

# BANK RUNS: CAUSES, BENEFITS, AND COSTS

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## Introduction

Bank runs have a bad reputation. A shout of "run" strikes the same fear into most of us as a shout of "fire" in a crowded room. We immediately get up and progressively walk, jog, and finally run in panic to the nearest exit even before finding out whether it is a false alarm or how bad the fire may be. After all, it is better to be safe than sorry. Indeed, a shout of "bank run" may evoke even greater fear. Not only will depositors walk, jog, and run to the affected bank to withdraw their funds, but depositors at other banks, not subject to the same bad news, may also run on their banks as bank runs are frequently viewed as contagious. If my neighbor's bank is in trouble, maybe mine is also. Thus, a run on one bank is frequently believed capable not only of causing the failure of a large number of other banks nationwide in domino fashion and of destabilizing the financial system, if not the economy as a whole.<sup>1</sup>

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<sup>1</sup>Indeed, it is widely believed that spreading rumors that start a bank run is a crime subject to penalties. No such federal law exists, although some states may have such statutes. In early December 1986, the Magnet Savings Bank, the largest thrift institution in West Virginia, experienced a run when a proposed merger was cancelled. Depositors withdrew about \$1 million within 24 hours. In response, the bank offered a \$5,000 reward for information leading to the conviction of those starting the rumor. The president of the bank explained that the bank had recently paid a \$3,000 reward to catch a bank robber and that he considered the act of spreading rumors at least as

This belief is not uncommon even among students of banking. For example, in a recent article, Robert Norcross (1986, p. 318) warned that

Bank failures are no longer isolated and self contained. . . . Today's bank failure is a crisis failure—a failure that will spread to other banks and financial institutions even during economic prosperity. The spark that ignites the flames of failure may still be grounded in mismanagement or fraud, but by the time the regulators douse today's fires, they will have ravaged the credit relationships of banks, businesses and individuals from coast to coast and, possibly, around the world.

At the time of the Continental Illinois National Bank crisis, Comptroller of the Currency C. T. Conover (1984, pp. 287–88), defending the policy of guaranteeing the par value of all deposits and other liabilities of the bank and holding company, argued that if

Continental had failed and been treated in a way in which depositors and creditors were not made whole, we could very well have seen a national, if not an international, financial crisis the dimensions of which were difficult to imagine. None of us wanted to find out.

Indeed, for many Americans, the term bank run conjures up images of the Great Depression. As a result, official public policy since 1933 has been directed at reducing to the extent possible the basis for any runs on depository institutions.

This paper considers whether the reputation of bank runs is deserved or whether they have received a bum rap. In the process, the paper analyzes the causes of bank runs; examines the implications of runs for the bank(s) directly affected, other banks, the financial system, the community, and the national economy; reviews the history of bank runs; and explores alternative policy prescriptions for eliminating the potentially harmful effects of bank runs.

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serious as robbery. See "Magnet Bank Cites Rumors in Run," *American Banker* (11 December 1986): 2, 9.

Attempts to penalize individuals who doubt the ability of banks to redeem their claims are not new in the United States. A study for the National Monetary Commission by Dewey and Chaddock (1911, vol. 4, p. 74) noted:

Many in the earlier period of the [19th] century considered it improper and injurious to call upon a bank for specie in payment of its bills. "Brokers who sent home the bills of country banks were denounced as speculators and bloodsuckers, whose extirpation would be a public benefit." Respectable men defended the conduct of banks in interposing obstacles to the payment of their notes to brokers who had brought them up to discount. A Boston broker was brought before a grand jury of Vermont for demanding payment in specie for the bills of one of its banks.

## Causes of Bank Runs

Banks are depository intermediaries that borrow funds from lenders and lend them to borrowers more efficiently than the individual lenders and borrowers can do on their own. Banks' profits are derived from the values added by transforming the denomination, maturity term to repricing, credit quality, currency of denomination, and so forth of the securities sold to lenders or bought from borrowers and assuming the associated risks. Contemporary banks typically raise most of their funds by selling short-term fixed-value debt securities (deposits), many of which contain put options exercisable by the depositor at par at any time. They invest their funds in securities that generally are not fixed-value and do not contain put options exercisable by the bank at par at any time. Thus, the banks assume the risk that the market value of their assets may decline to or below that of their deposit liabilities because of unexpected changes in interest rates, defaults, foreign exchange rates, regulations, fraud, and so on.

To protect themselves against having to bear the risk of loss, depositors, like any other creditors, will, in the absence of deposit insurance or guarantees, both monitor the risk/return profile of their banks' asset and liability portfolios and their capital (equity and subordinated debt). The poorer the risk/return profile and the smaller the capital base, the greater is the probability that a shock will wipe out a bank's capital and that depositors may experience a loss if the bank is not recapitalized or liquidated as soon as the market value of its net worth drops to zero. It appears reasonable to assume that the greater the probability that depositors place on this occurring, the more likely they are to withdraw their funds at the earlier of the deposits' maturity date or exercise date of the put option. The earlier the depositor is able to withdraw the deposit, the more likely is the depositor to receive the full amount of his deposit on time. As long as the cost of transferring deposits is smaller than the value of the ongoing banking relationship, the rational depositor will pursue a better-safe-than-sorry strategy in the face of adverse news about his bank's future prospects. If a large number of a bank's depositors simultaneously assign the same high probability of potential loss to the bank's assets, the bank will experience large simultaneous requests for deposit withdrawals, that is, the bank will experience a run.

Depositors, of course, could be correct or incorrect in their assessment of a bank's financial strength. The implication of the run both for the bank and for the depositors depends in large part on the correctness of the depositors' assessment.<sup>2</sup>

<sup>2</sup>The process of a bank run is described in greater detail in Benston et al. (1986, particularly chap. 2) and in Benston and Kaufman (1986). For an analysis of the causes of bank runs, see Gorton (1986).

If the depositors underestimate a bank's financial integrity and ignite a run on an economically solvent bank (that is, a bank with assets having a current market value exceeding that of its liabilities), the major problem facing the bank will be the need to obtain additional liquidity quickly to meet the deposit withdrawals successfully. It might obtain the necessary liquidity by borrowing (including the sale of new deposits), by selling assets, or by a combination of the two. If other banks, including those that gain the deposits withdrawn, believe that the affected bank is economically solvent, it will be in their mutual interest to recycle the funds quickly at market rates of interest either by lending to the bank or by purchasing the bank's assets. If a central bank exists, it will also be in society's interest for the central bank to assist in the speedy recycling of funds through appropriate use of the discount window or open market operations. In this scenario, the solvent bank facing a run will not encounter a serious liquidity problem. The run will do little harm to the affected bank, although it will produce a relatively small social cost by increasing uncertainty and causing depositors to expend shoe leather transferring funds.

In the absence of organized assistance from other banks or the central bank, the bank faced with a run will be forced to tap the financial markets and might encounter more serious liquidity problems. The less developed these markets are for particular types of assets, the higher will be the interest rates at which the bank can borrow funds quickly and the lower will be the prices at which the bank can sell assets quickly. The adverse consequences of the bank run will be more severe. In obtaining the necessary liquidity, the affected bank might incur "fire-sale" losses, defined either as the sale of assets at below the price at which they could be sold given normal search time for the highest bidder or as borrowing at a higher rate than if normal search time were available. At some point, the bank might be driven into fire-sale insolvency if, for the moment, the market value of its assets falls below that of its deposits, although the bank would not be insolvent if its assets were valued at equilibrium prices based on more normal search times. In this case, the liquidity problem has begotten a solvency problem, even if only a temporary one.

Unless such a bank is declared legally insolvent by the regulatory authorities as soon as it is economically insolvent, those depositors who run fastest to withdraw their funds from the bank will benefit most as they will receive payment in full. Those who run slowest will be harmed the most as they will be unlikely to receive full or timely payment. Indeed, one of the major reasons for declaring a

bank legally insolvent as soon as it is economically insolvent is to ensure that all depositors are treated fairly and are permitted to share alike in the distribution of the remaining assets. Such protection of creditors is the major rationale underlying the bankruptcy laws for nonbanking firms. In the scenario in which a bank run drives an economically solvent bank into economic, albeit fire-sale, insolvency, losses will accrue to shareholders and possibly to depositors and uncertainty will increase. Because the economic/social cost of appropriate public policy will be smaller than the economic/social cost of requiring the institution to be recapitalized, sold, or liquidated, it will not be in society's best interests to treat a fire-sale insolvency in the same fashion as a regular insolvency. Thus, under most circumstances and assuming an appropriate policy response, a run will not drive a solvent bank into economic insolvency.

If the depositors are correct in their assessment that the bank is insolvent on the basis of equilibrium market values so that it cannot meet all its deposit claims successfully, the fastest depositors would again benefit relative to slower depositors until the bank is declared legally insolvent and closed. An open insolvent bank can continue to pay deposit claims as long as the bank has sufficient remaining assets to sell or can promise sufficiently high interest rates to attract new deposits. However, in the absence of federal deposit insurance, an insolvent bank could not be expected to borrow from other banks aware of its financial predicament as lending to the insolvent bank would endanger the healthy banks' funds. Nor will the central bank enhance social welfare by providing liquidity to an economically insolvent bank that will use the newly borrowed funds to pay off previous depositors. Although a run on an insolvent bank might increase the bank's losses by forcing progressively greater fire-sale losses from the sale of progressively less liquid assets, in this case the run is the result of the insolvency, not the cause.

