



Runs Make the Bank

The fragile capital structure of banks makes them inevitably prone to runs, and that's a good thing

BY VANESSA SUMO

Banks are one of the most powerful and enduring institutions of all time. They have survived runs and panics and the Great Depression. They have folded, divided, and merged. They have withstood and participated in the parade of financial innovation. And even flourishing capital markets could not make them obsolete.

The persistence and pervasiveness of banks suggests that they provide a unique service. Companies, for example, overwhelmingly prefer banks when seeking financing outside their own coffers. "Bank loans are the predominant source of external funding in all the [industrialized] countries," note economists Gary Gorton of the University of Pennsylvania and Andrew Winton of the University of Minnesota, authors of a survey on financial intermediation. Instead of borrowing from banks, firms could secure the funding they need through the sale of a stock or bond, by going directly to the capital market. However, "in none of the countries are capital markets a significant source of financing," Gorton and Winton note. "Equity markets are insignificant." Their observations come from a 1990 study that looks at the sources of net financing by nonfinancial enterprises from 1970 to 1985. In the United States, about 24.4 percent of investment by firms was financed by bank loans, 11.6 percent by bonds, and only 1.1 percent by shares.

Studies have also found that the stock market price of a firm responds more favorably to the announcement of a new

bank loan or the renewal of an existing one, compared with news of an offering of company securities in capital markets. Others have shown that if a borrower's bank fails, it can cause a substantial loss to the borrower because his valuable relationship with a bank is destroyed. In other words, it won't be easy for a borrower to switch financiers if his bank shuts down.

But what specifically makes banks so special? What is it about the way they organize themselves that sets them apart from other businesses? The fact is, as dominant as banks are, their basic structure is actually quite fragile. On the asset side, banks make loans to borrowers that are typically long-term and are inherently illiquid, not easily converted to cash. On the liability side, depositors expect that they can withdraw their money anytime they need to. However, this may force banks to sell their assets, possibly at a much lower price, if depositors demand more money than what the bank has readily available. Thus, the bank's activities on both sides of the balance sheet, although valuable, appear to be ruinously incompatible.

To protect banks and their clients from this apparent vulnerability, financial regulators have typically responded with supervision, safety nets, and even proposals to downsize and restrict banks' activities. However, University of Chicago Graduate School of Business economists Douglas Diamond, who is also a visiting scholar at the Richmond Fed, and

Raghuram Rajan say that there is actually a good reason for a bank's choice of such a delicate arrangement.

Far from being a concern, a bank's distinctive asset and liability structure is precisely what allows the bank to provide liquidity at all times; that is, to make funds available to both long-term borrowers and short-term depositors whenever a need arises. The explanation for this surprising result comes from a rather catastrophic prospect built into a bank's fragile capital structure: the threat of runs.

Bank Runs

When the public suspects that a bank may become insolvent, depositors will rush to take out their money in desperate hope that they won't be last in line. The sudden demand for cash can force a bank to sell assets prematurely at a loss and, consequently, may cause that bank to fail, whether or not it was healthy prior to the run. On a scale that affects many banks, runs can disrupt economic activity and cause financial distress to many people.

Perhaps paradoxically, the possibility of bank runs arises from a valuable service that banks perform: transforming illiquid assets or bank loans into liquid liabilities or deposits, according to a 1983 paper by Diamond and Washington University economist Philip Dybvig, considered the most important and well-known analysis on bank runs. In other words, the ability to provide funds to depositors on demand even if the bank holds mostly illiquid assets on its balance sheet is what makes a bank a bank. But it is also why they are vulnerable to runs.

A depositor may want to invest his money but is worried that tying up his funds will make it difficult to withdraw, except at a considerable loss, when a personal need suddenly arises. Banks — as opposed to another investment vehicle — can improve upon this situation by getting all the depositors together and pooling everybody's risk of holding an illiquid asset. This works well because banks know with some certainty that for a given pool of depositors, only a fraction will ordi-

narily take out their money at any given time. Thus, banks can offer depositors a way to get out on better terms than would have been available to them had they invested individually.

But this solution also opens up the possibility that things may not go according to plan. If depositors panic and turn up earlier than expected, then those who will come to the bank later know that they may not get as much as they were promised, and indeed may not get anything at all because the bank will not have sufficient resources. Thus, a "first-come-first-served" rule induces the very real possibility that if some depositors ever get a whiff that a bank may be in trouble, even those who were previously not concerned about the bank's health will rush to withdraw their money. "If a run is feared, it becomes a self-fulfilling prophecy," says Diamond. Whether the rumor was true or not and whether depositors believe it or not, no depositor wants to be the last one to line up at the bank's door. This summer, depositors at British bank Northern Rock raced to take out their money when news leaked out that the central bank would provide emergency funds to the troubled bank.

