

The Historical and Contemporary Perspectives on Banking Instability, Deposit Insurance, and Prudential Regulation and Supervision

Charles W. Calomiris
Columbia Business School

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Introduction

The U. S. Treasury department is fond of referring to the need for new financial architecture to deal with new financial challenges that threaten banking systems worldwide. But before we can design that new architecture, we have to look critically at where banking instability is coming from. In my remarks I will address what I think are the two fundamental questions of bank regulatory reform, which apply to both developed and developing economies.

First, in what respects are current problems that give rise to banking instability similar to historical problems that motivated the various safety net programs for banks that are in place today, and in what respects are the challenges faced by government safety nets for banks new?

Second, in light of both traditional and new sorts of problems that threaten banking stability, how should government "safety net" policies adapt to promote greater banking stability?

Old and New Challenges to Banking Stability, and Motives for the Safety Net

The essential two ideas underlying the traditional arguments for some form of government protection of banks are that (1) banks perform an essential function of allocating capital and managing payments in a market economy, and (2) banks are susceptible to "panics" that can threaten not only insolvent institutions (those whose negative net worth was the result of fundamental shocks that predate any systemic reaction, or panic) but also solvent institutions (those that, absent the disintermediation produced by the panic, would have positive net worth).

I note that "protection" of banks (motivated by these two ideas) can mean very different things. The traditional idea of the safety net was to protect solvent banks from the folly of the insolvent. More recently, bank safety nets have been used not only to save the solvent, but to restore the insolvent as well. In other words, traditional protection focused on panic prevention; more recent ideas have focused on bank bailouts as well (on the argument that franchises are too valuable to lose, even if the bank's assets are worth less than its liabilities).

Let's begin with the traditional argument for a bank safety net. According to that view, insolvent banks should be allowed to fail (to promote the long-run goal of market discipline) but solvent banks should be protected from temporary crises of confidence and illiquidity that can threaten them. The safety net for banks (the discount window, overdraft protection, deposit insurance, and government recapitalization schemes), accordingly reflects a perceived need to save otherwise solvent banks (as institutions) from the threat of panics.

I note in passing that other purported motives for the traditional bank safety net — in particular, arguments that emphasize the protection of small depositors — are really beside the point. Small savers can be protected without providing safety net protection to banks (that is, without bailing out all bank debtholders, and bank stockholders, and without preserving bank franchises). In fact, the traditional view has always revolved around dealing with panics — protecting small savers in and of itself is not a legitimate motivation for the bank safety net as I define it.

Why, according to the traditional view, are solvent banks threatened by panics? Why are banks especially vulnerable to this problem? The answer is that (1) banks' assets are hard to value in the market place (that is natural, since the creation of private information is one of the main outputs of bank lending), and (2) the liabilities banks issue are very short-term (often demandable) debts, and banks repay those obligations to depositors on a first-come first-served basis. That combination (that many bank depositors have poor information about bank loan quality), and that depositors can withdraw funds quickly on a first-come first-served basis, means that shocks to the economy that are observable to depositors, but that have unobservable implications for individual banks, can promote widespread withdrawals of funds from solvent and insolvent banks alike.

The earliest deposit insurance schemes of which I am aware (including several state-chartered deposit insurance agencies in the United States which date back to the early nineteenth century) all were explicitly motivated by panic prevention. Insuring deposits and lending funds to banks during crises was meant to protect them from depositor withdrawals — in effect, to insulate them from market discipline at a time when market discipline was viewed as too destructive to the banking system and the economy as a whole.

Was the threat of panics which prompted deposit insurance a real problem? The answer is yes and no. The problem was potentially a real one, but there were a variety of means of resolving that problem without government provided deposit insurance. In particular, history teaches us that private coalitions of banks were typically able to resolve panics at fairly low cost.

The United States was the exception in that regard because of its fragmented banking system. That system made private coordination, risk sharing, and panic resolution virtually

impossible at the national level. Cooperative coalitions operated on a national scale in Britain, Canada, and other developed economies, but not in the U.S. In the U.S., such coalitions were confined to particular cities or states (for some interesting success stories of these state-level coalitions, see my paper, "Is Deposit Insurance Necessary?"). Banking system fragmentation, and the consequent inability of private bank coalitions to deal with the threat of panics adequately explains why the U.S. was the country that originated, and then exported, the idea of government deposit insurance.