### Implications of Runs for Other Banks

The effects of a bank run on other banks and the broader economy depend on the response of depositors to the new information about the financial condition of the bank or banks that give rise to the initial run. Individual depositors have three choices when they withdraw their funds from the bank:

1. They can redeposit their funds at another bank that is perceived to be safer;
2. They can purchase a financial security or real asset that is perceived to be safer, for example, a Treasury security; or

3. They can hold the funds in the form of currency outside the banking system.

Which of these alternatives depositors will choose depends on their analysis of the situation. If their fears are restricted only to the bank or a small number of banks perceived to be in financial difficulties, depositors are likely to redeposit the funds immediately in other nearby banks that are believed to be untouched by the same weaknesses and thus in safer financial condition. The net result is primarily a transfer of deposits and reserves from Bank A to Bank B with no change in aggregate reserves, deposits, and credit. This does not imply that simultaneous runs may not occur on groups of banks, particularly if they are subject to the same actual or perceived market conditions. Regional contagion can occur. But this only involves a larger and more widespread churning of funds within the aggregate banking system. As long as depositors can identify some safe banks in which to redeposit their funds, total deposits will remain basically unchanged and national or systemwide failure contagion can be ruled out. Some small contraction in deposits will occur if banks increase their excess reserves to better protect themselves against runs, but such bank runs will not seriously destabilize the financial system. However, unless Bank A is able either to regain its lost deposits quickly or to finance the deposit loss by the sale of investment securities, some loan customers may be forced to transfer to another bank and would be inconvenienced. Although the evidence is not strong, this cost can be expected to be relatively minor both in private and social terms.

If depositors question the financial viability of all the banks in their market area, they may use their deposits to purchase securities that they believe to be safer substitutes, such as U.S. Treasury securities. In this "flight to quality" scenario, ownership of the deposits is transferred to the seller of the securities, who then has the option of keeping the balances in the buyer's bank, transferring them to another bank, or withdrawing currency. Because security transactions are likely to be large, the seller can be expected both to have a wider range of available banks and to be unlikely to want to hold the balance in the form of currency outside the banking system. Except for drug trafficking, currency is basically used to finance smaller transactions.<sup>3</sup>

<sup>3</sup>Nor can any business organization but the very smallest use currency as an efficient medium of exchange. Nevertheless, in 1907, Henry Ford threatened to "build a vault to take our money out of the banks and put it in the vault, so we can pay our men in cash." Ford did not follow up on this threat. See Kennedy (1973, p. 92).

The wider the range of banks available to the seller of the security, the greater the probability of finding a safe bank and the more likely it is that the funds will be transferred from the buyer's bank to the seller's bank. This represents an indirect redeposit and is equivalent to the earlier direct redeposit scenario in terms of its effect on total deposits in the banking system. There will, however, be other effects. The demand for riskless securities will push up the price and lower the yield on federal government securities relative to private securities. This may discourage private investment without automatically increasing public spending. At the same time, the churning of deposits among banks may be greater than with direct redeposits, further increasing uncertainty in the economy and reinforcing any downward pressures on economic activity. In addition, more widespread churning of deposits will also require increased recycling of funds by the deposit gaining banks and/or the central bank. Still, the costs of these effects are of a substantially smaller magnitude than those associated with nationwide systemic bank failures.

If both depositors and sellers of safe securities fear the insolvency of all banks, neither group will redeposit funds in other banks, but will hold their balances as currency. In this case, the run is not on one bank but on the banking system. The flight to currency is equivalent to a drain of reserves from the banking system and will both ignite a multiple contraction in money and credit and increase the number and seriousness of bank fire-sale insolvencies. Unless the central bank injects reserves equal to the currency drain to offset the negative effects of the runs, bank failures will be contagious nationwide, tumbling otherwise innocent solvent banks in domino fashion, breaking long-standing bank-customer loan relationships, destabilizing the financial sector, and adversely affecting aggregate economic activity. This is the feared crisis or panic scenario that is vividly portrayed in money and banking textbooks. The private and social costs of a system-wide run are very high and of justifiably great public policy concern.

Despite the relatively mild repercussions of a run on individual banks but serious consequences of a system-wide run, the process by which runs on individual banks turn into runs on the banking system has only rarely been considered rigorously in the literature. Most writers do not seriously question that it occurs almost automatically, and many have accepted it as a matter of faith. For example, John Kareken (1986, pp. 36–37) has written:

There is . . . [an] argument: that the failure of a bank, unlike the failure of any company not engaged in banking, has third party effects. I have always had difficulty with that argument; I have never

been able to understand as well as I would have liked why there are third-party effects. . . . The third-party effects of a bank failure may be real or imagined. Whichever, there is reason enough for me to go on to how banks ought to be regulated.

Unfortunately, the process by and the conditions under which runs on individual banks do turn into runs on the banking system are too important to be ignored. Likewise, the statement that the first automatically leads to the second is too important to be left to faith. Most academic models have assumed a single monopoly bank to begin with and therefore have begged the question.<sup>4</sup> There needs to be more careful analysis as it is evident that completely different public policies will be appropriate if runs on individual banks endanger the entire system than if they do not. The next section analyzes the conditions for a run on an individual bank to turn into a run on the banking system.

### History of Bank Runs

Which of the three scenarios described above is most likely to occur depends on the nature of the initial shock that causes the loss of confidence in one or more banks and the institutional arrangements in place at the time. A review of U.S. history before the establishment of the Federal Deposit Insurance Corporation (FDIC) in 1934 indicates that, at least, the national contagion scenario has not occurred very frequently.<sup>5</sup> If a net currency drain is a prerequisite for such a scenario, then analysis of annual data suggests that it is likely to have occurred in only four periods—1878, 1893, 1908, and 1929–33—when currency increased relative to bank deposits concurrent with a decrease in total deposits (money). Further analysis suggests that nationwide bank contagion was probable in only two of these periods—1893 and 1929–33.<sup>6</sup> In 1893, nearly 500 banks failed, and between

<sup>4</sup>Indeed, a run on the banking system as a whole frequently is the only type of run analyzed in the academic literature. See, for example, Diamond and Dybvig (1983) whose article also considers only runs from bank deposits into consumption rather than currency. Such runs, however, effectively represent indirect redeposit runs and are not likely to lead to nationwide contagion or contraction in total bank deposits. Moreover, runs from deposits into consumption should increase income, which is inconsistent with both theory and observation.

<sup>5</sup>See Benston et al. (1986, chap. 2). Recent work by Schwartz (1987, 1988, forthcoming) suggests that major banking crises occurred even less frequently in foreign countries.

<sup>6</sup>Even in the 1929–33 period, regional rather than national contagion appears to have been the case until late 1932 when Nevada declared the first state bank holiday. See Willis and Chapman (1934, p. 9) and Wicker (1980).



1929 and 1933 the total number of commercial banks declined by 40 percent from some 25,000 to 14,000.

In the other years, the story was quite different. From the end of the Civil War through 1919, there were only eight years besides 1893 in which more than 100 banks failed and none in which more than 200 banks failed. This record was compiled despite there being about 10,000 banks by 1895, 20,000 by 1905, and 30,000 (twice the current number of banks) by 1920. Indeed, the pre-1920 bank failure rate averaged below that for nonbanks, although the annual variance was higher. Losses to depositors in the aggregate were also small. The FDIC estimated that such losses averaged only 0.20 percent of total deposits at all banks annually, although individual depositors at failed institutions suffered considerably greater losses.

While the number of bank failures jumped sharply to near 600 a year in the 1920s, the failed banks were, for the most part, small agricultural banks in small towns in the plains states and had little impact on banks elsewhere or on the aggregate economy.<sup>7</sup> Similar to today, most of these failures reflected the severe problems in agriculture from a continuing sharp decline in commodity and land prices after an even sharper runup. Ninety percent of the banks that failed in this period had capital of less than \$100,000, had loans and investments of less than \$1 million, and were located in towns of fewer than 5,000 in population. Even after adjusting for the sixfold increase in prices since that period, these were Ma and Pa banks by any measure and were unlikely to have been diversified greatly or managed professionally.

This evidence suggests that much of the current fear of bank failures, at least in the United States, stems from the harrowing but rather unique experience of the Great Depression. Further analysis also indicates that the primary direction of causation was from problems in the real sector to problems in banking and not the other way around. That is, both bank runs and bank failures were a result of, not the cause of, aggregate economic contractions and hardships. This suggests that almost all bank runs were of the first two types, involving either direct or indirect redeposits. They did not develop into runs on the system. Nevertheless, because the accounts of the period before 1920 also tell of financial panics and of losses experi-

<sup>7</sup>See Benston et al. (1986, chap. 2), Ely (1988), and Kindleberger (1985).

enced by shareholders, some depositors, and loan customers of the failed banks, the bank runs were not harmless. Nevertheless, few bank failures appear to have been directly attributed to runs.<sup>8</sup>

That the runs on individual banks or groups of banks failed, with only infrequent exception, to lead to runs on all banks, despite the absence of an FDIC, appears to be explained by the combined effect of greater market discipline on bank management and more timely closure of individual banks when they become economically insolvent. Both of these factors served to put banks in shape to weather most runs successfully. With all their deposits at risk, depositors had greater incentives to be concerned about the goings-on at their banks, to monitor their operations more carefully, and to exert discipline by either withdrawing their deposits or charging a higher interest rate for them if the banks' portfolios become too risky or their capital bases too small. The very threat of a run served as a powerful source of market discipline. As a consequence, at the turn of the century, capital ratios at banks were close to 25 percent and were effectively even higher as shareholders at national banks and some state banks were subject to double liability up to the initial par value of their shares. This led to an *ex post* settling up in case of losses at failed banks, which although not fully effective, did lead to assessments against shareholders of failed banks and the collection of at least some funds. The inability to pursue shareholders across state jurisdictions appears to have been a major barrier to more complete collections.

