

An Antebellum Lesson

Bank insurance systems before the Civil War provide a clear message for policy today about the importance of incentives, authority and exposure to loss

Douglas Clement

Editor

The U.S. financial system has evolved radically since its earliest years. Bank functions and organization, financial flows, international networks, government supervision, the currency and buildings themselves—all have been transformed by the nation's historical path, economic growth, and legal and political development.¹ It might therefore be thought that little can be learned about current regulatory matters from analysis of banking systems from centuries ago. Such a conclusion would be seriously wrong.

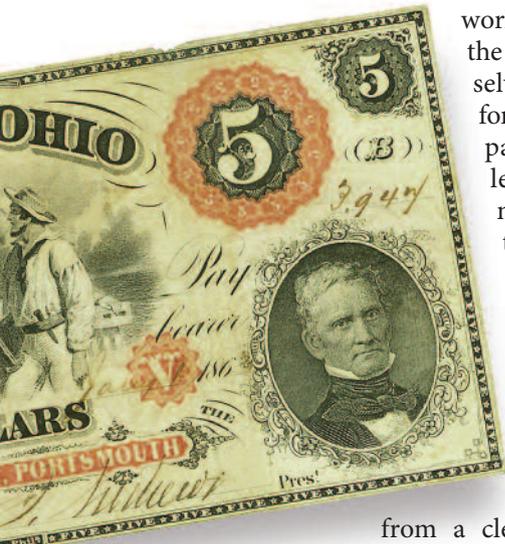
In reality, some of today's most difficult dilemmas would benefit from a clearer understanding of how issues in the nation's earliest years were addressed and, at times, resolved. This is particularly the case for what is one of the central challenges of modern financial system regulation: Ensuring that government policy does not promote excessive risk-taking by financial institutions. This issue of "moral hazard" (a seemingly archaic term with overtones of puritanical judgment) is paramount in current policy debates. How can government provide the right measure of protection for banks and other financial institutions without encouraging risky behavior?

With explicit provision of deposit insurance and implicit assurance of bailouts, governments have, in the public interest, long supported banks so that they're not subjected to runs by panicked depositors. Such runs can spread rapidly, destroying confidence and freezing liquidity throughout the finan-

cial system. And the more interconnected a financial institution is with other parts of the financial system, the greater the threat its collapse represents. This was precisely the rationale for the government's controversial bailout of AIG during the recent financial crisis.

But excessive support or insurance will exacerbate risk-taking, provoking the very financial instability it seeks to curb. A bank that assumes a government rescue may take risks it otherwise wouldn't. The issue of moral hazard has long been a concern to insurance providers of all sorts—health, auto and homeowner insurance companies all worry about clients taking excessive (and potentially expensive) risks, and insurance rates usually reflect the provider's beliefs about the customer's likely risk-taking behavior.

A recent piece of research by Minneapolis Fed Senior Research Officer Warren Weber, "Bank Liability Insurance Schemes Before 1865" (Working Paper 679 online at minneapolisfed.org), draws on the history of bank regulation before the Civil War to paint a vivid picture of how the right financial arrangement can discourage excessive risk-taking.



Warren Weber
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Genesis and background

"In truth, the motivation for this paper was Gary's conference," said Weber in an interview, referring to the conference in honor of former Minneapolis Fed President Gary Stern held at the Minneapolis Fed, April 23-24. (Go to "Events" on the Research

page at minneapolisfed.org and to “Too Big to Forget” in the June 2010 *Region*.) Because moral hazard in banking was one of Stern’s central concerns, Weber sought out a historical example. “My focus in this paper was moral hazard and the monitoring of risk in the context of ‘deposit insurance,’ and it turns out that there is a very clear illustration from the mid-1800s.”

Many assume that the Federal Deposit Insurance Corp. (FDIC), launched in 1933, was the first significant insurance scheme for banks in the United States, but Weber notes that some states insured deposits well before that. Eight states enacted deposit insurance programs between 1909 and the 1920s, and the National Currency Act of 1863 that established the National Banking System provided for explicit U.S. Treasury guarantee of notes issued by national banks.

