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THE POLITICAL ECONOMY OF BRANCHING RESTRICTIONS AND DEPOSIT INSURANCE: A MODEL OF MONOPOLISTIC COMPETITION AMONG SMALL AND LARGE BANKS*

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ABSTRACT

This article suggests that the introduction of bank branching restrictions and federal deposit insurance in the United States likely was motivated by political considerations. Specifically, we argue that these restrictions were instituted for the benefit of the small unit banks that were unable to compete effectively with large, multiunit banks. We analyze this "political hypothesis" in two steps. First, we use a model of monopolistic competition between small and large banks to examine gains to the former group from the introduction of branching restrictions and government-sponsored deposit insurance. We then find strong evidence for the political hypothesis by examining the voting record of Congress.

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> Myth 4: Deposit Insurance was enacted solely for the protection of depositors. . . . In fact when deposit insurance legislation was enacted in 1933, the primary political reason was that it had the support of small banks that overrode the opposition of bigger banks. . . . Any public policy debate limiting deposit insurance coverage necessarily is about the kind of banking system we want in the U.S. and the role of small banks in the system. (WILLIAM SEIDMAN, ex-chairman, Federal Deposit Insurance Corporation, in "The Facts about the FDIC," *Wall Street Journal,* June 5, 1991)

I. INTRODUCTION

FINANCIAL intermediaries, and commercial banks and near-banks in particular, are significantly regulated in virtually all countries. Concern that bank deposit-taking or lending activities or both play an important role in the provision of risk-sharing, liquidity, and information services has led policy makers to adopt regulations to promote "financial stability."

From the aftermath of Depression-era banking reforms in the United States through the end of the 1970s, the industrial organization and regulation of the banking industry were accepted as permanent and essentially salutary structures. While the link between regulation and financial innovation has long been acknowledged, two key underpinnings of U.S. regulation in this period—geographical limits on bank branching and federal insurance of bank deposits—were not significantly questioned. While unit banking was understood to increase the likelihood of instability in the banking system, the lack of evidence of substantial economies of scale in banking beyond relatively modest levels combined with the virtual elimination of bank runs following the introduction of federal deposit insurance calmed most concerns.

Events of the 1980s shook this sense of a permanent and benign regulatory structure. The failure of unit banks in response to declines in agricultural and energy prices brought back memories of the 1920s. In addition, as Herbert L. Baer and Larry R. Mote note,[1] the loan losses experienced in the bank and thrift "deposit insurance crisis" exceeded even the losses of failed banks during the early 1930s.

An important line of research on the role of financial intermediaries in the credit allocation process emerged coincident with this heightened interest in consequences of U.S. banking regulation. These papers[2] suggest that

[1] Herbert L. Baer & Larry R. Mote, The United States Financial System (photocopy, Federal Reserve Bank, Chicago 1991).

[2] See, for example, Hayne Leland & David Pyle, Information Asymmetries, Financial Structure and Financial Intermediaries, 32 J. Fin. 371 (1977); Tim Campbell & William Kracaw, Information Production, Market Signaling, and the Theory of Intermediation, 35 J. Fin.

banks either produce information directly or have proprietary access to information not available to the capital markets. Such models explain the emergence of financial intermediaries as optimal-contracting solutions in the presence of high transactions and information costs.

Using optimal-contracting models of financial intermediation to explain branching restrictions and government-sponsored deposit insurance is not straightforward, however. Nothing in the structure of modern explanations of financial intermediaries, for example, suggests efficiency improvements from limiting diversification of bank portfolios. Yet historical evidence suggests both that unit banking limited portfolio diversification and that poor diversification led to a higher bank failure rate than that experienced in other countries or in regions of the United States with less severe branching restrictions.[3]

Moreover, explanations of federal deposit insurance point to its introduction as a means of avoiding the costs of bank panics due to the presence of asymmetric information. This possibility was suggested by Douglas W. Diamond and Philip H. Dybvig,[4] who model a "bank" as an intermediary that transforms illiquid long-term assets into liquid short-term assets in an environment where privately observed consumption shocks are uncorrelated across agents. This pooling function will not be provided by insurance markets because the agents have privately observed consumption shocks that cannot be conditioned on. Accordingly, they suggest that first-best efficient equilibrium will be reached if the bank knows the agents' consumption shocks. Without this private information a sunspot phenomenon (a "bank run") could occur with an associated Pareto-inferior equilibrium. If the relative number of short-term and long-term agents is not known, the suspension of deposits' convertibility to cash cannot by itself allow banks to reach first-best equilibrium. Consequently, a credible promise of insurance from a tax-levying authority such as the federal government is required to achieve first-best equilibrium.

863 (1980); Douglas W. Diamond, Financial Intermediation and Delegated Monitoring, 51 Rev. Econ. Stud. 393 (1984); Douglas W. Diamond, Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt, 99 J. Pol. Econ. 689 (1989); Eugene Fama, What's Different about Banks? 15 J. Monetary Econ. 29 (1985); Ram Ramakrishnan & Anjan Thakor, Information Reliability and a Theory of Financial Intermediation, 51 Rev. Econ. Stud. 415 (1984); and James Boyd & Edward Prescott, Financial Intermediary Coalitions, 38 J. Econ. Theory 211 (1986).

[3] See, for example, Charles W. Calomiris, Regulation, Industrial Structure, and Instability in U.S. Banking: An Historical Perspective, in Structural Change in Banking (Michael Klausner & Lawrence White eds. 1993); Charles W. Calomiris, R. Glenn Hubbard, & James H. Stock, The Farm Debt Crisis and Public Policy, 2 Brookings Pap. Econ. Activity 441 (1986).

[4] Douglas W. Diamond & Philip H. Dybvig, Bank Runs, Deposit Insurance and Liquidity, 91 J. Pol. Econ. 401 (1983).

Our examination of branching restrictions and deposit insurance follows analyses of the political economy of regulatory intervention, in which government intervention serves principally to redistribute economic resources.[5] While recent research has attempted to explain the introduction of government-sponsored deposit insurance as an efficient mechanism to prevent bank runs for all banks,[6] we focus on the role that it has played in the survival of one type of bank, namely, "small" (unit) banks. In particular, we suggest that federal deposit insurance was instituted for the benefit of small banks, largely located in unit-banking states, at the expense of geographically well-diversified large banks that pushed for less restrictive branching legislation. The "political hypothesis" suggests that deposit insurance[7] was introduced to ensure the continued viability of small unit banks. Such an approach, as we discuss below, has a long pedigree in historical chronicles.[8] In particular, the decline in bank net worth accompanying the fall in agricultural prices in the 1920s and the inability of nondiversified unit banks to compete with the larger banks precipitated a crisis. Branching by larger banks and chain bank networks provided a serious threat to the small unit

[5] This approach has its origin in George J. Stigler's seminal paper, The Theory of Economic Regulation, 2 Bell J. Econ. & Mgmt. Sci. 2 (1971). Sam Peltzman, in Toward a More General Theory of Regulation, 19 J. Law & Econ. 211 (1976), formalized this approach in the context of a model in which a regulatory authority (or more generally a political process) transfers resources from a large (but poorly organized) majority to a smaller (and better organized) group. One can think of our exercise as the first step of a model in the Stigler-Peltzman approach (and related works by Gary S. Becker, Comment on Peltzman, 19 J. Law & Econ. 245 (1976)); Gary S. Becker, A Theory of Competition among Pressure Groups for Political Influence, 98 Q. J. Econ. 371 (1983); and Victor P. Goldberg, Peltzman on Regulation and Politics, 39 Pub. Choice 291 (1982)) to study the problem of a political authority providing bank deposit insurance to be paid for by some combination of taxes (deposit insurance premiums) on banks and on consumers/taxpayers. We focus on modeling the gains to different segments of the banking industry from alternative regulatory regimes, and not on the voting mechanism that determines the prevailing regime.

[6] See Section II for a more detailed description of the papers that address bank runs and deposit insurance.

[7] Throughout this article we interpret "deposit insurance" as meaning insurance with non-risk-based premiums, as was the case for federal deposit insurance in the United States prior to the passage of the Federal Deposit Insurance Corporation Improvement Act of 1991.

[8] See, for example, Carter H. Golembe & Clark S. Warburton, Insurance of Bank Obligations in Six States during the Period 1829–1866 (unpublished manuscript, Federal Deposit Insurance Corporation 1958); Carter H. Golembe, The Deposit Insurance Legislation of 1933: An Examination of Its Antecedents and Its Purposes, 75 Pol. Sci. Q. 181 (1960); Eugene N. White, State-Sponsored Insurance of Bank Deposits in the United States, 1907–1929, 41 J. Econ. Hist. 537 (1981); Eugene N. White, The Regulation and Reform of the American Banking System, 1900–1929 (1983); and the review of studies in Charles W. Calomiris & Eugene White, The Origins of Federal Deposit Insurance, in The Regulated Economy: A Historical Approach to Political Economy (Claudia Goldin & Gary D. Libecap eds. 1994).

banks.[9] Although eight statewide deposit insurance funds (which were introduced in the early 1900s) had failed, federal deposit insurance was instituted in response to pressures from unit-bank constituencies in Congress. Rather than forgo other bank reforms such as the separation of commercial and investment banking,[10] national advocates of bank reform added federal deposit insurance in the last part of a special session of the 69th Congress.

As with branching restrictions, consideration of the political economy of federal deposit insurance is not new. Edward J. Kane[11] has emphasized political motivations in assessing the responsiveness of bank regulation (deposit insurance in particular) to changes in the condition of the banking system as a whole. We add to Kane's approach by constructing a model of monopolistic competition between small and large banks. Each small bank operates in a single market. Such banks collectively benefit from restrictions that restrain large banks from branching into (entering) their markets. In addition, by reducing the variance of their profits, so that its depositors do not switch to a lower-risk bank with branches in many areas, small banks gain from the introduction of a non-risk-based deposit insurance scheme. Further, such deposit insurance allows small banks to have a lower capital-asset ratio than would be otherwise required to buffer the depositor from the risk of one single market. Consequently, in our model, with no regulatory interference, multiunit banks would be the only survivors when there is unrestricted branching across markets and no deposit insurance. However, small banks were able to pass their legislative agenda of anti-branching laws and federal deposit insurance in Congress against the wishes of larger banks. Deposit insurance enabled badly capitalized small banks to survive by reducing the need for equity capital to act as collateral against higher risk.

