

AN EMPIRICAL EXAMINATION OF DEPOSIT INSURANCE DECISIONS

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Deposit insurance is implicitly or explicitly compulsory for most banks, but membership in the Federal Deposit Insurance Corporation (FDIC) is optional for mutual savings banks in Massachusetts. These savings banks are required to join the state deposit insurance program—Mutual Savings Central Fund (MSCF), Inc.—according to the Acts of 1932 of the General Court of the Commonwealth of Massachusetts (Ch. 44, Sec. 1). The banks can decide voluntarily whether to join the FDIC (Acts of 1934, Ch. 43, Sec. 12). These decisions are assumed to maximize profits. We will investigate the motives behind the optional insurance decisions.

Three motives are suggested: first, signaling bank quality; second, substitution for bank capital; third, servicing depositors. The signaling motive encourages the safe banks and borrowing banks—borrowing from uninsured creditors—to use FDIC insurance as a signal of quality, whereas the risky banks and nonborrowing banks will find it too costly and unprofitable to send the signal. Due to informational asymmetry, safe banks may not be able to get low borrowing rates. Optional FDIC membership could serve as a signal of quality to uninsured creditors from the safe banks in order to get lower borrowing rates. Alternatively, the substitution motive causes the risky banks and nonborrowing banks to use the insurance as a capital substitute. Safe banks and borrowing banks will find it unprofitable to purchase the insurance. The savings banks may want to use FDIC membership as additional protection against loss and increase their risks as a consequence of this protection. Under this

circumstance, the insurance serves as a substitute for bank capital. The signaling and substitution motives are mutually exclusive concerning the characteristics of insured banks.

Deposit insurance also reduces insured depositors' risk exposure. Federal deposit insurance can be treated by the banks as an extra service they provide to depositors to compete for deposits. The FDIC's financial credibility is alleged to be better than the MSCF's, because the federal insurer has more financial and political resources. Thus, the federal deposit guarantee provides more assurance than the state guarantee. Most commercial banks and savings and loan associations are federally insured. Depending on oligopoly theory, the more concentrated a market, the stronger the interplay among the rivals. Competitive pressure from those federally insured financial institutions will force the savings banks in an oligopolistic banking market to join the FDIC. The servicing motive suggests that the savings banks in more concentrated markets are more likely to be FDIC members. A distinction between the signaling and servicing motives can be made. Signaling is aimed at informing uninsured creditors of bank quality so as to borrow at lower rates, whereas the latter is to impress insured depositors in order to get their deposits. The signaling motive is attributed to safe banks. Both can use the FDIC logo to differentiate their credibility and improve their images.

After the banking crisis of the 1920s' and 1930s', economists, bankers, and policy-makers concluded that the prevention of financial catastrophes required government intervention. Many regulations, including Regulation Q, the Glass-Steagall Act, the McFadden Act, and the Douglas Amendment, were enacted to reduce competition in banking. In addition, the FDIC was established to provide deposit guarantees for small savers so as to maintain public confidence in the banking industry and avoid future bank runs.

Over the past two decades, inflation, technological change, competition from nonbanking firms, and regulatory ineffectiveness because banks substitute other activities for regulated ones (Kane, 1981) have raised questions about restrictive banking regulations. Legislative actions have also been taken, such as the Depository Institutions Deregulation and Monetary Control Act of 1980, to free financial institutions from regulation. The objectives of the banking deregulation acts are to enhance the efficiency of financial markets and to promote competition and equity among depository institutions. As a result, financial institutions are facing increased competition.

Intensified competition will not necessarily impair the stability of the banking system. The FDIC still prevents widespread runs. To the public, it provides deposit insurance up to \$100,000. To the banking industry, it provides close supervision. However, the insurer's regulatory ability has been a matter of academic concern. For instance, in the studies of bank capital management, regulatory ability is a crucial factor in the capital decision and in the studies of deposit insurance premium schemes it is pivotal in determining whether to charge a risk-related premium. The insurer's supervisory ability and financial credibility should influence insured depositors' uninsured creditors', and bank managements' behavior. For insured depositors, a credible insurer makes the insurance a dependable symbol. It will influence the depositors' decisions as to whether to put their money into certain banks. For uninsured creditors, a capable insurer makes the insurance a signal of quality. Depending on this signal, uninsured creditors will decide the lending rates charged to the banks. For bank managements, a capable and credible insurer makes the insurance a costly signal of quality and a potentially profitable service. Based on marginal costs and revenues from buying the insurance, they will decide whether to join the FDIC. Few studies have dealt with the influence of the insurer's

financial credibility and regulatory ability on insured depositors and uninsured creditors. Studies concerning the influence on bank capital management have not been conclusive.

