Alternatives to the Federal Deposit Insurance Corporation

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The financial crisis of 2008 has caused economists to reexamine the forces that stabilize (or destabilize) the financial system in the United States and around the world. Despite much debate, there remains serious disagreement as to the root causes of the crisis and hence to the best solutions for preventing future crises. Some studies claim the crisis was caused by deregulation in the financial sector (Crotty 2009; Bhidé 2011), but the quantity and complexity of financial regulations had in fact increased significantly in the decades leading up to the crisis. Other studies, by contrast, argue that poor or misguided financial regulations were themselves a major cause of the crisis (Calomiris 2009; J. Friedman 2011). The form of potentially misguided financial regulation that we focus on here is government-administered deposit insurance, managed in the United States by the Federal Deposit Insurance Corporation (FDIC). This paper discusses the evidence from U.S. history and around the world that government deposit insurance leads to more bank failures and financial crises. We consider changes that might be made to the FDIC and the U.S. deposit insurance system to help stabilize the banking system and prevent future financial crises.

Many people are unaware that deposit insurance can reduce stability in the banking system. The literature in support of deposit insurance is based largely on

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theoretical models (e.g., Diamond and Dybvig 1983).[1] This line of research assumes banking is inherently unstable and that the government has special powers or privileges that enable it to prevent bank runs when private actors cannot. Deposit insurance is often modeled as an idealized and actuarially fair system that prevents crises without creating any harm to the economy.[2] More realistic models, however, include the disadvantages of deposit insurance, such as the problems of moral hazard and increased risk taking that occur when depositors' funds are guaranteed because the depositors no longer have strong incentives to monitor banks' risk-taking activities. From theory alone, it is unclear whether government deposit insurance should be expected to reduce the number of bank failures by preventing runs or to increase the number of bank failures because of moral hazard. We must therefore turn to the empirical studies that analyze the effects of deposit insurance in the real world.

Despite the common perception among both laymen and economists that deposit insurance helps stabilize the banking system, most empirical studies find that deposit insurance decreases stability. After briefly discussing the history of the FDIC, we analyze two strands of the empirical literature. First, international studies of deposit insurance systems around the world indicate that countries with higher levels of deposit insurance coverage and countries with more government involvement in the administration of deposit insurance tend to have higher numbers of bank failures and more frequent financial crises. Second, studies of the banking system in the United States prior to the establishment of the FDIC show similar results. Many U.S. states established their own deposit insurance systems through public or private means, especially prior to the nationalization of the U.S. banking system during the Civil War. Other states evolved competing private systems of insurance or functioned efficiently with no deposit insurance system at all. These private, pre-FDIC systems were effective at regulating the financial system, bailing out troubled banks, and preventing contagious bank runs that could lead to financial crises. Overall, the evidence indicates that reducing the FDIC's role in deposit insurance is likely to increase stability in the U.S. banking system.

Given this evidence, we next consider three potential changes to the FDIC system. First, the administrative side of deposit insurance can be improved by replacing the FDIC with a privately managed organization, as is the case in most developed nations. Second, the mandated level of FDIC coverage might be reduced, allowing private suppliers to make up the difference. Third, the system could be privatized entirely by eliminating mandated coverage and allowing insurance to be provided

1. Diamond and Dybvig 1983 has been cited more than one thousand times and is one of the top twenty-five most influential papers in economics, according to the Social Science Citation Index.

2. As Thomas Sargent describes the model, "People don't initiate bank runs because they trust that their deposits are safely insured. And a great thing is that it ends up not costing the government anything to offer the deposit insurance!" (in Rolnick 2010, 31). Thomas Hogan and William Luther (forthcoming) argue that the Diamond and Dybvig (1983) model and other actuarially fair models of insurance are not appropriate for analyzing the FDIC.

privately rather than through the FDIC. Absent the FDIC, private institutions similar to those that existed before the FDIC would likely evolve to provide deposit insurance, consumer protection, and banking stability. These changes would reduce the problems with government deposit insurance, especially moral hazard, and would help stabilize the U.S. banking system.

Studies of Deposit Insurance

Deposit insurance creates two conflicting forces that influence bank failures. On one hand, it removes the incentive for depositors to run on the bank, so banks are less likely to fail from nonfundamental causes. On the other hand, it creates moral hazard. Because banks are not monitored by depositors, they invest in riskier assets and are more likely to fail from fundamental causes. It is impossible to know in theory which of these effects will be greater, so we must look to the empirical literature—including literature on the history of the FDIC and international studies comparing deposit insurance systems around the world and deposit insurance in the United States prior to the FDIC—to find out whether deposit insurance makes banks more or less likely to fail in the real world. The evidence strongly indicates that systems with higher levels of deposit insurance and more government involvement are subject to higher instances of bank failures and financial crises.

The FDIC

The FDIC was established to stabilize the banking system and protect individual depositors in response to the banking panics of the early 1930s that largely contributed to the Great Depression in the United States (FDIC 1998, 20–27; Bradley 2000, 1–4). Although the FDIC is commonly credited with stemming bank runs,[3] deposit insurance has also increased the number of bank failures due to moral hazard. Many studies find that FDIC insurance played an important role in contributing to the 2008 financial crisis, and the Federal Savings and Loan Insurance Corporation (FSLIC) that is now a part of the FDIC played the same role in the savings and loan (S&L) crisis of the 1980s.