While imperfect, the threat of such assessments probably provided greater incentives for shareholders to monitor their banks and exert pressure on management to operate prudently to avoid failure, and served to buttress two other reasons for stockholder discipline. First, with higher capital ratios, shareholders had more of their own funds at stake, and second, the relatively swift closure of failed banks did not give them a free second or third chance to recoup their losses using depositors' funds.

In the absence of deposit insurance, knowledgeable lenders, including other banks, would not be likely to place their funds in banks they perceived to be economically insolvent. Indeed, they would act as quickly as possible to withdraw any remaining funds they might have on deposit at such a bank. Under these conditions, it did not take long for an insolvent bank to fail to meet a payment either by running out of currency or by not meeting its end-of-day debt to the clearinghouse. The bank was then forced to suspend

<sup>8</sup>See Gorton (1986) and Cagan (1965).

operations and subject itself to examination by the authorities to determine whether it was illiquid but solvent (defined to include satisfying minimum capital requirements) or illiquid and insolvent (or solvent but with less than minimum required capital). A bank in the former group was permitted to reopen, but if in the latter category, the bank was required to recapitalize itself or be liquidated. Thus, liquidity served as an effective constraint to the continued operation of economically insolvent institutions.<sup>9</sup>

There is evidence that depositors and noteholders in the United States cared about the financial condition of their banks and carefully scrutinized bank balance sheets. In Minnesota before the Civil War, noteholders were able to differentiate sound from unsound banks from their balance sheets.<sup>10</sup> In its formative years, Citibank prospered in periods of general financial distress by maintaining higher than average capital ratios and providing depositors with a relatively safe haven.<sup>11</sup> Lastly, an analysis of balance sheets suggests that banks took less interest rate risk before the FDIC was established. Although some short-term loans were more or less automatically rolled over at maturity, they were repriced at the new market interest rate, making them equivalent to floating rate loans.<sup>12</sup>

The incentive structure leading to market discipline by private parties appears to have worked reasonably well. Many banks were able to survive runs when they occurred through the sale of liquid assets and/or by borrowing from others, including other banks that believed in their solvency. The recycling of funds from deposit gaining to deposit losing banks was generally undertaken through the leadership of the local clearinghouse, which had a strong and direct stake in the survival of its member banks. This facility acted to save solvent but illiquid banks and to prevent a run on one bank from setting off runs on its other members. In case of a run on one of its member banks, the clearinghouse examined the bank and, if it deter-

<sup>9</sup>See Kaufman (1986). The reasons national banks could be declared insolvent and a receiver appointed before 1930 are listed in Upham and Lamke (1934, p. 19).

<sup>10</sup>See Rolnick and Weber (1984, 1985).

<sup>11</sup>See Cleveland and Huertas (1985). Recent evidence suggests that Citibank may be returning to this strategy.

<sup>12</sup>Most early students of banking from Adam Smith on argued that commercial banks should concentrate their lending on short-term self-liquidating loans in order to be able to meet potential currency and deposit losses. This represented a "real bills" micro- (or bank management) strategy as opposed to a "real bills" macro- (or monetary policy) strategy. Adherence to the real bills bank management strategy also underlies the development of special banks for longer-term lending, such as for agriculture and residential housing, which would be financed by longer-term deposits. See Miller (1927), Fein (1986), and Merris and Wood (1985).

mined the bank to be solvent, arranged for loans from other member banks. It also published the aggregate current balance sheet of its members to publicize their solvency and ability to satisfy all claims in full and on time.

In emergencies, banks would suspend converting deposits into currency or specie (and earlier currency into specie), but they continued to provide all other services, including making loans. At these times, the clearinghouse would often issue to member banks certificates on the clearinghouse to assist in the clearing process. On occasion, the clearinghouse also issued certificates in small denominations for its member banks to distribute to the public as a temporary replacement for currency. In this way, solvent banks were provided with time to work out their liquidity problems and avoid fire-sale insolvencies. Although the public may have been inconvenienced, the evidence strongly suggests that the clearinghouses were successful more often than they were not.<sup>13</sup> (Bank suspensions may be viewed as a less costly version of the so-called bank "holiday" declared by President Roosevelt in 1933 and, to a lesser extent, the governors of Ohio and Maryland in 1985, when the banks were closed temporarily for all business.)

Indeed, the very success of the clearinghouses appears to have been a major contributor to their decline, to the establishment of the Federal Reserve System, and, ironically, to the most costly failure of the banking system. Although the clearinghouses performed well, some of their actions, such as the distribution of certificates, were technically illegal though undertaken with the tacit approval of the authorities. This made those parties who preferred a completely legal and aboveboard process uneasy. At the same time, because the financial system did not work perfectly and runs occurred that, although not necessarily nationally contagious, were highly visible and did produce significant social and private costs, ways were sought to improve the structure. The result was the establishment of the Federal Reserve System to serve as a national clearinghouse. By having direct access to the reserves of all banks in the country, the system was intended to expedite the recycling of funds from banks gaining deposits to banks losing deposits as a result of runs. The Federal Reserve System was also given the power to issue legal certificates in the form of currency. The liquidity role of the clearinghouses at the time of crises was thereby transferred to the Fed, and the clearinghouses restricted their operations to the mechanics of clearing

<sup>13</sup>See, for example, Timberlake (1984), Gorton (1985), and Gorton and Mullineaux (1987).

and paying interbank claims in the normal course of business. Contrary to expectations, the Fed, in part because it did not have the same direct incentives as the clearinghouse to maintain the solvency of the banks, failed to perform as well in dealing with the bank runs from 1929 through 1933 as the clearinghouses had in earlier panics.<sup>14</sup>

### Importance of Incentive Structure

In the pre-FDIC environment described above, bank runs had both good and bad effects. The good effect was the strong market discipline exerted on bank management to steer a prudent course and to avoid the substantial penalties for failure. The bad effect was the potential for contagion and damage to other innocent banks, the financial system, and the national economy. The costs of any severe crisis, however infrequent, are great enough that the perceived immediate benefits from preventing a recurrence dominate, at least at the moment, the costs of distorting incentives that may have their unfortunate effects sometime in the future. Thus it was with the introduction of federal deposit insurance in 1934. The bad effects of bank runs were effectively removed. But, less visibly, the good effects were also significantly weakened. It is only in recent years, when the macroeconomic, institutional, and technological environments have combined to reduce the costs and increase the payoffs for risk taking, that the implications of the distortion in incentives have become generally visible.<sup>15</sup>

This is not to argue that market discipline has disappeared totally. The runs on the Continental Illinois Bank, First National Bank of Oklahoma, First Republic Bank of Dallas, First City National Bank of Houston, and other larger troubled banks would not have occurred if all depositors were absolutely certain that they were fully protected. Nor would one find different rates on the large certificates of deposit (CDs) of different banks.<sup>16</sup> Unfortunately, rather than viewing the runs as desirable vestiges of market discipline, the regulatory agencies and the public generally view them as undesirable precursors of contagious bank failures and panics and thus as events that the regulators should act to prevent.

Unfortunately, the consequences of the reduced market discipline that accompanied deposit insurance have become so costly in terms

<sup>14</sup>See Corton (1986) and Friedman and Schwartz (1963). The Federal Reserve was also significantly less interested in the plight of nonmember banks than in that of member banks. This reduced its ability to serve as a national clearinghouse.

<sup>15</sup>See Benston et al. (1986) and Kane (1985, 1986a, 1986b).

<sup>16</sup>See Baer and Brewer (1986), Hannan and Hanwick (forthcoming), and James (1987a).

of the dollar size of financially troubled institutions that the authorities have preferred to delay recognizing the costs in the hope that conditions will reverse themselves and the costs decline or disappear altogether. Many economically insolvent institutions have not been reorganized, many near-failed institutions have not been required to recapitalize, and the incentive structure has not changed. As a result, evidence indicates that the strategy of buying time has been, on the whole, counterproductive. Although it is not difficult to look back and point to insolvent or near-insolvent institutions that have improved their performance substantially when given additional time, this does not imply that similarly situated institutions can do so on average in the future. If one assumes that markets are efficient and impound the consensus of all available current information, there will be close to a 50-50 *ex ante* probability of an independent event improving or worsening a bank's performance.<sup>17</sup> Moreover, because the penalties for failure have been postponed and thereby weakened, insolvent banks allowed to remain open are likely to take greater risks than otherwise and the odds of success become even less favorable<sup>18</sup>

Thus, a policy of forbearance has served primarily to increase further the unbooked but very real losses accrued. In light of the large number of recent failures of depository institutions and the

<sup>17</sup>It might appear in retrospect that forbearance was successful for the thrift industry in the early 1980s, when most of the institutions were economically insolvent because of the effects of high interest rates on their greatly mismatched asset-deposit duration structures. Many of these institutions were solvent again by 1986 after interest rates had declined sharply. Indeed, this conclusion was reached in a study of forbearance policy by the General Accounting Office (1986b). Nevertheless, this conclusion is not necessarily warranted. The sharp decline in interest rates cannot be attributed to management skills. It would have occurred regardless of who was in charge of the associations at the time. If the insolvent institutions had been nationalized when they first became economically insolvent, the subsequent gain in net worth would have accrued to the Federal Savings and Loan Insurance Corporation (FSLIC) and the taxpayers. If instead they have been sold to new owners who had expected interest rates to decline as sharply as they actually did, the FSLIC would have obtained premiums equal in present value dollar magnitude to the subsequent gain. Under forbearance, the gain accrued to the previously insolvent managers/owners. But what if interest rates had not declined? The FSLIC would have suffered all the additional loss. In retrospect savings and loan managers were lucky, not skillful. Even in Las Vegas the customers win nearly one-half of the time, but not on average over time. Moreover, forbearance reduced the pressure on management/shareholders to change their strategy and to reduce their risk exposure. Thus, many associations have recently widened their asset-deposit duration mismatch again by returning to long-term fixed rate mortgages. This is likely to lead to a repeat of the interest rate risk game, but not necessarily with the same favorable outcome for the FSLIC. Other institutions found other ways to increase their bets on little or none of their own capital.