For better or worse, I believe that a government commitment to the traditional view of the safety net is now a given, politically, and in the rest of my remarks I will assume that it must continue to exist in some form. (Note that this assumption rules out safety net reforms that would privatize or repeal deposit insurance, or so-called "narrow banking" reforms, which are effectively attempts to repeal insurance.)

Moving on to the new view of the safety net — which is embodied in the "too-big-to-fail doctrine" — the goals have been expanded. We no longer intend merely to protect depositors, or to insulate solvent bank franchises from the fall out of panics; we now also want to revive failed banks who collapsed because of transparent, fundamental shocks to their asset values.

Unfortunately, the social costs of bank safety net protection have expanded alongside its expanded ambitions. The traditional argument justified insuring deposits, but the new view also entails insuring bank stock. Insurance of deposits by itself provides a subsidy for risk taking to bank stockholders. Bank stockholders get to keep profits from taking on risk, but do not have to bear the costs of doing so because they can borrow from depositors at the riskless interest rate. Under deposit insurance, therefore, the value of the insurance subsidy increases as the risk that the net worth of the bank will become negative increases. Deposit insurance thus subsidizes increasing risk.

But protection of bank franchises under the new doctrine of bank bail outs amplifies that problem. Now, even when the bank ends up with negative net worth, bank stockholders will be insulated from complete loss, and bank managers may even retain their jobs.

Now, let's consider the first question I posed: In what respects are current problems of banking instability similar to historical problems that motivated the various safety net programs for banks that are in place today, and in what respects are the challenges faced by government safety nets for banks new?

The challenges facing bank regulators are somewhat different from those faced by historical predecessors (like the Bank of England during the Baring Crisis of 1890 or the Federal Reserve during the Great Depression). The fundamental structure of banks, and the potential for panics largely remains the same as before, but today's regulators face the additional challenge of trying to protect the banking system from the destabilizing influences of the government safety net itself!

The largest threat to banking systems today comes not from exogenous shocks that produce recessions or securities price declines, but rather from the elimination of market discipline in banking — which has encouraged an unprecedented voluntary assumption of risk by today's banks. Banking systems today are riskier than they have ever been. Since

1980, 90 episodes of banking collapse have plagued the world, 20 of which have produced negative banking system net worth in excess of 10 percent of GDP.

That is unprecedented. The Great Depression produced negative bank net worth of roughly 4 percent of GDP, and other periods of economic Depression in other countries sometimes produced virtually no negative net worth of banks (consider Canada's experience during the Great Depression, for example, when no banks failed). Yet in the last 15 years — in the absence of any oil price shocks, and in the presence of relatively high and stable growth in global aggregate demand — we have seen a plague of crises never before witnessed. Clearly, the risk that threatens banks today is not fundamental exogenous risk, but rather the risk that banks will willingly act imprudently.

The essential difference between historical (unprotected) bank behavior and current behavior is the way banks respond to adverse shocks. Historically, when a bank suffered a loss, it would act to do all it could to reduce asset risk and raise capital. Doing so would reduce its default risk and reassure depositors. That is why historical bank failures were so much less costly than those we are currently witnessing.

To fix ideas, let's contrast several recent cases (Chile 1982-1983, Texas 1982-1986, the U. S. Savings and Loan Debacle 1980-1988, Mexico 1994-1995, Thailand, Indonesia, and Korea 1997-1998, and Japan 1990-1998) with one historical case (New York City 1929-1936).

Let's begin with the case of New York City banks during the Great Depression. During the boom decade of the 1920s New York banks saw increasing profit opportunities from lending and consequently expanded their lending accordingly. These banks operated in a highly disciplined environment, however, and as they expanded their asset risk they were forced to go to the stock market repeatedly to increase their capital ratios (and thus insulate bank depositors from the increased loan portfolio risk the banks were undertaking). Despite the fact that banks significantly increased their asset risk, they kept the risk of default on their debt at the same low level throughout the 1920s (essentially maintaining a AAA risk on deposits).

When the Depression hit, capital was lost and asset risk rose. Banks reacted immediately by contracting their loans, and virtually eliminating their dividend payments to reestablish depositor confidence. The banks that were unable to cut loan risk and dividends sufficiently suffered relatively larger outflows of deposits. The threat of deposit outflows was the market discipline that inspired prudent banking.