A series of bank failures during the early years of the Great Depression paved the way for the adoption of federal deposit insurance.[4] In 1931, the rate of bank failures and losses to depositors skyrocketed as the Federal Reserve failed to abate the shortage of liquidity in the banking system (Friedman and Schwartz 1963, 676; FDIC 1998, 21; Bernanke 2004). In January 1932, a federal lending agency

3. Charles Calomiris and Stephen Haber argue that, contrary to the common perception, the introduction of FDIC insurance did not play a causal role in ending bank runs in the Great Depression; "the banking crisis of 1932–33 ended months before the establishment of FDIC insurance" (2014, 190).

4. Although the bank failures of this period are often blamed on the supposedly unstable nature of banking, instability in the banking system was actually caused by ill-conceived banking regulations, such as restrictions on branch banking (Champ, Smith, and Williamson 1989; Calomiris and White 1994).

called the Reconstruction Finance Corporation was created, and by the end of the year it had "authorized almost $900 million in loans to assist over 4,000 banks striving to remain open" (FDIC 1998, 22). Nevertheless, deteriorating conditions led to a nationwide bank holiday, and after much deliberation and debate the FDIC was established in the Banking Act of 1933 (FDIC 1998, 27). The act provided the Temporary Deposit Insurance Fund, which began coverage on January 1, 1934, and a permanent plan that was to take effect on July 1, 1934, but was later delayed to July 1, 1935 (FDIC 1998, 30). There was strong opposition to federal deposit insurance, even by President Franklin Roosevelt and others in the administration,[5] but sentiments began to shift in 1934 as the rate of bank failures declined (FDIC 1998, 31). The Temporary Deposit Insurance Fund was at the time seen as a major contributing factor in stopping bank failures, so the opposition to it mostly faded. Thus, the perception that FDIC insurance stabilizes the banking system has been perpetuated to the present day despite much evidence to the contrary.

The FDIC's scope, coverage, and costs have greatly expanded over time and no longer resemble its original purpose. The initial coverage level of $2,500 per depositor was increased to $5,000 within just six months of adoption (Bradley 2000, 9). Since permanent FDIC insurance took effect in 1935, the maximum coverage amount has been increased six times, most recently in 2008, when it was increased to $250,000, where it stands today. "Since its inception, the real scope of federal deposit insurance . . . has increased by roughly 514 percent," outpacing growth in total deposits and income per capita (Hogan and Luther 2014, 153–54).

Despite the early perception that the FDIC reduced the frequency of bank failures, most evidence suggests it actually did the opposite. As Charles Calomiris and Stephen Haber point out, "Although the civics textbooks used by just about every American high school portray deposit insurance as a necessary step to save the banking system, all the evidence indicates otherwise: it was a product of lobbying by unit bankers who wanted to stifle the growth of branch banking" (2014, 190).[6] Empirical studies of FDIC insurance suggest that the effects of moral hazard are present and possibly strong. Richard Cebula and Willie Belton find that federal deposit insurance coverage increased the rate of commercial bank failures (1997, 281), and Alden Shiers indicates that "higher levels of deposit insurance are positively and significantly associated with increased riskiness of commercial banks" (1994, 359). Ira Saltz examines the link between the level of FDIC coverage and the frequency

5. Even before government deposit insurance was introduced at the federal level, economists and politicians alike predicted its catastrophic consequences. As Christine Bradley describes the Banking Act of 1933, "President Roosevelt was against a government guarantee of bank deposits. He was not alone: bankers, including the American Bankers Association, opposed an insurance program, maintaining that such a program rewarded inept banking operations" (2000, 5).

6. Many studies indicate that political support for the FDIC was driven by special interests, mostly to benefit small country banks and unit banking states at the expense of big-city banks and branch-banking states (Golembe 1960; Calomiris and White 1994; White 1998; Bradley 2000; Dehejia and Lleras-Muney 2007; Kroszner and Melick 2008).

rate of bank failures and finds "strong evidence of a cointegrating relationship between the bank failure rate and the extent of central government–provided deposit insurance" (1997a, 71), indicating that "federal deposit insurance very likely induced bank failures" (1997b, 3).

Evidence also indicates federal deposit insurance was a major cause of the S&L crisis of the 1980s. At the time of the crisis, deposit insurance for these institutions was provided through the FSLIC. Like the FDIC, the FSLIC supplied the same function and suffered from the same destabilizing moral-hazard effects. Both the FSLIC and the FDIC guaranteed deposits up to $100,000 per account, after being increased from $40,000 in 1980 (Kane 1989, 36). In the 1980s, the S&L industry experienced widespread failures, resulting in the largest collapse of financial institutions since the Great Depression (Curry and Shibut 2000, 33). Over the course of the crisis, 525 insolvent institutions were liquidated or sold, and another 517 institutions were insolvent but still operating at the end of the decade (Barth 1991, 1). The FSLIC was insolvent by 1986, and taxpayers were forced to cover the excess losses. In 1989, it was abolished, and its functions were moved under the FDIC, where they reside today (Curry and Shibut 2000, 28). A study by the FDIC estimates the total cost of the crisis at $153 billion, of which $124 billion was contributed by taxpayers and only $29 billion by the S&L industry (Curry and Shibut 2000, 33). Many studies find the high levels of risk taken by the S&Ls were primarily the result of moral hazard created by deposit insurance (Kane 1989; Barth 1991; Cebula 1993). A study by Michael Dotsey and Anatoli Kuprianov attributes the magnitude and costs of the crisis to "the blanket guarantees provided by deposit insurance, which permitted insolvent institutions to continue attracting deposits and to engage in high-risk activities that ultimately resulted in heavy losses" (1990, 3).