But two types of bank insurance schemes were also in effect prior to the Civil War: insurance funds and mutual guarantee systems, and these are the focus of Weber’s study. Though they went out of existence a century and a half ago, their history still sheds light on current regulatory quandaries. To initially develop his understanding of the systems, Weber used a classic 1958 study by Carter Golembe and Clark Warburton, *Insurance of Bank Obligations in Six States*, a book-length report created for the FDIC. “Golembe and Warburton really were the pioneers in this, pulling together massive amounts of data and archival information about these early insurance schemes,” he observed.

The analysis in terms of incentives, moral hazard and exposure to loss is all Weber’s, however, and his examination of the insurance plans provides clear lessons. “I’d argue that their experience demonstrates the critical importance in bank regulation of incentives, the authority to change those incentives, and the question of who bears loss—these points are essential to controlling moral hazard,” he noted. Or as he phrases it in the working paper: “[R]egulatory incen-

tives matter. ... The schemes that provided the most control of moral hazard were those that had a high degree of mutuality of losses borne by all banks participating in the scheme.”

Weber points to recent testimony by Allan Meltzer, a Carnegie Mellon University economist and historian of the Federal Reserve, who testified about bank supervision early this year before the U.S. House Financial Services Committee. (See an interview with Meltzer in the September 2003 *Region* and a review of his book *A History of the Fed, Part 1* in the December 2003 *Region*, both issues online at minneapolisfed.org.) “We cannot have deposit insurance without restricting what banks can do,” said Meltzer. “The right answer is to use

regulation to change incentives—making bankers and their shareholders bear the losses.”²

The pre-Civil War experience supports Meltzer, writes Weber in his working paper. “The incentives set up by the insurance scheme regulations were important for how well the moral hazard that accompanies any insurance schemes was contained.” But Weber contends that the evidence suggests more. “It could be useful to think about expanding the

class of agents that could (should?) be made to bear losses from a bank’s behavior *beyond the shareholders* of that bank,” he writes (emphasis added). “The class could be expanded to include other banks if they were to also have the power or authority to modify the incentives that a bank faces.”

The chief lesson of the mid-1800s bank insurance schemes, Weber says, is that when all members of the insurance plan are liable for losses incurred by others, they have an incentive to monitor the behavior of fellow members. And successful schemes provided not only the incentive to *monitor* behavior, but the power to change it to reduce risk. “It’s an over-used expression,” admits Weber, “but having ‘skin in the game’ makes all the difference to reducing moral hazard. Also, the ability to do something about risk-taking by others is another crucial element.”

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Historical context

Weber's paper begins with a review of money and banking in the antebellum period when these insurance schemes were active, and his description is a startling reminder of how much has changed.

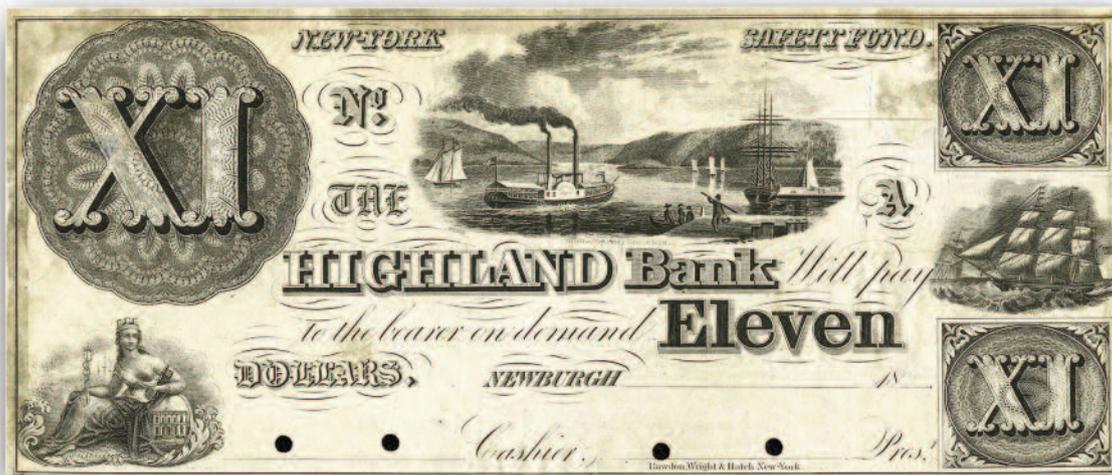
- There was no central bank of any sort.
- Unlike the *fiat* money of today, the United States had a *commodity* money standard. A dollar was defined in terms of grams of silver or gold, and the federal government issued gold and silver coins.³
- But coins were “only a small fraction” of the money supply in the United States, Weber writes.