We find evidence in support of the political hypothesis based on an em-

[9] In a more contemporary framework, R. Glenn Hubbard & Darius Palia, Executive Pay and Performance: Evidence from the U.S. Banking Industry, 39 J. Fin. Econ. 105 (1995), examine the effect of interstate banking deregulation on a bank chief executive officer's wealth. Using a sample of publicly traded banks during the 1980s, they find the sensitivity of a chief executive officer's compensation to the bank's performance is less when interstate banking is not allowed than when interstate banking is allowed.

[10] This presumes that there are no fundamental reasons for such a separation; see Randall Kroszner & Raghuram Rajan, Is the Glass-Steagall Act Justified? A Study of the U.S. Experience with Universal Banking before 1933, 84 Am. Econ. Rev. 810 (1994), for evidence that security affiliates of commercial banks did not systematically fool the public into investing into low-quality securities before the Glass-Steagall Act.

[11] Edward J. Kane, The Gathering Crisis in Federal Deposit Insurance (1985); and Edward J. Kane, A Six-Point Program for Deposit-Insurance Reform, 2 Housing Fin. Rev. 269 (1983).

pirical analysis of the congressional vote on branching by national banks (the McFadden Act of 1927), and anecdotal analysis of the development of the Banking Act of 1933 (which introduced federal deposit insurance in the United States). This article is organized as follows. In Section II, we review the literature on financial intermediation and deposit insurance. Our model of monopolistic competition among unit banks and branching banks is outlined in Section III. Section IV presents a brief history of the U.S. banking system in the early part of this century, focusing on the political struggle between the interests for and against bank branching and deposit insurance schemes. We test the predictions of the political hypothesis with regard to the antibranching constituency in congress and find strong support for it. We also present more impressionistic, but suggestive, evidence for the political hypothesis by examining the debate prior to the inclusion of federal deposit insurance in the Banking Act of 1933. Section V concludes.

II. The Intermediary Role of Banks

Recent research on banking has focused on formally motivating liability or asset contracts written by financial intermediaries. This inquiry has analyzed the role played by fixed-rate demand deposits in banking panics. Some models examine government deposit-guarantee contracts as an efficient mechanism to achieve a first-best competitive equilibrium among the multiple Pareto-ordered Nash equilibria possible selected by agents. John Bryant[12] first recognized the role of demand deposits in providing insurance against unobservable private risks such as preference shocks. This line of research has not analyzed the effects of geographical restrictions on branching on the likelihood of intermediary failure.

In an influential paper, Douglas W. Diamond and Philip H. Dybvig[13] argue that demand deposit contracts transform highly illiquid asset-payoff streams into more liquid liability payoffs. In their model, panics are due to random withdrawals caused by self-fulfilling beliefs. They examine a "panic" bank run in a model with agents of two types, which are identical ex ante (at time $t = 0$). At time $t = 1$, agents learn that they will live until $t = 2$ (long-term depositors) and a fraction of agents learn that they will die at $t = 1$ (short-term depositors). An optimal private insurance contract is not possible among agents, as it would have to include the nonverifiable private information of agents. Banks provide this insurance, as they guaran-

[12] John Bryant, A Model of Reserves, Bank Runs, and Deposit Insurance, 4 J. Banking & Fin. 335 (1980).

[13] Diamond & Dybvig, *supra* note 4.

tee a reasonable return for depositors who want to withdraw at $t = 1$. However, the characteristic of the demand deposit contract in which the bank's payoff to an agent depends only on the agent's place in line (the "sequential service constraint") can cause a bank run to be one of the two equilibria. If the ratio of short-term to long-term agents is stochastic, the suspension of convertibility of deposits to cash by banks cannot per se avoid the "bad" equilibrium. Diamond and Dybvig suggest that a credible promise to provide insurance (such as from the government which can levy taxes) is enough to prevent the bank run.[14,15]

This line of inquiry has evolved in recent papers attempting to provide a justification for the sequential service constraint and delineate types of events which cause beliefs to change prior to a panic. As an alternative to the Diamond-Dybvig approach, other models[16] of bank deposit contracts have stressed that both the sequential service constraint and bank panics may be the outcome of depositors' monitoring banks in the presence of asymmetric information about the quality of bank asset portfolios. In cases in which banks have private information about asset values, panics occur as the result of revisions in the perceived risk of bank debt.

In this approach, banks' economic function is not to provide insurance against preference shocks but to provide nonmarketable loans under asymmetric information.[17] The nonmarketability of loans accentuates the prob-

[14] Douglas G. Waldo, Bank Runs, the Deposit-Currency Ratio and the Interest Rate, 15 J. Monetary Econ. 269 (1985), also models a pure panic bank run in which savers shift from deposits to storage in anticipation of possible runs. In the event a run actually occurs, yields in secondary markets rise as banks sell their longer-term securities before maturity. The model explains the rise in short-term interest rates during bank runs and the fall in the deposit-currency ratio in anticipation of runs.

[15] The efficiency of demandable debt in the Diamond-Dybvig context has been examined by subsequent authors. Kenneth Cone, Regulation of Depository Financial Institutions (unpublished Ph.D. dissertation, Stanford Univ. 1983), suggests that panics could be eliminated in a Diamond-Dybvig-type model if demand deposits had no sequential service constraint attached. Charles J. Jacklin, Demand Deposits, Trading Restrictions and Risk Sharing, in Contractual Arrangements for Intertemporal Trade (Edward C. Prescott & Neil Wallace ed. 1987), shows that the ex ante optimal consumption allocation is possible through trading rather than through deposit insurance. Andrew Postlewaite & Xavier Vives, Bank Runs as an Equilibrium Phenomenon, 95 J. Pol. Econ. 485 (1987), demonstrate potential problems with the self-fulfilling panic, suggesting that no one would acquire demand deposits (in equilibrium) anticipating a run. As a result, the demand deposit contract is suboptimal when there is a nonzero probability that the self-fulfilling beliefs panic will occur.

[16] See, for example, the review in Charles W. Calomiris & Gary Gorton, The Origins of Banking Panics: Models, Facts and Bank Regulation, in Financial Markets and Financial Crises (R. Glenn Hubbard ed. 1991).

[17] Gary Gorton, Bank Suspension of Convertibility, 15 J. Monetary Econ. 177 (1985), has argued that these loans should be made by an institution whose liabilities are a circulating medium of exchange.

lem of monitoring bank-manager performance.[18] V. V. Chari and Ravi Jagannathan[19] show that, if individuals observe long lines at a bank, they correctly infer that the bank is about to fail, precipitating a run. Runs can therefore occur even when no one has any adverse information; information is revealed to depositors by the withdrawal decision of other depositors. Bank runs can be prevented by suspension of convertibility of deposits into currency; Chari and Jagannathan do not address the optimality of a government-provided deposit insurance contract. Charles J. Jacklin and Sudipto Bhattacharya[20] distinguish between information-based runs and pure panic runs. They suggest that demand deposit contracts tend to be better for financing low-risk assets, with high-risk projects better financed with an equity contract. Jacklin and Bhattacharya do not address the optimality of a government deposit insurance contract as a mechanism to reach a first-best risk-sharing equilibrium. Finally, in their review of models of banking contracts based on asymmetric information about the value of bank assets, Charles W. Calomiris and Gary Gorton[21] argue that federal deposit insurance of the sort provided in the United States is unlikely to be efficient. They discuss the merits of private insurance arrangements as a "deductible" for government deposit insurance or reliance on central bank discount lending to address systemic risks in bank lending.

To summarize, first, optimal contracting models of financial intermediation are not consistent with geographical limitations on bank branching. Second, while government-provided deposit insurance has been generally used as a mechanism to resolve asymmetric information problems used to motivate bank contracts, it is not a unique mechanism. Moreover, such an approach would have a difficult time explaining why the United States, with its uniquely concentrated banking structure, was the first country to adopt deposit insurance. That is, in addition to addressing the U.S. debate surrounding the passage of the Banking Act of 1933, efficiency explanations for deposit insurance must confront the fact that deposit insurance schemes were adopted much later in Europe and Japan, where they are in general more closely tied to the riskiness of commercial bank portfolios. Bank runs in these countries (which also had less fragmented banking systems than in

[18] See also Charles Calomiris & Charles M. Kahn, The Role of Demandable Debt in Structuring Optimal Banking Arrangements, 81 Am. Econ. Rev. 497 (1991), who motivate demandable debt (coupled with the sequential service constraint) as the optimal deposit contract.

[19] V. V. Chari & Ravi Jagannathan, Banking Panics, Information, and Rational Expectations Equilibrium, 43 J. Fin. 749 (1988).

[20] Charles J. Jacklin & Sudipto Bhattacharya, Distinguishing Panics and Information Based Bank Runs: Welfare and Policy Implications, 96 J. Pol. Econ. 568 (1988).

[21] See Calomiris & Gorton, *supra* note 16.

the United States) were prevented with less explicit deposit insurance contracts.[22]

In what follows, we offer a simple model of monopolistic competition that differentiates between two types of banks: "small" banks and "large" banks. Each small bank operates in a single "market," and small banks collectively benefit from regulatory interventions that restrict large banks from branching into (entering) their market. In this model, without any interference from the political process, large, branching banks would likely be the only survivors with unrestricted branching across markets and no deposit insurance. To permit small banks to competitively exist with large banks, antibranching laws and, ultimately, government-sponsored deposit insurance were legislated against the wishes of the large banks.

III. A Simple Model of Monopolistic Competition

We differentiate among banks according to the number of markets in which they participate. We assume that, historically, there are two types of banks:[23] "small" banks, indexed by $i_s = 1, \ldots, n_s$, and "large" banks, indexed by $i_\ell = 1, \ldots, n_\ell$, with $n_s \gg n_\ell$. Let bank i participate in g_i "markets," where $g \in \{1, g_h\}$. Small banks participate in only one market ($g_{i_s} = 1$) and large banks participate in g_h markets ($g_{i_h} = g_h$).