Conventional theory (substitution theory) postulates that the insurer has inaccurate information about the insured. Consequently, bank managements use deposit insurance—compulsory or optional—as a substitute for bank capital. The empirical tests of compulsory federal deposit insurance by Peltzman (1970) and Mingo (1975) support this argument while the tests by Throop (1975) and Dwyer (1981) cannot confirm it. Signaling theory postulates that the insurer has accurate information about the insured. It suggests that optional deposit insurance can be treated as a signal of soundness from bank management to uninsured creditors because both uninsured creditors and bank management respect the insurer's supervisory competence. No empirical work has been done in this direction. Other things being equal, conventional wisdom predicts that in equilibrium risky banks and nonborrowing banks will voluntarily insure, whereas the signaling theory predicts that in equilibrium safe banks and borrowing banks will voluntarily insure. In addition, if small depositors have more confidence in the federal insurer's deposit guarantee than the Mutual Savings Central Fund's, FDIC insurance can be treated as an additional service. This service can provide more assurance to depositors. It can differentiate deposit safety and attract small depositors. It may become an important area of nonprice competition, if other price and nonprice competition is deliberately limited by financial institutions. The servicing theory implies that in a more concentrated market, the savings banks will emulate the commercial banks to join the FDIC. No empirical research has been performed to test this hypothesis. The servicing theory is independent of the previous two theories.

Instead of looking at the influences of compulsory or optional deposit insurance on bank managements', uninsured creditors', and insured depositors' behavior to assess the insurer's

regulatory ability and financial credibility, we can investigate the motives behind the optional insurance decisions by banks. The optional deposit insurance decision has never been empirically examined. One plausible explanation for the omission is that most depository institutions are required to join a deposit insurance program. It is hard to find a sample of banks which can choose whether to purchase deposit insurance. Deposit insurance is often a case of government intervention to sustain the public confidence in the banking industry. In the context of compulsory deposit insurance, no empirical evidence can show the intention of bank management with regard to the insurance. If banks are allowed to make decisions on whether to purchase certain deposit insurance, the incentives behind the optional deposit insurance can be disclosed through the analysis of such decisions. Mutual savings banks in Massachusetts have a choice with respect to joining the FDIC. Using these data we can test the theories about the insurance decision.

At equilibrium, marginal costs from deposit insurance will equal marginal revenues from it and banks will be maximizing profits. We try to determine the meaning of the observed equilibrium in Massachusetts through an empirical test of the three theories. Since the data on marginal cost and revenue are not available, we examine the statistical relationship between bank characteristics and the optional insurance decision at equilibrium. In this approach, we assume that our observations of the insurance decisions and bank characteristics are of a profit-maximizing equilibrium phenomenon. The marginal costs and revenues from deposit insurance depend on the insurer's regulatory ability and financial credibility, bank managements' motives, uninsured creditors' judgment, and insured depositors' perception. The behavior of the latter three—bank managements, uninsured creditors, and insured depositors—can reflect their views

on the insurer's monitoring ability and financial credibility. The bank characteristics in this study are related to these three sectors.

If the signaling hypothesis is supported by the empirical test, then there may exist a signaling equilibrium of deposit insurance choices. The insurer must have accurate information to police the banking industry and bank quality can be maintained by regulatory power. The optional membership signals bank quality.

Alternatively, if the substitution hypothesis is supported by empirical evidence, then the optional membership in the substitution equilibrium does not signal bank quality; member banks are riskier than the nonmember banks. Bank quality will be checked by market-determined risk premia on bank borrowings. The keenness of the insurer's observation would be questionable. It must not be capable of imposing an adequate capital level on the insured banks either through price or nonprice discipline.

If the servicing hypothesis holds, optional deposit insurance is adopted for nonprice competition in a more concentrated market. Since the federal insurance is treated as a reliable symbol, small depositors' respect for the insurer's assurance is suggested.

A probit model containing bank characteristics is developed to test the three hypotheses using 1979-1981 data from mutual savings banks in Massachusetts. In chapter II, the development of thought on the relationship between compulsory deposit insurance and capital management is reviewed. Alternative explanations of bank decisions concerning optional deposit insurance are also discussed. From these explanations, we will derive testable hypotheses and the insurance decision model. Chapter III presents the probit model and hypotheses. Chapter IV deals with data analysis. Chapter V reports the regression results. Chapter VI draws conclusions from the findings.