Two bank insurance systems

In this antebellum period, two types of schemes were established to insure liabilities of member banks: insurance funds and mutual guarantee systems.

Under an *insurance fund* (called a “safety fund” in some states)—established in three states—banks paid a fraction of their capital to the state's bank authority, which would use this insurance fund to reimburse creditors of a bank that failed. Payments to creditors were capped by the funds, though member banks “could potentially be required” to make further contributions.

Under a *mutual guarantee system*—also established in three states—member banks were legally



“By far the predominant media of exchange were the notes issued by banks. ... Virtually every bank in existence during this period issued its own notes ... [that] were redeemable [in gold and silver coins] on demand at that bank.”

- Banks were plentiful relative to the U.S. population, growing in number from 356 in 1830 to 705 in 1840, and then doubling to 1,421 by 1860. There are nearly 8,000 FDIC-insured banks today, but the ratio of banks to people in 1860 was nearly twice as high as it is now.
- Bank regulation was exclusively state-based (no federal regulation), and in most states, banks were restricted to a single location.

responsible for full repayment of losses incurred by creditors of any of its failed members, “only limited by the market value of assets of all banks.”

Weber offers a significant level of detail for the insurance funds established in New York and Vermont and for the mutual guarantee systems established in Indiana and Ohio. The insurance systems established in Michigan and Iowa are ignored because they only existed for a short period.

Insurance funds

The New York and Vermont insurance funds were established in 1829 and 1832, respectively, and lasted until 1863 when all banks became part of the National Banking System.⁴ The funds had similar structures. They guaranteed all liabilities, but when a

bank failed, its creditors were paid from the fund only after the failing bank's assets had been completely liquidated, a process that could take some time.

To fund the insurance pool, banks were assessed a percentage of capital, ranging as high as 3 percent in New York and 4.5 percent in Vermont. If the insurance fund was exhausted, additional assessments could be levied until it was replenished, but annual contribution requirements were limited for each bank. A bank could opt out of the fund when its charter expired and regain a portion of its contributions.

Founders of these funds were well aware of the moral hazard such safety nets would create. Weber quotes from an account of the legislative debate over establishing the New York fund:⁵

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[A]nother representative, Mr. Hubbell, pointed out that the very existence of such a fund would relax “public scrutiny and watchfulness which now serve to restrain or detect malconduct.”

To mitigate that problem, both states established restrictions on bank activities and supervision of bank conduct. New York stipulated that banks could issue notes of a value no greater than two times capital stock (or shareholder equity), and Vermont set a note issuance limit of three times shareholder equity. New York's law limited loans and discounts to no greater than 2.5 times equity.

Bank commissioners were also established in both states to supervise banks belonging to the insurance fund, and Golembe and Warburton note that such supervisory agencies were an innovation at that time. Weber, though, is skeptical about their effectiveness, pointing out that there were only three bank commissioners in each state to supervise all insured banks. (There were 90 banks in the New York fund when it began; total membership declined over time. Membership in the Vermont fund fluctuated, with a maximum of 16 banks.) He also notes that supervisors weren't authorized to close banks for bad banking practices, only for illegal acts or

insolvency. Moreover, “bank commissioners were prohibited from owning stock in any bank,” he writes. “As a result, they had no direct stake in the gains or losses from the activities of the banks they supervised.” That is to say, supervisors had no financial skin in the game.

Still, Weber emphasizes that supervisors—then and now—are motivated by far more than personal financial gain. In most instances, supervisors are and were highly competent and work to the best of their ability to identify weaknesses in the banking system and have them corrected. And supervision works in part because supervisors know that their careers and reputations depend on solid job performance. A direct financial stake in a bank's health adds another important element to a supervisor's incentive structure.