FDIC insurance also appears to have contributed to the financial crisis of 2008. Anat Admati and Martin Hellwig argue that by removing depositors' incentives to monitor banks' risk-taking activities, deposit insurance reduces the cost of debt for the largest U.S. banks and encourages them to use much higher leverage. "In effect, taxpayers subsidize the use of borrowing by banks" (2013, 136–39, 176–88, 129). Higher leverage magnified banks' losses during the crisis, putting the largest banks at risk and increasing financial contagion. These events, which culminated in the bailouts of a number of U.S. banks and other financial firms by the Federal Reserve and the U.S. Treasury, were, according to Admati and Hellwig (2013), driven by misguided regulations, including FDIC deposit insurance.

International Studies

Unlike the FDIC in the United States, most developed nations have systems of deposit insurance that are either partly or fully privatized. Many studies compare across countries the different types of deposit insurance systems and levels of deposit

insurance coverage. They find that higher levels of deposit insurance and more government involvement in the deposit insurance system lead to more bank failures and financial crises.

Studies on deposit insurance around the world consistently find that higher levels of deposit insurance coverage lead to higher rates of bank failures. In a sixty-one-country study over the period from 1980 to 1997, Asli Demirgüç-Kunt and Enrica Detragiache examine various coverage aspects, such as level of insured deposits, presence of a coverage limit, and share of deposits covered, and the "results uniformly suggest that explicit deposit insurance tends to increase bank fragility, and the more so the more extensive is the coverage" (2002, 1386). Using a similar database of surveys from 107 countries, James Barth, Gerard Caprio, and Ross Levine show that "[t]he relationship between deposit insurance and bank fragility is economically large" (2004, 237). A bank-level data set of thirty countries in 1990–97 also indicates that "explicit deposit insurance is found to reduce market discipline" and that "a higher coverage limit significantly reduces interest rates [paid on deposits] and weakens market discipline" (Demirgüç-Kunt and Huizinga 2004, 397, 393).

International studies also reveal that the adverse effects of deposit insurance are stronger where government has greater involvement in the deposit insurance system. Demirgüç-Kunt and Detragiache find "the adverse impact of deposit insurance on bank stability tends to be stronger . . . where it is run by the government rather than [by] the private sector" (2002, 1373). Demirgüç-Kunt and Edward Kane show that "deposit insurance schemes that involve the private sector in their day-to-day management control moral hazard and financial fragility more effectively" (2002, 193). Demirgüç-Kunt and Harry Huizinga conclude that publicly managed systems "tend to reduce market discipline (and increase moral hazard)" (2004, 399). Specifically, schemes funded only by the government have the most significant decline in interest rates and the largest reductions in market discipline, whereas private and joint management tend to improve market discipline.

Deposit insurance also appears to increase the probability of financial crises. Demirgüç-Kunt and Detragiache analyze the causes of banking crises in developed and developing countries from 1980 through 1994 and find that "[c]ountries with an explicit deposit insurance scheme were particularly at risk" (1998, 81). Based on research in another study, they argue that "explicit deposit insurance tends to increase the likelihood of banking crises" (2002, 1373). Demirgüç-Kunt and Kane demonstrate that "explicit insurance makes banking crises more likely" and that "countries with highest coverage limits in the sample . . . are five times more fragile than the countries that impose the lowest coverage limits" (2002, 184–85). Barth, Caprio, and Levine find "deposit insurance generosity is positively associated with the likelihood of a crisis" (2004, 237). In an analysis of the costs of crises under different institutional regimes, Patrick Hohohan and Daniela Klingebiel assert that unlimited deposit insurance guarantees "add greatly to the fiscal cost of banking

crises" (2000, 1). Demirgüç-Kunt and Kane conclude that "[p]olicymakers should view the positive correlation between poorly designed deposit insurance and banking crises as a wakeup call" (2002, 187).

Because deposit insurance decreases financial stability, it has been found to have negative effects on economic development and long-run economic growth. Using a cross-sectional data set of forty-nine countries, Stephen Cecchetti and Stefan Krause show "that countries with explicit deposit insurance and a high degree of state-owned bank assets have smaller equity markets, a lower number of publicly traded firms, and a smaller amount of bank credit to the private sector" (2005, 531). Similarly, Robert Cull, Lemma Senbet, and Marco Sorge find that in countries with less-developed legal and regulatory regimes, "[g]enerous government-funded deposit insurance tends to have a negative effect on financial development and growth" (2005, 73). Demirgüç-Kunt and Kane review the literature on deposit insurance and conclude that although government backing might be helpful in specific instances, "[o]ver longer periods, it is more likely to undermine market discipline in ways that reduce bank solvency, destroy real economic capital, increase financial fragility and deter financial development" (2002, 192).