<sup>18</sup>Rigorous statements of the incentive structure for shareholders appear in Jensen and Meckling (1976) and Kane (1985).

large associated (booked and unbooked) losses, which in early-1988 were estimated to exceed \$50 billion for savings and loan associations alone, changes in public policy are urgently required to protect the safety and efficiency of the banking system and to reduce the cost to the insurance agencies directly and the U.S. Treasury and taxpayer indirectly. These changes need to correct the distortions in the incentive structure for risk taking introduced by the current structure of federal deposit insurance. *Delay in reforming the system will only increase instability and the associated costs further.*

### Distortions from Federal Deposit Insurance

As recent research has clearly established, the present structure of federal deposit insurance changes the incentive structure of insured depositors in ways that will tend to increase the risk exposure of individual depository institutions, increase the likelihood of losses by the insurance agency, and decrease equitable treatment of institutions in the payment of insurance premiums.<sup>19</sup> It does so in three ways.

First, insurance of any type makes the insured somewhat less careful because the costs or penalties from loss are perceived to be less than in the absence of insurance. For banks, deposit insurance makes depositors, at least those with accounts that do not exceed the de jure \$100,000 maximum amount of insurance, less careful about evaluating and monitoring the financial integrity of their banks and thereby reduces the degree of market discipline that they exert. The increase in account coverage from the original \$2,500 in 1934 to the present \$100,000 and, in particular, the sharp jump from \$40,000 to \$100,000 in 1980 have far exceeded the magnitude of the increase that could be justified by inflation to protect a constant definition of "small" depositor. Moreover, the increases in coverage have made it easier and cheaper for larger depositors to distribute their funds among different institutions in fully insured chunks with or without the help of brokers. What do depositors believe that banks paying up to 150 basis points above the national average on insured deposits are doing with their funds, and why should they care? As a result, insured banks are less restrained in increasing their risk exposure and, with the help of technological advances, risk prone banks can

<sup>19</sup>This literature is described in Benston et al. (1986) and in Kane (1985). Nor are these problems limited to the United States. See, for example, Dowd (1987).

expand quickly by attracting funds from beyond local markets.<sup>20</sup> It is unlikely that in the absence of federal deposit insurance commercial banks with capital-asset ratios of only 6 percent and thrift institutions with ratios barely above zero could continue to operate.

Second, premiums for federal deposit insurance are a constant proportion of the total domestic deposits of the insured bank rather than proportional to the risk exposure of the institutions. Thus, risky institutions pay no more for the same insurance coverage than do less risky institutions. Because losses on risky opportunities are, on average, larger than losses on less risky opportunities, a flat rate premium structure results in inequitable treatment of insured banks. Moreover, because the expected revenue payoff on risky opportunities is greater than on less risky opportunities, while the cost of at least *de jure* insured funds to finance these ventures does not increase proportionately, the expected net income payoff will also be greater to the bank taking on more risky ventures. This provides a strong incentive for insured banks to increase their risk exposures. As few of the bigger bets are likely to pay off by definition, uninsured depositors and the insurance agency are likely to absorb greater losses from the greater risk exposures of the banks.

Third, because depositors need not be concerned about the safety of their funds up to the *de jure* maximum amount insured, federal deposit insurance permits banks that are economically insolvent but have not yet been declared legally insolvent and closed to attract funds not only to meet deposit losses but also to make additional loans and investments and to expand in size. Thus, the managers/owners of these institutions are able to continue in operation for an indefinite time and are likely to increase their losses further.<sup>21</sup> Indeed, they can use the newly attracted insured deposits to meet deposit outflows, interest on deposits, and even payrolls. Before federal deposit insurance, such operations were referred to as "Ponzi" schemes and viewed with disdain.

A recent study of all savings and loan associations that were merged with financial assistance or liquidated between 1982 and 1985 reported that the most important determinant of the cost to the FSLIC was the delay between the date that an institution became insolvent on the basis of generally accepted accounting practices (GAAP) and the date

<sup>20</sup>An interesting empirical documentation appears in Clair (1984). In addition, a number of credit union officials have noted that the unions increased their risk exposure after the introduction of federal share insurance in 1971. See National Credit Union Administration (1983).

<sup>21</sup>See Kane (1985, chap. 2; 1987a; 1987b), as well as Kaufman (1987a).



that it was declared insolvent and closed by the FSLIC. The average delay was almost five months and cost the FSLIC about \$300,000 per month per institution.<sup>22</sup> Similarly, Nina Easton (1986) reported that in 1984 it cost the FSLIC, on average, 15 percent of a failed association's assets to close or merge it. In 1987, this figure had risen to 30 percent. More recently, outright looting of thrift institutions has become a major problem, particularly in Texas and California.<sup>23</sup> In contrast, if institutions could be closed precisely at the instant that the market value of their net worth declined to zero, there would be no losses to depositors and therefore no losses either to the deposit insurance agency.<sup>24</sup>

The term "closed" is often misinterpreted, however. To the public, it conjures up images of physically boarding up an institution so that it disappears as a provider of banking services to the community. Financially, of course, closing a bank refers only to closing down the old shareholders and senior management unless they recapitalize the bank themselves. Recapitalization can also occur through sale or merger. Only if these alternatives fail will the bank be liquidated and closed physically. As a result, it is more accurate to use the term reorganized rather than closed.

### More Timely Failure Intervention

Although the incentive-for-risk-taking problem arises from federal deposit insurance, abolition of federal insurance is not the solution. Some minimum federal deposit insurance, although not necessarily as much as \$100,000 per account, is necessary to preserve the stability of the system as a whole and prevent depositors from running on the system given the current political and organizational structure, particularly the uncertain nature of Federal Reserve actions. Thus, reform of the insurance structure is the more promising approach.

Most recommendations to date have dealt with attempting to correct the first two problems identified above—the moral hazard from insurance per se and the increased risk incentive from flat premiums.<sup>25</sup> The proposed solutions go in two opposite directions. One direction focuses on increased regulatory and legislative discipline to limit an institution's potential risk exposure. The other direction

<sup>22</sup>See Barth et al. (1986).

<sup>23</sup>See Kaufman (1987b).

<sup>24</sup>See Bierwag and Kaufman (1983) and B. A. Bennett (1984).

<sup>25</sup>See, for example, Federal Deposit Insurance Corporation (1983), Federal Home Loan Bank Board (1983), Working Group of the Cabinet Council on Economic Affairs (1985), and the General Accounting Office (1986a).

attempts to rely on market mechanisms to achieve the same result more efficiently.

To intensify the degree of market discipline exerted by depositors, many proposals favor rolling back the *de jure* \$100,000 maximum deposit insurance, or at least not increasing it further either *de facto* or *de jure*. Advocates of such proposals note that for thrift institutions, where all deposits are in effect fully insured as almost all are in denominations of \$100,000 or less, depositor market discipline is effectively nonexistent. To reduce the rewards to banks for risk taking, the market-oriented proposals also suggest scaling insurance premiums (or capital requirements) to a bank's risk exposure. But regardless of the academic merits of many of the reform suggestions, substantial opposition has developed to both calls for reductions in insurance coverage and for risk-based insurance premiums and capital requirements, casting doubt on rapid implementation of either set of proposals.<sup>26</sup>

Less attention has been focused on solutions to the third problem—the increased risk incentive from capital forbearance.<sup>27</sup> If institutions were recapitalized, sold, merged, or, as a last resort, liquidated at the point when the market value of their net worths reached zero, the reductions in market discipline from both shareholders and depositors would be greatly counteracted and, therefore, the incentives for risk taking by the institutions greatly reduced.<sup>28</sup> Any such closure/

<sup>26</sup>Much of the criticism focuses on the theoretical and practical difficulties of measuring risk accurately and developing appropriate premium scales. One of the earliest critics of these proposals was Kareken (1983). Kareken is also one of the first proponents of replacing federal deposit insurance by establishing uninsured "money market" bank affiliates, which would offer transaction deposits and invest only in near riskless securities. Other types of deposits would be offered by other affiliates of the bank or bank holding company, which could invest in risk securities and would not be federally insured. See Kareken (1986, pp. 39–46), Colembe and Mingo (1985), and Litan (1985). For criticism of these proposals, see Benston and Kaufman (forthcoming).

<sup>27</sup>Previous studies of the relationship of bank capital and deposit insurance include Pyle (1984, 1986).

<sup>28</sup>Because of problems of monitoring and the possibility of abrupt declines in the market value of an institution's net worth, it may be desirable to reorganize the institution before the market value of its net worth declines to zero, say at some small positive percentage of assets such as 2 or 3 percent. If any *ex post* losses are incurred, they should be borne *pro rata* by the federal deposit insurance agency on the *de jure* insured deposits and by the uninsured depositors. Alternatively, the reorganization/closure rule could be specified at some higher positive level of capital defined in nonmarket terms, for example, book value. Existing shareowners would be provided with an opportunity to recapitalize the bank at that point. If they failed to do so, the institution would be transferred to the regulators. It may reasonably be assumed that shareholders would have better information about the "true" market value of their institutions than do the regulators, and that they would be willing to provide additional capital if this value were positive and would walk away if it were negative. These alternative closure schemes are analyzed more carefully in Benston and Kaufman (forthcoming).

reorganization rule would need to be both clearly enunciated and strictly enforced.