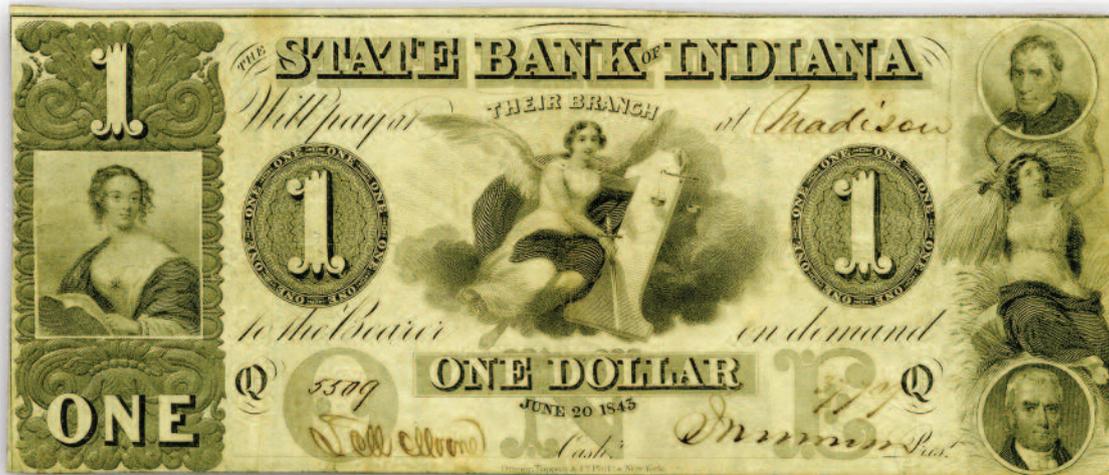
Mutual guarantee systems

Weber then describes the mutual guarantee systems in Indiana and Ohio. (Again, Iowa's lasted just a short time.) Both state systems were called the “State Bank of ...” and all member banks were called “branches” of the State Bank. But the terms were misleading—the “State Bank” did no business of its own, and each “branch” operated as an independent bank, with its own stockholders, notes and profits. Indiana's system, with 13 branches, operated from 1834 to 1857. Ohio's had (effectively) 34 branches, operating from 1845 to 1863.

To mitigate moral hazard, these systems instituted restrictions on note issuance, loans and discounts similar to those implemented by the New York and Vermont insurance funds. But there were significant differences in supervision, according to Weber. “The supervision of the Branches was done by a state board comprising members appointed by the state legislature and *one director from each branch*,” he writes (emphasis in original). The state board, which examined each branch two to three times a year, could close a branch, limit its dividend payments, and restrict loans and discounts.

Moreover, “each member of the system was mutually responsible for at least some of the liabilities of the other banks in the system.” Indiana’s branches were required by law to guarantee “all debts, notes, and engagements of each other.” Ohio’s law required that “[e]ach solvent branch shall con-

“virtually all banks in the country had suspended payments.”⁶ Banks resumed payment by the middle of 1838, but a second wave of suspension started in 1839, spreading across the nation with the exceptions of banks in New York and New England. These two waves of bank panic were followed by a



tribute ... to the sum necessary for redeeming the notes of the failing branch.”

The upshot was that in a mutual guarantee system, each branch shared in the losses but not the profits of its fellow system members, and was able to supervise the others (by virtue of having one of its directors on the state board). “In other words, the ‘regulators’ had a direct, one-sided financial stake in the outcome of the branches they regulated,” writes Weber. And because each branch was accountable for losses of others, it had every reason to monitor the banking practices of other branches. In sum, every branch had the motive, means and opportunity to protect the health of its peers.

Runs, failure and coverage

Did these systems work? Not entirely, according to Weber’s analysis. To explain this conclusion, he gives an account of how each state’s banks fared—in terms of runs, failures and coverage for creditors—during national bank panics.

There were two significant panics during that historical period; the first began on May 4, 1837, with banks in Natchez, Miss., suspending payment on their notes. Panic spread quickly, and by May 19,

severe economic contraction that lasted until 1843.

A second major panic began in the late summer of 1857, most likely starting in Ohio and spreading in subsequent months to Philadelphia, New York and Boston, followed by a contraction that continued until 1858.

So, how well did the insurance plans serve their members during these crises?

Bank runs

Unfortunately, finds Weber, “it is evident that these insurance schemes did not prevent bank runs during the panics of 1837 and 1857.” In 1837, banks in New York suspended payment on their notes on May 9, just five days after the Natchez suspensions, and banks throughout New England, including Vermont, did so the following day. Nor did Indiana’s mutual guarantee system prevent the potential for runs there. Branches of the State Bank suspended payment in May 1837. (Ohio’s system didn’t begin until 1845.)