Deposit insurance is one way to prevent runs and is provided in many countries. The purpose and terms may differ, but deposit insurance in general assures that no matter what happens to the bank and no matter how many people come to withdraw, depositors will always get the amount that they were promised. The government is a natural insurance provider because it has the authority to tax, say Diamond and Dybvig, so it can guarantee to come to the bank's rescue without having to hold a large amount of liquid assets to back up that claim. A deposit insurance law commits the government to insure banks, which is a stronger pledge than more discretionary policies such as suspending the convertibility of deposits to cash.

Runs as a Commitment Device

One would think that a bank's fragile structure is surely a weakness, for how

can bank runs be a good thing? But according to Diamond and Rajan, this weakness is also its strength. In a series of papers written in 2000 and 2001, Diamond and Rajan argue that banks as we know them today choose such a structure because the possibility of a run is what gives them the power to provide liquidity, which is the very thing that makes banks unique.

The story begins in a theoretical environment where banks don't exist. An entrepreneur needs to finance a project and a lender has money to invest in it. Only the entrepreneur has the specific skill to generate the highest cash flow possible from this undertaking, so once the investment is made, the project would be worth much less in somebody else's hands. In this case, a lender's investment in that project is said to be illiquid. One could think of a top-rated chef who wants to open a restaurant. If he decides to quit before the restaurant opens, then the lender can seize the restaurant, but he would have difficulty finding another chef of the same caliber to operate it.

The plot gets thicker if the lender himself needs cash at some interim date. To obtain the money, the lender can opt to borrow against the loan he made to the chef, by promising to collect the cash flows generated from the restaurant venture on behalf of a new investor. However, the investor knows only too well that the lender might be tempted to pay back less than what they agreed upon. If the investor thinks that the lender cannot commit to being honest, then it would be impossible for the lender to borrow an amount equivalent to the full value of the loan. The consequence of this chain of illiquidity is clear: Either the loan to the chef will not be made in the first place or the cost to him of borrowing money will be very high, because the lender will need to be compensated for the illiquidity of the loan.

The way to resolve this dilemma is for the lender to write a contract that guarantees investors can take out their money at any time they please. In this way, if the lender tries to extract more

money by renegotiating the contract and offering investors less than what had been promised, then investors will quickly withdraw all their funds because they assume others will do the same, leaving the lender empty-handed. A run is painful for the lender because his income depends primarily on the service he provides as an intermediary between the entrepreneur and the investors, so a run will drive his income to zero. Therefore, the lender would never attempt to renegotiate the contract and will always strive to give investors what he promised.

As it turns out, this type of “relationship” lender is exactly the kind of bank we have today, one that lends money for long-term projects but at the same time collects short-term deposits. A delicate capital structure that is vulnerable to runs is what makes the bank’s commitment credible and effective. This ensures that depositors will always be willing to put their money in the bank, and that there will always be a steady supply of funds for the bank to lend to entrepreneurs. If the bank ever misbehaves, then the depositors will run and the bank will shut down.

Thus, if depositors couldn’t run on the bank, then there would be no way to create liquidity. While it may seem counterintuitive to think of a bank run as a good thing, it is actually only the possibility of one that is desirable. “The threat of a run, great; the fact of a run, that’s bad,” says Diamond.

The commitment to discipline banks is convincing because it promises to punish even if the punishment is painful for the depositors themselves. “This is going to hurt me as much as it is going to hurt you, but I will do it anyway. Therefore, you know that if you mess around, you’re going to get the sanction imposed on you,” explains Diamond by taking the depositor’s perspective. Even if it is not in the depositors’ collective interest to pull their money out, they will rush to the bank anyway when they spot a crime in progress.

The Narrow Banking Alternative
Stuart Greenbaum, former dean and professor emeritus of finance at Washington University, thinks that while Diamond and Rajan’s proposal has some merit, “building in a weakness because the weakness will make you strong” sounds a bit like “hotel music.” It’s pleasing, but it makes too much of a bank’s delicate capital structure. “It’s one of those arguments where you find virtue in a weakness, developing compensating strengths for some sort of disability you might have,” says Greenbaum.

It could be desirable to avoid a fragile structure altogether, according to economists who believe that a 100 percent reserve requirement should be imposed on deposits that can be withdrawn on demand (this group includes Milton Friedman). Such a proposal would effectively narrow a bank’s activities by requiring it to invest demand deposits solely in “safe” short-term assets like Treasury bills, as opposed to illiquid assets such as loans. Putting deposits in very liquid assets makes the banking system run-proof. It precludes a bank run because depositors know with certainty that their deposits are backed by investments the bank can quickly convert into cash. A narrow bank could be chartered separately, while other institutions that lend to longer-term projects would be forbidden to finance these projects with demand deposits.

Narrow banking would make the financial system a more stable place because it would provide greater safety against bank runs, says Greenbaum. But it would come with a cost. Under a narrow banking arrangement, deposit-taking banks would lose that special ability to turn illiquid assets into liquid liabilities. “It provides a greater degree of safety, at a cost of the production of liquidity through mismatching [of assets and liabilities],” Greenbaum says. In other words, banks would not be able to use the rich mass of demand deposits to fund projects that have a much longer duration. Economists agree on this, but disagree on just how large that cost is.

