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InStAbILItY

Booms, Busts, the Fragility of Banks And What To Do about It

By Martin Lowy

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Abridged edition for Perspectives

This abridged edition omits many tables, graphs and citations and truncates many sections of text. It is intended as an introduction to the basic thinking of the book.

The Consequences of Booms and Busts and summary of what to do about them

Do you believe the real estate boom of the 2000s was worthwhile even though the bust that succeeded it included the Great Recession and the Great Financial Crisis? If you ask the person on the street, I believe you will hear a resounding preponderance of “no’s”. If you read the learned papers of economists, you will, I believe, find a similar preponderance of no’s.

And that judgment stands regardless of what the causes of the boom may have been.

I see an almost universal love of economic booms as the principal cause of economic booms getting out of hand. The 2000s U.S. housing boom was no exception. Credit fueled the boom, regardless of why the credit became available. The bust naturally follows the credit-fueled boom, as history has shown time and again all over the world. See Reinhart and Rogoff, *This Time Is Different*. In this book, I am not going into the thicket of which causes of the credit boom were the most important.

The nation would have been better off with slower, steady growth and no GR or GFC. Therefore preventing the next GR or GFC while encouraging steady economic growth should be the goal of economic policy, and the goal of financial regulation should be to provide strong, stable financial institutions that can provide credit and other financial products to the economy on a sound basis.

The purposes of this book are:

(1) To sketch the history of U.S. financial institution regulation since World War II; that history shows the inherent instability of the banking system, and

(2) To show how regulation, using modern stress testing, can reduce the inherent instability and tend to prevent the excessive lending that leads to the kind of debt-fueled boom that causes Great-Recession-like busts and Great-Financial-Crisis-like failures of major financial institutions.

Forward-looking stress tests overcome the inherent defects of historical financial statements. Looking backward does not accurately inform either supervisors or managements about the strengths and weaknesses of banks, no matter what regulatory capital regime is in force. The data at the beginning of Part III of this book (that come from the FDIC itself) show that despite its best efforts, the FDIC’s (and other regulators’) use of historical capital regulation has not been a

useful predictor of banking failures or a useful way to deter banks from taking excessive risks.

This general policy formulation suggests fairly stringent stress-tested regulation of the capital adequacy of major financial institutions (including stress testing under severe scenarios). But it also can encompass lighter-touch regulation of smaller institutions whose failure would not threaten the financial system in general. Such lighter-touch regulation should include stress testing, but it also could omit a great many of the traditional supervisory procedures.

If I am right about the efficacy of stress testing a la CCAR, as contrasted with the ineffectiveness of regulation based on historical financial statements, then a great deal of the edifice of prudential regulation can be repealed or substantially scaled back. See Part V “Summary, Conclusions and Suggestions”.

No boom without the eventual bust

There remain people both in and out of government who appear to believe that a nation like the U.S. can have the credit-fueled boom without the ensuing bust. So far as I am aware, there are no serious papers that claim this is possible. But that does not prevent the idea from appealing to growth-minded operatives and those who would benefit most from the boom.

PART I

THREE WAVES OF BANK/THRIFT FAILURES

Since WWII, the U.S. has seen three waves of bank or thrift failures:

(1) The thrift institution failures that resulted from having borrowed short (savings deposits, effectively due on demand) and lending long (30-year mortgages on homes) when inflation took hold and interest rates rose precipitously in the 1970s and early 1980s. Changes in competition, especially in the 1970s, also were important to bringing these failures about. Some of the competitive changes were:

- on the liability side of the balance sheet, commercial bank competition for savings accounts, money market mutual funds, and new kinds of deposit instruments, and,
- on the asset side, competition from Fannie and Freddie.

Many of the failures were recorded in the late 1980s, but the delay was largely due to the fact that for most of the 1980s, the thrift insurance fund (FSLIC) had no money to resolve the insolvent institutions.

(2) The Texas and New England banks that went big into construction lending when their local economies were hot (Texas early 1980s, New England mid-1980s) and failed when the local economies went into recession (in Texas because the price of oil dropped). The failures took place in 1988 through 1991. That volume

of loans was driven by banks' need for higher-yielding assets after their liabilities had become increasingly expensive.

