Mutual Banks and Stock Banks.*

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1 Introduction.

Mutual associations are something of an oddity in a capitalist economy, but they have long been significant in banking in the United States.[1] Mutual savings banks, credit unions, and most savings and loans are mutual associations, while national banks, state banks, trust companies and some savings and loans are stock companies.[2] I will refer to the two categories as mutual banks and stock banks.

The difference between mutual and stock banks lies in who controls the bank and receives the profits. A stock company is owned by stockholders, who vote for the firm's managers, distribute its profits, and are free to sell their privileges. Depositors are merely customers. A mutual association is "owned" by its depositors, but not controlled by them. As I discuss below, the managers are effectively self-controlling, limited only by government intervention. In *savings and loan associations* (hereafter called *S&L's*) and *credit unions*, each depositor has the rarely-exercised right to vote for the managers of the bank. In *mutual savings banks*, authorized in only seventeen states (including the New England states and New York), the depositors lack even the fiction of control, since they lack the right to vote.[3] Depending on state law, the board of trustees that controls the firm is either self-perpetuating or elected by a self-perpetuating "board of corporators." The trustees' control is not absolute, since blatant harm to the depositors' interests could provoke legal action, but depositors cannot otherwise influence the firm's policy except by withdrawing their funds.

Since the managers of a mutual cannot be punished by stockholders, they are unlikely to minimize the cost of banking services. Previous studies have noted this, and used favorable government regulation to explain the continued existence of mutuals.[4] The more difficult question is why mutuals flourished before the New Deal, and that is the question addressed in this paper.

We shall see that the mutual bank can be explained as a self-enforcing contract in which managers provide low-risk banking services to rational but ill-informed savers who are risk-averse and unprotected by deposit insurance. A stock bank could provide banking services at lower cost, but could not guarantee the asset portfolio's safety. If depositors are unable or unwilling to monitor the portfolio, they prefer a mutual bank because the managers have stronger incentives to choose a safe portfolio: the upside gains of the mutual managers are limited by legal constraints on their compensation,

while if the banks fail, they loses a lifetime of high income. The very lack of cost-minimization by mutual managers makes them choose a safer portfolio.

Section 2 explains why we would not expect mutuals to minimize costs. Section 3 sets out a formal model in which depositors prefer the mutual bank. Section 4 discusses alternative explanations for mutual banks, and Section 5 discusses the historical evidence.

2 The Disadvantages of Mutual Associations.

Mutual and stock companies differ in the incentives given to the three groups— owners, customers, and managers— whose interlocking contracts make up the firm. Economists studying these contracts have concentrated on managers' incentives in stock companies, which are highly efficient.[5] The stockholders hire managers to sell financial services to the depositors. If a depositor does not like the bank's services or prices, he switches to a competitor. If a manager is less than competent, the stockholders lower his salary or replace him. If ownership is too diffused for individual stockholders to be willing to expend effort to discipline the manager, one stockholder can buy enough shares from the others to make the disciplining profitable to himself. The stockholders expect zero profits, adjusting for risk, but if the bank earns more or less, they claim the residual and consume or save it as they please. Being residual claimants gives them incentive to ensure that the firm minimizes its costs and produces the efficient output.

While the depositors of a mutual association may be legally termed "shareholders", a mutual association effectively has no stockholders, because only the managers exert significant influence over the association's policies. The managers sell financial services to the depositors. Depositors can switch to another bank, but they cannot discipline the managers, and they are not residual claimants in the usual sense, because the bank's earnings may be either greater or smaller than the interest payments promised to them.

The mutual manager's incentives are different from those of his stock bank counterpart, for he collects not only his marginal product, but also a greater or lesser amount of "perks", the total compensation depending on the bank's resources and the threat of legal action. The manager must pay the depositors the promised interest, but he is otherwise free to operate the firm as he pleases. Previous studies such as those of Nicols and O'Hara have noted

this and investigated the differences in the behavior of managers of mutuals and stocks.[6] The problem is similar to that of managerial control in non-profit firms, which has been analyzed by Easley & O'Hara and Hansmann.[7]

The mutual manager does not control the firm simply because ownership is diffuse, for this is also true of most stock companies.[8] What is more important is that no individual can concentrate ownership of a mutual by purchasing the diffused shares. The manager is freed not by the absence of concentration, but by the absence of the threat of concentration. Nor is the proxy fight, a second means of concentrating the power of diffuse stockholders, available to the mutual depositors. In a stock company the main obstacle to a proxy fight is the lack of incentive for any one to expend the resources to organize it, but in mutual banks the problem is even more severe. The depositors of a mutual savings bank lack a legal vote, while uncooperative depositors of an S&L can be expelled by the managers, a practice tested in 1958, when a shareholder who requested a list of other shareholders shortly before the annual meeting was refused the list and refunded his deposit. He went to court, and lost.[9] Such drastic action by managers is rare, because shareholders rarely try to use their votes. The president of one San Diego S&L admitted that no one had turned up at annual meetings in thirty years,[10] and a 1937 study of mutual insurance found that the percentage of policyholders voting in eleven major companies varied from .02 to 2.5.[11]

If the manager of a mutual faced no constraints, the mutual bank would behave like a private, manager-owned bank. Inefficiency arises not because the manager is free from outside control, but because he is partly constrained by the law. If he were free to put his salary to any level, hire ghost managers, and sell shares in his salary to outsiders, then the mutual association would be no different from a stock company. Since he does face legal constraints, the manager's compensation takes inefficient forms and he is not simply the residual claimant. The constraint need not be anything so simple as a compensation cap. Even if the constraint is a probability of prosecution gradually increasing with the size of compensation, or increasing costs of covering up illegal actions, the manager is still not a residual claimant and does not receive the full value of an extra dollar of bank profits. Legal action against managers of mutuals is uncommon, but does occur occasionally.[12] The legal status of the managers of mutual savings banks has been unclear, but whether they are regarded as trustees or as agents for the depositors, their actions are legally constrained.[13]

Perks

I use the term "perks" for the difference between a mutual manager's compensation and his market wage. The most straightforward and efficient form of perk is an excessive salary, but perks need not be monetary. Fringe benefits, pleasant working conditions, nepotism, and a low managerial effort level also increase the costs of the bank, while a manager's loans to friends or firms in which he has an interest reduce the bank's expected return. Another perk is the information that a bank manager acquires in the course of his duties. The efficiency implications of this perk are not clear, but if borrowers would be hurt by the leakage of information about their loans, they will require the interest rate to be lower. Most perks are inefficient because they hurt the bank more than they benefit the manager; both would benefit by replacing the perk with an increase in cash wages.[14]

A perk with especially important implications for efficiency is the job given to an incompetent manager. He cannot trade his job for cash or hire someone to perform its duties, although he would profit from either of these alternatives. He retains the job, and when on retiring he gives it away, he is more likely to give it to a friend or relative than to a competent executive.[15]

Mutuals have the further disadvantage that they cannot compensate their managers based on the stock price. Even a stock bank may have difficulty in inducing managers to undertake the efficient effort and risk, but it can use stock-based contracts to change the manager's incentives, whereas the depositors of a mutual bank, limited to accounting data prepared by management, have difficulty even knowing the manager's past performance. The stock bank has the further advantage that because speculation is possible in its stock, outside analysts will bear the costs of acquiring information about managerial performance and leak the information to the market, whether by unintentional rumours or by moving the stock price.

