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Deposit Insurance and Moral Hazard: Capital, Risk, Malfeasance, and Mismanagement

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A COMMENT ON: LINDA HOOKS AND KENNETH ROBINSON, “DEPOSIT INSURANCE AND MORAL HAZARD: EVIDENCE FROM TEXAS BANKING DURING THE 1920s,” *THE JOURNAL OF ECONOMIC HISTORY*, 62(3) (SEPTEMBER 2002).

ABSTRACT

A *JOURNAL OF ECONOMIC HISTORY* ARTICLE BY LINDA HOOKS AND KENNETH Robinson, “Deposit Insurance and Moral Hazard: Evidence from Texas Banking During the 1920s,” contains a contradiction (Hooks and Robinson 2002). Pondering the contradiction in the paper reveals insights that the authors may have overlooked.

Hooks and Robinson’s article examines the experience of the banking industry in Texas during the 1920s. Texas operated a deposit-insurance system from January 1, 1910 until February 11, 1927. Deposit insurance was mandatory for all state banks, which were given the choice of two plans in which to participate. The preponderance participated in the depositors guarantee fund, to which they contributed a flat-rate premium and from which their depositors received reimbursement in the event of a failure. A small percentage of banks participated in the depositors’ bond security system, which required them to file annually with the state a bond equal to the amount of its capital. Nationally chartered banks in Texas did not participate in these deposit insurance systems, and therefore, serve as a control group from which conclusions can be drawn. Hooks and Robinson analyze a panel of data on a sample of state and national banks in Texas over the period 1919 to 1926.

THE CONTRADICTION

Hooks and Robinson examine balance sheet data for banks in Texas. Their Table 3 focuses on state banks during the 1920s and finds “evidence that declines

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in capitalization led to increases in asset risk, as measured by loan concentrations. Such activity on the part of insured banks would indicate that banks with weakened financial conditions increased the riskiness of their asset portfolios, which would be consistent with a moral-hazard effect at work” (848). They define ‘loan concentration’ as the ratio of loans to total assets. This variable indicates the share of the portfolio invested in loans, which were risky assets with high returns, relative to the share of the portfolio held as cash reserves, deposited in correspondent banks (including the Federal Reserve), or invested in securities. The authors lack information about the types of loans made by the banks or about diversification within loan portfolios.

Their Table 4 examines two control groups: state banks in 1909, and national banks during the 1920s. Neither control group exhibits correlations between capitalization and loan concentration, suggesting that a difference between the control and treatment groups, such as deposit insurance, encouraged poorly capitalized state banks to invest in loans to local farmers and businessmen and other assets with higher risk.

According to the regressions in their Table 2, however, such behavior did not increase the likelihood that banks failed. Banks whose portfolios contained a higher proportion of loans failed at lower rates than other banks, all else equal (see coefficient on the portfolio concentration variable, which measures the ratio of loans to assets, LOANASS). The beneficial effect of additional loans was large. An extra \$1 of loans reduced the probability of failure to the same extent as an additional 43 cents of retained earnings (-0.140/-0.327) (see Table 2, column 1). The authors acknowledge this result when they write “we expect a positive sign on LOANASS ... However, LOANASS is negative and significant, the opposite of what was hypothesized.” A positive coefficient would indicate that banks with loan-heavy portfolios failed at higher rates than other banks. The negative coefficient that they find, however, indicates that banks with loan-heavy portfolios failed, on average, at rates lower than other institutions.

Their un-realized hypothesis rests on the notion that “declines in capitalization can induce ‘go-for-broke’ strategies among insured banks. With less of their own funds at risk as capital declines, insured banks may be tempted to gamble on risky projects with a small probability of payoff. If these ventures prove successful, the bank gains, otherwise the insurance fund suffers the losses” (844). Their expectation of a “positive sign on LOANASS” presumes that investing in loans rather than safer assets, such as government securities and eligible commercial paper, resulted in large losses and high failure rates. Table 2’s regressions indicate the opposite. Texas banks benefited from lending more money. Their ex ante gambles yielded ex post profits. Historically, this is understandable, since the banks made these loans during the era known as the Roaring 20s, when Texas enjoyed booms in industry and oil, and the state’s economy flourished.

The regressions in Table 2 contain another variable, INSURED, an indica-

tor for state banks, all of which had to participate in one of the two Texas deposit insurance systems. The author's argue that "if moral hazard incentives are present at insured banks, leading them to pursue excessively risky activities, then we would expect a positive sign on INSURED" (843). The sign is indeed "positive and significant at the 10-percent level, indicating that deposit insurance significantly increased the likelihood of failure" (843).

This brings us to the contradiction in the article. The way the authors interpret LOANASS and INSURED in Table 2 is inconsistent with the way they interpret those variables in Tables 3 and 4. For the latter tables, the authors claim that the structure of a bank's assets, measured by loan concentrations in the portfolio, serves as a good proxy for risk. "Loans are one of the riskiest assets that banks can hold" (842). "A higher proportion of loans leaves a bank more exposed to credit risk and more vulnerable to adverse economic shock" (843). The statistically significant relationship between LOANASS, TOTCAP, and CAPLOAN, the authors assert, reveals moral hazard at work.