Contrast that with the recent cases, where deposit insurance protects depositors from loss, and thus removes market discipline. All the recent crises share one key feature: instead of cutting risk in response to initial losses, first-stage credit losses to banks were followed by even larger second-stage losses associated with increased, purposeful asset risk exposure, and no attempt to recapitalize banks via either retained earnings or new issues.

In the Chilean, Mexican, Thai, Indonesian, and Korean crises, after banks and the firms with which they were closely affiliated had suffered losses, they decided to borrow heavily in the form of short-term hard currency denominated debt. That was attractive because in an environment where devaluation risk is significant, dollar borrowing is cheaper on a cash flow basis. The large exchange risk borne by banks and their associated firms does not concern

them because if the exchange rate collapses, the taxpayers will have to bail them out. In all five cases, the combination of initial credit losses and larger second-round exchange rate betting ended up producing bailout costs to taxpayers ranging between 15 and 25 percent of GDP.

The Texas banking collapse of 1982-1985 illustrates a similar pattern, but here the second-round risk taking involved oil and real estate price risk, not exchange rate risk. When oil prices fell in the early 1980s Texas banks that had lent money for oil exploration found that their loans were not performing well. Rather than contract their lending, Texas banks doubled their bets, financing ambitious shopping centers in the desert (an even riskier bet than oil exploration since those loans would only have been profitable if oil prices had skyrocketed in 1984-1985). The banks lost that bet, and the taxpayers paid the price.

The U. S. Saving and Loan debacle exemplifies the same basic two-stage pattern of risk and loss, but the risks are different. In 1982, S&L portfolio deregulation played a role in helping low-or negative-net worth S&Ls to boost their risk during the second stage of the process. After S&Ls had lost enormous amounts of capital from the rise in interest rates from 1979-1982, they took on new risks in derivatives, commercial real estate deals, and junk bonds. Interestingly, high-capital S&Ls used new portfolio opportunities resulting from deregulation to diversify risk; but low-or negative-net worth S&Ls saw the safety net subsidy to gambling and acted accordingly.

The case of Japan, 1990-present, is similar, although the second stage risk taking may have been less dramatic than in the other examples. As you know, significant losses were realized (but not recognized officially) in 1990-1992. Rather than immediately cut asset risk and raise capital to restore the health of the banks, many banks waited for an upturn that would erase their losses, and in the meantime continued to pay out trillions of yen in dividends, and continued to make new loans domestically and internationally.

Instead of recovery, Japan's banks faced increasing pressures from weak economic performance, and suffered significant setbacks in capital during the Asian crisis. The troubles in Thailand, Indonesia, and Korea pushed some fragile Japanese banks over the edge. (How many remains to be seen.)

Three main lessons emerge from this analysis: First, safety net incentive problems are real. In the absence of safety nets, banks are more cautious, particularly after experiencing initial losses. Safety nets encourage banks not to take the painful steps necessary to restore their stability in the wake of shocks. Low-or negative-net worth banks face especially strong incentives to take on risk at taxpayers' expense.

Second, the Basle standards, or any book value capital standard system, is not an effective substitute for the market discipline removed by the safety net. Capital standards are supposed to prevent banks from abusing insurance protection, but they fail for two reasons: (1) unlike uninsured private market debtholders, government regulators and supervisors do not have their money at risk, and thus they are often willing to ignore problems in banks, and to allow banks to overstate their capital in the wake of shocks. Indeed government officials often face strong political pressures to "forebear" from properly enforcing capital standards. (2) capital standards have to be risk-based in order to be effective. Particularly in the cases

where opportunities to undertake currency risk grew, as risk rose even banks with significant remaining capital were tempted to take on excessive risk, particularly if their related industrial firms were facing cash flow problems that encouraged short-term dollar borrowing.

In other words, book capital standards are doomed to fail, both because they are not credibly enforced, and because they are inherently inadequate disincentives to take on risk in some circumstances.

Third, I believe there is no alternative but to reintroduce market discipline that responds quickly to bank losses to provide incentive for banks to respond prudently to their losses by cutting asset risk, raising capital, and cutting dividends (as the New York banks did during the Great Depression).

How can we successfully implement market discipline, given the expanded protection government seems intent on offering banks through its safety net? I emphasize the challenge is political, not just economic. We have to find a form of market discipline which can be credibly and easily enforced within the constraints of a real world supervisory and regulatory system — one that will remain in place during difficult times, when bank capital standards are tested.

