NBER Reporter: Research Summary 2008 Number 4

Banking Crises[1]

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The current global financial crisis grew out of banking losses in the United States related to subprime lending. How well do economists understand the origins of such crises and how they spread? Was this crisis something new or a replay of familiar historical phenomena? Will policy interventions be able to mitigate its costs? The history of banking crises provides informative perspectives on these and other important questions.

Crises Are Not All the Same

When considering the history of banking crises, it is useful to distinguish between two phenomena associated with banking system distress: exogenous shocks that produce insolvency, and pressures on banks that arise from rapid withdrawals of debt or failures to rollover debt during "panics." These two contributors to distress often do not coincide. For example, in the rural United States during the 1920s, large declines in agricultural prices cause many banks to fail, often with high losses to depositors, but those failures were not associated with systemic panics.[2] In 1907, the opposite pattern was visible. The United States experienced a systemic panic, originating in New York, which was precipitated by small aggregate shocks but had large short-term systemic effects associated with widespread withdrawals of deposits. Although some banks failed in 1907, failures and depositor losses were not much higher than in normal times.[3] That crisis was resolved only after banks had uncertainty about the incidence of the shock had been resolved.

The central differences between these two episodes relate to the information about the shocks producing loan losses. In the 1920s, the shocks were loan losses in agricultural banks, geographically isolated and fairly transparent. Banks failed without subsequent system-wide concerns. During 1907, although the ultimate losses for New York banks were small, the incidence of the shock was not clear (loan losses reflected complex connections to securities market transactions, with uncertain consequences for some New York banks).

Sometimes, large loan losses and confusion regarding their incidence occur together. In Chicago in mid-1932, for example, large losses resulted in many failures and also in widespread withdrawals from banks that did not ultimately fail. Despite the confusion about the incidence of the shock, and the consequent widespread temporary disruptions to the financial system, the banks that failed were exogenously insolvent; solvent Chicago banks experiencing withdrawals did not fail. In other episodes, however, bank failures may have reflected illiquidity resulting from runs, rather than exogenous insolvency.[4]

Today's financial turmoil is closer to the Chicago experience in 1932 than to either the banking shocks of the 1920s or those of 1907.[5] The shock that prompted the turmoil was of moderate size (subprime and Alt-A loans totaled roughly $3 trillion, including those on the balance sheets of

Fannie Mae and Freddie Mac, and total losses are likely to generate total losses of roughly half a trillion dollars), and its consequences were significant for both solvent and insolvent banks. Unlike the Chicago Panic, today's turmoil probably has produced the failures of financial institutions that were arguably solvent prior to their liquidity problems (for example, Bear Stearns).

Banking crises can differ according to whether they coincide with other financial events. Banking crises coinciding with currency collapse are called "twin" crises (as in Argentina in 1890 and 2001, Mexico in 1995, and Thailand, Indonesia, and Korea in 1997). A twin crisis can reflect two different chains of causation: an expected devaluation may encourage deposit withdrawal to convert to hard currency before devaluation (as in the United States in early 1933); or, a banking crisis can cause devaluation, either through its adverse effects on aggregate demand or by affecting the supply of money (when a costly bank bailout prompts monetization of government bailout costs). Sovereign debt crises can also contribute to bank distress when banks hold large amounts of government debt (for example, in the banking crises in the United States in 1861, and in Argentina in 2001).[6]

Shifting Perceptions of Banking Crises and the Desirability of Government Protection

The consensus views regarding banking crises' origins (fundamental shocks versus confusion), the extent to which crises result from unwarranted runs on solvent banks, the social costs attending runs, and the appropriate policies to limit the costs of banking crises (government safety nets and prudential regulation) have changed dramatically, and more than once, over the course of the nineteenth and twentieth centuries. Historical experience played a large role in changing perspectives toward crises, and the U.S. experience had a disproportionate influence on thinking. Although panics were observed throughout world history (as early as Hellenistic Greece, and in Rome in 33 A.D.), prior to the 1930s, in most of the world, banks were perceived as stable; large losses from failed banks were uncommon; banking panics were not seen as a great risk; and there was little perceived need for formal safety nets (for example, deposit insurance). In many countries, ad hoc policies among banks, and sometimes including central banks, to coordinate bank responses to liquidity crises (as, for example, during the failure of Barings investment bank in London in 1890), seemed adequate for preventing systemic costs from bank instability.

The unusual experience of the United States was a contributor to changes in thinking which led to growing concerns about banks runs, and the need for aggressive safety-net policies to prevent or mitigate runs. In retrospect, the extent to which U.S. banking instability informed thinking and policy outside the United States seems best explained by the size and pervasive influence of the United States; in fact, the U.S. crises were unique and reflected peculiar features of U.S. law and banking structure.