Perks have implications for the manager's choice of portfolio. In a stock bank, the stockholders can design the manager's compensation to encourage him to take any level of risk they desire. In a mutual, the manager's lifetime flow of perks is part of his wealth, but because it is undiversified he is averse to firm-specific risk. In addition, because his perks are capped by an implicit legal limit, he has only weak incentives to increase the bank's profits.

The possibility of adding to the bank's reserves moderates the manager's disinclination to increase bank revenues. Even if the manager cannot take more than a limited amount of perks in a given year, he can add to reserves

rather than increasing the interest rate to depositors. Reserves help the manager in two ways: by reducing the risk of bankruptcy, and by smoothing the flow of perks (important if he may be liquidity-constrained). But if a manager is keeping a reserve to protect against risk, he will be reluctant to incur risk to increase the reserves.[16]

Yet another problem is starting a mutual in the first place. Initial capital cannot be raised by a standard stock offering, so the first manager must supply seed capital or incur the cost of a complex solicitation of initial depositors. He can reap a return via perks, but the return is limited on the positive side.

Once the system is in place, depositors are always free to switch to a stock bank, so the price and product of the mutual must be just as attractive if the two forms coexist. The mutual's costs are higher, but its interest rate must be the same, so it canot survive indefinitely without some countervailing advantage.

3 A Model of Bank Behavior.

A more formal model of the set of contracts between the manager, depositors, and (for stock banks) stockholders is useful to distinguish the crucial features of the problem. Since the model is heuristic rather than theorem-proving, I present it as a numerical example.

Consider two systems, commercial banking and mutual banking, each consisting of a large number of competing banks of a single organizational type. The manager chooses between the three investment projects in Table 1: a safe project with a unit return of 1.2; a risky project whose return is with equal probability either .8 or 1.7; and a bad project whose return is with equal probability either .1 or 1.8.

Insert Table 1

Individuals are of two types: the risk-averse, whom we assume are unwilling to accept any additional risk to increase their expected income, and the risk-neutral. The stockholders are risk-neutral, while the manager and depositors are risk-averse. The depositors deposit their entire wealth $X = 20$ in the bank for one period.

At the beginning of the period the stockholders of the stock bank choose a capital reserve, which is available at the end of the period to pay the promised interest to depositors. The stock bank's manager makes decisions which maximize the utility of the stockholders. At the end of the period the manager is paid his competitively determined wage rate, which is .05 times the amount initially invested. Depositors are paid an amount $(1+r)X$ which is determined by competition between banks. The stockholders retain whatever funds are left after paying the manager and the depositors.

The manager of the mutual bank makes decisions which maximize his own utility. If the revenue from the project is sufficient, he is paid not only the wage $.05X$, but also an amount of perks $P = .5$, where P is determined outside the model by the threat of legal penalties. Depositors are paid $(1+r)X$ if the project's revenue is sufficient, where r is determined by competition between the mutual banks. Any funds remaining after depositors and managers are paid is put in a reserve and never paid out.

3.1 The Informed Depositor Model.

We will look at two versions of the model, which differ in their information structure. In the Informed Depositor Model, the manager must pick a project and truthfully announce it before proposing an interest rate to depositors. The sequence of actions is

1. The manager chooses a capital reserve and a project.
2. The manager offers an interest rate to depositors.
3. The project's outcome is observed.
4. The manager takes his perks (in a mutual bank).
5. The depositors are paid their interest, and the manager his salary. If the bank assets are insufficient, they are divided in proportion to the size of the debts.
6. The stockholders receive the residual profits (in a stock bank).

The stockholders' profit-maximizing policy is to direct their manager to choose the risky project and a capital reserve of 12. The bank competes for

depositors by offering them $(1+r)X = [.5(.8) + .5(1.7)]20 - .05(20) = 24$, which can be paid regardless of the success of the project. If the project fails, the bank's assets equal $.8(12) + .8(20) = 25.6$, of which 1.6 is paid to the manager, and 24 to the depositors. If the project succeeds, the assets equal $1.7(12) + 1.7(20) = 54.4$, of which 1.6 is paid to the manager, 24 to the depositors, and 28.8 to the stockholders. The stockholders' expected unit return is 1.2, so the economic profits are zero.

The safe project would not permit the bank to maintain zero profits while offering depositors the same interest rate. A lower level of capital would drive away the depositors by introducing a positive probability of bankruptcy.

Shareholder's capital is similar to deposit insurance because it allows depositors to be repaid even if the bank's investments are unsuccessful.[17] Many states have required that bank stock specify double liability, under which persons holding stock during some legal time limit before the failure of the bank must contribute up to the par value of the stock, over and beyond the price they originally paid. Double liability reduces the risk to depositors even further, and like deposit insurance it does not require the stockholders to tie up extra capital in the bank except in emergencies.[18]

In the mutual banking system, the manager chooses the safe project and offers depositors $(1+r)X = 1.2X - .05X - P = 21.5$. Choosing the risky project would expose him to the risk of lower compensation, because if the project failed the bank's assets of 16 - .5 (the perks having already been taken) would have to be split between the depositors, owed at least 20, and the manager, owed 1. Even if the manager were willing to accept the risk, the depositors would not be willing. Thus the interest rate in the mutual system is lower than in the stock system for two reasons: the perks are deducted and the safe project is adopted instead of the risky project. The stock bank pays a higher rate of interest without being any riskier for depositors or managers, so mutuals would not survive in a system with both kinds of banks.

The mutual's choice of the safe project is not an artifact of using a one-period model without initial reserves. A mutual's reserves are part of the wealth of its manager. If he chooses projects like B that can deplete the reserves, he runs the risk of eventually not being able to extract P. If the mutual initially held reserves, its manager could respond to competition from the stock banks in one of two ways. He could adopt the risky project, with the attendant risk that a series of reverses could deplete the reserves quickly and the knowledge that reducing the reserves by an expected P each period

will eventually deplete them anyway. Or he could adopt the safe project, paying depositors the market interest rate by drawing from the reserves as well as the investment income, so that the date by which the reserves are exhausted is closer but has lower variance than under the policy of choosing the risky project. In either case the mutual bank fails in the long run.