Let there be $j = 1, \ldots, M$ banking markets. In each market, there are m participating banks. The number of participants defines the degree of competition in the market. In each market, let each bank choose a strategy (for example, let it set a price for banking services). Then the profits of bank i in market j are $\Pi_{i,j}(\mathbf{P}_j; g_i, m)$, where $\mathbf{P}_j = (p_{i,j}, \ldots, p_{m,j})$ is the vector of prices charged by all banks in this market, and g_i is the number of markets in which the bank participates. We have in mind a model of monopolistic competition among banks competing in each market. Therefore, each

[22] Supplementary assessments in the event of insurance fund losses are features of the systems in Belgium, England, France, Holland, and Italy. The systems in France, Italy, Switzerland, and Germany are private, with systemic risk handled as a lender-of-last-resort function of the central bank. Dates for adoption of deposit insurance schemes include Belgium (1985), Britain (1982), France (1980), the Netherlands (1979), Ireland (1989), Italy (1987), Japan (1971), Spain (1977), and Germany (1966); see R. Glenn Hubbard, Money, the Financial System, and the Economy ch. 16 (1997).

Indeed, outside the United States, the prevalence of branch banking coincided with a much lower rate of bank failures than in the United States (for a general review, see Calomiris, *supra* note 3; for an analysis of pre-Depression branch banking in Canada, England, and Australia, see Gaines T. Cartinhour, Branch, Group, and Chain Banking 304–6 (1931); a discussion of Scottish experience can be found in Shirley D. Southworth, Branch Banking in the United States 185–93 (1928)).

[23] That is, the existing industry structure could be due to historical accident or populist political influences, among other things (see, for example, the discussion in Calomiris, *supra* note 3; and Hubbard, *supra* note 22, ch. 14).

bank's profits decrease in the number of competitors in that market. The profits of a small bank are from one market only. The profits per branch of a large bank (that is, that participates in g_h markets) are $\Pi^{\ell}(\mathbf{P}_{g_h}, m) = \sum_{j=1}^{g_h} \Pi_{i,j}(\mathbf{P}_j; g_h, m)/g_h$, where $\mathbf{P} = (\mathbf{P}_1, \ldots, \mathbf{P}_{g_h})$ is the vector of all prices for all markets in which the large bank participates.

To determine the equilibrium price and number of banks in each market, we apply the circular model of differentiated products.[24] Bank borrowers are located uniformly on a unit circle. Banks likewise are located on a circle, along which borrowers travel. Borrowers in market j would like to obtain a loan of one unit and encounter a cost $t_j d^2$ if they travel distance d; borrowers are willing to borrow at the smallest cost net of transportation cost provided that the cost does not exceed the borrower's surplus from the credit transaction. Each bank is permitted to locate in only one location in a given market. Individual banks also incur a fixed cost equal to rK, the opportunity cost of invested equity capital K at the (exogenously given) safe rate of interest. Once a bank locates itself in the market it has a marginal cost c of servicing deposits and making loans. Combining these features yields a profit for bank i of $(p_{i,j} - c)L_{i,j} - rK_{i,j}$ if it enters market j (where $L_{i,j}$ is the demand for loans faced by the bank i), and zero otherwise.

We model competition as a three-stage game: banks enter in the first stage, choose locations in the second stage, and choose prices in the third stage. This game has a free-entry, symmetric equilibrium in locations and prices. Here we restrict the exposition to the pricing and entry stages for symmetric locations for all banks.[25]

Suppose that m_j banks have entered market j. Given their symmetric locations, suppose further that all banks except bank i charge the same price for loans p_j.[26] The ith bank has two proximate competitors (one on either side). Suppose that it chooses a price $p_{i,j}$. A borrower who is located at some distance $d \in (0, 1/m_j)$ from that bank is indifferent between borrowing from bank i and its nearest neighbor if

$$p_{i,j} + t_j d^2 = p_j + t_j(1/m_j - d)^2. \tag{1}$$

As a result, bank i faces a demand for loans $L_{i,j}(p_{i,j}, p_j)$ of

$$L_{i,j}(p_{i,j}, p_j) = 2d = \frac{1}{m_j} + \frac{m_j(p_j - p_{i,j})}{t_j}, \tag{2}$$

and maximizes

[24] See Steven Salop, Monopolistic Competition with Outside Goods, 10 Bell J. Econ. 141 (1979); and the refinement in Nicholas Economides, Symmetric Equilibrium Existence and Optimality in Differentiated Product Markets, 47 J. Econ. Theory 178 (1989).

[25] Economides, *supra* note 24, derives the complete entry-location-price equilibrium.

[26] Note that now p_j is a scalar rather than $\mathbf{P}_j$ the vector of all prices.

$$\max_{p_{i,j}} \left[(p_{i,j} - c) \left(\frac{1}{m_j} + \frac{m_j(p_j - p_{i,j})}{t_j} \right) - rK_{i,j} \right]. \tag{3}$$

Maximizing (3) with respect to $p_{i,j}$, and setting $p_{i,j} = p_j$, the equilibrium price for loans in market j, $p_{i,j}$ is given by

$$p_j = c + t_j/m_j^2. \tag{4}$$

Equilibrium demand for loans is

$$L_{i,j}^* = 1/m_j, \tag{5}$$

and profits are

$$\prod_{i,j}(m_j, K_{i,j}) = t_j/m_j^3 - rK_{i,j}. \tag{6}$$

For a given amount of deposits D, a bank can support a bank loan volume $L = (1 - R)D$, where R is the (assumed constant) fraction of loans held as reserves. Therefore to support loans $L_{i,j}^*$ the bank needs to attract $L_{i,j}^*/(1 - R)$ in deposits. Savers' willingness to supply deposits depends positively on the ratio of capital to assets, $k_{i,j} = K_{i,j}/L_{i,j}$. It also depends positively on g_i, the number of markets in which a bank operates. Essentially, g_i is a valued quality attribute of a bank.

Depositors are, in one sense, informed about the profitability of the bank; they know that, ceteris paribus, the variance of the bank's profit margins is negatively related to sampling from many markets. This is simply the standard risk-pooling argument used to justify portfolio diversification, and applies even to sampling from independently and identically distributed distributions. That is, a large bank's variance of profits will be smaller than that of a unit bank because the sample for the former is of size $g_h > 1$, even if all g_i draws are from the same distribution. A second divergence arises since the distributions from which the large bank draws may be negatively correlated. The variance of the average return in a sample of size N is smaller if the sample is composed of draws of size 1 each from N negatively correlated distributions rather than if the sample is composed of a draw of size N from the same distribution. For these two reasons, large banks have lower variance of profits than small banks, all else being equal.

Therefore, to attract a given volume of deposits (in the absence of deposit insurance), banks that participate in only one market need to hold more capital per dollar of assets[27] k than banks that participate in many markets,

[27] Empirical support for this proposition in the pre-FDIC period can be found in A. D. S. Gillett, Better Credit Facilities for Our Rural Communities, 8 Sound Currency 183 (1901); Peter Temin, The Jacksonian Economy (1969); and Calomiris, *supra* note 3. Sam Peltzman, Capital Investment in Commercial Banking and Its Relationship to Portfolio Regulation, 78 J. Pol. Econ. 1 (1970), provides an early analysis of effects of federal deposit insurance on the level and distribution of bank capital; more recently, see David C. Wheelock & Paul W.

$k_i^s > k_i^\ell$.[28] Hence small banks need to hold more equity capital than large banks (per branch) because they are not as diversified; that is, $K_i^s > K_i^\ell$. Hence, a "large" bank, as long as it is allowed to have branches in more than one market will have higher expected profits, ceteris paribus, than a "small" bank from any particular market in which both participate:

$$\begin{aligned}\Pi^\ell(m) &\equiv \Pi(m, K^\ell) = t/m^3 - rK^\ell > t/m^3 - rK^s \\ &= \Pi(m, K^s) \equiv \Pi^s(m) \Leftrightarrow K^s > K^\ell,\end{aligned} \tag{7}$$

where we have dropped, for simplicity, the subscripts i and j. We consider the equilibria in different regimes with respect to restrictions on branching and the provision of deposit insurance. The free-entry equilibrium number of banks in the different regimes is determined by the zero-profit condition of large banks. Branching restrictions in our model imply reducing the free-entry number of banks in each market to the number of banks set by the zero-profit condition of small banks. Accordingly, we examine the different regimes of branching restrictions and deposit insurance below. Figure 1 presents a graphical depiction of the profit functions of large and small banks in the regimes considered.

Branching Restrictions and No Deposit Insurance. We first consider the case of branching restrictions (indicated by B) and no government-sponsored deposit insurance (indicated by NI). The profits per branch of a large bank are now

$$\Pi^\ell_{\mathrm{B,NI}}(m) \equiv \Pi(m, K^\ell(\mathrm{B, NI})) = t/m^3 - rK^\ell(\mathrm{B, NI}), \tag{8}$$

where $K^\ell(\mathrm{B, NI})$ denotes the required capital for a large bank per market. Similarly, the profits of a small bank are

$$\Pi^s_{\mathrm{B,NI}}(m) \equiv \Pi(m, K^s(\mathrm{B, NI})) = t/m^3 - rK^s(\mathrm{B, NI}). \tag{9}$$

The free-entry equilibrium number of banks, defined by $\Pi^\ell_{\mathrm{B,NI}}(m_1) = 0$, is given by $m_1 = (t/(rK^\ell(\mathrm{B, NI})))^{1/3}$. The corresponding equilibrium price is given by $p = c + t^{1/3}(rK^\ell(\mathrm{B, NI}))^{2/3}$. Thus, the equilibrium number of banks depends positively on borrower transportation costs and negatively on the opportunity cost of holding equity capital for banks. Note that, at this level of competition (with m_1 banks per market), small banks have losses equal to $\Pi^s_{\mathrm{B,NI}}(m_1) = \Pi(m_1, K^s(\mathrm{B, NI})) = r(K^\ell(\mathrm{B, NI}) - K^s(\mathrm{B, NI})) < 0$. This loss is depicted in Figure 1 by the segment CD. Only under the most severe

Wilson, Can Deposit Insurance Increase the Risk of Bank Failure? Some Historical Evidence, 76 Fed. Reserve Bank St. Louis Rev. 57 (1994).

[28] The statement in the text assumes implicitly that the transactions cost of depositors' using the alternative safe asset or of diversifying across unit banks is high.