Weber argues that the New York and Vermont insurance funds *may* have led to an early resumption of payment in those states. They resumed in May 1838, while banks in most of the

The Suffolk System

A strong pattern among banks in four states doesn't prove a theory, of course. But another banking system in the antebellum period, the Suffolk Banking System of New England, offers further support for the importance of exposure to loss and authority to restrain risky banking activity. The System provides an example in which a motivated party (the Suffolk Bank of Boston) could and did take action to curb risk-taking by (and improve survival of) interconnected banks (those who joined Suffolk's note-clearing system) whose potential losses would negatively affect its interests.*

Suffolk was a regional note-clearing system—not a bank liability insurance scheme—run by the Suffolk Bank of Boston from 1825 to 1858. By the early 1830s, most banks in New England belonged to the Suffolk System because it enabled them to hold smaller levels of coins and other reserves than would otherwise be required to redeem the notes they issued. Banks could borrow from the Suffolk Bank and pay off the Suffolk loans when their own loans and other assets matured. Another benefit: Notes issued by member banks exchanged at par throughout New England, increasing value and convenience for bank customers. In exchange for these benefits, the Suffolk Bank required its members to keep an interest-free deposit at Suffolk (or another Boston member bank) of 2 percent of bank capital.

If a member bank failed, the Suffolk Bank would be stuck with losses on the bank's notes held on its balance sheet, as well as any overdraft advances made to that bank. (The losses would be borne by Suffolk alone, not mutually by all members as in a mutual guarantee system.) And potential losses could be quite substantial. In the 1830s and 1840s, observes Weber, member banks owed Suffolk about \$700,000 on average, climbing to about \$1 million in the 1850s. Bank notes held by Suffolk were about \$450,000 in the 1830s, rising to roughly \$700,000 in the 1850s. These numbers loomed large compared with Suffolk's

total capital stock of approximately \$1 million in the 1840s and 1850s.

"Thus, the Suffolk Bank had an interest in monitoring the actions of banks that were members of the system," writes Weber. "And it did." He quotes as evidence a letter from Suffolk's president to a Vermont member bank commenting that "too large a portion of your loan ... cannot be relied upon at maturity to meet your liabilities."

"Further, the Suffolk Bank had the power to affect the behavior of member banks," writes Weber. Whenever it felt compelled to do so, it notified debtor banks to pay off loans due. Otherwise, the bank's notes would be redeemed by Suffolk for gold and silver coin—solid collateral.

The Suffolk System's apparent ability to reduce bank failure is suggested by Weber's failure rate data from System members in four New England states (Maine, Massachusetts, New Hampshire, Vermont) compared with four other eastern states (Maryland, New Jersey, New York, Pennsylvania). In the Suffolk System, only 24 of 354 banks failed—a rate of 6.8 percent, less than half the 14.5 percent rate of bank failure (47 of 325) in the other four states.

—Douglas Clement

*In earlier work with Arthur Rolnick and Bruce Smith, Warren Weber studied the Suffolk Banking System to evaluate the claim that it was an effective and efficient privately run interbank payments system. They conclude that the System's history of extraordinary profitability suggests that note clearing is a natural monopoly and that "there is no consensus in the literature about whether or not the unfettered operation of markets in the presence of natural monopolies will produce an efficient allocation of resources." Rolnick, Arthur J., Bruce D. Smith and Warren E. Weber. 1998. "Lessons from a Laissez-Faire Payments System: The Suffolk Banking System (1825-58)." *Federal Reserve Bank of Minneapolis Quarterly Review* 22, Summer, pp. 11-21.

country didn't begin paying until August. And the second wave of the 1837 panic didn't cause suspension in New York and Vermont as it did elsewhere. "It is not clear how much of this early resumption and lack of second suspension can be attributed to the ... insurance funds [in those states], however," Weber acknowledges; many other New England banks had similar suspension/resumption patterns.

As for the 1857 panic, only Ohio's mutual guarantee system was truly in effect at the time, and while none of the branches suspended payment on their notes, Weber suggests that a variety of unrelated actions taken by the state's bank authorities made it more difficult for note holders to run banks by presenting notes for redemption. The guarantee system was not necessarily a crucial factor.

