Why Economists Still Worry About Bank Runs

Depositors crowded around barricades surrounding Abacus Federal Savings Bank in New York's Chinatown on the second day of a run that began April 22, 2003. After a week, the bank had paid out $30 million to depositors but remained solvent.

They may be rare today, but the costs they impose can be large — and so can the measures we take to prevent them, says a Richmond Fed economist

BY DOUG CAMPBELL

You're thinking of this place all wrong, as if I have the money back in a safe. The money's not here. Well, your money's in Joe's house, that's right next to yours. And in the Kennedy house, and Mrs. Macklin's house, and a hundred others. You're lending them the money to build, and then they're going to pay it back to you as best they can. Now, what're you going to do, foreclose on them?"

— George Bailey (Jimmy Stewart) pleading with panicked depositors in the bank run scene from "It's a Wonderful Life."

Thomas Sung remembers thinking there was no way it could be happening. It was Tuesday, April 22, 2003, and Abacus Federal Savings Bank, which he founded almost 20 years earlier to serve Chinese immigrants in New York City, was experiencing a run. Jumpy depositors lined up five-deep outside to withdraw their money. They were incited by rumors that Sung had fled the country along with another employee, supposedly stealing $50 million from the bank's vault. What actually happened was that an employee had been fired for alleged embezzlement, but Abacus as a financial institution remained strong.

"It was awful," Sung recalls. "I never thought we would have any problems because we had so much liquidity. I went there to calm the crowd and shake hands with customers. I said, 'I'm here. Abacus isn't going anywhere.'" But inside, as Sung tells it, bank managers were scrambling to secure liquid funds. Agents of the Office of Thrift Supervision were faced with the question of whether to close the $282 million-asset bank's doors.

The crisis deepened and spread through the bank's six branches in New York and Philadelphia. For days, depositors continued to queue up, unswayed by public statements from regulators that Abacus was safe and sound and federally insured. Sung had to move fast. If he couldn't convert some $20 million worth of assets into cash by Monday, Abacus Federal Savings might fail. "We'll find some way," he told his staff as they hunkered down for 48-straight hours of work over the weekend. He kept to himself the gnawing suspicion that Abacus was hanging in the balance.

Preventing Panic

The plight of Abacus Federal Savings turned a lot of heads. Bank runs hardly ever happen anymore in the United States, though many did occur in the 19th and early 20th centuries. The 1929 market crash and ensuing depression, with its flurry of bank panics (between 1930 and 1933, one out of every three U.S. banks failed), prompted Congress to introduce federal deposit insurance.

George Bailey explained to the panicky people of Bedford Falls how the system works — and how easily it can break down. One problem is acute: When a cascade of people start withdrawing their money, irrationally or rationally, it becomes increasingly difficult for even safe and sound banks to pay off depositors. The other problem is chronic: In the long term, if fewer people keep their money in

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banks, then banks have fewer dollars to lend out for development.

Initially, deposit insurance was seen as a means to protect "the small, unsophisticated depositor," writes Arthur Rolnick, director of research at the Minneapolis Fed, in an article about the costs of preventing bank runs. It also carried the apparent virtue of discouraging bank runs.

The original amount insured by the Federal Deposit Insurance Corp., created in 1933, was $2,500; today it's $100,000. That insurance fund is a pool to which insured banks contribute; it's not taxpayer money. (But if the funds ran out, then taxpayers could be on the hook.) Banks don't match deposits dollar for dollar but rather 1.25 percent of insured deposits in the aggregate.

These protections have made a difference. Since Jan. 1, 1934, according to the FDIC, no U.S. depositor has lost even a penny of insured funds from a bank or thrift failure.

But as the events around Abacus Federal Savings proved, bank runs are more than a theoretical possibility in the 21st century. Economists regularly go back and reevaluate the costs and benefits of having policies and systems in place that reduce the possibility of bank runs. Understanding the economics of bank runs is essential for those calculations. Deposit insurance may seem like a bulletproof solution, but many economists dislike it because of the moral hazard problem. Because their deposits are insured, customers have reduced incentive to monitor their banks' behavior, which can lead to more risk-taking than is desirable. Many blame the 1980s savings and loan crisis at least in part on this disconnect.