The U.S. Panic of 1907 (the last of a series of similar U.S. events, including 1857, 1873, 1884, 1890, 1893, and 1896) precipitated the creation of the Federal Reserve System in 1913 as a means of enhancing systemic liquidity, reducing the probability of systemic depositor runs, and mitigating the costs of such events.[7] This innovation was specific to the United States (other countries either had established central banks long before, often with other purposes in mind, or

had not established central banks), and reflected the unique U.S. experience with panics - a phenomenon that the rest of the world had not experienced since 1866, the last British banking panic.

For example, Canada did not suffer panics like those of the United States and did not establish a central bank until 1935. Canada's early decision to permit branch banking throughout the country ensured that banks were geographically diversified and thus resilient to large sectoral shocks (like those to agriculture in the 1920s and 1930s), able to compete through the establishment of branches in rural areas (because of low overhead costs of establishing additional branches), and able to coordinate the banking system's response in moments of confusion to avoid depositor runs (the number of banks was small, and assets were highly concentrated in several nationwide institutions). Outside the United States, coordination among banks facilitated systemic stability by allowing banks to manage incipient panic episodes to prevent widespread bank runs. In Canada, the Bank of Montreal occasionally would coordinate actions by the large Canadian banks to stop crises before the public was even aware of a possible threat.[8]

The United States, however, was unable to mimic this behavior on a national or regional scale. U.S. law prohibited nationwide branching, and most states prohibited or limited within-state branching. U.S. banks, in contrast to banks elsewhere, were numerous (for example, numbering more than 29,000 in 1920), undiversified, insulated from competition, and unable to coordinate their behavior to prevent panics.

The structure of U.S. banking explains why the United States uniquely had banking panics in which runs occurred despite the health of the vast majority of banks. The major U.S. banking panics of the postbellum era (listed above) all occurred at business cycle peaks, and were preceded by spikes in the liabilities of failed businesses and declines in stock prices; indeed, whenever a sufficient combination of stock price decline and rising liabilities of failed businesses occurred, a panic always resulted.[9] Owing to the U.S. banking structure, panics were a predictable result of business cycle contractions that, in other countries, resulted in an orderly process of financial readjustment.

The United States, however, was not the only economy to experience occasional waves of bank failures before World War I. Nor did it experience the highest bank failure rates, or banking system losses of that era. None of the U.S. banking panics of the pre-World War I era saw nationwide banking distress (measured by the negative net worth of failed banks relative to annual GDP) greater than the 0.1 percent loss of 1893. Losses were generally modest elsewhere, but Argentina in 1890 and Australia in 1893, the most severe cases of banking distress during the 1875-1913 era, suffered losses of roughly 10 percent of GDP. Losses in Norway in 1900 were roughly 3 percent of GDP and in Italy in 1893 roughly 1 percent of GDP. With the possible exception of Brazil (for which data have yet to be collected to measure losses), there were no other cases in 1875-1913 in which banking loss exceeded 1 percent of GDP.

Loss rates tended to be low because banks structured themselves to limit their risk of loss, by maintaining adequate equity-to-assets ratios, sufficiently low asset risk, and adequate asset liquidity. Most importantly, market discipline (the fear that depositors would withdraw their funds) provided incentives for banks to behave prudently. The picture of small depositors lining

up around the block to withdraw funds has received much attention, but perhaps the more important source of market discipline was the threat of an informed (often "silent") run by large depositors (often other banks). Banks maintained relationships with each other through inter-bank deposits and the clearing of public deposits, notes, and bankers' bills. Banks often belonged to clearinghouses that set regulations and monitored members' behavior. A bank that lost the trust of its fellow bankers could not long survive.[10]

This perception of banks as stable, as disciplined by depositors and inter-bank arrangements to act prudently, and as unlikely to fail, was common prior to the 1930s. The banking crises of the Great Depression changed that perception. U.S. bank failures resulted in losses to depositors in the 1930s in excess of 3 percent of GDP. Bank runs, bank holidays (local and national government-decreed periods of bank closure to attempt to calm markets and depositors), and widespread bank closure suggested a chaotic and vulnerable system in need of reform. The Great Depression saw an unusual raft of banking regulations and interventions, especially in the United States, many of which have subsequently been discredited as unwarranted and undesirable, including restrictions on bank activities (the separation of commercial and investment banking, subsequently reversed in the 1980s and 1990s), and government insurance of deposits. Targeted bank recapitalizations were also implemented via the Reconstruction Finance Corporation, in an innovative program that proved quite successful at little cost to taxpayers.[11]

Academic perspectives on the Depression fueled the portrayal of banks as crisis-prone. The most important of these was the treatment of the 1930s banking crises by Milton Friedman and Anna J. Schwartz in their book, *A Monetary History of the United States* (1963). Friedman and Schwartz argued that many solvent banks were forced to close as the result of panics, and that fear spread from some bank failures to produce failures elsewhere. Their views that banks were inherently unstable, that irrational depositor runs could ruin a banking system, and that deposit insurance was a success, were particularly influential coming from economists known for their skepticism of government interventions.