Yet for Table 2, the authors' argue that the coefficient on INSURED indicates that moral hazard induced excess risk taking and influenced the survival of banks. But Table 2's regressions also contain the variable LOANASS. If LOANASS serves as a good proxy for ex ante portfolio risk, as the authors argue throughout their essay and in Tables 3 and 4, then the variable INSURED cannot also do so. Regression analysis imposes a *ceteris paribus* assumption. This assumption means that the coefficient on INSURED measures the correlation between insurance and failure that is orthogonal to LOANASS, that is holding the loan-to-asset ratio (the measure of risk taking) constant.

In other words, if the coefficient on INSURED reveals moral hazard at work, it must reveal moral hazard operating through a channel other than distorting banks decisions concerning the bearing of risk. What might that channel be?

RESOLVING THE CONTRADICTION

The literature on deposit insurance discusses many manifestations of moral hazard. Moral hazard arises when the presence of insurance reduces the incentives for depositors to monitor the safety of their savings. Depositors stop monitoring the behavior of bankers, and no longer bother to move deposits from worse to better institutions.

One manifestation of moral hazard, for which Hooks and Robinson search, involves excess risk-taking by insured banks. The relationship is one between managers and regulators, who indirectly underwrite gambles gone bad. The Savings and Loan crisis inspired this line of research.

Another manifestation of moral hazard arises when bank managers engage in actions that serve themselves at the expense of their bank. For example, managers may fail to exert efforts to collect bad debts or may show leniency toward

friends. Managers may cut costs and corners, initiating what may become a race to the bottom, as self-serving actions become endemic. Bank regulators usually refer to the illegal aspects of this phenomenon as malfeasance or defalcation, which is defined as a monetary deficiency through breach of trust by one who has the management or charge of funds, or in other words, a fraudulent deficiency in monetary matters. Bank regulators refer to behavior which does not rise to the level of criminality, but which harms the health of banks, as mismanagement.

Malfeasance and mismanagement of this type may have been present particularly among the small state banks operating in Texas between the world wars. The owners of these banks were typically the managers, and in some instances, also the principal borrowers. These banks did business in a small community, where the owner/managers socialized with businessmen and merchants who were their biggest borrowers, and also often significant depositors. These intimate relationships might have made it difficult for the owner/managers to vigorously collect delinquent debts. In such circumstances, the deposit-insurance system served as a means of subsidizing an entire community. When adverse shocks or inappropriate behavior prevented borrowers from repaying obligations, management avoided making hard choices, and instead, ceased operations, forcing the deposit-insurance authority to cover the bank's liabilities and the community's losses.

Malfeasance and mismanagement of this type does not generate predictable patterns in bank balance sheets. Some classic examples of mismanagement illustrate this point. First, a bank never bothers to make loans. Instead, it invests in commercial paper, deposits funds in correspondent banks, and keeps the remainder of its resources in its vault. Its costs exceed revenues, and it goes bankrupt, because its portfolio has too low of a return and too little risk. Second, a bank invests in a large, expensive building with beautiful new furniture and artwork, which it cannot afford on current revenues, and goes bankrupt. Third, bank managers do not perform due diligence and fail to collect outstanding debts. Losses rise. Bankruptcy results. Fourth, bank managers extend loans to friend's and neighbors, rather than to the project with the highest potential return or to the investors willing to pay the highest (risk-adjusted) interest rate.

In the first and second examples, the balance sheets of banks afflicted by moral hazard would exhibit low ratios of loans to assets. This pattern is the opposite of what, according to Hooks and Robinson, would be exhibited by banks bedeviled by moral hazard. It may explain the sign on the variable LOANASS in their Table 2.

In the third and fourth examples, the balance sheet of a bank could exhibit any ratio of loans to assets. The variable LOANASS would not reveal moral hazard of this type. Lack of correlation with LOANASS makes this type of moral hazard a potential explanation for the positive coefficient on INSURED in Table 2, because the logic of regression analysis dictates that the factor generating the coefficient must be orthogonal to LOANASS and to the underlying phenomena,

portfolio concentration and asset risk, for which LOANASS proxies.

Recently discovered data on the causes of bank suspensions during the 1920s supports this supposition. The data come from the archives of the Federal Reserve Board of Governors. The data indicate the cause of failure for each bank that ceased operations from 1921 through 1930. From 1921 through 1926, when deposit insurance existed in Texas, mismanagement or malfeasance forced an annual average of 3.2% of all state banks to suspend operations. That fraction amounted to roughly eight out of ten state bank suspensions that occurred during the interval. From 1927 through 1930, the four years following the cessation of deposit insurance, mismanagement and malfeasance forced an annual average of only 1.2% of all state banks to suspend operations. That fraction amounted to only two out of ten state banks that suspended operations (see Chung and Richardson 2006a and 2006b and Richardson 2006 for a description of the new data).