Studies of individual countries also show the adverse effects of expansive government deposit insurance. Jack Carr, Frank Mathewson, and Neil Quigley examine the stability of the Canadian banking system before and after the adoption of federal deposit insurance in 1967. They find that insolvencies increased after the establishment of the Canadian Deposit Insurance Corporation in 1967 and argue that the absence of deposit insurance "provided incentives for both prudence on the part of bank management and monitoring by depositors and bank regulators" (1995, 1156). Similarly, Thomas Mondschean and Timothy Opiela find evidence of decreased market discipline in Poland following an increase in coverage as "bank specific variables became less important in explaining differences in deposit interest rates" (1999, 179). Lucy Chernykh and Rebel Cole indicate that "financial risk and, to a lesser degree, operating risk increase follow[ed] implementation" of Russian federal deposit insurance in 2004 (2011, 388). From 1975 to 1998, the deposit insurance scheme set up by German banks was completely private in funding and management. Examining this period, Thorsten Beck finds that "German banks take very low risks compared to other countries and do not seem able to extract a net subsidy from the financial safety net" (2002, 711).

It is clear that substantial empirical evidence supports the claim that deposit insurance increases bank failure rates, and a further look at the varying schemes in other countries provides policy implications for the United States. The findings suggest that the negative effects of deposit insurance are stronger where coverage is higher and when deposit insurance is administered by the government. Private systems or systems with private involvement empirically tend to do a better job at combating the harmful effects of moral hazard. These alternatives may provide guidance for improving the deposit insurance system in the United States.

Pre-FDIC Insurance

Prior to the establishment of the FDIC, deposit insurance in the United States was administered at the state level through public or private mechanisms. Many states had either legally mandated or government-run deposit insurance systems. Other states had fully privatized systems of coinsurance administered by a clearinghouse or banking organization. Studies of pre-FDIC deposit insurance find that higher state involvement leads to a higher number of bank failures.

Comparisons of state-level deposit insurance systems demonstrate that government involvement in deposit insurance tends to decrease stability. Calomiris shows that "in both the antebellum period and in the 1920s, insurance systems that relied on self-regulation, made credible by mutual liability, were successful, while compulsory state systems were not" (1990, 283). Clifford Thies and Daniel Gerlowski also examine the state-sponsored systems in the nineteenth and twentieth centuries, finding, "other things equal, state banks in states with guaranty funds failed at a higher rate than state banks in states without guaranty funds" (1989, 677). Warren Weber compares state-run funds of the pre–Civil War era to mutual-guarantee systems and concludes, "[T]he 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" (2010, 1).

Among the pre–Civil War deposit insurance systems, Indiana, Iowa, and Ohio were mutual-guarantee systems with small numbers of banks that had strong incentives to police one another, and these programs appear to have been successful at preventing bank failures. By contrast, systems in Michigan, New York, and Vermont "were much more like later deposit insurance systems, including the federal system," and were not successful because they "produced very large bank failures, sufficiently large to bankrupt the insurance fund" (White 1995, 5). For example, New York's fund, established in 1829, continued to suffer losses until 1842, when "it ceased to be able to repay losses of failed banks and thus ceased to provide protection to the payments system" (Calomiris 1990, 286). Indiana, Iowa, and Ohio's systems experienced little to no failures, mostly avoided suspension of convertibility, and enabled banks to maintain operations. While Indiana's scheme was in place from 1834 to 1865, no insured bank failed (Calomiris 1990). Both Iowa's (1858–66) and Ohio's (1845–66) schemes had similar results (Calomiris 1989). These systems "were brought to an end not by insolvency, but by federal taxation of bank notes designed to promote the National Banking System" (Calomiris 1990, 288).

Studies using individual bank data find similar results. Rajeev Dehejia and Adriana Lleras-Muney examine state-chartered banks from 1900 to 1940 and conclude that "the overall effect of deposit insurance was negative. And these negative effects, when significant, are sizable" (2007, 265). Linda Hooks and Kenneth Robinson use data from Texas state-chartered banks over the period 1919–26 and find "the existence of deposit insurance for state-chartered banks increased their

likelihood of failure" (2002, 833). Several studies examine the voluntary state insurance program in Kansas in the 1920s (Wheelock 1992; Wheelock and Kumbhakar 1995; Wheelock and Wilson 1995) and assert that "insured banks were more likely to fail than non-insured banks" (Wheelock 1992, 530). According to one study, "The uninsured banks, in fact, were generally stronger institutions that exhibited higher capital ratios, fewer real estate lending problems, and far less need for public assistance" (Spong and Regher 2012, 108).

In the absence of deposit insurance, other mechanisms served to maintain stability and limit bank failures. As discussed later, banks often formed clearinghouses to coordinate the exchange of banknotes, but "during banking panics the clearinghouse united banks into an organization resembling a single firm which produced deposit insurance" (Gorton 1985, 277). Prior to the establishment of the FDIC, bank shareholders faced double or even triple liability for their equity investments and were therefore responsible for a portion of the bank's losses after insolvency. Jonathan Macey and Geoffrey Miller indicate that "double liability was an effective regulatory system" and that, "unlike deposit insurance, the threat of double liability appears to have induced caution on the part of bank managers in their use of depositors' funds" (1992, 34). As Kevin Dowd (1993) notes, a bank can also maintain depositor confidence and thus stability in other ways, such as hiring an independent auditor to evaluate its soundness, developing reliable accounting standards, publishing its financial data, and maintaining adequate capital.

Overall, studies of pre-FDIC deposit insurance in the United States find that state-run systems were largely unsuccessful and increased bank failures and that self-regulating systems privately managed by banks that bore a portion of liability were the most successful. Based on these studies, we can only conclude that decentralized administration and privatization of losses would improve the current U.S. deposit insurance system.