For these and other reasons, bank runs remain fertile ground for economic inquiry. A lot of the intuitive ways to prevent bank runs or diminish their fallout have turned out to be questionable. Some of the most influential research has been led by economists with ties to the Richmond Fed. What they have concluded may shape banking policy in the years ahead.

The Diamond-Dybvig Model

Douglas Diamond, an economist at the University of Chicago and a visiting scholar at the Richmond Fed, co-authored in 1983 with economist Philip Dybvig the landmark paper "Bank Runs, Deposit Insurance, and Liquidity." It contained what's regarded as the first coherent mathematical model on how bank runs work.

Their story began by asking why banks are subject to runs in the first place. The simple answer is that banks finance illiquid assets — like loans — with very liquid short-term liabilities, meaning deposits. That means that if depositors want their money, banks can either call or sell their loans before they reach maturity — but either way they don't get full value. As a result, it's unlikely there will be enough to go around to all depositors. Runs are caused by sometimes rational responses of depositors who know that if they get in line for payment too late, there may be nothing left for them.

Diamond and Dybvig suggested that banks offer contracts that encourage people to withdraw their deposits only when they need the funds. To make such a system work, there has to be some coordination among depositors so that they won't all demand payment or panic at the same time. Of course, such coordination can be difficult. That's why banks in the Diamond-Dybvig model remain vulnerable to runs, and that's a problem for the entire economy.

Seemingly the only surefire way to prevent the possibility of a bank run in the Diamond-Dybvig model is to specifically forbid more than a certain percentage of withdrawals in any given period of time — so-called "suspension of convertibility." But even this system is not perfect. To ensure that only depositors who are in financially dire straits can withdraw funds, Diamond and Dybvig propose a taxation authority with the power to take back money from depositors who came first in line but turned out not to really need the money. "That's our model of what deposit insurance is. It would be useless without taxation authority," Diamond says. Researchers also point out that although almost all actual deposit insurance systems are government-run, the theory itself does not rule out the possibility of private solutions.

In the years since Diamond and Dybvig's paper, scores of economists have added to the model's robustness. But still questions remain about its practicality for the real world. Many economists continue to study ways that might help ease the negative economic impact of the very possibility of bank runs.

The Ennis-Keister Model

Huberto Ennis, a research economist at the Richmond Fed, recently tackled the problem from a new angle. In a 2003 paper, Ennis and Todd Keister of Instituto Tecnologico Autonomo de Mexico (also known as ITAM) ask whether runs, and the very possibility thereof, are bad for the long-run performance of the economy. The short answer: Yes, but with some caveats. In fact, one of their more counterintuitive conclusions is that eliminating deposit insurance might have the beneficial effect of spurring more economic growth.

In "Economic Growth, Liquidity, and Bank Runs," Ennis and Keister created a mathematical model which simulates an economy where deposit insurance doesn't exist. In this environment, runs definitely happen. Their model was different from the Diamond-Dybvig version in that they fused together a simple bank-run model with a simple growth model. Then they produced artificial data to investigate the optimal kinds of contracts that banks and depositors could engage in and their effects on economic growth. There were three key findings, all of which suggested that the absence of deposit insurance could be harmful to capital formation, plus one surprising result.

First, banks enduring a run will liquidate their assets for cash. As a result, new capital creation is slowed, thus tamping down overall growth. Second, consumers react to the hypothetical possibility of runs by

keeping more of their money safe at home. This again keeps money that might be used for investment out of the system, hurting overall economic growth. Finally, banks likewise protect themselves against runs by putting more money in liquid investments that don't generate high returns. "The mere possibility of a bank run reduces capital formation, even when a run does not occur," Ennis and Keister write.

Even though banks may be shifting relatively small amounts of assets into liquid forms, the consequences can be large and last for a long time, Ennis says. It becomes an intertemporal problem: The way resources are allocated in the banking system hurts the future economy.