Building the Postmodern Safety Net

My plan, which has been embodied in large part in Argentina's new bank capital law, is to require banks to issue a minimum fraction of their capital in the form of special subordinated debt. Note that this is a departure from the Basle standards which place a maximum constraint on the use of subordinated debt to satisfy capital requirements, but no minimum constraint.

The Basle capital constraints reflect the incorrect belief that a buffer of junior (equity) capital is a more effective barrier to excessive risk taking by banks. That is simply wrong. Senior (subordinated debt) capital is a more effective deterrent to excessive risk because, first, the holders of subordinated debt (unlike equity holders) do not share in the upside gains of taking risk. Unlike stockholders, subordinated debtholders are a constituency for conservatism in the bank (much like interbank deposits were during the nineteenth and early twentieth centuries).

Second, subordinated debt requirements are very easy to enforce because the face value of debt is always close to its market value (which cannot be said of book values of equity).

In a nutshell, here is the plan. Add to the existing Basle standards the requirement that banks (as part of their capital requirement) must issue a minimum of 2 percent of risk-weighted assets in subordinated debt. Subordinated debt will be restricted in several ways to be sure it serves as an effective source of discipline.

Specifically, (1) it must be held by parties other than stockholders of the bank, borrowers of the bank, or other parties with significant dealings with the bank to ensure that holders will be disinterested third parties; (2) it should be issued in monthly or quarterly overlapping generations of two-year debt (e.g., notes or CDs); and (3) the yield on qualifying debt should be limited to a maximum spread above the riskless rate to ensure that market limits bank insolvency risk.

Under this scheme, if a bank suffers a capital loss that temporarily makes its subordinated debt too risky to sell at the prespecified maximum spread above the riskless rate, it will not be able to roll over its subordinated debt in that month. That means the bank will have to shrink its risky assets by 1/24 (since the subordinated debt has a two-year maturity and is spaced out in evenly spaced monthly offerings). That is a reasonable pace of loan liquidation. As the bank liquidates loans and suspends dividends, it accumulates cash and lowers asset risk. Within a few months it is able once again to gain access to debt markets at reasonable interest rates, and therefore, is able to stop the process of loan contraction.

Because this process is gradual it does not create liquidity crises, which is desirable both on economic grounds, and because it adds to the political credibility of the rule. Because it nudges banks away from second-stage risk taking, it stabilizes the banking system at moments when moral-hazard risks are at their worst.

There are other details I would add to this market-based approach, including adjusting the definition of risk-weighted assets to reflect the interest paid on bank loans (as in Argentina), and requiring value-at-risk capital budgeting for market risks (using the "commitment and penalty approach" currently favored by the Federal Reserve Board — which also relies on market signals to calculate losses — but with some minor modifications).

The key point of all these reforms is to make bank risk and capital regulation market based and rational. My plan would create a strong constituency to enforce low default risk in banks and would virtually eliminate regulatory discretion from the process of measuring capital.

The Transition Problem: Bank Recapitalization in Japan Today

What about Japan today? Could it immediately adopt this approach? There is a transition problem. It is hard to introduce real market discipline if it has been lacking previously, and if the banking system is weak. If banks are insolvent, market discipline will simply result in bank closure. Banks with high asset risk and no capital will not be able to meet the new standards.

One way out is for the government to inject capital into the banking system as part of the transition to market discipline. But this must be done in a very careful way. Capital injections (1) must be used sparingly (only in a limited number of cases, where franchise values are high), and (2) should be provided in a way that does not invite reckless behavior (in expectation of future recapitalizations again).

One way to proceed, which I proposed in my February 12 *Nikkei* article, is for the government to make subsidized purchases of preferred stock in banks on a conditional basis. For example, the government could announce that it will buy 8% preferred stock in banks, and forgive the first three years of dividends, but only if the issuing bank (1) simultaneously issues a matching amount of common stock, and (2) complies with the new subordinated debt requirement within six months of issuing its stock.