Alternatives to the FDIC System

This section proposes three potential changes that might be made to the current system of deposit insurance managed by the FDIC. First, international studies find that private or semiprivately managed deposit insurance systems tend to outperform public systems. The FDIC might therefore be partly or fully privatized in a manner similar to most European deposit insurance systems. Second, the evidence shows that lower levels of mandated deposit insurance coverage tend to increase stability in the banking system. The current maximum level of $250,000 in mandated FDIC deposit insurance coverage can be greatly reduced without endangering the vast majority of depositors, a change that is likely to benefit smaller depositors by increasing stability and reducing costs. Finally, we propose that mandated insurance could be eliminated and that the FDIC be privatized or abolished altogether. Historical evidence of deposit insurance prior to the FDIC indicates that private mechanisms

such as clearinghouses, coinsurance programs, and systems of self-regulation are likely to emerge to stem bank risk. The empirical evidence indicates that these proposals are likely to increase efficiency and stability in the U.S. banking system.

Private Administration of Deposit Insurance

The United States could maintain a government mandate on deposit insurance but allow the system to be privately administered. As mentioned earlier, private management tends to reduce bank risk and the rate of bank failures. Many developed countries around the world currently use such models. Thirteen countries have privately administered schemes, and many others have joint public–private administration, as defined by the World Bank (Demirgüç-Kunt, Kane, and Laeven 2014, 37–38). New Zealand has no deposit insurance but instead employs a system for resolving insolvent banks. This section discusses the examples of privately administered systems in Switzerland and Italy, the special case of a private system in Germany, and the bank-resolution system used in New Zealand. Belgium, Brazil, Denmark, Finland, France, Japan, Luxembourg, Norway, Spain, and many other countries have privately administered systems similar to the ones discussed here (Demirgüç-Kunt, Karacaovali, and Laeven 2005, 60–64).

Switzerland and Italy are examples of countries with deposit insurance systems that are mandated by law but privately administered by organizations of member banks. The scheme in Switzerland, esisuisse, is identified as "self-regulation" (esisuisse 2014, 1). The Swiss Federal Law on Banks and Savings Banks requires that depositors be insured up to 100,000 Swiss francs but calls for a self-regulating organization approved by the Swiss Financial Market Supervisory Authority (FINMA) to insure deposits (Federal Assembly 1934, Art. 37a and 37h). All deposit banks in Switzerland are required to be members of esisuisse and are subject to its regulations (Federal Assembly 1934, Art. 37h). Administrative functions, such as setting annual member contributions, are carried out internally by esisuisse (esisuisse 2014). When a bank becomes insolvent, FINMA has the authority to trigger deposit protection, at which time all other banks in esisuisse must supply the necessary funding within twenty days (Federal Assembly 1934, Art. 37i). Dirk Cupei, managing director of financial market stability for the Association of German Banks, notes of the Swiss scheme, "[T]he central principles are set down in legislation, but most things are left for the financial services industry to regulate itself." He claims that this lean model "works very well" and that "[i]t is right that the funds of an insolvent institution should first be used to cover client credit balances. This rule not only makes deposit protection more efficient, it also means that in many cases banks can be wound up without having to use money from the deposit protection scheme" (esisuisse 2013, 78). According to an esisuisse annual report, "The esisuisse depositor protection scheme in Switzerland is unique: a self-regulated model with joint and several liabilities that has proven its ability to work on more than one occasion since 2007" (esisuisse 2013, 91).

In Italy, the Interbank Deposit Protection Fund was established in 1987 as a voluntary consortium but is now a "private-law mandatory consortium" (Fondo Interbancario n.d.). All Italian banks except mutual banks are members of the fund (Banca D'Italia 1993, Art. 96). Although the Protection Fund is private, with statutes and by-laws adopted by a general meeting of members, the Italian central bank, the Bank of Italy, has full powers in supervising and coordinating the fund's activities (Fondo Interbancario 2014). Italian law dictates maximum coverage of 100,000 euro (Il Presidente 2011). Once the Bank of Italy initiates compulsory administrative liquidation of the bank, the Deposit Fund has twenty days to provide funds for reimbursement (Fondo Interbancario 2014). The fund's board determines the procedures and schedule for the reimbursement of depositors (Fondo Interbancario 2014, Art. 14). Major administrative decisions are made at the general meeting, such as determining member contributions, electing officials, and approving the balance sheet (Fondo Interbancario 2014, Art. 11).

In Germany, the Association of German Banks established its private deposit insurance scheme, the Deposit Protection Fund, in 1975. Beck describes Germany's model as "a club that provides a nonrival, but excludable good for its members" and notes that the scheme's structure resembles the successful historical schemes in the United States (2001, 712–13). The Deposit Protection Committee, whose members are elected from the Association of German Banks, manages the fund (Bankenverband 2014). Although the Deposit Protection Fund is voluntary and emerged absent a statutory mandate, a new statutory scheme, the Compensation Scheme of German Banks (EdB), was introduced in 1998 in response to a European Union (EU) mandate for compulsory deposit insurance schemes. As required by the EU mandate, the EdB set a minimum coverage level of 20,000 euro per depositor, but the level has since increased to 100,000 euro per depositor (Demirgüç-Kunt, Kane, and Laeven 2014, 34). The EdB is also privately managed and shares features of the voluntary scheme but is under the regulation and supervision of the Federal Banking and Supervisory Office. The Ministry of Finance sets the premiums for the statutory system (Beck 2002, 714).