Since the publication of *A Monetary History of the United States*, however, other scholarship has led to important qualifications of the Friedman-Schwartz view of 1930s' bank distress, and particularly of the role of panic in producing distress.[12] Detailed studies of particular regions and banks' experiences do not confirm the view that panics were a nationwide phenomenon during 1930 or early 1931, or an important contributor to nationwide distress until very late in the Depression (that is, early 1933). Regional bank distress often was localized and traceable to fundamental shocks to the values of bank loans. Indeed, recent scholarship in banking has emphasized that government protections of banks, including the U.S. federal deposit insurance, can undermine market discipline of bank risk taking, and contribute significantly to the risk of a banking crisis.

Interestingly, the theory behind the problem of destabilizing protection has been well-known for over a century, and was the basis for Franklin Roosevelt's opposition to deposit insurance in 1933 (an opposition shared by the Fed, the Treasury, and Senator Carter Glass). Deposit insurance was seen as undesirable special-interest legislation designed to benefit small banks. Numerous attempts to introduce it failed to attract support in the Congress.[13] Deposit insurance removes depositors' incentives to monitor and discipline banks, and frees bankers to take

imprudent risks (especially when they have little or no remaining equity at stake, and see an advantage in "resurrection risk taking"). The absence of discipline also promotes banker incompetence, which leads to unwitting risk taking.

Empirical research on the banking collapses of the last two decades of the twentieth century has produced a consensus that the greater the protection offered by a country's bank safety net, the greater the risk of a banking collapse.[14] Studies of historical deposit insurance reinforce that conclusion. Indeed, the basis for the opposition to federal deposit insurance in the 1930s was the disastrous experimentation with insurance in several U.S. states during the early twentieth century, which resulted in banking collapses in all the states that adopted insurance.[15]

Macroeconomic Consequences

As macroeconomists increasingly have emphasized, when banks respond to losses, deposit outflows, and increased risk of loan loss by curtailing the supply of credit, that can aggravate the cyclical downturn, magnifying declines in investment, production, and asset prices, whether or not bank failures occur. Recent research explores the linkages among bank credit supply, asset prices, and economic activity, and focuses in particular on the adverse macroeconomic consequences of "credit crunches" that result from banks' attempts to limit their risk of failure.[16]

This new literature provides evidence in support of a "shock-and-propagation" approach to understanding the contribution of financial crises to business cycles. This approach has empirical implications that can distinguish it from other theories of the origins, propagation, and consequences of bank distress. For example, this approach helps us to understand why it was that during previous severe banking panics in the United States, in the face of severe asymmetric-information problems and associated adverse-selection costs of potential bank equity offerings in the wake of banking crises, it was prohibitive for banks to issue new equity in support of continuing lending. Interestingly, following the subprime shock, nearly $500 billion of new capital was raised prior to any announcement of public injections of funds. This unusual behavior reflected improvements in the structure of the U.S. banking system since the 1980s, which resulted from nationwide branching and the diversification of banking income through the deregulation of bank activities, which mitigated problems of adverse selection (in comparison with the 1930s or the 1980s). Although it is sometimes wrongly believed that deregulation promoted the recent instability of banks, in fact subprime lending and securitization were in no way linked to deregulation, and whatever prudential regulatory failures attended the subprime boom and bust, the last decade has seen substantial increases in those regulations, not a relaxation of prudential regulation.[17]

The shock-and-propagation approach to understanding the origins and transmission of banking crises also implies that regulatory policy and policy interventions that are targeted to respond to the shocks buffeting banks (like the bank recapitalizations recently employed by the G7 countries) can be used very effectively to offset the harmful macroeconomic consequences of shocks to banks' balance sheets, just as the Reconstruction Finance Corporation's preferred stock purchases helped to stabilize the banking sector and restart the flow of credit after 1933.[18]

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[1.] A longer treatment of many of the issues surveyed in this article appears as C. W. Calomiris, "Bank Failures in Theory and History: The Great Depression and Other 'Contagious' Events," NBER Working Paper No. 13597, November 2007.

[2.] C. W. Calomiris, "Do 'Vulnerable' Economies Need Deposit Insurance? Lessons from the U.S. Agricultural Boom and Bust of the 1920s," in If Texas Were Chile: A Primer on Banking Reform*, P. Brock, ed., ICS Press, 1992, pp. 237 314, 319 28, and 450 8.*

[3.] C. W. Calomiris and G. Gorton, "The Origins of Banking Panics: Models, Facts, and Bank Regulation," in Financial Markets and Financial Crises*, R. G. Hubbard, ed., University of Chicago Press, 1991, pp. 109 73. See also R.F. Bruner and S. D. Carr,* Money Panic: Lessons from the Financial Crisis of 1907 *(2007).*

[4.] C. W. Calomiris and J. R. Mason, "Contagion and Bank Failures During the Great Depression: The June 1932 Chicago Banking Panic," NBER Working Paper No.4924, November 1994, and American Economic Review *87, December 1997, pp. 863-83.*

[5.] C. W. Calomiris, "The Subprime Turmoil: What's Old, What's New, and What's Next," in "Maintaining Stability in a Changing Financial System", Federal Reserve Bank of Kansas City Symposium Proceedings, 2008.