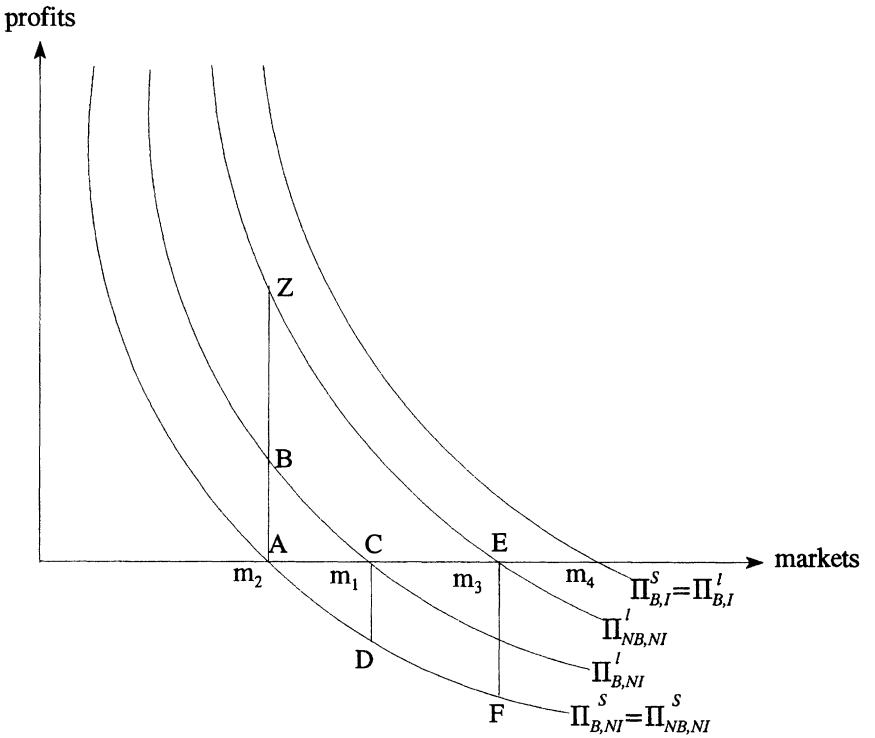

FIGURE 1.—Profit functions of large and small banks, alternative regimes

entry restrictions, under which no branching banks are permitted to enter other markets, could the small banks make zero profits and survive.

Under branching restrictions and no deposit insurance, an equilibrium in which small banks survive with zero profits has $m_2 = (t/(rK^s(\mathrm{B, NI})))^{1/3}$. The corresponding equilibrium price is $p = c + t^{1/3}(rK^s(\mathrm{B, NI}))^{2/3}$. In this equilibrium, large banks reap positive profits equal to $\Pi^\ell_{\mathrm{B,NI}}(m_2) = \Pi(m_2, K^\ell(\mathrm{B, NI})) = r(K^s(\mathrm{B, NI}) - K^\ell(\mathrm{B, NI})) > 0$, which is depicted by the segment *AB* in Figure 1.

No Branching Restrictions and No Deposit Insurance. The removal of branching restrictions enables large banks to enter a greater number of markets. Again, the variance of profits will differ between large and small banks. The removal of branching restrictions (indicated by NB) allows a large bank to reduce further the variance of its profits; as a result, a large bank will be required to hold even less capital relative to assets, namely, $K^\ell(\mathrm{NB, NI}) < K^\ell(\mathrm{B, NI})$. This increases the profits of existing large banks to

$$\Pi^{\ell}_{\mathrm{NB,NI}}(m) \equiv \Pi(m, K^{\ell}(\mathrm{NB, NI})) > \Pi(m, K^{\ell}(\mathrm{B, NI})) \equiv \Pi^{\ell}_{\mathrm{B,NI}}(m). \quad (10)$$

Profits of small banks remain unaffected since their capital levels remain unchanged; that is, $K^{s}(\mathrm{NB, NI}) = K^{s}(\mathrm{B, NI})$, so that

$$\Pi^{s}_{\mathrm{NB,NI}}(m) \equiv \Pi(m, K^{s}(\mathrm{NB, NI})) = \Pi(m, K^{s}(\mathrm{B, NI})) \equiv \Pi^{s}_{\mathrm{B,NI}}(m). \quad (11)$$

In the free-entry equilibrium, the large banks make zero profits; $\Pi^{\ell}_{\mathrm{NB,NI}}(m_3) = 0$. In this case, the higher free-entry equilibrium number of banks and lower price of loans reflect the lower opportunity cost of holding equity capital for large banks operating (that is, branching) in multiple markets; that is, $m_3 = (t/(rK^{\ell}(\mathrm{NB, NI})))^{1/3}$, and $p = c + t^{1/3}(rK^{\ell}(\mathrm{NB, NI}))^{2/3}$. At this level of competition (with m_3 banks per market), the small banks experience losses equal to $\Pi^{s}_{\mathrm{NB,NI}}(m) = \Pi(m_3, K^{s}(\mathrm{NB, NI})) = r(K^{\ell}(\mathrm{NB, NI}) - K^{s}(\mathrm{NB, NI})) < 0$ and therefore do not survive. These losses are depicted by the segment *EF* in Figure 1 and are larger than the losses with branching restrictions; that is, segment *EF* is longer than segment *CD*. For small banks to survive in this regime, the number of banks per market has to be significantly reduced to m_2. In this case, large banks make profits equal to $\Pi^{\ell}_{\mathrm{NB,NI}}(m_2) = \Pi(m_2, K^{\ell}(\mathrm{NB, NI})) = r(K^{s}(\mathrm{NB, NI}) - K^{\ell}(\mathrm{NB, NI})) > 0$. We note that these profits to large banks are greater when there are no branching restrictions as compared to when there are branching restrictions (in the equilibrium where small banks are allowed to survive). In Figure 1, this result is shown by segment *AZ* being longer than segment *AB*.

Branching Restrictions and Deposit Insurance. The introduction of deposit insurance with premiums unrelated to risk (indicated by I) reduces the need for both small and large banks to hold capital.[29] Under complete insurance[30] (that is, of deposits of all sizes), small and large banks alike would hold the same amount of capital per dollar of assets, which we denote as $\underline{k}$. In general, compared to the no-insurance case, we expect both types of banks to hold less capital per branch ($\underline{K}$) and have higher profits; that is,

$$\underline{K}(\mathrm{B, I}) = K^{\ell}(\mathrm{B, I}) < K^{\ell}(\mathrm{B, NI}), \text{ and } \underline{K}(\mathrm{B, I}) = K^{s}(\mathrm{B, I}) < K^{s}(\mathrm{B, NI}),$$

so that

[29] In what follows, we have implicitly assumed that the deposit insurance premiums are zero. In practice, non-risk-adjusted premiums were historically a very small fraction of deposits.

[30] We consider the case of complete insurance only for simplicity of exposition. Federal deposit insurance actually covers deposit insurance only up to a ceiling per account ($2,500 in 1934, and $100,000 currently). To the extent that small unit banks were more likely to have predominantly smaller (and, hence, completely insured) accounts, their reduction in equity capital per dollar of assets would be even greater relative to the reduction in large, branching banks.

$$\Pi^{\ell}_{\mathrm{B,I}}(m) \equiv \Pi(m, \underline{K}(\mathrm{B, I})) > \Pi(m, K^{\ell}(\mathrm{B, NI})) \equiv \Pi^{\ell}_{\mathrm{B,NI}}(m), \quad (12)$$

and

$$\Pi^{s}_{\mathrm{B,I}}(m) \equiv \Pi(m, \underline{K}(\mathrm{B, I})) > \Pi(m, K^{s}(\mathrm{B, NI})) \equiv \Pi^{s}_{\mathrm{B,NI}}(m). \quad (13)$$

The long-run free-entry equilibrium characterized by $\Pi^{\ell}_{\mathrm{B,I}}(m_4) = 0$ results in the equilibrium number of banks in each market being $m_4 = (t/(r\underline{K}(\mathrm{B, I})))^{1/3}$. The corresponding loan price is $p = c + t^{1/3}(r\underline{K}(\mathrm{B, I}))^{2/3}$. In this equilibrium, both small banks and large banks survive, as deposit insurance replaces the need for banks to hold equity capital to satisfy depositors. Accordingly (because depositors would otherwise demand higher levels of capital from the undiversified small bank), the gains to small banks from deposit insurance are much greater than the gains to large banks; that is, the shift from $\Pi^{s}_{\mathrm{NB,NI}}(m_2)$ to $\Pi^{s}_{\mathrm{B,I}}(m_4)$ is greater than the shift from $\Pi^{\ell}_{\mathrm{NB,NI}}(m_3)$ to $\Pi^{\ell}_{\mathrm{B,I}}(m_4)$.

Comparing Branching Restrictions and Deposit Insurance. We now compare the equilibria in the branching-restrictions-and-deposit-insurance regime (B, I) and the no-branching-restrictions-and-no-insurance regime (NB, NI). In the free-entry equilibria, the number of banks per market is greater in the (B, I) regime than in the (NB, NI) regime; that is, $m_3 < m_4$. Similarly, if we compare equilibria in which small banks survive, the number of banks per market is greater in the (B, I) regime; that is, $m_2 < m_4$. For this latter comparison, profits of existing large banks are higher in the (NB, NI) regime than in the (B, I) regime; that is, segment AZ in Figure 1 is greater than zero. These results suggest that deposit insurance and branching restrictions increase the number of banks in each market, while decreasing the profits to existing large banks.

Predictions. In the absence of bank branching restrictions and government-sponsored deposit insurance, the competitive position of small unit banks is severely hampered. On the other hand, with branching restrictions and deposit insurance, unit banks survive. We observe that large banks lose and small banks gain (relative to an equilibrium with no branching restrictions or deposit insurance) from the introduction of federal deposit insurance.[31] Deposit insurance enables small banks to hold less capital and attract deposits when competing with large banks. Branching regulation enables small banks to deter entry by large banks in the market in which the small

[31] Strictly speaking, we show that large banks are not made better off by the introduction of non-risk-priced federal deposit insurance. Small banks make zero economic profits in the equilibria with government interventions. For small banks as a group to "prefer" these equilibria requires some benefits to bankers from ownership or control of small banks, benefits not explicitly incorporated in our examples.

banks participate. Accordingly, the conflicting preferences of the pro-branching, anti-deposit-insurance, well-capitalized large banks and the anti-branching, poorly capitalized, pro-deposit-insurance small banks is reflected in their legislative representatives. Which of these two opposing positions ultimately prevails depends on the relative political influence of the two groups. Given that $n_s \gg n_\ell$, it is likely that small banks obtained branching restrictions and federal deposit insurance in spite of the protests of the large banks. In the next section, we test for whether the poorly capitalized unit banks and better-capitalized branching banks had "fought over" deposit insurance and branching restrictions, and we provide some anecdotal evidence of their preferences.