New Zealand does not currently have a government deposit insurance program at all. The government introduced a system of deposit insurance during the financial crisis of 2008 but has since allowed its temporary program to expire. "Following the closure of the Retail Deposit Guarantee Scheme on 31 December 2011, there was not a case to introduce a deposit insurance scheme on its own" (Reserve Bank of New Zealand 2013). As a substitute, its Open Bank Resolution (OBR) tool is aimed at maintaining operations in the event of a bank failure rather than providing a deposit insurance safety net. If a bank fails, a portion of its liabilities are frozen to allow the bank to continue operations until it is acquired by another bank or resolved completely. If the bank is resolved, the priority of creditors is maintained such that shareholders bear the first losses, followed by subordinated debt holders and then last by depositors. However, only a portion of depositors' funds are frozen for use against the bank's losses, and the rest of the unfrozen funds become available

the next day, allowing depositors to conduct transactions. "While the initial portion of the creditors' claims that are frozen puts a ceiling on their final losses, their actual losses may be less than this if it turns out that the estimate of the losses was too conservative . . . creditors could well regain access to much of their frozen funds once the bank's losses are determined" (Hoskin and Woolford 2011, 10). Unfrozen liabilities are ultimately funded through liquidation of assets, takeover, or restructuring. As Toby Fiennes of the Reserve Bank of New Zealand says, "[OBR] does not change the fact that depositors' and other creditors' funds are at risk" (2013). The OBR scheme reduces moral hazard while enabling the financial system to continue to function during a crisis.

Reducing the Level of FDIC Coverage

As discussed in the previous section, the provision of deposit insurance can be improved by privatizing administration, but it might also be beneficial to improve the consumer side by lowering the mandated level of coverage. This change would have benefits that are attractive to both supporters and opponents of the current FDIC system. Supporters argue that deposit insurance requires government support to backstop the banking system in the event of a financial crisis. Opponents would prefer that individuals be allowed to choose how much of their deposits, if any, they would like to insure rather than be required to purchase deposit insurance for up to $250,000 in deposits. Reducing the mandated level of deposit insurance coverage would maintain a backstop for the banking system while creating benefits to any consumer who might prefer to opt out of the currently mandated system of deposit insurance, especially low-income consumers who might have trouble affording a bank account under the current system.

Two arguments are often given in favor of government deposit insurance: it stabilizes the banking system, and it protects small, less-sophisticated depositors. The first justification is based on a false premise, however: as shown earlier, government insurance programs tend to increase rather than reduce risk in the banking system. But what about the protection of small depositors? As Christine Bradley points out, one justification given for federal deposit insurance during the congressional debates over the Banking Act of 1933 was simply "to protect the small depositor" (2000, 5 n. 47). The argument goes that less-sophisticated depositors do not have the ability to monitor the soundness of large, complex banks and will be exposed to losses if the bank fails. However, only a minimal amount of deposit insurance is needed to protect these depositors, and the cost of deposit insurance, however small, is particularly harmful to lower-income consumers in several ways. First, low earners may only marginally be able to afford a bank account at all, and their financial alternatives, such as check-cashing services and payday loans, may be more costly. Second, deposit insurance fees have a proportionally larger impact on incomes that are lower and less disposable. Third, small depositors benefit less than large depositors

from the implicit taxpayer subsidy created by deposit insurance. The current coverage limit of $250,000 is far beyond the amount needed by the typical depositor. Why should consumers be penalized by being forced to purchase a service they neither desire nor can afford?

Cutting the level of deposit insurance would also please economists who worry about moral hazard because more sophisticated depositors will have a greater incentive to monitor banks' risk-taking activities. FDIC chairman William Isaac, for example, worried in the early 1980s that "[w]ith a perception of minimal risk, there is little incentive for larger depositors to exert the degree of market discipline present in other industries" (1984, iv). If the level of deposit insurance is reduced, more-sophisticated investors will withdraw their deposits from banks that take excessive risk, thereby imposing a higher degree of market discipline, and less-sophisticated investors will still have some minimal level of protection.

Reducing the level of mandated coverage does not mean that consumers would have no insurance at all but rather that they would have the option of acquiring insurance through private means. American consumers are already able to insure their excess deposits through a variety of private insurance providers. As described in a report from the FDIC, "Private excess insurance already exists. . . . A small number of private insurance companies have offered this type of insurance over the past decade" (2000, 48). Although the insurance of excess deposits is most common at the individual level, it also appears that some institutions take it upon themselves to make sure all customer deposits are insured, even those beyond the FDIC coverage limit. As of 2000, the FDIC reported that "[a]mong the some 300 institutions represented at FDIC outreach meetings in recent weeks, approximately one in ten indicated that they had purchased excess coverage" (2000, 48).

Credit unions use a similar system for insuring excess deposits. Like the FDIC, the National Credit Union Association (NCUA) operates the National Credit Union Share Insurance Fund to protect its member institutions' deposits. This fund, however, is supplemented by private insurers. One of the largest private insurers is American Share Insurance (ASI), which provides primary and excess deposit insurance exclusively to credit unions. Excess deposit insurance from ASI is often used to insure deposits of up to $250,000 beyond the NCUA coverage limit of $250,000, for a total coverage of $500,000.

