Banking Crises

Charles W. Calomiris

There are two distinct phenomena associated with banking system distress: exogenous shocks that produce insolvency, and depositor withdrawals during "panics." These two contributors to distress often do not coincide. For example, in the rural United States during the 1920s, many banks failed, often with high losses to depositors, but those failures were not associated with systemic panics. In 1907, the United States experienced a systemic panic, originating in New York. Although some banks failed in 1907, failures and depositor losses were not much higher than in normal times. As the crisis worsened, banks suspended convertibility until uncertainty about the incidence of the shock had been resolved.

The central differences between these two episodes relate to the commonality of information regarding the shocks producing loan losses. In the 1920s, the shocks were loan losses in agricultural banks, geographically isolated and fairly transparent. Banks failed without resulting in system-wide concerns. During 1907, the ultimate losses for New York banks were small, but the incidence was unclear ex ante (loan losses reflected complex connections to securities market transactions, with uncertain consequences for some New York banks). This confusion hit the financial system at a time of low liquidity, reflecting prior unrelated disturbances in the balance of payments (Bruner and Carr 2007).

Sometimes, large loan losses, and confusion regarding their incidence, both occurred. In Chicago in mid-1932, losses resulted in many failures and also in widespread withdrawals from banks that did not ultimately fail. Research has shown that

the banks that failed were exogenously insolvent; solvent Chicago banks experiencing withdrawals did not fail. In other episodes, however, bank failures may reflect illiquidity resulting from runs, rather than exogenous insolvency.

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 (e.g., in the banking crises in the United States in 1861, and in Argentina in 2001).

The consensus views regarding banking crises' origins (fundamental shocks vs. 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 19th and 20th centuries. Historical experience played a large role in changing perspectives toward crises, and the United States' experience had a disproportionate influence on thinking. Although panics were observed throughout world history (in 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 (e.g., deposit insurance, or programs to recapitalize or banks). 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. 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 (Bordo 1985).

For example, Canada did not suffer panics like those of the U.S. 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.

The United States, however, was unable to mimic this behavior on a national or regional scale (Calomiris 2000, Calomiris and Schweikart 1991). 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 (e.g., numbering more than 29,000 in 1920), undiversified, insulated from competition, and unable to coordinate their response to panics (U.S. banks did establish clearing houses, which facilitated local responses to panics beginning in the 1850s, as emphasized by Gorton 1985).

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 (Calomiris and Gorton 1991). 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 bank failure losses. 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% loss of 1893. Losses were generally modest elsewhere, but Argentina in 1890 and Australia in 1893, the most severe cases of banking distress during this era, suffered losses of roughly 10% of GDP. Losses in Norway in 1900 were 3% and in Italy in 1893 1% of GDP, but with the possible exception of Brazil (for which data do not exist to measure losses), there were no other cases in 1875-1913 in which banking loss exceeded 1% 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. 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 interbank deposits and the clearing of public deposits, notes, and bankers' bills. Banks often belonged to clearing houses that set regulations and monitored members' behavior. A bank that lost the trust of its fellow bankers could not long survive.

This perception of banks as stable, as disciplined by depositors and interbank arrangements to act prudently, and as unlikely to fail was common prior to the 1930s. The banking crises of the Great Depression changed this perception. U.S. Bank failures resulted in losses to depositors in the 1930s in excess of 3% 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, especially in the United States, including restrictions on bank activities (the separation of commercial and investment banking, subsequently reversed in the 1980s and 1990s), targeted bank recapitalizations (the Reconstruction Finance Corporation), and limited government insurance of deposits.

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 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. They saw the early failure of the Bank of United States in 1930 as a major cause of subsequent bank failures and monetary contraction. They lauded deposit insurance: “federal deposit insurance, to 1960 at least, has succeeded in achieving what had been a major objective of banking reform for at least a century, namely, the prevention of banking panics.” 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 (notably, the work of Elmus Wicker 1996, and Charles Calomiris and Joseph Mason 1997, 2003a) has led to important qualifications of the Friedman-Schwartz view of 1930s bank distress, and particularly of the role of panic in producing distress. Detailed studies of particular regions and banks' experiences does 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 (i.e., early 1933). Regional bank distress was often localized and traceable to fundamental shocks to the values of bank loans. Not only does it appear that the failure of the Bank of United States had little effect on banks nationwide in 1930, one scholar has argued that there is evidence that the bank was, in fact, insolvent when it failed (e.g., Lucia 1985).