An analysis by Neil Wallace, an economist at Pennsylvania State University, attempts to quantitatively compare these opposing worlds, by extending the original Diamond and Dybvig model of fragile banking to include the possibility of a narrow banking system. Overall, he finds that the narrow banking alternative is undesirable. “It eliminated any role for banking,” says Wallace. History is rife with episodes of panics and runs, and perhaps narrow banking can prevent that, but at what cost? Wallace thinks it might be substantial. “Using narrow banking to cope with the potential problems of banking illiquidity is analogous to reducing automobile accidents by limiting automobile speeds to zero,” writes Wallace in his paper. Diamond and Rajan agree. They think that narrow banking would essentially “kill liquidity creation and result in lower credit availability to borrowers.”

Greenbaum, however, thinks otherwise. “It doesn’t preclude the production of liquidity,” Greenbaum says. He says that there are other ways of creating liquidity without using demand deposits, in particular by “mismatching” other financial instruments on the bank’s balance sheet. For instance, instead of using the money from checking accounts and transforming these funds into loans, another institution can take a one-year time deposit and lend out a three-year loan. Hence, in this view, banks do not need the threat of runs to create liquidity. (However, some ways of creating liquidity may not be immune from run-like events. Recently, “structured investment vehicles,” which issue commercial paper backed by longer-term assets such as mortgages, had trouble rolling over their paper when investors started doubting the quality of the underlying assets.)

Nonetheless, no country has ever experimented with narrow banking and Greenbaum says it will probably never happen. And so in the existing banking system where banks’ long-term assets are backed by mostly demand deposits, regulators have

responded with oversight, stops, and safety nets. “We make the best of it. We do it with regulation, we do it with monitoring, and all sorts of restrictions in order to avoid the worst instability. That’s the basic fact of the case,” says Greenbaum.

The Implication for Safety Nets

The threat of runs, say Diamond and Rajan, keeps banks from misbehaving, because if they ever do anything that people perceive might impose a loss on depositors, the bank would be closed immediately. If so, then certain safety nets like deposit insurance, which is often thought to prevent jumpy depositors from running on the bank, may actually reduce the incentive for banks to behave well because it removes the depositors’ commitment to run. So why have deposit insurance?

In the real world, unexpected events can cause losses, even if they have nothing to do with a bank’s behavior. For instance, if the economy is hit by a recession, a bank’s investments may not generate as much return as expected, and as a result, the bank may not be able to deliver what it promised to its depositors. Thus, while the threat of runs keeps banks from misbehaving, the real-world uncertainty might make it excessively susceptible to panics.

In this case, deposit insurance could be helpful by tempering depositors’ nerves, but where to draw the line is tricky. On the one hand, bank panics

and their dire consequences should be avoided, but on the other, a fully insured bank will lose the disciplining mechanism that was built in its capital structure — it would make banks more likely to take big risks. As a result, deposit insurance would require additional financial regulation because the onus to impose the appropriate penalties now lies with the regulator. “Deposit insurance is only going to work well if regulators are good at actually closing banks whenever they misbehave,” Diamond says.

But if there is a sense that some banks may be too big to fail, regulators may be hesitant to carry out that punishment. Diamond thinks that having limited deposit insurance likewise disciplines the regulators themselves, because if they intervene to bail out a bank, then this very public event will receive scrutiny by the political process, which can subsequently improve regulation. Hence, in assessing how much of a bank’s deposits should be insured, regulators must try to get as much as possible of the good and very little of the bad. They would have to weigh the importance of enforcing discipline against ensuring financial stability.

The implications of Diamond and Rajan’s proposal for deposit insurance also hold true for capital adequacy rules. Bank capital includes long-term claims such as equity and long-term debt, “softer” claims that are not subject to runs. As such, too high an amount of bank capital is not desirable

because it impairs the bank’s ability to create liquidity by removing the depositors’ incentive to punish. But if banks keep too low a buffer, then they might fail too often. Indeed, banks themselves will choose some amount of capital, regardless of government regulation.

The question, then, is whether regulators want to stipulate an amount other than that level, keeping in mind the trade-off between creating liquidity and stability in the financial system. If stability is considered the more important goal and a higher minimum capital requirement is stipulated, then regulatory standards ought to be more intense to keep the banks in check. If these standards are good, then a higher level of capital requirement won’t compromise too much of the bank’s unique ability to provide funds to those who need it and at the same time will make the bank less vulnerable to the vagaries of the business cycle.

Despite their apparent fragility, banks have persevered through centuries and continue to be integral to the economy. Indeed, one can recognize the might of banks by the grandeur of their buildings and marble interiors, just as the palaces of the past were iconic of the stature of kings and queens. And just as the power of the monarchies relies on the allegiance of their subjects, the strength of banks depends mostly, as it turns out, on even the littlest of their depositors. **RF**

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