To protect itself against losses, ASI monitors the soundness and risk taking of its member credit unions. As described in an FDIC report, "American Share Insurance Company, a private primary and excess deposit insurer to credit unions, requires monthly financial reports from its members, examines them regularly, and supervises them closely" (Bradley and Craig 2007, 26). ASI is sometimes able to provide its services at a discount relative to FDIC insurance. According to the *Chicago Tribune,* "Craig Bradley, president of Kane County Teachers Credit Union in Illinois, said his organization switched to American Share in the early 1980s because the federal credit union deposit insurance fund was charging higher premiums"

(Allison 2002). The firm's website advertises that "ASI is owned by our insured credit unions. . . . [T]he corporation insures over 1.2 million credit union members, and no member has ever lost money in an ASI-insured account!" (ASI 2015).

State-level cooperatives provide another example of private insurance. Massachusetts, for example, has a set of state-level deposit insurance funds that operate like the FDIC but are privately administered. "Massachusetts state law requires excess deposit insurance for the customers of state cooperative banks, savings banks, and state-chartered credit unions" (NCUA 2007, 9). There are three main providers in the state: the Co-operative Central Bank, which insures cooperative banks; the Deposit Insurance Fund, which insures savings banks; and the Massachusetts Share Insurance Corporation, which insures credit unions. Although insurance for excess deposits is not required in most states, reducing the level of FDIC coverage would allow consumers to choose the level of insurance that is best for them through state-level providers, as is done in Massachusetts, or through private firms such as ASI.[7]

To some degree, depositors are able to circumvent the limits of deposit insurance coverage through programs such as the Certificate of Deposits Account Registry Services (CDARS). CDARS allows each individual depositor to insure millions of dollars in deposits by splitting their total deposits among accounts at multiple banks, each of which is insured by the FDIC up to its $250,000 limit (CDARS 2014). If the coverage limit on FDIC insurance is substantially lowered, some depositors would likely turn to services such as CDARS, and others would move to private insurance or other programs. Large depositors would have the option of earning a higher return on their uninsured accounts or earning a lower return by paying a fee to protect against potential losses.

Private Insurance Without Mandated Coverage

A final recommendation for improving the deposit insurance system in the United States would combine the extreme cases of the previous two recommendations by lifting the mandate on deposit insurance completely and privatizing deposit insurance entirely. Although it is impossible to predict the response from private firms in the market or what institutional features would emerge, we can identify at least a few possibilities by looking to examples from the past. Prior to the FDIC, some states created their own state-level government deposit insurance programs, while other states allowed the emergence of clearinghouses and other private mechanisms to manage bank and depositor risk.

7. Some opponents of private deposit insurance argue that the failure of the Ohio Deposit Guarantee Fund (ODGF) in 1985 proves that state-level private deposit insurance is unreliable, but there is much confusion over whether the ODGF was in practice a private system. Ronald Alexander, for example, notes that although the ODGF was not intended to be a government agency, it was established by legislation to promote the public interest, and its structure, functions, and guarantees are specified in statute (1982, 431–32). A similar state-level bailout took place in Maryland. As the FDIC describes, "Ohio and Maryland S&L failures helped kill state deposit insurance funds" (2002).

As previously discussed, prior to the FDIC, several U.S. states instituted their own deposit insurance systems. Some states had schemes resembling the FDIC, whereas others relied more heavily on banks to self-regulate with a mutual-guarantee system. During the antebellum period, for example, Indiana, Ohio, and Iowa had bank-liability schemes that largely resembled clearinghouses, run by a board of directors, whose members were appointed by individual banks (Calomiris 1989). According to Weber, "[T]he board had the power to close a branch, limit a branch's dividend payments, and restrict the ratio of its loans and discounts to capital" (2010, 5). Each member was mutually responsible for some of the other banks' liabilities. As Calomiris notes, Indiana's system established strong supervisory authority, which it gave to banks themselves, who had an incentive to implement it properly (1989, 16). Some state-level examples exist today, such as the programs in Massachusetts. As discussed previously, public state-level deposit insurance programs were historically less effective than their private counterparts.

In many states, clearinghouses emerged to facilitate transactions among banks and reduce the cost of clearing checks (Gorton and Mullineaux 1987, 460). Clearinghouses in the nineteenth century resembled the clublike model of banking associations that provide deposit insurance in private systems, such as Germany's current system. Members had to satisfy certain rules of the clearinghouse, and failure to do so resulted in disciplinary actions such as fines and expulsion (Gorton and Mullineaux 1987, 461). When runs occurred, the clearinghouse transformed into a quasi–deposit insurance scheme, "uniting the member banks in a hierarchical structure topped by the Clearinghouse Committee" (Gorton 1985, 280). As Gary Gorton and Donald Mullineaux note, "[I]ndividual banks had an incentive to lower the probability of other members' failures because of the information externalities" (1987, 464).