Other recent research on banking distress during the pre-Depression era has also deemphasized inherent instability, and focused on the historical peculiarity of the United States' banking structure and panic experience, noted above. Furthermore, recent research on the destabilizing effects of bank safety nets has been informed by the experience of the U.S. Savings and Loan industry debacle of the 1980s, the banking collapses in Japan and Scandinavia during the 1990s, and similar banking system debacles occurring in 140 developing countries in the last two decades of the 20th century, all of which experienced banking system losses in excess of 1% of GDP, and more than 20 of which experienced losses in excess of 10% of GDP (data are from Caprio and Klingebiel 1996, updated in private correspondence with these authors).

Empirical studies of these unprecedented losses concluded that deposit insurance and other policies that protect banks from market discipline, intended as a cure for instability, have become instead the single greatest source of banking instability.

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 many). 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 (Calomiris and White 1994). 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 produced a consensus that the greater the protection offered by a country's bank safety net, the greater the risk of a banking collapse (see, for example, Caprio and Klingebiel 1996, and the papers from a 2000 World Bank conference on bank instability listed in the bibliography). Empirical research on prudential bank regulation emphasizes the importance of subjecting some bank liabilities to the risk of loss to promote discipline and limit risk taking (Shadow Financial Regulatory Committee 2000, Mishkin 2001, Barth, Caprio, and Levine 2006).

Studies of historical deposit insurance reinforce these conclusions (Calomiris 1990). The basis for the opposition to deposit insurance in the 1930s was the disastrous

experimentation with insurance in several U.S. states during the early 20th century, which resulted in banking collapses in all the states that adopted insurance. Government protection had played a similarly destabilizing role in Argentina in the 1880s (leading to the 1890 collapse) and in Italy (leading to its 1893 crisis). In retrospect, the successful period of U.S. deposit insurance, from 1933 through the 1960s, to which Friedman and Schwartz referred, was an aberration, reflecting limited insurance during those years (insurance limits were subsequently increased), and the unusual macroeconomic stability of the era.

Models of banking crises followed trends in the empirical literature. The understanding of bank contracting structures, in light of potential crises, has been a consistent theme. Banks predominantly hold illiquid assets ("opaque," nonmarketable loans), and finance those assets mainly with deposits withdrawable on demand. Banks are not subject to bankruptcy preference law, but rather, apply a first-come, first-served rule to failed bank depositors (depositors who are first in line keep the cash paid out to them). These attributes magnify incentives to run banks. An early theoretical contribution, by Douglas Diamond and Philip Dybvig (1983), posited a banking system susceptible to the constant threat of runs, with multiple equilibria, where runs can occur irrespective of problems in bank portfolios or any fundamental demand for liquidity by depositors. They modeled deposit insurance as a means of avoiding the bad (bank run) equilibrium. Over time, other models of banks and depositor behavior developed different implications, emphasizing banks' abilities to manage risk effectively, and the beneficial incentives of demand deposits in motivating the monitoring of banks in the presence of illiquid bank loans (Calomiris and Kahn 1991).

The literatures on banking crises also rediscovered an older line of thought emphasized by John Maynard Keynes (1931) and Irving Fisher (1933) – market discipline implies links between increases in bank risk, depositor withdrawals, and macroeconomic decline. As banks respond to losses and increased risk by curtailing the supply of credit, they can aggravate the cyclical downturn, magnifying declines in investment, production, and asset prices, whether or not bank failures occur (Bernanke 1983, Bernanke and Gertler 1990, Calomiris and Mason 2003b, Allen and Gale 2004, Von Peter 2004, Calomiris and Wilson 2004). New research explores general equilibrium linkages among bank credit supply, asset prices, and economic activity, and adverse macroeconomic consequences of "credit crunches" that result from banks' attempts to limit their risk of failure. This new generation of models provide a rational-expectations, "shock-and-propagation" approach to understanding the contribution of financial crises to business cycles, offering an alternative to the endogenous-cycles, myopic-expectations view pioneered by Hyman Minky (1975) and Charles Kindleberger (1978).

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