IV. Empirical Tests for the Political Contest for Deposit Insurance and Branching Restrictions

Before we test the implications of our model for the national debate over branching restrictions and deposit insurance, we begin by describing the eight statewide deposit insurance schemes that were tried before federal deposit insurance was introduced in 1933 and examine the role small banks had in the pressure for deposit insurance in those states. Subsequently, we test whether the preferences of small banks were manifested in the legislative process against branching and for deposit insurance. Finally, we present anecdotal evidence supporting the political hypothesis.

A. *Statewide Deposit Insurance Schemes*

Before its introduction at the federal level, eight states had experimented with the insurance of bank deposits in the early 1900s. We describe their experience with statewide deposit insurance and their total lack of success in protecting depositors over a few years.[32] By 1930, all eight schemes had failed in the wake of large insurance fund deficits.

Oklahoma. The Panic of 1907 created a lot of interest in deposit insurance in Oklahoma.[33] Oklahoma established a deposit guarantee system in 1907 and gave little attention to its design. All deposits were insured, and immediate payment on closure was promised. The state legislation intended that banks insure all bank deposits, but the U.S. attorney general ruled in 1908 that national banks could not join the system. Consequently, between

[32] For more detailed discussions, see Thomas B. Robb, The Guaranty of Bank Deposits (1921); White, The Regulation and Reform of the American Banking System, 1900–1929, *supra* note 8; and Calomiris & White, *supra* note 8.

[33] See Thornton Cooke, The Insurance of Bank Deposits in the West, 1 Q. J. Econ. 85 (1909).

March 1908 and November 1909, the number of state banks rose from 470 to 662, an increase of 40.8 percent, while state bank membership growth nationwide was only 4.9 percent. The collapse of the Columbia Bank with deposits of $2.8 million immediately threatened the state insurance fund which had reserves of only $400,000. A special levy was imposed to pay off the deposits. A number of additional restraints were instituted on member banks and the premiums further increased. Given the large failure of small banks, many of the large banks left the system for national charters. Finally, in March 1923, the fund was suspended when its deficit was between $7 million and $8 million.

Texas. The lessons from Oklahoma were not observed in Texas, though the Texas state legislature did attempt to establish a relationship between a bank's deposits and its capital. The state instituted two insurance funds, the Depositors Guaranty Fund and Depositors Bond Security System. Under the first fund, all banks were required to pay 1 percent of the average checking deposits for the previous year. After this initial payment, the assessment was 0.25 percent of the average deposits. Under the second fund, banks had to file a bond or some other guarantee of indemnity equal to the amount of its capital stock. On failure, the bank was liquidated, and the bond was made payable to the bank's depositors. From its introduction, the first fund was more profitable, and by 1918, 942 banks operated under this plan, while only 41 operated under the Bond Security System plan. In a scenario similar to Oklahoma, the number of state banks increased 17.3 percent between 1909 and 1914 (compared to a national average of 4.9 percent), and the number of national banks fell 3.1 percent. The fall in agricultural prices in the 1920s and the subsequent failure of many small rural banks made many banks leave the fund en masse. By 1926, there were only 75 banks left in the fund, which in turn were subject to a harsh 8.5 percent levy on their capital.[34] The backlash from the experience forced the state legislature to abolish both insurance funds in 1927 when the total deficit was $16 million.

Nebraska. Deposit insurance was passed on March 25, 1909, and was patterned after the Oklahoma system. The insurance was compulsory for all state banks and was sustained by a 1 percent premium assessed against average daily deposits. The larger state banks that opposed this compulsory insurance took out national charters. However, more banks joined the state system during 1911 to 1914, causing an annual increase of 12.6 percent. Because of the significant decline in agricultural prices in the 1920s, many

[34] See Joseph M. Grant & Lawrence L. Crum, The Developments of State-Chartered Banking in Texas (1978).

banks failed, resulting in a deficit of $20 million by 1930, when the deposit insurance scheme was finally repealed.

Mississippi. The state insurance fund in Mississippi, unlike those previously discussed, was created explicitly in response to bank failures. Mississippi profited from the Oklahoma experience and created a bank examiners department which was given a year to isolate the insolvent banks which would not be given any insurance. The problem arose with the determination of which banks to admit and which to liquidate. Many banks were admitted which should have been closed.[35] The program was finally repealed in March 1930, with a deficit of $3 million to $4 million.

Kansas. Kansas was the first state to provide for voluntary state deposit insurance in 1909. A 10 percent capital-to-deposit ratio was established, and strict restrictions were imposed on advertising, inspection of books, and so on. Rather than receiving the full refund of their deposit, depositors held interest-bearing certificates which were redeemed on the bank's liquidation. These restrictions made the state's deposit insurance scheme less attractive for banks. From 1905 to 1909, the number of national banks increased 22 percent, while the number of state banks increased 39 percent. When deposit insurance was passed in 1909, the number of new state banks increased by 96 (from 1908 to 1910), whereas the number of national banks actually fell by three. During the same period, the deposits in the state banks increased by $25.6 million and in the national banks by only $4.7 million,[36] a pattern likely accounted for by the guaranty of deposits scheme by the state. However, the poor performance of the state's economy made the deposit insurance program inoperative in 1926, after which it was finally closed with a deficit of $7 million.

Washington. For the most part, Washington's program mimicked the Kansas deposit insurance program. Totally voluntary, with strict regulations, deposit insurance enabled the state banks' membership to grow at an annual rate of 5.1 percent. Beginning with the failure of the Scandinavian Bank (with deposits of $9 million), many failed banks withdrew their unpaid warrants and the guarantee fund was exhausted by 1921.

South Dakota. South Dakota was influenced by Nebraska and introduced the Depositors Guaranty Fund in March 1915. The depositors of a failed bank were fully protected against failure with stringent criminal provisions for "bank wreckers." In fact, a reward of $300 was offered by the fund for the apprehension and production of any person accused of violating any provisions of this act (South Dakota banking laws). With the de-

[35] Robb, *supra* note 32.

[36] *Id.*

TABLE 1

BANK FAILURES IN THE UNITED STATES: 1864–1933

	Period		
	1864–1920	1921–29	1930–33
Number of state bank failures	2,411	4,645	5,319
Number of national bank failures	584	766	1,385
Amount of deposits in failed state banks ($)*	. . .	1,205,680	3,573,148
Amount of deposits in failed national banks ($)*	. . .	363,414	1,881,116

SOURCE.—Cyril B. Upham & Edwin Lamke, Closed and Distressed Banks: A Study in Public Administration (1934).

* Deposits are in thousands of dollars, and are unavailable for failed banks prior to 1921.

cline in the state's economy in the 1920s, the fund was repealed in 1927 with a deficit of $2 million.

North Dakota. The Deposit Guaranty Fund was introduced in North Dakota in March 1917. Controversy over whether to enact such a program had raged over a period of 30 years, but it was only after the passage of the South Dakota law that deposit insurance was successfully instituted. The law made membership by state banks compulsory and levied an insurance premium of 0.05 percent of deposits. The decline in the state economy in the 1920s led to a deficit of $14 million by 1929, when the fund was finally repealed.

To summarize, state-level experience with bank deposit insurance reflected growth in undercapitalized, state-chartered banks.[37] To put this in broader perspective, Table 1 presents the failure rate of state banks and national banks from 1864 to 1933. We observe that the number of state banks that failed (and the amount of deposits in the state banks) is significantly greater than the number of national banks that failed (and the amount of deposits in the national banks). Thus, preliminary evidence suggests that failures were much more prevalent among the (generally smaller) state banks than among the (generally larger) national banks. Charles W. Calomiris[38] provides evidence that branching banks were less likely to fail, ceteris paribus, than unit banks.

[37] See *id.* Although our model specifies "small" and "large" banks as the two types of competitors, we are unable to get data for the subjective classification of small (unit) and large (branch) banks. Hence, in the empirical tests, we assume that state banks are small banks and national banks are large banks. In 1926, the average size of a national bank was $2,530,000, and the average asset size of a state bank was $1,565,000. Therefore, national banks are much larger on average than state banks.

[38] Calomiris, *supra* note 3.

TABLE 2

CHARACTERISTICS OF STATEWIDE DEPOSIT INSURANCE SCHEMES

				Differences in Growth Rates in the 3 Years before the Law Went into Effect and That Year Plus the Following 2 Years‡			
State	Year Law Went into Effect*	Year of Failure*	Branching Permitted or Not†	Number of State Banks	Number of National Banks	Equity-to-Asset Ratio of State Banks	Equity-to-Asset Ratio of National Banks
Oklahoma	1908	1921	silent	−14.60	14.77	6.20	4.83
Texas	1910	1925	prohibited	−.21	−.79	2.37	.51
Nebraska	1911	1922	silent	−1.70	10.23	.21	.81
Mississippi	1915	1923	prohibited	−4.97	−1.52	.76	−.72
Kansas	1909	1925	silent	−1.20	2.17	−1.14	1.47
Washington	1917	1921	permitted	1.42	−1.77	−.55	−.43
South Dakota	1916	1923	silent	−.52	5.51	1.39	−.04
North Dakota	1917	1921	silent	−2.07	3.26	1.81	.72

* See U.S. House of Representatives, 73d Cong., 78 Cong. Rec. 11223, 11226 (1933); and American Bankers Association, The Guaranty of Bank Deposits (1933).

† See Frederick Bradford, The Legal Status of Branch Banking in the United States (1940).

‡ Growth rates are detrended to remove any countrywide macroeconomic effect by calculating differences between the states with deposit insurance and states without deposit insurance. Data are obtained from the Board of Governors of the Federal Reserve System, All Bank Statistics, 1896–1955 (April 1959).

Table 2 summarizes the characteristics of the eight statewide deposit insurance schemes. We observe that all eight states failed much before the stock market crash of 1929 and the introduction of federal deposit insurance in 1933. In addition, regulations in many of these states were either silent or prohibited branching. The only state that permitted branching was Washington, which had a voluntary deposit insurance scheme. We also calculate the differences in growth rates in the number of state banks in the 3 years before the state's deposit insurance law went into effect and that year plus the following 2 years. We detrended the growth rates to remove any nationwide macroeconomic effect by calculating differences between the states with deposit insurance and the states without deposit insurance. The growth in state banks was substantial in each of these eight states after their deposit insurance law went into effect (except for Washington). Further, the equity-asset ratio of state banks generally decreased after deposit insurance was introduced. This preliminary evidence suggests that deposit insurance allowed state banks to grow substantially while reducing their equity capital.