The most famous example of an effective clearinghouse is the Suffolk Bank of New England. Rather than forming from a banking organization, the Suffolk Bank was a private bank that evolved into a bankers' bank. It provided note-clearing services but also acted as a lender of last resort. Members were required to keep an interest-free deposit of 2 percent of capital at the Suffolk Bank, and if they ran a negative clearing position, they could borrow in the form of an overdraft. Instead of returning the bank's notes, the Suffolk Bank would hold on to them and return them as the member bank paid off the loan (Weber 2010, 14). Arthur Rolnick, Bruce Smith, and Warren Weber (2000) show that New England banks fared better during the Panic of 1837 and claim this outcome was due to the note-clearing and lender-of-last-resort services provided by the Suffolk Bank.[8] In the years leading up to the Civil War, the Suffolk Bank faced increasing competition from other clearinghouses

8. In addition to the regulatory function of monitoring member banks, the Suffolk Bank also promoted economic stability by acting as a check on overexpansive monetary policy. Andrew Young and John Dove (2013) examine state-level data on circulations and reserves from the Suffolk Banking System (1825–58) and find a cointegrating relationship between state-level circulation and reserves, indicating that the Suffolk system was able to prevent in-concert overexpansions of banknotes.

and bankers' banks, most notably the Bank of Mutual Redemption. These regional clearing systems ultimately met a political end from "the suspension of specie payments in December 1861 and the passage of the National Banking System Act in 1863 with the resulting elimination of the bank-note issue of state banks" (Lake 1947, 205).

In addition to the benefits created through bank clearinghouses, other institutional mechanisms often developed to protect depositors and deter bank risk. One such mechanism described by Eugene White was the requirement that bank managers post performance bonds, often in the amount of multiple years' salary, which would be forfeited in the case that the bank became insolvent (2011, 6). Many banks have recently adopted a similar tool, "clawback" clauses that in certain instances allow the bank to reclaim salaries or bonuses paid to bank executives, but these mechanisms are not generally used to cover creditors' losses. "Such clauses are generally triggered by ethics violations rather than [by] performance alone" (Hogan and Luther 2014, 166). Another pre-FDIC institutional feature adopted in several states was double or unlimited liability for bank stockholders (Weber 2010, 5). According to Calomiris, "[S]tockholders were liable for bank losses up to twice their capital contribution[,] and officers and directors of failed banks were presumed guilty of fraud until they proved otherwise. If they failed to prove their innocence, their liability was unlimited" (1989, 16). Double liability resulted in actual losses to creditors being extremely small (Macey and Miller 1992, 58).

Although it may be hard to imagine gaining the political will to disband the FDIC in the United States, it is not hard to imagine how a developed economy would operate without a government deposit insurance system. Many countries have evolved sophisticated financial markets without the need for government deposit insurance. In 1970, only 5 countries had explicit deposit insurance systems, and in 1985 there were still only 19 countries with deposit insurance systems, compared to the 112 countries that have such systems today (Demirgüç-Kunt, Kane, and Laeven 2014, table A.1.2). Australia, Hong Kong, and Singapore adopted deposit insurance as recently as 2004 and appear to have done so mostly in the face of political pressure rather than for any perceived benefit to the financial system. The Australian government, for example, worried that "[i]f we do not [insure deposits], Australian financial institutions could, over time, find it more difficult to borrow in international financial markets. They would become uncompetitive in attracting funds" (Prime Minister 2008). As discussed earlier, New Zealand adopted but then abolished its system of deposit insurance. Although its financial system is small relative to the U.S. system, New Zealand provides a current example of both a financial system in a developed economy without the need for a deposit insurance program and, perhaps more important, a government that was able to recognize the harms created by deposit insurance and to summon the political will to abandon its existing deposit insurance system.

Evidence from other developed nations and historical experiences in the United States suggest that ending compulsory federal deposit insurance is both reasonable

and practical. In the past, a variety of private mechanisms emerged to protect depositors and maintain stability in the banking system. The fact that financial systems in other developed nations functioned efficiently without deposit insurance in the recent past and function without it even today indicates that eliminating deposit insurance is a realistic possibility for the United States as well.

Conclusion

Partly or fully privatizing the FDIC system of deposit insurance would increase efficiency and stability in the U.S. banking system. Most laymen and economists alike believe that FDIC deposit insurance increases stability by preventing bank runs. However, the widespread consensus in empirical studies is that the benefit of fewer bank runs is far outweighed by the cost of moral hazard, which increases individual bank failures and financial crises. Considering this evidence, the United States should attempt to improve banking stability by moving to a partly or fully privatized deposit insurance system.

This study discusses three potential paths for improving upon the current system of FDIC deposit insurance. First, because international evidence indicates privately administered deposit insurance systems are more stable than government-administered systems, deposit insurance should be run by a private entity or an organization of private banks rather than by the FDIC. Second, empirical studies find that stability can be improved by reducing the level of mandatory deposit insurance coverage, allowing supplemental insurance to be provided through private means. Third, combining these recommendations, the United States could move to a fully privatized deposit insurance system with no required coverage. History suggests that alternative mechanisms would emerge to insure depositors and minimize bank risk. These changes can be instituted in part or in full, alone or in conjunction. We hope future studies will explore these options in further detail to judge which will be the most efficient and politically feasible to implement in the United States.

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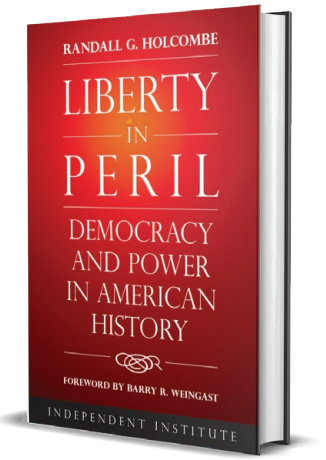

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