Bank failures

The story with regard to bank failures is mixed. To analyze failure experience, Weber compares different states with a variety of types of banks.⁷ It's a complex picture, but the bottom line seems to be that failure rates for banks that operated under the two insurance systems were "roughly the same as or somewhat higher than those of uninsured chartered banks in the same state or in similar states."

The stunning exception, though, is Indiana. "There were no failures of the branches of the State Bank of Indiana," Weber writes. But he defers his proffered explanation until the conclusion of the paper. A hint: Think "exposure."

Insurance coverage

A third criterion for evaluating the success of these schemes is the degree to which creditors were made financially whole in the event of bank failure. As Weber points out, doing so was a central rationale for the FDIC, established by the Banking Act of 1933. Representative Henry B. Steagall, a key proponent of deposit insurance, said its purpose was to supply the public with "money as safe as though it were invested in a government bond" and to "prevent bank fail-

ures, with depositors walking in the streets."

Weber's thorough analysis of the data finds that results on this criterion varied significantly: Mutual guarantee systems fared far better than insurance funds.

Ten banks that were members of New York's insurance fund made claims on the fund after the crisis of 1837. The first three claims were completely covered. But in 1841, four banks failed, placing claims of over \$1.7 million, well beyond the \$572,000 available. The next year, three more banks failed; they claimed \$532,000 from the fund, which had only \$497,000. To cover these claims, New York issued nearly \$1 million in state bonds and "all creditors of the failed banks were paid off by the end of 1847."

Because the special bonds allowed the New York fund to pay off all losses, it could be argued that the insurance scheme provided complete coverage. But "in another sense," writes Weber, "at least some creditors suffered losses due to the time delay in receiving final payment." Note holders needing quick access to funds would commonly have to accept a discount of between 30 percent and 50 percent of their notes' face value.

The Vermont situation was worse still. Two members of that state's fund failed and made claims on the fund. Creditors of one failed bank were paid in full after it failed in 1839, *but not until 12 years later*. At the second bank failure, in 1857, less than half the amount claimed was paid off.

The mutual guarantee systems in Indiana and Ohio provided much better coverage for creditors. No branch of the Indiana system failed, so no creditors suffered loss. And though four Ohio branches failed, other members of the system were assessed to redeem in full the notes of the failed four.

In a side note, Weber mentions an interesting parallel to today's policy discussions. In 1855, faced with imminent branch bank failures, the president of Ohio's state board advocated making fund

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advances to the branches experiencing liquidity problems, “the object being to sustain the Branch during a period of general alarm, when [its] failure ... would have, in all probability, carried several others with it.” His rationale, observes Weber, bears remarkable likeness to that used by regulators during the recent crisis in justifying large bailouts to avert broader financial collapse.

Lessons (still to be) learned

The experience of these bank insurance systems has clear implications for controlling moral hazard, notes Weber, with close application to today’s financial system, different though it may otherwise be.

Meltzer had it right in his House testimony, says Weber. He stressed that to control the increased risk-taking that government deposit insurance encourages, the activities of insured banks must be restricted by those parties who have an incentive for doing so. To repeat, Meltzer said regulators should “change incentives [by making] bankers and their shareholders bear the losses.” Increasing the required amount of capital held by banks would provide *shareholders* (among others) added incentive to watch their bank’s risk levels. Contingent debt plans would convert debt into equity in the event of bank failure, providing *bondholders* with an incentive to monitor bank actions.

But the lessons of history teach that losses can usefully be shared beyond the equity or debt holders of a particular bank. “All of the pre-Civil War bank liability insurance schemes had at last partial mutuality of losses borne by all banks participating in the scheme,” he writes. Expanding the parties exposed to loss from bank risk-taking could be effective. (A provocative if implausible proposal: Create a system whereby the “too-big-to-fail” banks analyzed in the 2009 stress tests are mutually liable for losses of the others. That financial exposure would offer a powerful incentive to monitor competitors’ risk-taking.)