B. Empirical Tests

Although federal deposit insurance was introduced with the creation of the Federal Deposit Insurance Corporation (FDIC) under the Banking Act of 1933, we examine the congressional vote on the branching provisions of the McFadden Act of 1927 for two reasons: (1) the final version of the Banking Act of 1933 did not have a roll call vote taken in Congress,[39] while the McFadden Act did, allowing us to examine the political interests of various legislators; and (2) branching is a form of self insurance which the large banks advocated—in direct contrast to the federal deposit insurance advocates on behalf of the small banks. Hence, we are able to test the influence of the banking constituencies (namely, the small, nondiversified banks and the large, diversified banks) on Congress.

Effectively, the McFadden Act allowed Federal Reserve member banks to establish branch banks where state law permitted, but such branches were restricted to the city limits of cities in which the parent institutions were located. Concern that the McFadden Act was not a significant step toward the promotion of branch banking was expressed by a number of contemporary chroniclers.[40] An explicit barrier to branching was contained in the

[39] The absence of a roll call vote for deposit insurance in the Banking Act of 1933 was not unique. Calomiris & White, *supra* note 8, at 10–11, note that, "of the 150 bills that were introduced to establish federal deposit insurance between 1886 and 1933, only one bill ever came to a roll call vote (Amended HR 7837 in December 1913)."

[40] See, for example, Charles S. Tippetts, State Banks and the Federal Reserve System (1929); Cartinhour, *supra* note 22; and Frederick Bradford, The Legal Status of Branch Banking in the United States (1940).

act's prohibition of any bank's becoming either a national bank or a Federal Reserve member state bank without giving up branches established after the enactment of the legislation.[41,42]

We examine the vote given by each legislator on the McFadden Act. The congressional vote[43] on the McFadden Act is obtained from the *Journal of the House of Representatives of the First Session of the Sixty-Ninth Congress*. We calculate the proportion of congressmen in a state who voted yes (PROP) for the McFadden Act. If a representative voted neither yes nor no on the McFadden Act, we excluded him or her from the total number of representatives in the state. We include the proportion of banks that are operating branches in each state (BR). We calculate the proportion of banks that are operating branches as of December 1926 from the *Federal Reserve Bulletin* (May 1927). The bank equity-asset ratios are obtained from *All Bank Statistics* (1896–1955), Board of Governors of the Federal Reserve System (April 1959), and are for the year 1926. In order to ensure that the vote on the McFadden Act was not strictly due to congressional voting according to party affiliations, we include the number of representatives who are Republicans in each state as a fraction of the total number of representatives who voted in each state (REP). The party affiliation for each representative is obtained from the *Biographical Directory of the U.S. Congress, 1774–1989,* Bicentennial edition. Table 3 presents descriptive statistics for the different variables.

The results of the regression of the proportion of congressmen in a state who voted for branching (PROP) is given in Table 4. Given that the proportion of representatives in a state who voted for branching (PROP) is bounded between zero and unity, we use the Tobit estimation technique. For each of the three specifications estimated we also present the marginal coefficients associated with each regressor.[44]

Accordingly, we now focus on the influence of state banking structure on the vote for branching. The monopolistic competition model in Section III above suggests that deposit insurance enhances the ability of unit banks

[41] The prediction that the act would not promote branching appears to have been corroborated by experience: from February 25, 1927, to December 1930, the rate of expansion of branches did not increase; see Cartinhour, *supra* note 22.

[42] The McFadden Act did not disallow chain banking, but such networks do not seem to have replicated full branching systems. Indeed, in the late 1920s, chain banks were predominantly located in states with fairly liberal branching policy (*id.* ch. 8). One check on chain expansion after the act's passage appears to have been concern over congressional reaction (*id.* ch. 7).

[43] The Senate did not have a roll call vote taken. In the House of Representatives, the vote was 293 yeas and 90 nays.

[44] For more details on this censored regression technique, see William H. Greene, Econometric Analysis ch. 22 (1990).

TABLE 3

DESCRIPTIVE STATISTICS OF THE VARIABLES USED IN THE TOBIT ESTIMATION

Variables	Mean	SD
Average ratio of equity to assets for state-chartered banks in each state (SEQASS)*	.131	.030
Average ratio of equity to assets for nationally-chartered banks in each state (NEQASS)*	.142	.031
Dummy equal to unity for states that had state-provided deposit insurance (I)†	.167	.377
Fraction of banks operating branches in each state (BR)‡	.048	.079
Proportion of Republicans among congressmen who voted in each state (REP)§	.596	.411

* Equity-to-asset ratios are calculated as of December 1926 from the Board of Governors of the Federal Reserve System, All Bank Statistics, 1896–1955 (April 1959).

† These are the eight states described in Section IV*A* of this article.

‡ The proportion of banks operating branches are calculated as of December 1926 from the Federal Reserve Bulletin (May 1927).

§ Party affiliation for each representative is obtained from the Biographical Dictionary of the U.S. Congress, 1774–1989, Bicentennial ed.

to attract deposits without holding higher levels of capital. In addition, as we showed in Section III, multiunit banks that are better capitalized would prefer to branch into different markets than to lobby for deposit insurance. Consistent with these predictions, we find evidence that representatives from states with poorly capitalized state-chartered banks (SEQASS) voted against branching (that is, for McFadden). The opposite seems to be the case in this specification for well-capitalized nationally chartered banks.[45] When we introduced a dummy variable (I) for whether a state had experimented with statewide deposit insurance before, none of our results changed significantly. The estimated coefficient for this variable was found to be negative and insignificantly related to the congressional vote, providing only weak evidence that states that had tried statewide deposit insurance

[45] Although the coefficient of NEQASS is statistically significant in some specifications, these results are driven by the observations for the two states of Connecticut and Rhode Island. Dropping these states from our sample renders the estimated coefficient on NEQASS statistically insignificant. No such outlier problems are encountered in the use of SEQASS, allowing us to make a stronger interpretation of SEQASS.

TABLE 4

TOBIT ESTIMATES OF THE CONGRESSIONAL VOTE ON THE MCFADDEN ACT

VARIABLES	ESTIMATED COEFFICIENTS FOR MODELS					
	(1)		(2)		(3)	
Constant	1.284*		1.433*		.482	
	(2.726)		(2.858)		(.965)	
Average ratio of equity to assets for state-chartered banks in each state (SEQASS)	−12.462*	−11.843*	−12.391*	−11.795*	−7.518**	−7.368**
	(−3.064)	(−3.088)	(−3.077)	(−3.101)	(−2.133)	(−2.137)
Average ratio of equity to assets for nationally chartered banks in each state (NEQASS)	10.443**	9.925**	9.434**	8.980**	7.510***	7.360***
	(2.294)	(2.299)	(2.071)	(2.075)	(1.838)	(1.839)
Dummy equal to unity for states that had state-provided deposit insurance (I)	. . .	. . .	−.202	−.193	−.087	−.085
			(−.854)	(−.855)	(−.425)	(−.425)
Fraction of banks operating branches in each state (BR)	. . .	. . .	. . .	. . .	−.822	−.806
					(−.730)	(−.729)
Proportion of Republicans among congressmen who voted in each state (REP)	. . .	. . .	. . .	. . .	.814*	.798*
					(3.854)	(3.884)
Log likelihood	−36.589		−36.222		−28.312	
Wald statistic		9.717		10.408		22.900

NOTE.—In each specification, the first set of numbers are the estimated coefficients of the Tobit model, and the second set of numbers are the implied marginal coefficients. *t*-statistics are in parentheses and are based on two-tailed tests.

* Statistically significant at the 0.01 level.

** Statistically significant at the 0.05 level.

*** Statistically significant at the 0.10 level.

before voted significantly for branching (against McFadden). The coefficient on the branching variable was negative (though statistically insignificant), suggesting that states with proportionately more branch banks were more likely to have more support for branching in the state's congressional delegation.[46] The estimated coefficient on REP is statistically significant, suggesting that some of the vote was clustered along party lines. However, the coefficient on SEQASS still has a negative sign and remains statistically significant. Therefore, consistent with the political hypothesis, we find a state's representatives were more likely to be against branching the higher the average state banks equity to capital. None of our results change significantly when we estimate the marginal coefficients. (See Table 5.)

Although the political hypothesis is strongly and more directly confirmed by examining the congressional voting record, we also examine whether states dominated by well-capitalized large banks interested in branching were against any form of state-provided deposit insurance. This test is in the spirit of Eugene N. White,[47] and it allows us to determine whether support for state-provided deposit insurance (as differentiated from federal deposit insurance instituted later) came from small, poorly capitalized state banks. Specifically, we estimate a logistic model, using state-level data, with I given the value of unity for the eight states listed above and zero for the rest of the states. The results of the logistic regression are given in Table 6.

We include the following independent variables in the estimation of the logistic model and generally use data for 1908 to be consistent with White. To develop a proxy for each state's branching laws, we would have preferred to include the proportion of banks that are operating branches in each state, but such data are unavailable pre-1915 (given that the *Federal Reserve Bulletin,* in which these data are subsequently reported, began publication in 1915). Consequently, we create two dummy variables for a state's branching regulation from Frederick Bradford.[48] Specifically, BR1 assumes a value of unity if a state permitted branching in 1910, and BR2 assumes a value of unity if a state prohibited branching. When the state laws are silent

[46] We also created a dummy variable for state branching regulation in 1924 (from Bradford, *supra* note 40) but found that none of our results changed significantly. The lack of significance of the branching variable might be attributed to the fact that many states with permissive branching laws still had banks that had not branched by 1926. Hence, the proportion of branching banks in these states is still low. The dummy variable proxy for branching also includes states which remained silent on the branching issue. Accordingly, our result that BR has the right sign but is insignificant is not necessarily surprising.

[47] White, State-Sponsored Insurance of Bank Deposits in the United States, 1907–1929, *supra* note 8.

[48] Bradford, *supra* note 40.