In addition, except for major fraud, losses to the deposit insurance agencies would be effectively eliminated because no losses would accrue to depositors. Thus, timely reorganization/closure intervention offers three further significant bonuses that may increase its attractiveness and thereby its adoption.

First, assuming the current structure of federal deposit insurance is kept intact, the effective elimination of losses from bank failures would reduce the need for insurance premiums in excess of those necessary to meet the operational expenses of the FDIC and FSLIC, including upgraded and more frequent monitoring of insured institutions and the development of accurate market value accounting systems. The authority to close banks should be transferred from the chartering agencies, which bear none of the dollar costs of delayed bank closures and frequently view official recognition of a failure as a blot on their records, to the insurance agency, which bears the full cost of such hits. The FDIC and the FSLIC may then be viewed as unusual insurance firms that can determine the magnitude and timing of their own losses through controlling the outcomes of the insured events.<sup>29</sup> Thus, to the extent that insurance premiums are required and intended to be actuarially fair to cover the insurance agencies' expected losses, they should be scaled to the difficulty of monitoring the activities of the bank and to existing public policy with respect to the timing of closure rather than to the riskiness of the particular activities of the bank. Activity risk and difficulty of monitoring may or may not be correlated.

The second benefit of instituting a timely reorganization policy is that the risk characteristics of banks would be unimportant. As long as the institutions are capable of playing only with their own equity funds, there would be little justification for regulating or legislating the nature of the activities in which banks may or may not engage solely on considerations of risk. Activity restrictions based on other considerations, such as excess concentration, conflicts of interest, or the undesirability of bringing the activity under the surveillance of bank regulators, would remain.

Third, in part because of the different dollar losses that may be associated with failures of different sized institutions, the present closure policy does not treat all failed banks equally. Uninsured depositors at large failed banks are reimbursed in full regardless of

<sup>29</sup>Reasons policy makers want to affect the timing of closures are discussed in Bierwag and Kaufman (1983).

the bank's condition, while uninsured depositors at small failed banks frequently suffer losses related to the market value of a bank's assets. This policy has important competitive implications that place smaller banks at a disadvantage in attracting funds. By effectively eliminating depositor losses, timely failure resolution would permit more equal treatment of banks regardless of their size, location, or the nature of their business. No bank would be "too-large-to-fail."

As a result of the lower premium costs to banks, the greater freedom from regulation of bank risks and activities, and the greater equity in treating banks in similar financial predicaments similarly, timely reorganization may be more efficient and attract less opposition than either reductions in insurance coverage or risk sensitive premiums. The major opposition may be expected to center on (1) the application of a different, more stringent standard of insolvency for banks than for nonbanking firms, (2) the high cost of bank failure to the community, and (3) the difficulties in implementing market (current) value accounting and more frequent, almost on-line monitoring.

A nonbank firm is generally declared involuntarily bankrupt and remedies for creditors are started when it fails to meet a major scheduled payment on time and in full. Economic insolvency, per se, is not generally considered sufficient grounds for creditors to file for involuntary bankruptcy.<sup>30</sup> Thus, nonbank firms are permitted some time to continue to operate after they become economically insolvent. However, banks are different from nonbank firms in many ways, and more timely failure resolutions may be justified, in part, as payment for one of these differences, namely federal deposit insurance.

As noted earlier, unlike the debt of nonbank firms, much of the debt (the deposits) of banks contains a put option that is exercisable at par at any time at the discretion of the depositor (that is, most deposits are payable on demand), and much of the rest of bank debt is very short term. Thus, in the absence of deposit insurance, attempts by some depositors to withdraw their funds as a result of concern over the bank's solvency could result in immediate large-scale demands from other depositors that the bank could not accommodate. Economic insolvency for banks is therefore only one inevitable step short of the necessary condition for involuntary bankruptcy for nonbank firms. Action to declare a bank in this condition legally insolvent thus represents effectively equal treatment for the two types of firms.

Evidence that more timely closure reduces losses to creditors is quite strong. Until recently, the FDIC closed banks reasonably quickly after it became evident that the market value of their assets had

<sup>30</sup>See Weintraub and Resnick (1986).

declined below that of their liabilities and, except in the case of major fraud, the insurance fund experienced minor if any losses.<sup>31</sup> In the absence of major fraud, the market values of banks are unlikely to decline abruptly overnight. Rather, they generally deteriorate slowly through time and can be monitored reasonably accurately. Through 1931, losses at failed and swiftly closed national banks were estimated to be about 10 cents on the dollar, as compared to 90 cents on the dollar at nonfinancial firms.<sup>32</sup> In a more recent study of defaulted corporate bonds, Altman and Nammacker (1985) estimated that during the 1974 to 1984 period the immediate loss in market values of affected bonds averaged about 60 percent. This is consistent with the loss ratios estimated by W. B. Hickman (1958) for the 1900 to 1943 period. These losses to creditors reflect the delay in initiating involuntary bankruptcy procedures for nonfinancial firms.

### Costs of Bank Failures

The fear of the high cost of bank failures is based on a belief that one or more of the following occurs: (1) failed banks are liquidated and disappear; (2) bank services are unique and even a brief interruption is exceptionally harmful to the community; and (3) failure of one bank can set in motion a domino effect, tumbling other banks throughout the country as well as the payments system.<sup>33</sup> The weight of available evidence suggests that none of these fears is justified. Liquidation of failed banks or any other type of firm is generally limited to smaller firms. Larger firms are recapitalized, merged, or sold, although some time in bankruptcy may be required to work out a least-cost solution for larger institutions. The Banking Act of 1987 provided for the FDIC to establish temporary "bridge" banks to gain the time necessary to devise a longer term solution.<sup>34</sup> In addition, the

<sup>31</sup>See Benston et al. (1986, chap. 4).

<sup>32</sup>See Lawrence (1931). Losses tended to be greater between 1921 and 1930 among smaller banks, among banks that were liquidated, and among banks located in smaller cities (where the number of bank failures was greatest). During this period, losses to depositors at fully liquidated banks were about 50 percent, but these were the smaller banks. Depositors at 50 percent of the failed banks with loans and investment in excess of \$1 million received 100 percent of their deposits, and 70 percent of affected depositors received 80 percent or more. See Upham and Lamke (1934, chap. 7).

<sup>33</sup>See Corrigan (1982) and Volcker (1986).

<sup>34</sup>Bridge or trusteeship banks were proposed by Kaufman (1985). On the other hand, strong political opposition has developed recently to regulators' declaring institutions insolvent (regardless of the definition used) that are located in an area where a large number of institutions are in financial difficulty. This appears to reflect a coalition of a number of interested parties including managers, who prefer to keep their positions; shareholders, who are hoping to recover their losses in ways described in the text;

Federal Home Loan Bank Board operates failed savings and loan associations under a management consignment program until they can be sold or privately recapitalized.

But even liquidations do not necessarily indicate that a community is left without banking facilities. Between 1927 and mid-1932, near the height of the decline in the number of banks, less than 4 percent of the more than 10,000 cities in the United States with populations of 1,000 persons or more lost their only commercial bank, and only 17 of the nearly 1,000 cities with populations of 10,000 or more saw their sole bank close.<sup>35</sup> More recently, the number of savings and loan associations has declined by almost 50 percent between 1965 and 1985, from 6,200 to 3,200 institutions and by 30 percent in the five years since 1980 alone. Yet, there has been no major outcry by consumers about a loss of services. In large part, this can be explained by the sharp increase in the number of branches. The total number of savings and loan association offices more than doubled between 1965 and 1985, from 9,200 to 20,300, and declined by only 1,000 between 1980 and 1985.

There is an additional indirect societal cost to carrying insolvent institutions. In a market economy, failure is the market's way of indicating that customers are not satisfied with the products offered by the suppliers at the prices charged. Economically insolvent suppliers of banking services are kept in business only through subsidies from the bank authorities, and the welfare of the economy would be improved if these institutions were permitted to close and the resources were shifted elsewhere. Restrictions on exit are in effect also restrictions on entry, and they result in the misallocation of scarce resources.

Although banks at some earlier time may have produced unique liquidity and payments mechanism services by virtue of their charters, the availability of which has been restricted at least since the Great Depression, the recent dramatic advances in computer and telecommunications technology have effectively permitted anyone with a large computer system to offer similar services anywhere on short notice. In addition, different types of chartered financial institutions have been permitted to offer services previously restricted to only one type of institution. As a result, surveys report that hardly any household now uses only one financial institution, fully 60 per-

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debtors in default, who fear new managers would be harsher in restructuring their loans and who view the status quo as not much different from a debt moratorium; and provincialists, who fear loss of control to nonlocal outsiders. Very liberal forbearance provisions were mandated in the Banking Act of 1987.

<sup>35</sup>See "No Banking Adjustment in 68% of All Cities and Towns," *The Bankers Monthly* (October 1932): 585-88.

cent use three or more, and more than 50 percent of small business firms use two or more institutions.<sup>36</sup> Larger firms may reasonably be expected to use even more. Thus, failure and even liquidation of a bank are highly unlikely to leave many customers stranded.<sup>37</sup>

This is not to argue that more timely reorganization is without costs or difficulties. Market value accounting is not easy, particularly for infrequently traded and nonfinancial assets.<sup>38</sup> Yet it underlies almost every proposal for reform. How is it possible for policy makers to evaluate the condition of a bank without an accurate statement of its accounts, or for management itself to direct the bank's operations systematically without such knowledge? To successfully map a plan of how to reach a target, one has to know where one is starting. Indeed, the use of book value accounting in banking was increased greatly by the bank regulators in the 1930s to deliberately mask the poor financial condition of the banks.<sup>39</sup> It continues to be used for this purpose today.<sup>40</sup> It is interesting to note that the increased reliance by banks on book value accounting corresponds with the decreased allegiance to the "real-bills" strategy for asset management.