If the mutuals began with reserves sufficient to protect the depositors, and their managers chose risky projects and refrained from taking perks, the mutuals could survive competition from the stock banks, but the mutual manager has no incentive not to take perks. If he takes perks, his bank will eventually fail and he loses his privileged position, but if he does not take perks, that privileged position is useless to him, no better than a stock manager's job. The only reason not to take perks now is to increase consumption of perks in the future, which is not something the manager of a mutual in a mixed system can look forward to.

The example elucidates another point which causes some confusion: whether dividends ought to be considered an expense of the stock bank, equivalent to the perks of the mutual bank. The stock bank does pay dividends– equal in expectation to $.24(12) = 2.88$ in the example– but the revenue to pay the dividends is generated by the capital and does not diminish the earnings of the depositors. Although a stock bank pays out more to non-depositors than does a mutual, the stock bank also has more assets.

3.2 The Uninformed Depositor Model.

A change in the information structure reverses the mutual bank's disadvantage. In the preceding model the manager chose the project before the depositors agreed to the contract. In the Uninformed Depositor Model the depositors must agree to the contract without any guarantees about the project or the capital reserve.

The sequence of actions is

1. The manager and depositors agree to an interest rate.
2. The manager chooses a project and capital reserve.
3. The project's outcome is observed.
4. The manager takes his perks (in a mutual bank).

5. The depositors are paid their interest, and the manager his salary. If the bank assets are insufficient, they are divided in proportion to the size of the debts.

6. The stockholders receive the residual profits (in a stock bank).

The stock bank's best credible contract is to offer the depositors $1.8(20) - .05(20) = 35$ at the end of the period if the project is successful, and $.1(20) - .05(20) = 1$ otherwise, with a reserve of zero. The contract yields an expected profit of zero, so the depositors are receiving the full benefits of the risk, but it is both risky and inefficient. The problem is that now the stockholders have incentive to pick the bad project, whatever the contract, because they can declare bankruptcy if the project is unsuccessful, but collect the residual profits if it succeeds. If, for example, they offered depositors the contract (33 if successful, 15 if unsuccessful), which could be paid by picking the risky project, the stockholders would still want to pick the bad project. If the project were successful, they would make a profit of 2, and if it were unsuccessful, they would declare bankruptcy.

The mutual bank, on the other hand, can credibly offer depositors the fixed return given by $(1 + r)X = 1.15(20) - .05(20) - .5 = 21.5$, the same contract as in the Informed Depositor Model. The manager is unwilling to take on risk, so he chooses the safe project, and given that he is known to choose the safe project, the depositors do not require a reserve.

The advantage of the mutual is that the manager is self-controlled but limited in his perks. Being limited in the amount he can take out of the firm, he is not attracted by risky investments with high payoffs. Since his compensation exceeds his market wage and he can lose his perks only by letting the bank fail, he has strong incentives to avoid downside risk. Moreover, the manager cannot be replaced involuntarily or sell his job to someone else, so the depositors can depend on continuity in managerial tastes and policies. The advantages of stability and safety outweigh the disadvantages of poor management and high expenses.[19]

It is interesting to contrast this with the explanation Grossman and Hart advance for high levels of debt in stock corporations.[20] In their signalling model, a manager whose compensation is based on the market value of the firm chooses a high level of debt to show his willingness to exert enough effort to avoid the risk of bankruptcy. Stockholders do not mind the extra risk because they are diversified, but they do value the extra effort. In the

Uninformed Investor Model of mutuals the opposite occurs: unidiversified depositors are willing to accept less effort in exchange for less risk.

The principle at work in the Uninformed Depositor Model is similar to the justification for high wages found in Klein & Leffler and Adam Smith.[21] The manager does not want to lose the stream of rents he receives from his job at the mutual bank, and although he is safe from being fired, he can lose the rents by following an investment policy which bankrupts his firm. Depositors can therefore trust him to make cautious investments.

4 Alternative Explanations for Mutual Banks.

4.1 The Stockholder-Debtholder Conflict.

The stockholder-debtholder conflict gives rise to an explanation similar to and not inconsistent with the Uninformed Depositor Model. Mayers and Smith suggest the following explanation for mutual associations in the insurance industry.[22] Every firm with both debt and equity faces an incentive problem between debtholders and stockholders. Shareholders have incentive to increase the riskiness of investments after debtholders have invested in the firm, and writing debt covenants to cover every possible contingency is very costly. The policyholders of a stock insurance company are like debtholders, but a mutual insurance company has only one class of capital-providers, so the only incentive problem is between managers and policyholders.[23] The argument applies to banks because bank depositors are similar to insurance policyholders.

The stockholder-debtholder conflict explains why an all-equity bank is desirable, but not why it should be management-controlled. Management control leads to managerial perks and to investment policies not under the control of the owners. To minimize costs, the all-equity bank could be organized to permit proxy fights and takeovers which would prevent the managers from taking perks, or the voting shares could be limited in number and restricted to non-managerial owners.

The Uninformed Depositor Model is consistent with the mutual's usefulness in avoiding stockholder-debtholder conflict, but also explains why the manager should be independent of outside control— to permit the additional advantage of stable, risk-averse management. If the bank is both owned and

controlled by depositors, there are no stockholders to extract the profit when risky investments are successful, but even though all depositors are treated alike, they cannot feel secure if their tastes differ. A group of depositors who gain control can change the portfolio to suit their own taste for risk, and not that of the other depositors. For a company owned by diversified and perfectly-informed stockholders this is not a problem, but the mutual bank exists to serve small savers who lack the sophistication to discover portfolio changes and undo them or shift to another bank. Equal treatment of all providers of capital is not sufficient protection; only the manager's independence guarantees a cautious investment policy.

4.2 The Manager-Stockholder Conflict.

Another explanation for the mutual bank is that agency problems between manager and stockholders are so severe that the stock bank is no more efficient than a mutual. The managers of a stock bank cannot be induced to maximize its profits, but the managers of a mutual have interests tied closely to their bank, so the mutual form acts as a way to share profits with the manager.

A problem with this is that tying the manager's compensation to the stock price is a simpler and more effective way to induce him to increase the bank's profitability than tying his perks to bank revenues. Because of managerial slack, a stock bank is efficient only in a second-best sense, but the fact that stockholder control over managers is imperfect does not mean that total lack of control is better. In addition, an empirical difficulty is that agency problems are likely to be less important in savings banks, with their relatively simple services and portfolios, than in commercial banks or many other firms which use the stock form.