[6.] For a discussion of the Argentine experience, see C. W. Calomiris, "Devaluation with Contract Redenomination in Argentina," NBER Working Paper No. 12644, October 2006, and Annals of Finance *3, January 2007, pp.155-92.*

[7.] The national banking era panics are discussed in Calomiris and Gorton (1991); the Panic of 1857 is treated in C. W. Calomiris and L. Schweikart, "The Panic of 1857: Origins, Transmission, and Containment," Journal of Economic History*, December 1991, pp. 807 34.*

[8.] C. W. Calomiris, US Bank Deregulation in Historical Perspective*, Cambridge University Press (2000).*

[9.] Calomiris and Gorton (1991).

[10.] For a theoretical perspective on market discipline, see C. W. Calomiris and C. M. Kahn, "The Role of Demandable Debt in Structuring Optimal Banking Arrangements," American Economic Review *81, June 1991, pp. 497 513. For historical evidence, see C. W. Calomiris and J. R. Mason, "Fundamentals, Panics and Bank Distress During the Depression,"* American Economic Review *93, December 2003a, pp. 1615-47, and C. W. Calomiris and B.Wilson, "Bank Capital and Portfolio Management: The 1930s 'Capital Crunch' and Scramble to Shed Risk,"* Journal of Business *77, July 2004, pp. 421-55. A modern-day example of market discipline (Argentina 1991-9) is analyzed in C. W. Calomiris and A. Powell, "Can Emerging Market Bank Regulators*

Establish Credible Discipline?" NBER Working Paper No. 7715, May 2000, in Prudential Supervision: What Works and WhatDoesn't, *F. S. Mishkin, ed., University of Chicago Press, 2001, pp.147-96.*

[11.] *See J. R. Mason, "Do Lender of Last Resort Policies Matter? The Effects of Reconstruction Finance Corporation Assistance to Banks During the Great Depression,"* Journal of Financial Services Research *20, 2001, pp. 77-95; C. W. Calomiris and J. R. Mason, "How to Restructure Failed Banking Systems: Lessons from the U.S. in the 1930s and Japan in the 1990s," NBER Working Paper No. 9624, April 2003, and in* Governance, Regulation, and Privatization in the Asia-Pacific Region*, T .Ito and A. Krueger, eds., University of Chicago Press, 2004, pp.375-420.*

[12.] *J. L. Lucia, "The Failure of the Bank of United States: A Reappraisal,"* Explorations in Economic History *22, 1985, pp. 402-16; E. Wicker,* The Banking Panics of the Great Depression*, Cambridge University Press, 1996; Calomiris and Mason (1997); Calomiris and Mason (2003a).*

[13.] *C. W. Calomiris and E. N. White, "The Origins of Federal Deposit Insurance," in* The Regulated Economy: A Historical Approach to Political Economy*, C. Goldin and G. Libecap, eds., University of Chicago, 1994.*

[14.] *See, for example, J.Barth, G. Caprio, and R.Levine,* Rethinking Bank Regulation: Till Angels Govern*, Cambridge University Press, 2006.*

[15.] *C. W. Calomiris, "Is Deposit Insurance Necessary? A Historical Perspective,"* Journal of Economic History*, June 1990, pp. 283 95.*

[16.] *B. S. Bernanke, "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," NBER Working Paper No. 1054, 1983, and* American Economic Review *73, June 1983, pp. 257-76; B. S. Bernanke and M. Gertler, "Financial Fragility and Economic Performance," NBER Working Paper No. 2318, July 1987, and* Quarterly Journal of Economics *105, February 1990, pp. 87-114; C. W. Calomiris, "Financial Factors in the Great Depression,"* Journal of Economic Perspectives*, 7, Spring 1993, pp. 61-85; C. W. Calomiris and J.R. Mason, "Consequences of Bank Distress During the Great Depression," NBER Working Paper No. 7919, September 2000, and* American Economic Review *93, June 2003b, pp. 937-47; Calomiris and Wilson (2004); F. Allen and D. Gale, "Financial Fragility, Liquidity, and Asset Prices,"* Journal of the European Economic Association *2, 2004, pp.1015-48.*

[17.] *Calomiris (2008).*

[18.] *Mason (2001) and Calomiris and Mason (2004).*