TABLE 5

DESCRIPTIVE STATISTICS OF THE VARIABLES USED IN THE LOGISTIC REGRESSION ESTIMATES

Variables	Mean	SD
Dummy equal to unity for states that permit branching (BR1)*	.250	.438
Dummy equal to unity for states that prohibit branching (BR2)*	.188	.395
Average asset size for state-chartered banks in each state (SASS)†	714.80	1,249.00
Average asset size for nationally chartered banks in each state (NASS)†	1,032.40	818.01
Reserve requirements for nonreserve city banks in each state (RES)‡	13.229	7.473
Fraction of rural to total population in each state (RURAL)§	.624	.209
Average asset size of failed state-chartered banks to average asset size of all banks in each state (FAIL)‖	.001	.003
Average ratio of equity to assets for state-chartered banks in each state (SEQASS)†	.226	.064
Average ratio of equity to assets for nationally chartered banks in each state (NEQASS)†	.233	.050

* Dummy variables are created using information from Frederick Bradford, The Legal Status of Branch Banking in the United States (1940).

† Variables are as of 1908 and are from the Board of Governors of the Federal Reserve System, All Bank Statistics, 1896–1955 (April 1959).

‡ See Samuel Welldon, Digest of State Banking Statutes (1910).

§ Estimates of rural population and total population in each state for 1920 are from U.S. Department of Commerce, Bureau of Census, Historical Statistics of the United States, Colonial Times to 1970 (1975).

‖ These are calculated for the period 1903–9, except for states adopting deposit insurance after 1909, in which case the failure rate is the 7-year period prior to the passage of their laws. Data are from the Comptroller of the Currency, Annual Reports (various years).

on branching, both BR1 and BR2 are set to zero. We also include the average equity-asset ratio of a state bank (SEQASS) and the average equity-asset ratio of a national bank (NEQASS) to examine whether poorly capitalized state and/or national banks pushed for statewide deposit insurance. Alternatively, we include the average assets of a state bank (SASS) and the average assets of a national bank (NASS). The bank equity-asset ratios and asset sizes are obtained from *All Bank Statistics* (1896–1955), Board of Governors of the Federal Reserve System (April 1959), and are for the year 1908. As in White, we create three additional variables. The first is the reserve requirement for nonreserve city banks (RES) and is obtained from Samuel Welldon.[49] For the second, we obtain the 1920 estimates of rural

[49] We compared Bradford, *id.,* with Samuel Welldon, Digest of State Banking Statutes (1910), for any differences in each state's branching regulation and found none. Since White,

population and of total population in each state from the *Historical Statistics of the United States Colonial Times to 1970,* U.S. Department of Commerce, Bureau of the Census (1975). Using these data we construct a variable RURAL to capture the fraction of rural to total population in each state. Finally, we construct the third variable, FAIL, defined as the average asset size of failed state-chartered banks to average asset size of all banks for the period 1903 to 1909. For states adopting deposit insurance later, the failure rate was for a 7-year period prior to the passage of their laws. These data are obtained from the *Annual Report of the Comptroller of the Currency,* various years.

White uses two specifications. In the first, he includes as regressors the average asset size of state-chartered banks (SASS) in the state, and the average asset size of nationally chartered banks (NASS). We reestimate his regression and include the two branching variables BR1 and BR2.[50] As did White, we find a negative sign on SASS and NASS, although we find SASS to be statistically significant at the 10 percent level, and he finds it to be statistically insignificant. In our second specification, we add the average equity-asset ratio of a state-chartered bank (SEQASS) in a state, and the average equity-asset ratio of a nationally chartered bank (NEQASS) in a state, to the previous specification. We find a negative and statistically significant relationship with SEQASS, suggesting states with poorly capitalized, state-chartered banks were more likely to have experimented with statewide deposit insurance. Finally, we replicate White's second specification and find that RURAL and SEQASS are negative and statistically significant at the 10 percent level. We observe that all three specifications have regressors that are barely significant; when we estimate the marginal coefficients associated with each regressor,[51] none is statistically significant. White also finds no variable to be statistically significant at the 10 percent level (see his table I), even though he does not estimate the marginal coefficients. Accordingly, both studies find consistent results, with none of the independent variables showing strong evidence in differentiating between states that tried deposit insurance and states that did not.

C. *The Political Contest for Federal Deposit Insurance*

As we cannot examine the roll call vote for the introduction of federal deposit insurance, we present anecdotal evidence that describes the prefer-

State-Sponsored Insurance of Bank Deposits in the United States, 1907–1929, *supra* note 8, used Welldon, our study and White's study use consistent data.

[50] None of our results changes substantially if we exclude the branching variables.

[51] For further detail on calculating the marginal coefficients, see Greene, *supra* note 44, ch. 21.

TABLE 6

LOGISTIC REGRESSION ESTIMATES OF THE STATEWIDE DEPOSIT INSURANCE SCHEMES

VARIABLES	ESTIMATED COEFFICIENTS FOR MODELS					
	(1)		(2)		(3)	
Constant	2.040	.37E−4	6.904	.13E−4	−7.967**	−.335
	(1.478)	(.200)	(1.542)	(.173)	(−2.115)	(−1.441)
Dummy equal to unity for states that permit branching (BR1)	.956	.18E−4	2.378	.44E−5	.110	.46E−2
	(.644)	(.187)	(1.168)	(.175)	(.074)	(.075)
Dummy equal to unity for states that prohibit branching (BR2)	1.847	.34E−4	3.100	.57E−5	1.718	.072
	(1.211)	(.186)	(1.608)	(.170)	(1.274)	(1.000)
Average asset size of state-chartered banks (SASS)	−.018***	−.34E−6	−.023***	−.42E−7	. . .	. . .
	(−1.738)	(−.204)	(−1.886)	(−.179)		
Average asset size of nationally chartered banks (NASS)	−.0001	−.23E−8	−.001	−.23E−8	. . .	. . .
	(−.062)	(−.052)	(−.378)	(−.141)		
Reserve requirements for nonreserve city banks (RES)	. . .	. . .	. . .	. . .	.150	.63E−2
					(1.585)	(1.172)
Rural to total state population (RURAL)	. . .	. . .	. . .	. . .	11.927**	.502
					(2.051)	(1.550)
Average asset size of failed state-chartered banks to average asset size of all banks (FAIL)	. . .	. . .	. . .	. . .	−164.460	−6.925
					(−.687)	(−.639)
Equity to assets for state-chartered banks (SEQASS)	. . .	. . .	−22.989***	−.43E−4	−23.078***	−.971
			(−1.701)	(−.172)	(−1.691)	(−1.099)
Equity to assets for nationally chartered banks (NEQASS)	. . .	. . .	7.462	.14E−4	1.121	.047
			(.295)	(.154)	(.063)	(.063)
χ^2	17.080*		19.628**		14.523**	

NOTE.—In each specification, the first set of numbers are the estimated coefficients of the logistic regression, and the second set of numbers are the implied marginal coefficients. *t*-statistics are in parentheses and are based on two-tailed tests.

* Statistically significant at the 0.01 level.

** Statistically significant at the 0.05 level.

*** Statistically significant at the 0.10 level.

ences of the small and large banks for federal deposit insurance and branching restrictions, as well as the debate that occurred when the laws were initially legislated.[52] Although our description is necessarily impressionistic, we believe that it captures the battle between the large banks and small banks over branching restrictions and deposit insurance.

The notion that the inclusion of deposit insurance in the Banking Act of 1933 reflected political rather than efficiency considerations is consistent with the historical record. Senator Carter Glass and the Banking Committee were initially opposed to deposit insurance. Relying heavily on the advice of Columbia professor Parker Willis, Senator Glass favored liberalized branching restrictions, higher reserve requirements, and an effective lender of last resort.[53] The lobbying pressure for deposit insurance came from small banks. Richard H. K. Vietor[54] suggests that the prohibition of interest payments on demand deposits, a last minute addition to the bill, reflected a quid pro quo to large, well-capitalized banks who stood to benefit little from a deposit insurance scheme as opposed to nationwide branching legislation.

Our approach suggests that the motives for national deposit insurance under the Banking Act of 1933 reflect the political economy of banking in the United States. An "economic efficiency" interpretation—that federal deposit insurance was a creative new scheme prompted by the banking crisis in the early 1930s and was devised by the Roosevelt administration with the support of the Congress to protect small depositors against bank failures—is not supported by historical evidence.[55] First, deposit insurance was not a creative new scheme, having been unsuccessfully tried in eight state experiments in the early 1900s. Second, it was not part of the original New Deal reforms. In fact, Senator Glass, one of the primary sponsors of the Banking Act of 1933, stated, "I think I violate no confidence when I say that the President who, at the beginning, was very much opposed to any

[52] Mark D. Flood, The Great Deposit Insurance Debate, 74 Fed. Reserve Bank St. Louis Rev. 51 (1992).

[53] See H. Parker Willis & John M. Chapman, The Banking Situation (1934).

[54] See Richard H. Vietor, Regulation-Defined Financial Markets: Fragmentation and Integration in Financial Services, in Wall Street and Regulation (Samuel L. Hayes III ed. 1987).

[55] Our analysis has not addressed the hypothesis that the aid to small unit banks given by non-risk-priced federal deposit insurance reflected a general desire in the political process to preserve small banks (as has been argued for the case of "profamily-farm" aspects of U.S. agricultural policy). While not implausible a priori (given that the populist mistrust of concentrated banking interests is a long-standing feature in the debate over U.S. banking regulation), we could find no evidence of this justification for the introduction of federal deposit insurance to benefit small banks in the historical record. At the same time, we found numerous comments suggesting the small bank versus large bank contest over the introduction of deposit insurance.

insurance of bank deposits at all, very earnestly advocated that provision of the bill."[56]

The impetus for federal deposit insurance came from certain members of Congress concerned about the continued viability of small unit banks. The decline in agricultural prices in the 1920s and the inability of nondiversified unit banks to compete with the larger branching banks precipitated a crisis. Branching by larger banks and chain bank networks provided a serious threat to small unit banks. Legislative constituencies built up in Congress both for more branching privileges by the larger national banks and for restrictive branching generally supported by the unit banks. When the Federal Reserve surveyed state legislation in 1934, 11 states were found to allow statewide branching with nine more permitting some form of limited branching. In 1909, California had passed a branching law that encouraged Amodio P. Giannini to build the Bank of Italy (later known as the Bank of America) into the largest West Coast bank.

The 1920s saw a spurt in branch banking. By 1925, 720 banks were operating 2,525 branches that accounted for 35.2 percent of all commercial bank loans and investments. Sensing this threat, small unit banks pushed a resolution at the annual convention of the American Bankers Association, which read: "We regard branch banking or the establishment of additional offices by banks as detrimental to the best interests of the people of the United States. Branch banking is contrary to public policy, violates the basic principles of our government and concentrates the credits of the Nation and the power of money in the hands of a few."[57] Nonetheless, branch banking faced a favorable climate. With less restrictive branching laws prevalent from 1925 to 1930, the percentage of loans and investments in branching banks rose from 35.2 percent to 45.5 percent. The large number of bank failures in the latter half of the 1920s and the early 1930s increased the desire of unit banks to protect themselves from competition from larger, branching banks.