4.3 Altruism.

The first mutual savings bank in New York was founded by members of the Society for the Prevention of Pauperism who hoped that the poor could be encouraged to save. If the mutual manager is altruistic, he abstains from taking perks and might even serve for less than his market wage. Realizing this, depositors would prefer a mutual to a stock bank, and stock banks could not compete with mutuals.

Determining whether managers are altruistic is not easy, although the earlier-cited work of Nicols suggests that in recent managers are not. The earliest mutual savings banks were very likely founded for charitable reasons, but even then other motives seem to have existed. Many antebellum mutual savings banks had close connections with commercial banks. The second mutual savings bank in New York, the Bowery Savings Bank, was founded with the cooperation of the directors of two nearby commercial banks, the Butchers' Bank and the Drovers' Bank, and cash reserves of the Bowery were kept in those two banks at unfavorable interest rates.[24] The Greenwich Savings Bank was founded in 1833 by the Greenwich Bank, to which it remained closely tied by interlocking directorates, and 1861 twenty-seven of eighty-nine savings banks in Massachusetts were located in the same offices as commercial banks.[25] In his book on the early mutual savings banks, Olmstead concludes that by and large the managers of ante-bellum mutual banks acted in their depositors' interests.[26] Keyes, however, writing in 1868, was disturbed by the number of mutual banks operating in close cooperation with commercial banks, and argued that "if either is to suffer from the connection, we may rest assured that it will not be the institution whose *business is to make money.*"[27]

While some managers have been altruistic, others have not, and under the altruism explanation it is crucial that depositors be able to tell the difference. But what is important in a savings bank is not so much altruism as stability and conservatism. An altruistic manager devoted to buying the best high-yield, high-risk securities is worse than a risk-averse scoundrel. In the Uninformd Depositor Model, the depositor does not have to try to distinguish motives: the advantage of the mutual is that the interests of depositors and managers roughly coincide, and whether managers are conservative to protect their perks or their depositors is a minor point.

4.4 Government Regulation.

New Deal Banking Regulation.

We must consider the possibility that organization is important only because of government regulation. From 1932 to 1980, restrictions on entry and interest rates, together with past history, do provide the best explanation for industry structure. The Banking Act of 1933 (the Glass-Steagall Act) separated commercial and investment banking, prohibited interest on demand

deposits, and created the Federal Deposit Insurance Corporation (FDIC) to insure depositors against losses and inspect the riskiness of bank loan portfolios. The Banking Act of 1935 allowed the Federal Reserve to fix time deposit interest rates and authorized the Comptroller of the Currency to bar entry of new banks. The Federal Home Loan Bank Board (FHLBB) and the Federal Savings and Loan Insurance Corporation (FSLIC) were created to be the regulatory equivalents of the Federal Reserve and the FDIC for S & L's.[28]

New Deal regulation went far towards equalizing the riskiness of deposits in different kinds of banks, and if all deposits are equally safe, the advantage of the mutual bank vanishes. If deposit insurance and interest rate ceilings were the only forms of regulation, mutuals would not survive in the long run. Given the same interest rate for the same risk in every institution, depositors would be indifferent between mutuals and stocks. Initially all the institutions would make profits by lending at higher rates than they borrowed, although the profits of the mutuals would be lower because of their perk-inflated expenses. In the long run the profits would attract entry, the profits of stock banks would fall to zero, and mutual banks would make losses.

Other aspects of regulation, however, benefited the mutuals. From 1913 until 1952 mutual savings banks and mutual S&L's were not subject to Federal corporate income tax, and until 1962 a bad debt provision kept their taxes near zero.[29] For many years S&L's were not subject to Regulation Q, the upper limit on bank deposit interest, and even after the Interest Rate Adjustment Act of 1966 was passed, S&L's were allowed a rate .25 percent higher than commercial banks.

The S&L's expanded their market share during this period, although the restrictions on entry prevented radical change. Stock S&L's grew faster, their market share increasing from 11 percent of total S&L assets in 1955 to 40 percent in 1983.[30] Nicols argues that the FHLBB set an informal interest rate ceiling for S&L's even before 1966, enforced by the unwillingness of the FHLBB to make advances to S&L's that offered high interest rates, a policy which further restricted the scope of the more efficient stock companies.[31]

Earlier Banking Regulation: Portfolio Restrictions and Usury Laws.

From the earliest days of mutual banks, some state governments have restricted bank portfolios to a limited variety of relatively safe assets. New

York, for example, initially required mutual savings banks to invest in New York and U.S. government debt or commercial bank deposits, although the law was soon relaxed to allow other kinds of government debt. Not until fifteen years after the first charter were mortgage loans allowed.[32] If mutual banks are structured so that managers voluntarily choose conservative investments, why did the government intervene? Why could stock banks not lobby for similar laws to constrain themselves to choose safe portfolios?

At first, state governments may not have realized that mutual banks would be safe. Mortgages were soon allowed in the portfolio, but since mortgages can be risky and require managerial discretion, a bank constrained to own only mortgages might own a very risky portfolio. Neither state legislation nor writing such a restriction into the corporate charter could guarantee that the bank was a safe investor.

Another explanation arises because governments often view banks as institutions which exist to buy government debt. Restricting mutuals to own state bonds lowers the interest rate the state must pay, and while allowing mortgages does not help the government directly, it benefits local borrowers, and hence might be attractive to legislators. Portfolio restrictions were useful to New York. For more than a decade The Bank for Savings was by far the largest holder of the state's Erie Canal debt, at one time holding thirty percent of the entire issue. From 1819 to 1831 over half of the bank's assets were in New York canal bonds.[33] Lack of diversification was one reason the Bank for Savings lobbied for changes in its charter to allow itself to hold mortgages.[34]

State usury laws are also potentially important. We have already discussed the New Deal deposit interest rate ceilings, but many states had already imposed ceilings on the loan interest rates. If the ceilings were binding, riskier loans would be rationed out of the market and the loans of stock banks would not be much riskier than those of mutuals. Moreover, often mutual S&L's were exempt from usury laws, which in 1921 existed in all but five states, with interest limits varying from six to twelve percent and a wide range of penalties, of which forfeiture of all interest was the most common.[35] Evidence is not easily available to test the importance of usury laws, but I have not seen them mentioned as a source of competitive advantage for mutuals in any of the sources I consulted, and the legal status of the mutuals' usury exemption was dubious.[36]

Usury laws were enforced irregularly, and were not difficult to evade. In 1916, for example, the maximum rates of interest allowed in North Carolina and South Carolina were 6 and 8 percent, but the average rates on agricultural loans reported by banks to an economist studying usury were 6.6 and 8.3 percent. Even these were not the true rates, and adding in "discounts, bonuses, and any other extra charges" the rates became 10.2 and 10.5 percent.[37]

Studying an earlier period, Lance Davis found that the average interest rate charged by mutual savings banks in New England from 1840 to 1860 was 5.8 percent, compared to the 6.6 percent charged by commercial banks.[38] His explanation is that mutuals obeyed usury laws while commercial banks found ways around them. By obeying, mutual managers could choose who would receive the loans at the low legal rate and avoid the personal inconvenience of getting around the laws. The Uninformed Depositor Model adds a third reason: the managers were not interested in finding ways to make riskier loans at higher interest rates.

