion to the error. That is, excessive premia are a tax on bank earnings.

Second, with a flat, high premium, the well-capitalized banks subsidize the less well-capitalized banks. The well-capitalized banks are getting very little benefit from the fund, but are paying a high premium. The less well-capitalized banks are gaining insurance with a value that exceeds the premium they pay.

A higher capital standard, on the other hand, makes the banks receiving the most subsidy "pay" the most in declining bank value. If a bank is receiving a subsidy from the insurance fund, a higher capital standard, by "taking away" the subsidy, will decrease the value of the bank. A bank already enjoying no subsidy will not be affected.

This "weeding out" effect of a higher capital requirement is supported by a recent study by Dahl and Spivey of the performance of severely undercapitalized banks in the 1981-1988 period. They concluded that new external equity issuance is a critical determinant of recovery of the bank; if forced to raise capital, the banks with the least claim on the insurance fund were successful and the ones with the greatest claim were unsuccessful and failed to recover.

### **The competitiveness of well-capitalized banks**

Theoretically, then, higher capital standards appear to be irrelevant in determining the value of a bank or its profitability and, hence, its competitiveness. It is interesting to examine

the capital levels of our main foreign bank competitors to see if this theory is supported.

Such comparisons are not easy to make using the available book value accounting data, because most European and Japanese banks hold corporate stocks and real estate assets whose value has tended to be higher than the reported book values.

An indication of the net worth of foreign banks is implied, however, by the ratings conferred on the debt of these institutions, since the capital cushion is a primary determinant of this rating. As of December 1990, of the 11 largest Japanese banks only 2 have ratings below an S&P AA (or Moody's equivalent) and one has a AAA rating. Of the largest German banks, none are below AA, and three have AAA ratings. All three of the largest Swiss banks have AAA ratings. French and British banks also enjoy high ratings. By comparison, of the eight largest U.S. bank holding companies, only two are rated AA or above, and three are rated BBB + . Many other U.S. banks' debt is below investment grade.

### **Conclusion**

Many other factors, of course, influence the profitability and competitiveness of banks in different countries. Indeed, we have argued in previous *Letters* that it is the lack of commerce powers of U.S. banks that is their greatest handicap. Both theoretically and empirically, however, there is little evidence that higher capital standards *per se* impair competitiveness. Indeed, if anything certain U.S. banks unfairly compete with other banks because of a subsidy received via underpriced deposit insurance.

Retaining low capital standards and enlarging the insurance fund creates biases in favor of weak banks, and preserves the strong incentives, on the margin, for banks to exploit the fund. Modifications in the treatment of subordinated debt and increased regulatory capital requirements offer better prospects for fairly reforming deposit insurance. Put differently, our banking system may be better off "self-insuring" through higher capital than relying on an enlarged public insurance fund.

**Randall J. Pozdena**  
Vice President

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P.O. Box 7702  
San Francisco, CA 94120