This approach accomplishes several desirable goals. First, it ensures that assistance only goes to banks that are viable franchises (i. e., those banks able to attract equity investors). Suppose the banks were issuing 1 trillion yen in preferred stock and the same amount in

common stock. The three year forgiveness of interest amounts roughly to a subsidy of 24 billion yen ($8\% \times 1 \text{ trillion yen} \times \text{three years}$). If the current net worth of the bank is negative 100 billion yen, that subsidy will not be enough to allow the bank to access the program (since the bank will have highly negative net worth and thus will not be able to float common stock). But if the bank has a net worth of negative 10 billion yen, then the subsidy will effectively save the bank, since in the presence of the subsidy it is able to offer the matching common stock.

By linking the subsidy to the bank's ability to access the market for stock, the government once again brings market forces to bear in disciplining banks, and also economizes on scarce fiscal resources.

By requiring compliance with subordinated debt, and by linking preferred stock purchases to new common issues, the government also limits perceptions that future bailouts will be likely.

To sum up, my plan for the new financial architecture, which I recommend not only for Japan, but for the United States as well, is to recognize the new political realities that have created the bank safety net (and that have made safety net protection broader than we as economists would like), and try to design plans that minimize the cost of safety net protection. In a sense, the best way to solve the new challenges of safety net policy is to go back to the future to restore market discipline, but do so in a way that takes account of the political challenges of today's world, which dictate the kinds of market discipline that are politically credible.

In the United States, I believe this sort of approach will win the day. Influential bankers are now calling for increasing discipline because they see it as the quid pro quo for increasing banking powers. Bank regulators are sympathetic. Without a credible means to commit not to abuse deposit insurance, American bankers are finding Congress very reluctant to give them all the freedom they want.

As Japan faces the challenges of deregulation during its big bang, it too will see increasing advantages from combining deregulation of banking powers with credible market-based limits on the abuse of government safety nets.

**Table 1 AGGREGATE BALANCE SHEET DATA, NEW YORK CITY
FED MEMBER BANKS (Selected Dates, End-of-Year Data)**

Year	L	C+T	L/(C+T)	A	D
1922	3,663	1,778	2.06	7,689	6,374
1925	4,732	1,745	2.71	8,952	7,552
1929	6,683	2,004	3.33	13,583	10,173
1931	4,763	2,592	1.84	10,417	7,781
1933	3,453	3,405	1.01	9,496	7,284
1934	3,159	5,289	0.60	11,372	9,512
1936	3,855	7,061	0.55	13,734	11,824
1940	3,384	13,325	0.25	19,688	17,744

Source: Board of Governors of the Federal Reserve System 1976, pp. 80-82.

Variable Definitions:

L = Bank Loans C = Cash Assets T = U.S. Treasury Securities A = Total Assets (book value) D = Total Deposits

Table 2 MEANS FOR "STABLE SAMPLE" OF 12 NEW YORK BANKS

Year	MVE/BVE	E/A (%)	S_A	BID-ASK	P
1920	1.23	16.73	0.024	2.53	0.00
1921	1.40	18.03	0.029	2.41	0.30
1922	1.51	18.40	0.045	2.09	7.75
1923	1.54	20.25	0.019	1.73	0.00
1924	1.89	21.70	0.038	1.78	0.00
1925	2.36	24.77	0.056	1.47	0.07
1926	2.27	26.10	0.029	1.26	0.00
1927	2.81	32.16	0.061	1.47	0.00
1928	3.82	34.16	0.084	2.58	0.08
1929	2.80	33.10	0.179	2.74	33.46
1930	2.06	26.86	0.085	2.05	1.24
1931	1.02	18.54	0.085	4.18	9.18
1932	1.16	19.24	0.115	5.64	34.73
1933	0.88	15.02	0.070	5.41	41.69
1934	0.98	13.88	0.038	5.48	11.72
1935	1.34	16.96	0.063	4.41	23.09
1936	1.32	16.74	0.043	3.66	1.32
1937	0.94	12.95	0.037	4.28	0.60
1938	0.91	12.05	0.035	5.49	7.08
1939	1.39	14.70	0.056	5.63	0.50
1940	0.93	9.55	0.020	6.71	2.14

VARIABLE DEFINITIONS:

MVE=market value of equity

BVE=book value of equity

E/A=market capital-to-asset ratio

 S_A =asset volatility (standard deviation of asset return)

BID-ASK=bid-ask spread as a percentage of share price

P-VALUE=deposit default premium in basis points (1.00=1 basis point)

Figure 1 Deposit Risk as a Function of Asset Risk and Leverage