5 Historical Evidence.

The Uninformed Depositor Model implies that the mutual banks attract small savers, that mutual banks are safer than stock banks, and that increases in the safety of stock banks erode the mutuals' advantage. These implications can be matched against historical evidence.

5.1 Uninformed Depositors.

An important part of the Uninformed Depositor Model is that depositors are unable to monitor the bank portfolio, since otherwise they just withdraw their deposits when the bank invests in a portfolio too risky for their tastes, the form of control suggested by Fama and Jensen.[39] Monitoring need not be literally impossible for the model to be valid. If monitoring is possible, but costly, the depositors still prefer a mutual bank, and many people, especially those who are undiversified and unsophisticated, wish to save amounts too small to justify the fixed cost of monitoring.

The first mutual banks were founded with the stated intention of serving small savers. In the 1830's the proportion of unskilled laborers among new

depositors at the largest savings bank in the United States varied from forty to fifty percent.[40] The trustees of many mutual savings banks actively discouraged large deposits. Frequently there were upper limits on deposits, and large deposits commonly received an interest rate one percent lower than small deposits.[41] Olmstead gives two reasons why the early mutuals were hostile towards large depositors. The first is that the trustees did not like donating their time and energy to help the rich. The second is that large depositors were quickest to withdraw their deposits during panics, precisely when the banks needed liquidity. During the 1837 panic the average size of withdrawals from the Bank for Savings was $216, much larger than $133, the average account size.[42] Large depositors make the bank riskier for the managers and the other depositors.

Regardless of the size of deposits, if ignorant depositors can rely on other depositors being equally ignorant, they are safer in staying uninformed during crises. Being the only ignorant depositor means being last in line during a bank run, and excluding large deposits is a way of excluding informed depositors.

The Uninformed Depositor Model explains why small savers would be attracted to mutuals, but also why mutuals prefer small savers. Large depositors threaten the manager, because despite their lack of formal authority, they can at least threaten to withdraw their deposits if they disagree with the manager, or during bank runs.

5.2 Mutuals Were Safer than Stocks.

The Uninformed Depositor Model implies that deposits in mutuals earned a return lower but less risky than stock banks could offer. I have not discovered data on deposit returns, but information is available on bank portfolios and bankruptcies.

In the early days of mutual savings banks, New York restricted bank portfolios, but Maryland did not, so the investments of its banks show the attitude of managers towards risk. The Savings Bank of Baltimore was generally conservative, the bulk of its portfolio from 1830 to 1860 consisting of real estate mortgages, bank deposits, state and Federal bonds, and secured business loans. Only about ten percent consisted of utility stocks, bank stocks, and railroad bonds.[43] Massachusetts had no portfolio restrictions until 1834, and its early savings banks invested in state and Federal bonds, local bank

stock, and bank deposits.[44]

Throughout the nineteenth century, mutual savings banks had a reputation for safety. In New York only one failed before the Civil War, and it was closely affiliated with a bankrupt commercial bank.[45] Two fifths of the commercial banks chartered in the United States before 1860, on the other hand, had failed by that year.[46] Failure rates for commercial banks declined after the Civil War, but whereas no mutual savings bank failed in New York State in the panics of 1873 and 1893, in those years 4 of 1968 and 69 of 3807 national banks (generally safer than state-chartered stock banks) failed.[47]

Although commercial banks generally became safer over time, they failed in unusually large numbers in the 1920's. The average percentage of national banks suspended during 1900-1909 was .22, and during 1920-1929 was .97. Table 2 shows failure rates for the period after 1921. Both mutual saving banks and S&L's had lower failure rates than commercial banks. In the Great Depression, S&L's and commercial banks were more likely to fail than mutual savings banks. Commercial banks went bankrupt at a very high rate from 1930 to 1933, and in the worst year, 27.70 percent of commercial banks failed, but only .80 percent of S&L's and .01 percent of mutual savings banks. S&L's failed less often than commercial banks in the early years of the Depression, but continued to have an unusual rate of failure throughout the 1930's. The numbers are deceptive since many S&L's which froze deposits early in the Depression did not formally fail until later, but even over the entire decade a smaller percentage of S&L's failed than commercial banks. Very few mutual savings banks failed.

Insert Table 2 here.

5.3 Mutuals Declined in Importance as Information Improved.

If the business environment becomes less risky the advantage of mutuals over stocks decreases. Even if the business environment does not otherwise change, stock banks which survive can acquire a reputation for safety over time, which they are reluctant to lose by making risky investments.[48] Stock banks did become safer and gain market share over time.

The first mutual savings banks were founded in 1817, and they increased rapidly in numbers up to the Civil War. Throughout the nineteenth century,

commercial banks had little success in attracting deposits. The close connections between commercial and mutual banks mentioned earlier indicates the difficulty commercial banks had in attracting deposits.

Although mutuals were more successful, they did acknowledge the possibility of competition from stock banks. Wishing to distinguish themselves from risky commercial banks in the minds of both legislators and depositors, neither the Philadelphia Saving Fund Society nor the Provident Institution for Savings (in Boston), the first two mutuals, used the word "bank" in their titles.[49] In 1868 Keyes notes with approval a state law forbidding any bank but a mutual to call itself a "savings bank," but he also tells of an advertisement by a national bank calling itself a saving bank and promising six percent interest. Keyes called for prohibition of interest-bearing deposits in commercial banks because of their risk.[50]

After the Civil War the rate of creation of mutual savings banks slowed, and of the 514 which still existed in 1960, four fifths had been founded before 1875.[51] Savings and loan associations started to become more important, but before 1900 the mutual S&L's were usually self-terminating, consisting of a group of people who would pool their savings and loan it to individual members one at a time. The first S&L in the United States, the Oxford Provident Building Association, was founded in 1831 and terminated in 1841, by which time there were more than fifty S&L's in Pennsylvania.[52] The self-terminating S&L was a way to borrow rather than a way to lend, overcoming the problems of moral hazard and adverse selection by pooling the resources of acquaintances. The Uninformed Depositor Model is not needed to explain these early S&L's, but it does explain why some of them were able to evolve into permanent and impersonal banks in which people deposited their savings even when they did not wish to borrow.

The historical development of mutuals shows how they overcame the problem of raising initial capital. The mutual savings banks were founded from altruistic motives, and amidst little competition in the market for safe banking services, while the S&L's were founded as small organizations of acquaintances.