The importance of deposit insurance as a bulwark of the unit banking system was reflected in congressional debates. In opposition to the bill for deposit insurance, the comptroller of the currency, John Pole, said, "There is only one sound remedy for the country bank situation and that is a system of branch banking. . . . Since by last report and recommendations to Congress on the small unit bank situation . . . there have been 4,000 additional small bank failures. . . . While, therefore, I am in agreement with the ultimate purpose of the bill, namely, greater safety to the depositor, the method

[56] U.S. Senate, 78 Cong. Rec. 3728 (May 19, 1933).

[57] See Gerald C. Fisher, American Banking Structure 45 (1968).

proposed by the bill and the principles which I advocate stand at opposite poles. A general guaranty of bank deposits is the very antithesis of branch banking.''[58]

When the original bank reform bill was introduced in Congress, it did not contain a provision for federal deposit insurance. In trying to obtain more branching privileges and other provisions such as the separation of commercial and investment banking, Senator Glass allowed deposit insurance advocates to introduce the guarantee of deposit into his bill. Glass states in the *Congressional Record* that ''[t]he executive authorities at the outset were all thoroughly opposed to the insurance of bank deposits. I may say also that the majority of the subcommittee of the Committee on Banking and Currency . . . were utterly opposed to the insurance of bank deposits. But as sensible men, we realized that it was a problem from which we could not escape.''[59] Realizing that the banking bill might not be passed, the pro-branching constituency allowed the bill to carry deposit insurance. On April 4, 1933, deposit insurance was introduced in the banking proposal before Congress.[60] To keep this timing in perspective, note that the Banking Act was finally passed on June 16, 1933.

At the time, Congress was not ignorant of potential moral hazard problems in federal deposit insurance. Both members of Congress and bankers knew that non-risk-based deposit insurance premiums implied transfers across banks. In fact, they clearly understood that federal deposit insurance could encourage excessive risk-taking and dissuade prudent bank management. As Representative Goldsborough states in the *Congressional Record,* ''My doubts go to method rather than to principle. I have never understood why it is impossible or even unwise to extend the insurance principle to the insuring of deposits. . . . Personally, I should have preferred that it be done by way of a mutual insurance system fostered by the Federal Government, but if the method here proposed can succeed, I shall rejoice.''[61] This sentiment was shared by others. Senator King put it more bluntly: ''It seems to me that the strong banks, the sound banks, are to carry the weak banks.''[62] Representative Steagall stated the modern economic viewpoint that ''bankers should insure their own deposits. They should apply to their deposits the same principles of insurance that they apply to their employees and to their customers and every citizen who offers to pledge his property as secu-

[58] U.S. House of Representatives, Report on the Hearings before the Subcommittee of the Committee on Banking and Currency 7 (March 14, 1932).

[59] U.S. Senate, 78 Cong. Rec. 5861–62 (June 13, 1933).

[60] See Deposit Insurance Added to Bank Bill, N.Y. Times, April 5, 1933, at 281–82.

[61] U.S. House of Representatives, 78 Cong. Rec. 5896 (June 13, 1933).

[62] U.S. Senate, 78 Cong. Rec. 3728 (May 19, 1933).

rity."[63] To summarize, while potential moral hazard problems in federal deposit insurance were well understood by the politicians, the program was nonetheless legislated to protect the small banks.

Even after the passage of the bill, the probranching large bank constituency kept fighting against deposit insurance. On June 16, 1933, Francis H. Sisson, president of the American Bankers Association, wired his member banks to urge Roosevelt into vetoing the newly legislated act. The wire read:

> The American Bankers Association fights to the last ditch deposit guarantee provisions of Glass-Steagall Bill as unsound, unscientific, unjust and dangerous. Overwhelmingly, opinion of experienced bankers is emphatically opposed to deposit guarantee which compels strong and well-managed banks to pay losses of the weak. . . . This legislation . . . has not had approval of the Federal Reserve Board, the Treasury, nor sympathetic cooperation of the President. . . . The guarantee of bank deposits has been tried in a number of states and resulted invariably in confusion and disaster . . . and would drive the stronger banks from the Federal Reserve System. These strong banks should not be assessed to pay a premium for mismanagement.[64]

The president signed the Banking Act of 1933 on June 16, with the Temporary Deposit Fund proposed by Senator Vandenberg (with 100 percent coverage up to $2,500 for each depositor).[65]

Our analysis is very much in the spirit of contemporary models of the political economy of regulation. Calomiris and White offer a somewhat different view of the debate over federal deposit insurance, emphasizing the role of "political entrepreneurship" on the part of Representative Steagall of Alabama and others.[66] Consistent with our interpretation, Calomiris and White observe that "a key factor in the passage of federal deposit insurance was the discrediting of large-scale banking by the advocates of deposit insurance"; "[Senator Huey] Long and Steagall extolled deposit insurance as a means of survival for the small banks and the dual banking system"; and "small, rural banks . . . were clear winners [as a result of federal deposit insurance]." Nevertheless, they point to the fact that federal deposit insurance was instituted following the wave of bank failures in the early 1930s as confirming that Congress (and Representative Steagall) responded to

[63] U.S. House of Representatives, 78 Cong. Rec. 3838 (May 20, 1933).

[64] Wires Banks to Urge Veto Glass Bill, N.Y. Times, June 16, 1933, at 14.

[65] The first temporary system was extended to July 1, 1935, then to August 31, 1935. The Banking Act of 1935 institutionalized federal deposit insurance and created the FDIC.

[66] Calomiris & White, *supra* note 8, following quotes at 147, 174, 176.

constituent pressure (that is, to protect depositors, not small banks). In their hypothesis, they cite arguments from William Keeton that small banks did not lobby aggressively for deposit insurance in the early 1930s.[67]

The Calomiris-White story is potentially significant for explaining the timing of the introduction of federal deposit insurance, which we view as a complement to our study which emphasizes the intraindustry battle over bank regulation. Their story does raise some questions, however. First, it is difficult to falsify a hypothesis of political entrepreneurship because all legislation must be introduced and supported by representatives. Second, we draw a different interpretation of Keeton's evidence.[68] Third, the troubled condition of many failed banks in the early 1930s reflected poor diversification which itself could be explained in part by the political economy of branching restrictions. Fourth, "constituent pressure" is likely a better explanation of a onetime bailout—which did not occur—than a long-run insurance program (see also the quote by William Seidman at the beginning of this article about the continued debate on the role of small banks). Finally, at least some of the "political entrepreneurs" appeared to have small banks in mind in their support of federal deposit insurance. Senator Vandenberg, the author of the temporary insurance which became law, commented: "If there is one purpose more than another which is inherent in the amendment which is now at stake in this conference, it is the *purpose to*

[67] William Keeton, Small and Large Bank Views of Deposit Insurance: Today vs. the 1930s, 75 Fed. Reserve Bank Kansas City Econ. Rev. 23 (1990).

[68] Based on anecdotal evidence, Keeton, *id.,* suggests that small banks were originally against federally sponsored deposit insurance in the 1930s, as opposed to strongly supporting it today. He offers three reasons for the initial lack of support by small banks: first, the original deposit insurance legislation required most small banks (who were largely state-chartered banks) to join the Federal Reserve System, causing fear that they would not meet the Fed's financial requirements. Second, deposit insurance was to be self-financing, with healthy banks paying for failed banks. Third, bankers are essentially "conservative people," who do not like change. The first two arguments are internally inconsistent. Given that the failure rates for state-chartered banks were much higher than the larger, nationally chartered banks during the 1920s (see Bank Suspensions, 1921–1936, 23 Fed. Reserve Bull. table 7 (1937); and Federal Reserve Committee on Branch, Group, and Chain Banking, Bank Suspensions in the United States, 1892–1931 (1933)), it was in the self-interest of state-chartered small banks to be subsidized by healthier national banks—even if the deposit insurance system has to be self-financed by banks (as long as premiums are not risk-based). The argument that state-provided deposit insurance offered the small bank insurance without the strict requirements of the Fed (whereas the large bank would get federally provided insurance, being part of the Fed system) is also misleading since the all statewide deposit insurance schemes had failed prior to national deposit insurance. That is, the two schemes are not comparable "safety nets." Accordingly, we suggest that federal legislation providing deposit insurance in the 1930s was in the interest of the small, undiversified, state-chartered banks (and against the wishes of larger, better-diversified, nationally chartered banks); see also the anecdotal evidence presented in Vietor, *supra* note 54.

protect the smaller banking institutions, and to make the reopening of closed banks possible as speedily and as safely as it can be done'' (emphasis added).[69]

V. Conclusions

This article suggests that bank branching and government-sponsored deposit insurance were introduced by Congress for political reasons—to benefit small unit banks that would not be able to compete with the large, branching banks if nonrestrictive branching legislation had been allowed. Against the (initial) wishes of the Roosevelt administration, banking regulators, and the large bank constituency (the probranching constituency of Congress), federal deposit insurance was introduced in 1933—although statewide deposit insurance had failed in all eight states in which such insurance had been tried.

We offer a simple model of monopolistic competition that differentiates between two types of banks, ''small'' banks and ''large'' banks. Each small bank operates in a single market and benefits from legislative or regulatory interventions that restrict large banks from entering its market. Small banks gain relative to large banks from the introduction of federal deposit insurance. Consequently, in this model, without any interference from the political process, large banks would be the ''winners'' with unrestricted branching across markets and no deposit insurance. The legislated antibranching laws and federal deposit insurance were in the interest of small banks. We examine the voting record of Congress and find evidence that the introduction of federal branching restrictions was designed to maintain the viability of poorly capitalized small banks and against the interests of large banks. Anecdotal evidence on the inclusion of federal deposit insurance in the Banking Act of 1933 also lends support to the political hypothesis.

A promising topic for future research is to examine the continued influence of the small banks (on Congress) in helping to further geographical entry barriers and deposit insurance. Recently available data on lobbying expenditures before recent reforms of branching restrictions and deposit insurance might lead to more direct tests of their influence on bank legislation.

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[69] U.S. House of Representatives, 78 Cong. Rec. 5256 (June 13, 1933).

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