But Ennis and Keister also discovered a new twist: In certain cases, banks might actually choose to hold less liquid portfolios in response to the probability of runs. And that, theoretically, would not only be good for economic growth prospects but also decrease the probability of runs.

How can this be? It is a matter of incentives. Banks attract deposits by promising solid returns. By necessity (and regulator-mandated capital requirements), they set aside liquid funds for depositors who may legitimately need to withdraw their money before their investment vehicle has reached maturity. But the rest of any given bank's depositors ought to wait for higher returns instead of pulling out early in fear of a run.

To pay off as many depositors as possible in the event of a run, banks can set up contracts that pay lower interest rates to those who withdraw early. Depositors who otherwise don't need immediate cash are dissuaded from trying to withdraw early because they know the funds are both limited and low in value; they might as well wait it out. On the flip side, banks in this scenario are placing more money in long-term, high-return investments, and less money in liquid assets. That's good for economic growth.

"What's important is that the behavior of banks facing runs is complicated," Ennis says. "The most obvious thing is to increase liquidity; it's an easy way to think about it. But the other way is that under certain conditions it's going to be more advantageous to actually lower interest rates on the front end as opposed to increase liquidity. A lot of it depends on the promised returns on long-term investment."

Now, what's good for economic growth is not necessarily the same as what's good for individuals' welfare. Some depositors could be harmed by a system in which banks hold less liquidity. That is one of the many reasons why deposit insurance endures, and why Ennis, for one, remains agnostic on the topic. "One has to be careful," Ennis says. "We are not necessarily always interested in growth. If there's a situation where you grow slower but provide more insurance and that gives you improved welfare, then that's a good thing."

Wounded Survivor

Two and a half years later, Abacus Federal Savings Bank endures. After working through day and night over the weekend, Sung showed up at Fannie Mae headquarters in Virginia at 8 a.m. Monday, April 28. He needed to sell a pool of his mortgage loans as soon as possible. By 10 a.m., Fannie Mae — after buying the loans at a discount — had sent over enough money to effect the release of Abacus' notes from the bank's primary lender. Abacus was liquid. By the time the crisis ended a couple of days later, the bank had paid out about $30 million to depositors, but the doors remained open.

But the panic took a toll nonetheless. For one thing, Sung earlier this year gave up the CEO's post, handing it over to his daughter, though he remains chairman. Short term, the bank took an earnings hit because it had to convert mortgage loans into cash assets which would have earned higher returns if allowed to reach maturity.

Long term, Abacus is keeping an unusual proportion of its assets in cash or near-cash reserves, Sung says. The bank is doing this on the advice of its regulators, Sung says, who suggested Abacus "pre-position" itself for the possibility of runs. Unlike institutions that are perceived to be "too big to fail," community banks are largely on their own, Sung says.

Sung insists that he had plenty of liquidity back in 2003; if only funds had been released to him on a timely basis there would have been no scramble, he says. To this day, Sung thinks he was wronged by the system. It's not his depositors who are to blame, he says — they were possibly making rational decisions based on the actions of fellow depositors.

He is skeptical that it was a cultural phenomenon, driven by Abacus depositors' ignorance of deposit insurance and the workings of modern-day finance. "The problem is that when you have a run, you have a frenzied type of feeling. People forget. They worry about it.

"Maybe people need to be more educated in that. Maybe that would have prevented some of it. But I honestly don't believe that would have prevented a run like this." **RF**

Readings

Diamond, Douglas W., and Philip H. Dybvig. "Bank Runs, Deposit Insurance, and Liquidity." *Journal of Political Economy*, June 1983, vol. 91, no. 3, pp. 401-419.

Ennis, Huberto M., and Todd Keister. "Economic Growth, Liquidity, and Bank Runs." *Journal of Economic Theory*, Spring 2003, vol. 109, no. 2, pp. 220-245.

Peck, James, and Karl Shell. "Equilibrium Bank Runs." *Journal of Political Economy*, February 2003, vol. 111, no. 1, pp. 103-123.

Rolnick, Arthur. "The Alarming Costs of Preventing Bank Runs." *Fed Gazette*, April 1991.

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