The National Banking Act of 1863 established "national banks", which were safer than state banks since they were subject to inspection by the newly created Comptroller of the Currency. The act also shifted the banks' sources of capital to deposits by discouraging the issue of banknotes, but mutuals continued to hold the bulk of time deposits.[53]

Table 3 shows the percentages of time deposits held in different savings institutions from 1880 to 1935.[54] The category "commercial banks" aggregates a wide variety of institutions, not all of which would have been interested in attracting savings deposits, but the table shows that in 1880 commercial banks held only 11.7 percent of time deposits, but their share had increased to 52.2 percent by 1925. As we would expect, with the passage of time some banks could develop reputations for safety and better compete with mutuals.

The only two downturns in the share of the stock banks during this period were in 1890-95 and 1925-35, which can perhaps be explained by the substantial increases in bank failures in the 1890's and the 1920's shown in Table 4.[55] The two downturns show that more than just a time trend was at work; the increase in the market share of the stock banks is correlated with their safety.

Insert Table 3 here.
Insert Table 4 here.

5.4 The Present.

We have already seen how the New Deal favored mutuals. The deregulatory mood of the 1970's and pressures within the industry resulted in two major banking acts, the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn-St. Germain Depository Institutions Act of 1982, which eliminated many of the regulatory differences between banking institutions. All institutions were given access to the services of the Federal Reserve at uniform prices, were required to adhere to the same reserve requirements, and were allowed to offer checking accounts. Portfolio and product restrictions on mutuals were eased, and Regulation Q, the ceiling on interest rates, was phased out.

If the regulatory advantage given to mutual banks is removed, but deposit insurance is retained, the Uninformed Depositor Model predicts that mutuals will be unable to compete effectively with stock banks. The advantage of mutuals lies in the attractiveness of their safe portfolios to small depositors, an advantage removed by deposit insurance, so the model predicts the gradual disappearance of mutual banks.

Mutual banks are indeed diminishing in importance, although banking deregulation is not the only reason. In the 1970's, even before deregulation,

many S&L's ran into financial difficulty because of outstanding low-interest mortgages and new competition for deposits from money market funds. Mutuals were in particular difficulty, perhaps because their costs were higher, but also because they found it difficult to raise new capital. From 1975 to 1983 the percentage of all S&L deposits in stock S&L's rose from 21 to 40.[56] Part of the change happened because after a twelve year moratorium the FHLBB began in 1976 to allow federally chartered mutual S&L's to convert to stock charters in states where stock charters were authorized. The number of insured S&L's has fallen from 4365 in 1970 to 3040 in 1983, and since 1976 there have been over 205 conversions.[57]

The pattern of the mutual conversions is consistent with the Uninformed Depositor Model. Masulis found empirically that the mutual S&L's most likely to convert were those that were large, highly leveraged, and located in markets with greater competition and growth.[58] I would expect the incentives for mutual managers to convert to be highest in those banks because perks do not rise in proportion to bank size. If a mutual is large, or is expected to grow if it can raise capital by a conversion, its managers derive more benefit from a conversion, but do not suffer much more loss of perks than if the bank were small. Their benefit is in the form of rights to purchase the new stock, which are valuable because the new issues are consistently underpriced. Moreover, by no means all mutual managers are incompetent, and conversion allows the bank to expand more easily and grant executive stock options which are valuable to skilled managers.

The present financial difficulties of many mutuals illustrates another feature of the mutual manager's portfolio choice. It is not quite true that managers always avoid risk. If their bank is likely to fail otherwise, the mutual manager, like stockholders in a failing company with debt, will take large risks to try to restore solvency. His liability is limited, so he is willing to exchange large downside risks for small possible gains. The manager does not willingly risk failure, but if failure is likely he does not care about the extent of the depositors' losses. We should expect, if government regulation does not prevent it that mutuals will make many exceptionally risky loans during the coming years in which they are being outcompeted by stock banks.

Ironically, much of the competition mutuals face for deposits has come from money market mutual funds, which are organized as mutuals, but in which the disadvantages of mutuals are mitigated by the limited range for managerial discretion. The money market mutuals provide simpler services

than banks, doing little more than buying publicly traded assets and processing checks. Their expenses are publicly disclosed, and the nature of the assets does not provide managers with opportunities for perks like friendly loans and the diversion of title insurance business. An advisory company, not the shareholders, controls the mutual fund, but the advisory company is itself a diversified stock company rather than an undiversified team of managers. The company is organized as a mutual association rather than a stock company because people who save in a mutual fund desire a return that fluctuates with the stock market. The depositors in these open-end mutual funds are truly the residual claimants, able to sell their shares for a price equal to the value of the mutual's assets.

Footnotes for Rasmusen: "Mutual Banks and Stock Banks."

1. Mutuals are as important in the insurance industry as in banking. See David Mayers & Clifford Smith, Ownership Structure Across Lines of Property-Casualty Insurance, UCLA GSM working paper #8-86, April, 1986; and Henry Hansmann, The Organization of Insurance Companies: Mutual versus Stock, 1 Journal of Law, Economics, and Organization 125 (1985).

2. The government-owned postal savings system (significant during the 1930's and 40's) and private banks, so-called because they lack government charters and are owned by individuals or partnerships, are neither stock companies nor mutual associations. For the purposes of this paper, private banks can be included with stock companies, the chief differences being that their ownership is more concentrated and the owners' liability is greater.

3. In 1947 the states authorizing mutual savings banks were Maine, New Hampshire, Vermont, Massachusetts,Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Ohio, Indiana, Wisconsin, Minnesota, Washington, and Oregon. Only 15 of 531 mutual savings banks existing in that year were west of Pennsylvania. John Lintner, Mutual Savings Banks in the Savings and Mortgage Markets (1948) at 42.

4. See Alfred Nicols, Management and Control in the Mutual Savings and Loan Association (1972) for a full exposition.

5. See Armen Alchian and Harold Demsetz, Production, Information Costs and Economic Organization, 62 American Economic Review 777 (1972); Eugene Fama and Michael Jensen,Separation of Ownership and Control, 26 Journal of Law and Economics 301 (1983); Eugene Fama and Michael Jensen, Agency Problems and Residual Claims, 26 Journal of Law and Economics 327 (1983); Michael Jensen and William Meckling, The Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure, 3 Journal of Financial Economics 305 (1976).

   In Section 4.3 I will discuss the explanation for mutuals in the more recent papers on insurance by David Mayers and Clifford Smith, Ownership Structure and Control: the Mutualization of Stock Life Insurance

Companies. 16 Journal of Financial Economics 73 (1986); *supra* note 1; Hansmann, *supra* note 1.