But supplying incentive to monitor banking behavior would do little without also providing the ability to change behavior that might inflict (mutual) losses. “The difference between the insurance fund ... schemes and the mutual guarantee schemes,” writes Weber, “is that the latter also gave survivors (banks that did not fail) the

power to regulate the activities of member banks.” In the insurance fund systems, bank commissioners were prohibited expressly from owning bank equity; it was a prohibition that made them impartial, perhaps, but also left them without a direct financial interest in curbing risky behavior by the banks they supervised. In the mutual guarantee systems, a director of each branch sat on the state regulatory board, with means as well as motive to restrict imprudent actions of fellow system banks.

But even among the mutual guarantee systems, there was a significant difference in results. Indiana’s system achieved a far better outcome than Ohio’s in a key respect: no bank failures, and therefore no need for some members to cover losses of others. The explanation?

“The reason for the different outcomes, in my opinion,” writes Weber, “is the difference in the amount of ‘skin in the game’ of the branches of the two systems. It was much higher for the branches of the State Bank of Indiana.” By calculating the fraction of capital that an average branch would have to pay out to creditors should another average branch fail, Weber computed the level of capital exposure of the Indiana branches between 1835 and 1856 and Ohio branches between 1846 and 1861.

While levels varied widely from year to year, the general capital exposure of an Indiana branch was about 20 percent, whereas the exposure of an Ohio branch was on the order of 5 percent. Thus, each Indiana branch had much more to lose if a fellow branch failed, and therefore far greater incentive to curb risky behavior by others. What accounted for Ohio’s lower exposure? Two factors, explains Weber: The Ohio system guaranteed only bank notes, not “all debts, notes and engagements” as in Indiana, and there were more branches over which to spread losses (roughly 33 in Ohio versus 13 in Indiana).

The most effective system, in other words, must ensure that those with the authority to restrict bank activities will bear the potential loss of increased risk-taking. But the pre-Civil War experience illustrates another important point. “The incentives do not have to apply solely to the shareholders,” writes Weber. “[T]he evidence seems to suggest that degree of mutuality [of losses borne] affected the outcomes.”

The bottom line

The experience of the insurance funds and mutual guarantee systems of the mid-1800s thus provides powerful lessons for controlling moral hazard today, says Weber. Relying on supervision alone isn't sufficient because supervisors don't bear financial losses if the institutions they oversee fail. "Supervision is fine, and necessary, and there's no question that supervisors then and now were very competent and committed to carrying out their responsibilities," he said. "But if this historical episode is any guide, getting incentives right is critical, and creating direct financial incentives seems to work." In implementing deposit insurance or other measures to limit bank runs and systemic failure, policymakers should consider designing systems that include a higher extent of financial loss-sharing among involved parties, and that provide members with the means to change incentives of other members.

"Regulatory incentives matter for controlling moral hazard," he writes in summing up the pre-Civil war experience with bank insurance liability plans. "The schemes that provided the most control of moral hazard were those that had a high degree of mutuality of losses borne by all banks participating." ^R

Endnotes

¹ See, for example, "The 'Monster' of Chestnut Street" in the September 2008 *Region* and "The Bank that Hamilton Built" in the September 2007 *Region*, both issues online at minneapolisfed.org.

² Meltzer, Allan H. 2010. Testimony to the U.S. House Financial Services Committee, March 17. Meltzer touched on many issues in his testimony, but control of moral hazard was central, and using incentives rather than supervision was his key point: "Trust stockholders' incentives not regulators' rules. Incentives are not perfect, but they are better. ... Real financial reform requires that bankers, not regulators, monitor the risk on their balance sheet and accept their losses from mistakes. ... That will make for more prudence. I repeat my frequent comment: Capitalism without failure is like religion without sin. It doesn't work well."

³ Textbook definitions of these terms, from N. Gregory Mankiw's *Principles of Economics*, are that commodity money "takes the form of a commodity with intrinsic value," while fiat money is "money without intrinsic value that is used as money because of government decree." But Weber notes that the true source of value for fiat money remains a debated issue.

⁴ Weber suggests that the New York fund essentially stopped providing insurance in 1842.

⁵ Chaddock, R. E. 1910. *The Safety Fund Banking System in New York State, 1829-1866*. S. Doc. No. 581, 61st Cong., 2nd sess. Washington, D.C.: Government Printing Office.

⁶ Suspended banks would not redeem their notes or deposits for gold and silver, but remained open for other business.

⁷ For example: banks with state charters but without insurance, and so-called free banks, which were allowed to operate without a state charter but with restrictions on note issuance.