(3) In 2007-2011, when the housing bust and accompanying recession caused real estate borrowers to default. Many medium-sized and small banks failed. Many of the banks that failed had taken on greater risk as the housing boom gathered steam.

Why supervisors have not prevented typical failures

Regulators know very well what causes bank failures. The typical bank failure makes real estate loans in a local or national boom period and suffers losses on those loans when a local or national recession occurs and the bank has insufficient capital and loan loss reserves to sustain the losses and remain solvent.

Why don't the regulators stop the dangerous lending? Why do the managements engage in it?

Historically, the regulators did in many cases try to stop the dangerous lending. But what tools could they use? The loans had been made in accordance with bank policies properly adopted by the boards of directors. Banks are privately owned and operated businesses, one of whose roles, under the current system, is to finance the economy. The banks, as the bankers saw it, were going their job. In many cases, regulators have told bank managements and boards of directors that the bank's risk posture was too risky. But if the loans were performing, the bank was making money, and to the outside world, management was doing a fine job, this regulatory jawboning seemed to the board and management like empty talk. By the time the loans begin to become delinquent, it usually is too late, as the loans slowly deteriorate, causing losses and eroding capital.

But bank managements should know about risk postures, too. Why do they take the risks? They take the risks because that is the way for the bank to make money and for them to earn bonuses and stock options. Banking is a risky business. The question for bankers is which risks to take and which to avoid.

Bank supervision cannot be effective unless problems that are identified *ex ante* can be given the force of problems that become obvious *ex post*. That deficiency has bedeviled bank examiners and agency leaders for the entire 50 years that I have been involved on various sides of the issues—until 2010.

The 1988-1991 bank failures

The relatively cozy world of commercial banking changed in the 1970s, as competition from outside the industry increased and bank-to-bank competition increased as well. Eventually, these changes led to the first post-WWII wave of bank failures in 1988-91. From 1980 through 1993 there were 1,536 commercial bank failures, of which 600 were in Texas, which had a quadruple whammy of unit

banking, lax regulation, an oil boom and bust, and a real estate boom and bust during the period.

The FDIC could see the failures coming at least by 1985. The loans had been committed in the late 1970s and early 1980s, the oil price had peaked in 1980, had declined some through 1985, then got cut in half in 1986, leading to a deep recession throughout the oil patch. It was a typical boom and bust story, leading to typical bank failures.

Bank Failures in the 2007-2011 period

Of the approximately 8,000 commercial banks and savings institutions that were in business at the end of 2006, 430 failed in 2007-2011, over half of them in the states of Georgia, Florida, California and Illinois, according to FDIC data. I think it is noteworthy that even in the extreme conditions of the Great Recession, only a little over 5% of American banks actually failed (though many others were granted temporary assistance that got them through the period). It also seems likely that another 5% of banks that were weakened by the general financial conditions sought mergers that they otherwise would not have pursued. So maybe a 10% failure figure is a better estimate than the 5% figure. It still seems not extreme.

The boom and bust of the 2003-2008 period made it easy for a bank to fail. Many banks that followed the private label securities market up the underwriting risk scale were doomed. Those that did not so mostly survived.

PART II

HOW THE POTENTIAL FOR INSTABILITY GREW FROM THE 1950s TO THE 2000s

Banking from the Depression to 1966

There was a period from about 1941 to 1973 (over 30 years) when no significant U.S. banks failed. There was economic turmoil from time to time and world war. But large banks did not fail. Gary B. Gorton, a Yale economist, suggests that a cause of this phenomenon was the high “charter value” that banks enjoyed during the period. (*Misunderstanding Financial Crises*, p. 127.) Gorton suggests that just by being a bank, an institution had such an advantage in making money that management saw little point in taking large risks.

Gorton’s analysis makes sense. However, it appears that the value of the banking franchise began to erode quite soon after WWII.

The stability of U.S. commercial banks after WWII was due mainly to two factors. On the asset side, war production had precluded banks from making large

amounts of commercial loans, and with the government's need for funds, banks had made U.S. Treasuries the principal asset in their portfolios. On the liability side, Reg. Q did not permit the payment of interest on demand deposits, which accounted for about 70% of commercial bank liabilities, and there was relatively little competition for deposit money from non-banking institutions.