6. Nicols, *supra* note 4; Maureen O'Hara, Property Rights and the Financial Firm, 24 Journal of Law and Economics 317 (1981).

7. David Easley and Maureen O'Hara, The Economic Role of the Nonprofit Firm, 14 Bell Journal of Economics 531 (1983); Henry Hansmann, The Role of Nonprofit Enterprise, 89 Yale Law Journal 835 (1980).

8. I will speak of "the manager" as if the mutual's management were monolithic. In reality it is not, but the simplification is useful because disputes over the division of managerial perks are tangential to the central issues and I have not found evidence that disputes among managers allowed depositors to exert influence. Disputes within management only strengthen the argument for stock banks, because they incur costs that the stock bank would avoid.

9. Daurelle v. Traders Federal Savings and Loan Assn. of Parkersburg, 104 S.W. 2d 320 (1958).

10. Nicols, *supra* note 4 at 75.

11. National Association of Mutual Savings Banks, Mutual Savings Banking: Basic Characteristics and Role in the National Economy (1962) at 24. A typical example from a later period is Prudential, which in 1968 had 18,704,879 policyholders, of which 593 voted J.A.C. Hetherington, Fact v. Fiction: Who Owns Mutual Insurance Companies?, Wisconsin Law Review 1068 (1969), at 1079. Admittedly, one would also expect low participation in a non-controversial stock company vote.

12. Charles Allen, Legal Actions Against S&L Directors and Officers, FHLBB Journal 6 (1976). The charges in one case were that the managers of an S&L hired inexperienced relatives, that three directors were too old to serve, and that five of the directors were trying to push through a merger for personal benefit. Directors of another S&L were accused of violating their fiduciary duty in taking its business to an insurance company they operated. In a third case two officers were indicted for accepting payments from borrowers to make loans.

13. Concerning the trustees of mutual savings banks: " The true role is that such trustees are bound to the exercise of ordinary care and prudence, that degree of care and prudence that men prompted by self-interest generally exercise in their own affairs." David Garland and Lucius McGehee, eds., The American and English Encyclopedia of Law (1903), Vol. 24, at 1248 under the article Savings Banks.

    Another authority says, "The prohibitions and limitations fixed against the officers and directors of savings banks, forbidding them from borrowing any of the deposits or other funds of such corporations fully establishes the principle that they are acting as trustees, and it is a well-established principle of law that trustees cannot personally use in any manner, either directly or indirectly, the funds of their principal, either for profit or otherwise." H. Magee, A Treatise on the Law of National and State Banks (1921), at 553.

14. Because of income taxes on cash income even stock banks provide some portion of the manager's compensation in fringe benefits. Beyond some level,however, the marginal dollar spent on a perk like office furniture is worth less to the manager than the marginal dollar of pretax salary.

15. In recent years the manager has been able to effectively sell his job by converting his mutual S&L to a stock S&L. He benefits from special treatment in the stock sale, but loses control of the firm, and the institution is no longer a mutual. See Ronald Masulis, Changes in Ownership Structure: Conversions of Mutual Savings and Loans to Stock Charter, 18 Journal of Financial Economics 1 (1987) at 29.

16. Laws have often regulated the size of a mutual's reserves. The original charter of the Bank for Savings, the first mutual in New York, did not permit it to keep a surplus (an amount in excess of that promised to depositors). The trustees lobbied to amend the charter to allow surpluses of first three percent, and later ten percent, although the limit was not rigorously policed. In 1852 the New York State Assembly passed a bill (never enacted) that would have effectively confiscated the reserves of savings banks. The Bank for Savings had reserves of 12.5 percent at that time, and the threat prompted them to pay extra dividends to their depositors. Alan Olmstead New York City Mutual Savings Banks, 1819-1861, (1976), at 40-43.

17. Keyes claims that private banks made the argument to savers that the banker's unlimited liability provided security that he would make safe investments, and some compensation if he did not. Emerson Keyes, A History of Savings Banks in the United States from their Inception in 1816 down to 1874 (1876), vol. 1 at 366-368.

18. As Jensen & Meckling, *supra* note 6, point out, a major advantage of limited liability is that it makes the personal wealth of stockholders unimportant to one another. Double liability is still limited liability, and hence retains much of this advantage. For a discussion, see Susan Woodward, On the Economics of Limited Liability, UCLA Dept. of Economics working paper #437 (1984).

19. The recent conversions of mutual S&L's to stock companies might seem to undercut the argument for stability, but a conversion is a one-time event and is clearly announced to depositors.

20. Sanford Grossman and Oliver Hart, Corporate Financial Structure and Managerial Incentives, from John McCall, ed., The Economics of Information and Uncertainty (1982).

21. Benjamin Klein and Keith Leffler, The Role of Market Forces in Assuring Contractual Performance, 89 Journal of Political Economy 615.

    Smith says:
    "The wages of goldsmiths and jewellers are everywhere superior to those of many other workmen, not only of equal, but of much superior ingenuity, on account of the precious materials with which they are intrusted. ... When a person employs only his own stock in trade, there is no trust, and the credit which he may get from other people depends, not upon the nature of his trade, but upon their opinions of his fortune, probity, and prudence. The different rates of profit, therefore, in the different branches of trade, cannot arise from the different degrees of trust reposed in the traders."
    Adam Smith, The Wealth of Nations (1776), ch.10, part 1.

22. Mayers & Smith (1985), *supra*, note 5.

23. Hansmann, *supra* note 1, repeats this explanation with more detail, particularly concerning the difference between life insurance and property insurance.

24. Olmstead points out that the personal benefit to those directors was probably small, and the other directors eventually forced a change of policy. Olmstead, *supra* note 16 at 126-133.

25. *id.* at 145. The close connections between commercial banks and mutual savings banks might be considered practical implementation of the segregated trust suggested by Henry Hansmann, The Political Economy of Cooperative Enterprise, mimeo, Yale University, August 1985 at 54.

26. *id.* at 114.

27. Keyes, *supra* note 17 at 370.

28. Mutual savings banks are covered by the FDIC.

29. Tax acts passed in 1969 and 1976 further reduced their tax advantages. The relevant bills are the Revenue Act of 1913, the Revenue Act of 1951, the Revenue Act of 1962, the Tax Reform Act of 1969, and the Tax Reform Act of 1976. Moreover, from 1928 to 1932 up to $300 per person of dividends from S&L's were exempt from the federal income tax, and until 1942 the distributions of federally chartered S&L's were not fully taxable. (see the Revenue Act of 1928, the Revenue Act of 1932, and the Public Debt Act of 1942).

30. Masulis, *supra* note 15 at 30. The insurance industry was showing similar progress by stock companies. The share of new business written by the fifteen largest stock companies rose from 5.1 percent to 14.5 percent from 1910 to 1965, and the share of the fifteen largest mutuals fell from 61.8 to 28.5 percent. Nicols, *supra* note 4 at 121.