One of the major misconceptions the public has about banking is that one needs to have faith in his bank and banker.<sup>41</sup> Nothing could be further from the truth! Faith belongs in churches; good assets belong in banks. If the value of a bank's assets are insufficient to meet its deposit liabilities in full and on time, those depositors who have the most faith will be the last to attempt to withdraw their funds and will suffer the largest losses. If a banker asks depositors to have faith in him, they should transfer their funds quickly. Market discipline requires depositor skepticism, not faith, as depositor faith in banks only permits banks to assume greater risk exposure than they

<sup>36</sup>See Whitehead (1982) and V. Bennett (1984).

<sup>37</sup>For studies that argue that bank loans are unique, see Bernanke (1983) and James (1987b). For earlier studies that argued communities can survive the loss of a bank, see Tussing (1967, 1968).

<sup>38</sup>See Benston et al. (1986, chap. 8), Kane (1985, chap. 4), Benston (1982), Johnson and Petterson (1984), White (1988), and Benson and Kaufman (forthcoming).

<sup>39</sup>See "Revision in Bank Examination Procedure and in Investment Securities Regulation of the Comptroller of the Currency," *Federal Reserve Bulletin* (July 1938): 563-66.

<sup>40</sup>When in the early 1980s, even book value accounting proved insufficient to show positive net worth for savings and loan associations, the Federal Home Loan Bank Board invented regulatory accounting practices (RAP), which included a wider range of intangible and imaginary assets, to avoid reorganizing insolvent institutions. Similar practices occur in other federal agencies. See Bailey and McCoy (1987).

<sup>41</sup>For example, Gerald Corrigan (1987, p. 21), president of the Federal Reserve Bank of New York, has recently argued that "the business of banking and finance is essentially the business of public and mutual confidence."

otherwise could. A recent study of failed savings and loan associations found that, contrary to expectations, the losses to the FSLIC from these institutions were greater the greater the institutions' net worth as measured by GAAP and the even less meaningful regulatory accounting practice (RAP), but losses to the FSLIC fell as net worth measured by market value rose.<sup>42</sup>

Sufficiently frequent and accurate monitoring is difficult. But it is becoming easier as bank managers themselves have discovered the need for quick on-line and accurate information. Indeed, it appears that the greater opposition to market value accounting comes not from the banks themselves but from the regulators. Nevertheless, serious problems do exist. By definition, fraud cannot be easily detected until after the event, and not all changes in financial conditions occur smoothly nor continuously. Statistically jump processes can cause net worth to become suddenly negative and impose losses on the insurance agency, even under perfect monitoring.

## Conclusion

This paper has argued that more timely bank failure resolution, while neither easy nor costless, deserves greater immediate attention as a politically acceptable, an economically efficient, and an equitable solution for offsetting the undesirable incentive effects of deposit insurance; for reducing the frequency, costs, and disruptions of bank failures; and for substantially reducing the degree of regulation over the amount of capital and types of activities in which a bank or bank holding company may engage. In such an environment, bank runs are unlikely to invoke fears and panic in depositors or the public. Their good effects will outweigh their bad effects and help to make the banking system both safer and more efficient at minimum cost. The bad reputation of bank runs has reflected both bad public policy and undue concern over losses to bank owners and managers. Public policy needs to refocus attention away from concern over individual institution stability, which is little if at all more important than the stability of individual grocery stores or gas stations, to concern over the stability of the banking system, which is of critical importance and requires limited federal deposit insurance and/or intelligent central bank policy. To the extent these are in place, public policy toward banking can be greatly simplified. By confusing runs on individual banks and runs on the banking system, bank runs have been given a bad rap. Public policy can improve their reputation by per-

<sup>42</sup>See Brumbaugh (1986).



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mitting at least the threat of their occurrence for individual institutions. The challenge is not to eliminate bank runs, but to harness their power in such a way that the financial system will be both safer and more efficient.

## References

- Altman, Edward I., and Nammacher, Scott A. "The Default Rate Experience on High Yield Corporate Debt." *Financial Analysts Journal* (July/August 1985): 25-41.
- Baer, Herbert, and Brewer, Elijah. "Uninsured Deposits as a Source of Market Discipline." Federal Reserve Bank of Chicago *Economic Perspectives* (November/December 1986): 25-31.
- Bailey, Jeff, and McCoy, Charles F. "To Hide Huge Losses, Financial Officials Use Accounting Gimmicks." *Wall Street Journal*, (12 January 1987): 1, 14.
- Barth, James R.; Brumbaugh, Dan R.; and Sauerhaft, Daniel. "Failure Costs of Government-Regulated Financial Firms: The Case of Thrift Institutions." Working paper. Federal Home Loan Bank Board, June 1986.
- Bennett, Barbara A. "Bank Regulation and Deposit Insurance: Controlling the FDIC's Losses." Federal Reserve Bank of San Francisco *Economic Review* (Spring 1984): 16-30.
- Bennett, Veronica. "Consumer Demand for Product Deregulation." Federal Reserve Bank of Atlanta *Economic Review* (May 1984): 28-37.
- Benston, George J. "Accounting Numbers and Economic Values." *Antitrust Bulletin* 27 (Spring 1982): 161-215.
- Benston, George J.; Eisenbeis, Robert A.; Horvitz, Paul M.; Kane, Edward J.; and Kaufman, George G. *Perspectives on Safe and Sound Banking*. Cambridge, Mass.: MIT Press, 1986.
- Benston, George J., and Kaufman, George G. "Risk and Failures in Banking: Overview, History, and Evaluation." In *Deregulating Financial Services: Public Policy in Flux*, pp. 49-77. Edited by George G. Kaufman and Roger C. Kormendi. Cambridge, Mass.: Ballinger Publishing Co., 1986.
- Benston, George J., and Kaufman, George G. *Risk and Solvency Regulation of Depository Institutions: Past Policies and Current Options*. Monograph Series in Finance, New York University, forthcoming.
- Bernanke, Ben S. "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression." *American Economic Review* 73 (June 1983): 257-76.
- Bierwag, G. O., and Kaufman, George G. "A Proposal for Federal Deposit Insurance with Risk Sensitive Premiums." *Proceedings of a Conference on Bank Structure and Competition*, pp. 223-42. Chicago: Federal Reserve Bank of Chicago, 1983.
- Brumbaugh, R. Dan. "Empirical Evaluation of the Determinants of Losses for the Federal Savings and Loan Insurance Corporation (FSLIC)." Working paper. Federal Home Loan Bank Board, February 1986.
- Cagan, Philip. *Determinants and Effects of Changes in the Stock of Money, 1875-1960*. New York: Columbia University Press, 1965.

- Clair, Robert T. "Deposit Insurance, Moral Hazard, and Credit Unions." Federal Reserve Bank of Dallas *Economic Review* (July 1984): 1-12.
- Cleveland, Harold van B., and Huertas, Thomas F. *Citibank, 1812-1970*. Cambridge, Mass.: Harvard University Press, 1985.
- Conover, C. T. "Testimony." *Inquiry into Continental Illinois Corp. and Continental Illinois National Bank: Hearings*. Subcommittee on Financial Institutions Supervision, Regulation and Insurance of the Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 98th Cong., 2d Sess., 1984.
- Corrigan, E. Gerald. "Are Banks Special?" Federal Reserve Bank of Minneapolis *1982 Annual Report*.
- Corrigan, E. Gerald. *Financial Market Structure: A Longer View*. New York: Federal Reserve Bank of New York, 1987.
- Dewey, Davis R., and Chaddock, Robert E. *State Banking before the Civil War*. Washington, D.C.: National Monetary Commission, 1911.
- Diamond, Douglas W., and Dybvig, Philip H. "Bank Runs, Deposit Insurance and Liquidity." *Journal of Political Economy* 91 (June 1983): 401-19.
- Dowd, Kevin. "Some Lessons from the Recent Canadian Bank Failures." Unpublished manuscript. University of Sheffield, England, January 1987.
- Easton, Nina. "Costs to FSLIC Skyrocket as Delays on Sales of Failed Thrifts Drag On." *American Banker* (15 December 1986): 1, 20-21.
- Ely, Bert. "The Big Bust: The 1930-1933 Banking Collapse—Its Causes, Its Lessons." In *The Financial Services Revolution: Policy Directions for the Future*, pp. 41-67. Edited by Catherine England and Thomas Huertas. Boston: Kluwer Academic Publishers, 1988.
- Federal Deposit Insurance Corporation. *Deposit Insurance in a Changing Environment*. Washington, D.C., April 1983.
- Federal Home Loan Bank Board. *Agenda for Reform*. Washington, D.C., March 1983.
- Fein, Melanie L. "The Separation of Banking and Commerce in American Banking History." In Appendices to the Statement by Paul A. Volcker before the Subcommittee on Commerce, Consumer and Monetary Affairs of the Committee on Government Operations, U.S. House of Representatives, June 1986.
- Friedman, Milton, and Schwartz, Anna J. *A Monetary History of the United States, 1867-1960*. Princeton, N.J.: Princeton University Press, 1963.
- General Accounting Office. *Deposit Insurance* (2 volumes and summary). Washington, 1986a.
- General Accounting Office. *The Thrift Industry: Cost to FSLIC of Delaying Action on Insolvent Savings Institutions*. Washington, D.C., September 1986b.
- Golembe, Carter H., and Mingo, John J. "Can Supervision and Regulation Ensure Financial Stability." In *The Search for Financial Stability: The Past Fifty Years*, pp. 125-46. San Francisco: Federal Reserve Bank of San Francisco, 1985.
- Gorton, Gary. "Clearinghouses and the Origin of Central Banking in the United States." *Journal of Economic History* 45 (June 1985): 227-83.
- Gorton, Gary. "Banking Panics and Business Cycles." Working Paper No. 86-9. Federal Reserve Bank of Philadelphia, March 1986.