A THEORETICAL BASIS FOR THIS OBSERVATION

Leibenstein's (1966) concept of "X-Efficiency" provides a theoretical basis for this argument. Leibenstein distinguishes allocative efficiency (and inefficiency), which occurs when firms properly (or improperly) respond to price signals, to X-efficiency (and inefficiency), which occurs when firms minimize costs of producing an allocation (or fail to do so). The failure to minimize costs occurs due to difficulties aligning the incentives of employees and the firms for which they work. This principal-agent problem leads firms to operate inside their production possibilities frontier.

Deposit insurance is the type of regulation that distorts the incentives of managers, leading them to pursue their own interests – such as high salaries, large bonuses, plush offices, corporate contributions to high-profile charities, and leniency towards borrowers who are their family and friends – at the expense of the public and their firm. In other words, deposit insurance may distort incentives WITHIN banks, as well as distorting incentives OF banks.

Like the large literature on the impact of deposit insurance, Hooks and Robinson focus on the latter issue, how deposit insurance distorts the risk taking decisions of banks. On that issue, their piece makes a useful contribution, but, I believe, their statistical analysis also illuminates the former issue, how deposit insurance distorts incentives of managers, and thereby, encourages mismanagement and malfeasance within banks. In this respect, Hooks and Robinson's piece follows in the footsteps of Leibenstein (1966). Leibenstein's seminal study shows that in a wide array of industries, legal limits on competition among firms (such as monopolies and price controls) reduce economic efficiency both by distorting the decisions of firms (i.e. allocative efficiency) and by diminishing management's incentives to minimize costs (X-inefficiency). His estimates indicate that welfare

losses due to allocative inefficiency were a small fraction of the welfare losses due to X-inefficiency. Hooks and Robinson's regressions lead to a similar quantitative conclusion.

ADDITIONAL POSSIBILITIES

Moral hazard can afflict financial institutions in many ways. The afflictions described here and by Hooks and Robinson do not exhaust the possibilities. For example, insurance also distorts incentives pertaining to bank capitalization. The distortion arises because depositors do not insist that insured banks retain large reserves. Depositors would rather have banks invest the bulk of their assets and pay large dividends. This enables insured banks to operate with less capital and lower reserve ratios than uninsured counterparts.

The data set constructed by Hooks and Robinson may not be able to reveal the quantitative significance of this channel. State chartered banks differed from nationally chartered banks along many dimensions including: capital requirements, reserve requirements, examination frequency and thoroughness, services offered, investments permitted, and access to liquidity. The coefficient on the single-indicator variable, *INSURED*, confounds all of these effects.

In my opinion, de-capitalization did occur during the era of deposit insurance in Texas during the 1920s. At that time, the number of state-chartered banks rose. The number of newly opened institutions exceeded the number of failing banks, as mismanaged banks left the industry and new institutions arose to replace them. Regulations allowed state chartered banks to operate with less paid-up capital and lower financial reserves than nationally-chartered institutions. These facts are consistent with the hypothesis that insurance enabled banks to operate with lower levels of capital.

DISCUSSION

Hooks and Robinson indicate that their article provides evidence supporting the conventional academic wisdom about deposit insurance, moral hazard, and risk taking. I say their essay does that and more. Their regressions demonstrate that while the prevailing paradigm explains a portion of the events that occurred during the 1920s, some other phenomena, hitherto overlooked, must also be at work. Evidence from the archives of the Board of Governors suggest that this phenomenon is mismanagement and malfeasance, which increases when insurance reduces depositors' incentives to monitor and react to the safety and soundness of banks. Economic logic suggests that de-capitalization may also have occurred. Other manifestations of moral hazard may have influenced the behavior of banks in Texas. Further research is required to determine their rela-

tive importance.

REFERENCES

- Chung, Ching-Yi, and Gary Richardson.** 2006a. Deposit Insurance Altered the Composition of Bank Suspensions During the 1920s: Evidence from the Archives of the Board of Governors. *Contributions to Economic Analysis & Policy* 5(1): Article 34.
- Chung, Ching-Yi, and Gary Richardson.** 2006b. Deposit Insurance and the Composition of Bank Suspensions in Developing Economies: Lessons from the State Deposit Insurance Experiments of the 1920s. NBER Working Paper w12594 (October).
- Hooks, Linda M., and Kenneth J. Robinson.** 2002. Deposit Insurance and Moral Hazard: Evidence from Texas Banking in the 1920s. *Journal of Economic History* 62(3) (September): 833-53.
- Kane, Edward J.** 1989. *The S&L Insurance Mess: How Did it Happen?* Washington, DC: The Urban Institute.
- Leibenstein, Harvey.** 1966. Allocative Efficiency vs. 'X-Efficiency.' *American Economic Review* 56(3): 392-415.
- Merton, Robert C.** 1977. An Analytical Derivation of the Cost of Deposit Insurance and Loan Guarantees: An Application of Modern Option Pricing Theory. *Journal of Banking and Finance* 1(1): 3-11.
- Richardson, Gary.** 2006. The Records of the Federal Reserve Board of Governors in the National Archives of the United States. *Financial History Review* 13(1): 123-134

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[Go to Reply by Linda Hooks and Kenneth Robinson](#)

[Go to September 2007 Table of Contents with links to articles](#)