31. *id.*at 91-101.

32. Olmstead, *supra* note 16 at 75.

33. *id.*at 78-83.

34. Lack of diversification could also be treated as part of the managers' perks, since several of the trustees were both promoters and beneficiaries of the canal.*id.*at 83.

35. Franklin Ryan, Usury and Usury Laws (1924), at 28-31.

    A typical usury clause is from Pennsylvania statutes: Sec. 6. VI. "No Premiums, fines, or interest on such premiums, that may accrue to the said corporation, according to the provision of this act, shall be deemed usurious; and the same may be collected as debts of like amount are now by law collected in the commonwealth," p. 669. Reprinted in: Commissioner of Labor, Ninth Annual Report of the Commissioner of Labor (1894), at 669.

36. Garland and McGehee assert that the usury exemption is dubious, and cite Citizens' Security, etc. Co. v. Uhler, 48 Md 455. Garland & McGehee, *supra* note 13, vol. 4 at 1074, under the article Building and Loan Associations.

37. Ryan, *supra* note 35 at 103, citing C. Thompson, Bulletin 409, U.S. Dept. of Agriculture, 1916.

38. Lance Davis, The New England Textile Mills and the Capital Markets: a Study of Industrial Borrowing, 1840-1860, 20 Journal of Economic History 1 (1960) at 9.

39. Fama & Jensen, *supra* note 5.

40. Olmstead, *supra* note 16 at 51,58.

41. The Bank for Savings. Olmstead, *supra* note 16 at 36-38, 59-66.

42. *id.* at 62.

43. Peter Payne and Lance Davis, The Savings Bank of Baltimore, 1818-1866: A Historical and Analytical Study (1956) at 107.

44. *id.* at 112. The law passed in 1834 allowed all of these plus real estate mortgages.

45. Olmstead, *supra* note 16 at 142.

46. Herman Krooss and Martin Blyn, A History of Financial Intermediaries (1971) at 75. This is an aggregate statistic; failure rates for commercial banks in New England, where most of the mutuals were located, were lower. From 1830 to 1845, 18 of 129 Massachusetts banks lost their charters, and 4 of 62 Rhode Island banks failed (Naomi Lamoreaux, Banks, Kinship and Economic Development: the New England Case, 46 Journal of Economic History 647 (1986)).

47. Weldon Welfling, Savings Banking in New York State: A Study of Changes in Savings Bank Practice and Policy Occasioned by Important Economic Changes (1939) at 18,25. U.S. Department of Commerce, Historical Statistics of the United States: Colonial Times to 1970 (1975), at 1027,1038.

48. For a model of the process of reputation acquisition in credit markets, see Douglas Diamond, Reputation Acquisition in Debt Markets, U. of Chicago mimeo, (1985).

49. The first attempt to obtain a charter in New York State also avoided the opprobrious term "bank" and proposed "an association by the name of the savings corporation of the city of New York," although after the first attempt failed the organizers chose the name "The Bank for Savings in the City of New York" for the second try. Olmstead, *supra* note 16, at 9.

50. Keyes, *supra* note 17, vol. 1 at 366-368.

51. Krooss and Blyn, *supra* note 46, at 128.

52. Alan Teck, Mutual Savings Banks and Savings and Loan Associations: Aspects of Growth (1968), at 24.

53. Banknotes were not prohibited, but national banks were required to keep interest-bearing reserves with the Comptroller to back their notes, and a heavy tax was imposed on the notes of banks chartered by the states.

54. Some of this data was constructed by Lintner using interpolation and extrapolation. Anyone intending to use it should see Lintner's notes, *supra* note 3, at 461.

55. Table 4 only includes national banks, for which reliable data is available. National banks were generally safer than state banks.

56. Masulis, *supra* note 15, at 30.

57. *id.*at 30.

58. *id.*at 29.

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Table 1: Investment Projects.

Project	**Unit Return**	**Probability**
Safe Project	1.2	1
Risky Project	.8 (failure)	.5
	1.7 (success)	.5
Bad Project	.1 (failure)	.5
	1.8 (success)	.5

Table 2: Bank Failures.

Year	Commercial Banks		M.S.B.'s		S&L's	
	Number	Percentage	No.	Per.	No.	Per.
1921	505	1.69	0	.00	6	.07
1922	366	1.24	0	.00	4	.04
1923	646	2.24	1	.00	9	.09
1924	775	2.75	0	.00	18	.17
1925	618	2.24	0	.00	26	.22
1926	976	3.65	0	.00	12	.10
1927	669	2.59	0	.00	21	.17
1928	498	1.99	1	.00	23	.18
1929	659	2.74	0	.00	159	1.26
1930	1350	6.08	2	.00	190	1.54
1931	2293	11.83	1	.00	126	1.07
1932	1453	8.16	3	.01	122	1.07
1933	4000	27.70	4	.01	88	.80
1934	105	.68	*	.00	68	.63
1935	42	.27	*	.00	239	2.19
1936	47	.31	*	.00	144	1.37
1937	65	.44	*	.00	269	2.62
1938	80	.55	*	.00	277	3.09
1939	70	.48	*	.00	183	2.20
1940	47	.33	*	.00	129	1.67
1941	16	.11	0	.00	44	.61
1942	18	.13	0	.00	18	.26
1943	5	.04	0	.00	11	.17
1944	2	.00	0	.00	5	.08
1945	0	.00	0	.00	0	.00
1946	0	.00	0	.00	0	.00
1947	1	.00	0	.00	1	.02
1948	0	.00	0	.00	0	.00
1949	4	.00	0	.00	0	.00
*A total of 2 banks failed 1934-40.						
Sources: Russell,p. 654; *Historical Statistics* pp.1027, 1031, 1038.						

Table 3: Percentages of Time Deposits.

Year	Mutual Savings Banks	S&L's	Commercial Banks
1935	40.1	16.7	42.1
1930	31.3	17.8	47.7
1925	31.5	16.3	52.2
1920	36.7	13.3	49.9
1915	50.1	10.8	39.1
1910	56.2	9.0	34.8
1905	65.5	9.1	25.4
1900	69.3	12.0	18.7
1895	69.3	15.2	15.5
1890	73.7	10.0	16.4
1885	82.4.	4.0	13.6
1880	87.5	0.8	11.7
Source: Lintner, p. 473.			

Table 4:Failures of National Banks.

Period	Failures	Number of Banks at the Start. of the Decade.
1930-33	1947	7247
1920-29	773	8024
1910-19	82	7138
1900-09	118	3731
1890-99	243	3484
1880-89	50	2076
1870-79	57	1612
Source: *Historical Statistics*, pp. 1031, 1038.		