- Gorton, Gary, and Mullineaux, Donald J. "The Joint Production of Confidence: Endogenous Regulation and Nineteenth Century Commercial-Bank Clearinghouses." *Journal of Money, Credit, and Banking* 19 (November 1987): 457-68.
- Hannan, Timothy, and Hanwick, Gerald. "Bank Insolvency Risk and the Market for Large Certificates of Deposit." *Journal of Money, Credit, and Banking* (forthcoming).
- Hickman, W. B. *Corporate Bond Quality and Investor Experience*. Princeton, N.J.: National Bureau of Economic Research, 1958.
- James, Christopher. "An Analysis of the Use of Loan Sales, Standby Letters of Credit and Secured Debt by Commercial Banks." Working paper. Federal Reserve Bank of San Francisco, July 1987a.
- James, Christopher. "Some Evidence on the Uniqueness of Bank Loans." *Journal of Financial Economics* (December 1987b): 217-35.
- Jensen, Michael C., and Meckling, William H. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 6 (October 1976): 305-60.
- Johnson, Ramon E., and Petterson, Paul T. "Current Value Accounting for Savings and Loans: A Needed Reform." *Journal of Accountancy* (January 1984): 80-85.
- Kane, Edward J. *The Gathering Crisis in Federal Deposit Insurance*. Cambridge, Mass.: MIT Press, 1985.
- Kane, Edward J. "Appearance and Reality in Deposit Insurance." *Journal of Banking and Finance* (June 1986a): 175-88.
- Kane, Edward J. "Confronting Incentive Problems in U.S. Deposit Insurance: The Range of Alternative Solutions." In *Deregulating Financial Services: Public Policy in Flux*, pp. 97-120. Edited by George G. Kaufman and Roger C. Kormendi. Cambridge, Mass.: Ballinger Publishing Co., 1986b.
- Kane, Edward J. "No Room for Weak Links in the Chain of Deposit Insurance Reform." *Journal of Financial Services Research* 1 (1987b): 77-111.
- Kane, Edward J. "Dangers of Capital Forbearance: The Case of the FSLIC and 'Zombie' S&Ls." *Contemporary Policy Issues* 5 (January 1987a): 77-83.
- Kareken, John H. "Deposit Insurance Reform or Deregulation Is the Cart, Not the Horse." Federal Reserve Bank of Minneapolis *Quarterly Review* (Spring 1983): 1-9.
- Kareken, John H. "Federal Bank Regulatory Policy." *Journal of Business* 59 (January 1986): 3-48.
- Kaufman, George G. "Implications of Large Bank Problems and Insolvencies for the Banking Industry and Economic Policy." *Issues in Bank Regulation* (Winter 1985): 35-42.
- Kaufman, George G. "Banking Risk in Historical Perspective." *Proceedings of a Conference on Bank Structure and Competition*, pp. 231-49. Chicago: Federal Reserve Bank of Chicago, 1986.
- Kaufman, George G. "Bank Capital Forbearance and Public Policy." *Contemporary Policy Issues* 5 (January 1987a): 84-91.

- Kaufman, George G. "Public Policy toward Failing Institutions: The Lessons from the Thrift Industry." *Proceedings of a Conference on Bank Structure and Competition*. Chicago: Federal Reserve Bank of Chicago, 1987b.
- Kaufman, George G. "The Truth About Bank Runs." In *The Financial Services Revolution: Policy Directions for the Future*, pp. 9–40. Edited by Catherine England and Thomas Huertas. Boston: Kluwer Academic Publishers, 1988.
- Kennedy, Susan F. *The Banking Crisis of 1933*. Lexington: University Press of Kentucky, 1973.
- Kindleberger, Charles P. "Bank Failures: The 1930s and the 1980s." In *The Search for Financial Stability in the Past Fifty Years*, pp. 7–34. San Francisco: Federal Reserve Bank of San Francisco, 1985.
- Lawrence, Joseph S. "What Is the Average Recovery of Depositors?" *American Bankers Association Journal* (February 1931): 655–56, 722–23.
- Litan, Robert E. "Evaluating and Controlling the Risks of Financial Product Deregulation." *Yale Journal on Regulation* 3 (Fall 1985): 1–52.
- Merris, Randall C., and Wood, John. "A Deregulated Rerun: Banking in the Eighties." Federal Reserve Bank of Chicago *Economic Perspectives* (September/October 1985): 69–79.
- Miller, Harry F. *Banking Theories in the United States before 1860*. Cambridge, Mass.: Harvard University Press, 1927.
- National Credit Union Administration. *Credit Union Share Insurance: A Report to the Congress*. Washington, D.C., 1983.
- Norcross, Robert W., Jr. "The Bank Insolvency Game: FDIC Superpowers, the D'Oench Doctrine, and Federal Common Law." *Banking Law Journal* (July/August 1986): 316–56.
- Pyle, David H. "Deregulation and Deposit Insurance Reform." Federal Reserve Bank of San Francisco *Economic Review* (Spring 1984): 5–15.
- Pyle, David H. "Capital Regulation and Deposit Insurance." *Journal of Banking and Finance* 10 (June 1986): 189–201.
- Rolnick, Arthur J., and Weber, Warren E. "The Causes of Free Bank Failures." *Journal of Monetary Economics* 15 (October 1984): 267–91.
- Rolnick, Arthur J., and Weber, Warren E. "Banking Instability and Regulation in the U.S. Free Banking Era." Federal Reserve Bank of Minneapolis *Quarterly Review* (Summer 1985): 2–9.
- Schwartz, Anna J. "The Lender of Last Resort and the Federal Safety Net." *Journal of Financial Services Research* 1 (1987): 1–18.
- Schwartz, Anna J. "Banks Runs and Deposit Insurance Reform." *Cato Journal* 7 (Winter 1988): 589–94.
- Schwartz, Anna J. "Financial Stability and the Federal Reserve Safety Net." American Enterprise Institute, forthcoming.
- Timberlake, Richard H., Jr. "The Central Banking Role of Clearinghouse Associations." *Journal of Money, Credit and Banking* 16 (February 1984): 1–15.
- Tussing, A. Dale. "The Case for Bank Failure." *Journal of Law and Economics* 10 (October 1967): 129–47.
- Tussing, A. Dale. "Bank Failure: A Meaningful Competitive Force." In *Proceedings of Conference on Bank Structure and Competition*, pp. 99–109. Chicago: Federal Reserve Bank of Chicago, 1968.

- Upham, Cyril B., and Lamke, Edwin. *Closed and Distressed Banks*. Washington: Brookings Institution, 1934.
- Volcker, Paul A. Statement (and appendices) before the Subcommittee on Commerce, Consumer and Monetary Affairs of the Committee on Government Operations, U.S. House of Representatives, 11 June 1986.
- Weintraub, Benjamin, and Resnick, Alan N. *Bankruptcy Law Manual*. Boston: Warren, Gorham and Lamont, 1986.
- White, Lawrence J. "Mark-to-Market Accounting for Thrifts Is Vital to FSLIC and Valuable to Thrifts." *Federal Home Loan Bank Board Outlook* (January/February 1988): 20-24.
- Whitehead, David D. "The Sixth District Survey of Small Business Credit." Federal Reserve Bank of Atlanta *Economic Review* (April 1982): 42-47.
- Wicker, Elmus. "A Reconsideration of the Causes of the Banking Panic of 1930." *Journal of Economic History* 40 (September 1980): 571-83.
- Willis, H. Parker, and Chapman, John. *The Banking System*. New York: Columbia University Press, 1934.
- Working Group of the Cabinet Council on Economic Affairs. *Recommendations for Change in the Federal Deposit Insurance System*. Washington, D.C., 1985.

## BANK RUNS AND DEPOSIT INSURANCE REFORM

*Anna J. Schwartz*

George Kaufman has prepared a splendid paper that helps orient thinking about the ways to make the financial system both safer and more efficient. His proposals are designed to offset undesirable incentive effects of deposit insurance by closing or reorganizing depository intermediaries before net worth turns negative and by basing the decision to close an institution on market value accounting. He suggests that implementing his two proposals will reduce the frequency, costs, and disruptions of bank failures, and reduce the degree of regulation concerning the amount of capital and types of activities in which a bank or holding company may engage. Bank runs might occur, but they would not become contagious. Concern, he further argues, should shift from keeping individual institutions stable to keeping the banking system stable. And for that objective what is required is limited federal deposit insurance and intelligent central bank policy.

I find Kaufman's views congenial. His formulation of the problems confronting the financial system and the solutions he offers are appealing. I shall limit my comments to selected aspects of the many contributions Kaufman has made in his paper: (1) an analysis of bank runs; (2) the historical record on bank runs; and (3) reforming deposit insurance.

### Why Bank Runs?

Kaufman begins by discussing why bank runs have occurred and their effects, if any, on the community in which the banks were

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located, other banks, the financial system, and the macroeconomy. He draws a fundamental distinction between a bank run in which depositors shift from deposits to currency held outside the banking system, and a bank run in which depositors withdraw deposits from a bank they perceive to be unsound and either redeposit the currency at another bank they perceive to be sound or use the currency to buy a financial or real asset perceived to be safer than a bank deposit.

The effects of these alternative types of bank runs are substantially different. A flight to currency because all banks are regarded as unsafe is the essence of a banking panic, the consequences of which contract aggregate deposits and aggregate economic activity. A run on one bank that leads to redeposits in another bank will leave total deposits unchanged unless excess reserves are increased in response to the possibility of a run. If the losing bank cannot regain deposits quickly by sale of investment securities, help from the lender of last resort, or convincing depositors that its condition is unjustly challenged, some borrowers may be forced to obtain loans elsewhere. Kaufman regards this cost to be minor whether measured as private or social cost. Shifting from deposits in a bank run to securities regarded as safe will have effects that depend on the seller's disposition of the funds obtained from the securities sale. If he merely transfers the funds he obtained from the depositor's bank to his own bank, the effects are the same as a direct redeposit, although there may be significant side effects on yields of the securities that are in demand. If the seller of securities shares the depositor's suspicion of banks and holds the proceeds in currency, the effects are similar to those of a textbook banking panic.

Kaufman's presentation of alternative outcomes of a bank run is a signal contribution to our understanding of the functioning of the financial system. Most available analyses of panics take for granted a flight to currency if a bank run occurs. However, as Kaufman shows, if a bank run involves a flight from one institution to another perceived to be sound, the consequences of such a shift are no threat either to monetary aggregates or economic activity.

Charles Goodhart (n.d.) has recently disputed this conclusion, arguing that the costs to borrowers of having to switch the source of loans from a troubled institution to sound ones are not minor, as Kaufman has argued, but are as large as the loss of depositors' wealth that results from a shift to currency. Clearly, when borrowers have several sources of loans, being forced to give up one bank does not leave them stranded. In addition, the banks to which deposits have been transferred are surely eager to invest the funds. Why borrowers

in good standing should not find a responsive lender in the circumstances is not obvious.

Another position that Goodhart adopts, in contrast to Kaufman, is that a central bank should support not only banks with liquidity problems but also those with solvency problems. I share Kaufman's view that a central bank does not "enhance social welfare by providing liquidity to an economically insolvent bank that will use the newly borrowed funds to pay off previous depositors."

## Historical Record of Bank Runs

Kaufman notes that there were many years with bank runs from the Civil War until the establishment of federal deposit insurance. I have the impression that there are many years with a large number of bank failures but few years with runs. I recently read the sections in the annual reports of the U.S. Comptroller of the Currency from 1921 to 1929 that deal with national bank failures. In some years the Comptroller listed the causes of failures. In 1921, 34 banks failed, with runs on only 4. In 1922, 31 banks failed, with runs on only 3. In 1923, 52 banks failed with runs on only 3. In 1924, 138 banks failed, with runs on only 6. In 1925, 98 banks failed, and no runs are mentioned in accounting for causes of failure. In the remaining years of the decade there is no reference to runs in connection with bank failures.

Bank runs, moreover, are rarely contagious. As Kaufman notes, a true banking panic is likely to have occurred among all U.S. banks only in four periods—1878, 1892, 1908, and 1929–33—and among U.S. national banks only in two periods—1893 and 1929–33. He attributes the difference between the large number of runs on individual banks or groups of banks and the infrequency of banking panics before deposit insurance to "the combined effect of greater market discipline on bank management and more timely closure of individual banks when they became economically insolvent."

There is an additional explanation, however, that can account for the infrequency of panics. Following Kaufman's lead, I recently tabulated the incidence of banking panics in 17 countries. The record covers nearly two centuries in the United States and Great Britain and nearly a century in a dozen other countries, with coverage between the two extremes in the three remaining countries. Before 1930 banking panics were uncommon. Among all 17 countries, the United States experienced the greatest number of years of panic—a total of 14 from 1790 to 1929. The runner-up was Great Britain with eight years of panic between 1793 and 1866. No British banking panic has

occurred since then. The four banking panics that occurred in France were confined to the period between 1847 and 1882, and Italy's four panics came between 1891 and 1921. Austria had three banking panics, and eight other countries had one or two each. None are recorded in Canada, South Africa, India, or China before 1930, though banks occasionally failed in each of them.

A lesson that was learned by most countries by the end of the 19th century was how to prevent panics. Monetary authorities learned to demonstrate readiness to meet all demands by sound debtors for loans and by depositors for cash when banks became targets of suspicion by depositors. A *banking panic could be averted by timely, predictable signals to market participants of institutional readiness to make available an augmented supply of funds.* The source of funds might have been inflows from abroad—attracted by higher domestic than foreign interest rates—or emergency issues of domestic currency. The availability of the supply was sufficient to allay alarm, so that the funds might never have been drawn on. In some cases, orderly liquidation of troubled institutions, with a guarantee against loss by the liquidator, isolated the problem so that it did not spread to other institutions.

As noted, Britain had learned the lesson by 1866. The United States by contrast experienced a banking panic in 1873 because no institutional framework was immediately available to deal with a surge of demand for high-powered money by the public and banks. Belatedly, the crisis was alleviated by the issue against collateral of clearinghouse loan certificates for use in the settlement of clearing balances and by U.S. Treasury redemption with greenbacks of outstanding government debt.

Yet in 1893, issuing loan certificates did not cut short a banking panic. One possible explanation is that the individual banks with the bulk of bankers' deposits had reserve deficiencies even though aggregate reserves of the banks were adequate. A more persuasive explanation is that rumors of refusal of banks to convert deposits into cash incited the panic. A misinformed public can nullify the beneficial effects of actions designed to avert panic.

In 1907, the right actions to quell a panic were taken but too late to be effective. *Assistance to troubled trust companies was granted slowly and without dramatic effect.* The runs on the trust companies depleted the cash of the New York Clearing House banks, which were also shipping currency to interior banks and paying it out over their counters to their own frightened depositors. Had the Clearing House at this point issued loan certificates to enable banks to extend loans more freely to borrowers and also to prevent the weakening of

particular banks with unfavorable clearinghouse balances, loss of confidence—displayed less by the public than by country banks (reminiscent of Continental Illinois' nervous interbank depositors)—might have been calmed. The banks, however, believed that an issue of clearinghouse loan certificates would cause restriction of payments. Belatedly, the New York Clearing House issued loan certificates and immediately restricted the convertibility of deposits into currency when country banks demanded currency for funds on deposit or on call in New York.

As is well known, it was the panic of 1907 that led to the far-reaching reform of the monetary system by the creation of the Federal Reserve System. The official lender of last resort had no institutional memory of the practices to forestall panic behavior. It did not act from 1930 to 1933 to stem the intensifying failure of banks with a steeply declining price level and the destruction of the payments system as panic followed panic.

Kaufman associates the Fed's 1930 to 1933 failure to cope with bank runs, as well as the clearinghouses had, in part to the absence of "the same direct incentives as the clearinghouses to maintain the solvency of the banks." As I have just noted, to me the failure was a result of no institutional memory at the Fed of how to prevent panic behavior. These may be complementary explanations.

## Reforming Deposit Insurance

Kaufman gives a persuasive account of moral hazard and increased incentives for risk taking that are encouraged by deposit insurance and the flat premium the insured pay. He finds unappealing proposed reforms for the first two problems: increased regulation and legislation to limit risk exposure, or reliance on market mechanisms, by rolling back maximum deposit insurance and adopting risk-related premiums. He favors instead, as I indicated at the start, timely closure of troubled institutions. If banks were closed before their net worths became negative, there would be no losses to depositors, and no losses would be imposed on the insurance agencies. Premiums would be needed only to foot operational expenses of the agencies.

Kaufman points out that timely closure would also counteract reductions in market discipline on the part of shareholders due to existing capital forbearance. Under a regime of timely closure, shareholders would not undertake greater risk unless they believed the bank's capital was adequate. Hence regulation of bank risks and activities could be minimized.

Kaufman discusses three sources of opposition to his proposal of timely closure. One is that a more stringent standard of insolvency would be applied to banks than is applied to nonbanking firms. For nonbank firms, economic insolvency does not immediately allow a debtor to request involuntary bankruptcy and to start remedies for creditors. He justifies timely failure resolution for banks as payment for their differences from nonbank firms, one of which is deposit insurance. In the absence of deposit insurance a solvency crisis based on market value accounting would "ignite the inevitable run." Timely closure is therefore a cheaper and more efficient remedy, because it reduces losses to creditors. However, I doubt that a run is inevitable. The record of failures before 1930 does not support such a conclusion.

Another possible source of opposition to timely closure is the belief that there is a high cost of bank failures in which the institutions are assumed to disappear, with harmful effects on the community as a result of the interruption of bank services, and with domino effects on other banks throughout the country and the payments system. Kaufman argues that liquidations of failed banks are rare, and even when they occur, a community is not necessarily left without banking facilities. But even if an only bank is closed, the effects are not much different from the closing of a community's only supermarket or movie house. He notes the misallocation of scarce resources if restrictions on exit exist and the availability of alternate financial services in current conditions when a bank is closed. Moreover, he denies that, given federal deposit insurance, bank failures will have contagious effects on solvent banks.

It is the final objection to timely closure that seems to Kaufman to have most weight, and that is that market value accounting is not easy for infrequently traded financial and nonfinancial assets. One alternative is to assess market value of a bank's net worth from transactions data for its stock. However, only a small number of the largest bank holding companies are traded publicly. The other approach is to assign values to individual assets and liabilities including off-balance-sheet accounts, goodwill, franchise value, and other intangibles. In fact, approximations to market value are available for most bank assets. Kaufman advocates research to improve market value accounting, but it is do-able even now if only the will is there to implement the change from book value accounting.

## References

- Goodhart, C.A.E. "Why Do We Need a Central Bank?" Processed, n.d. U.S. Comptroller of the Currency. *Annual Report*. 1921-29.