However, both sides of the balance sheet changed quickly, and by the mid-1960s, demand deposits accounted for less than half of commercial bank liabilities and Treasury securities accounted for less than a quarter of bank assets. The banks grew by making higher yielding commercial loans, not by buying Treasury securities and by buying time deposits to fund the loans. Although time deposits paid interest, they carried far lower reserve requirements and, thus, were more profitable as marginal liabilities.

The erosion of low-cost funding:

Eurodollars, negotiable CDs and the ascendency of time deposits

Perhaps the first chink in the banks' low-cost funds armor was the invention of euodollars. Next came negotiable CDs that effectively permitted banks to pay long-term rates for deposits that could be seen as of shorter duration.

The growth of time deposits was the most significant destabilizer of commercial bank funding because market interest rates were gradually creeping up. The Fed was accommodative in that it raised interest rate ceilings to keep pace with the market. But in the summer of 1966, the Fed held rate ceilings steady despite increases in market rates. That caused a significant, though brief, credit crunch. See this 1969 St. Louis Fed [study](#), from which I have drawn much of my description of the 1966 summer credit crunch.

The 1966 credit crunch incident illustrated how fragile the banking system can be when government policies change. The Fed wanted to prevent the economy from overheating by reducing the flow of commercial loans. Instead of a smooth transition, however, Reg. Q time deposit rates being below market rates caused a sudden stop in bank funding and a sudden consequent need for banks to sell assets in order to fund loan commitments. That caused chaos in the municipal securities market because municipal securities were what the banks were trying to sell. As often is the case when the Fed applies the brakes, unforeseen consequences caused the Fed to pull back from its most drastic actions. In 1966, the Fed temporized by a variety of means to overcome the incipient instability of the system.

We will see time and again through the 1960s, 1970s, 1980s, 1990s and the earliest years of the twenty-first century that efforts to protect the banks from competition failed again and again, and the only answer that the banks or policy had was to enable the banks to take greater risks in order to make profits in the face of competitive funding markets. And that strategy, too, failed time and time again. And although Congress in the 1950s and 1960s had seen that protecting the banks from

competition for funds was necessary to prevent them from taking increasing risks (see the St. Louis Fed's "Requiem for Reg. Q" [published](#) in 1986), by the 1980s, attempts to prevent competition had failed, free market economics was in the ascendancy, and Congress let go the reins almost entirely in order to give banks a chance to make profits.

Asset Side Instability

The second postwar financial disturbance that required Fed intervention occurred in 1970. This time the market in distress was the commercial paper market. The intervention of the Federal Reserve took the form of (1) opening the discount window so banks could acquire funds to refinance a run on commercial paper, and (2) encouraging banks to form syndicates to refinance organizations such as finance companies that did not have statutory access to the discount window. See Minsky⁸⁶ at pp. 101-102.

The increase in banks' asset riskiness was not a secret. That the new competitive marketplace would require banks to take on greater risk in order to be profitable was widely recognized in the 1960s and 1970s, even by many members of Congress.

Lessons of the 25-year post-WW II period

Many historians have depicted the pre-1970 period as a halcyon time in American banking, to which regulation should seek to bring it back. My reading of that period is that it was an unstable period that had few failures because after WWII, the banks were flush with treasury securities, had practical monopolies on the most desirable funding sources, had borrowers who were making money from the U.S. being the only economy left standing, and had an undersized capital market to contend with. There was little a commercial banker could do not to make money, and for much of the time, there were no other destabilizing competitors.

But even in the 1950s, the financial world began to change and to become increasingly unstable. Thus, reviewing this history, I come to embrace Hyman Minsky's instability hypothesis. The trend toward instability in finance is an unfortunate byproduct of a capitalist financing system, but indeed, my hypothesis is that it would be a byproduct of any financing system.

As this historical review continues through the 1970s, 1980s, and into the teens of the current century, the tendency toward instability will become even clearer. The various ways that regulation has sought to constrain the instability tendency have failed, and the "free market" attempts to permit banks and others to find equilibrium on their own also have failed, perhaps even more spectacularly. The problem, we will see, is not that economists are stupid or that the members of the Federal Reserve Board are stupid but that banking and the increasingly diversified financial world are prone to bouts of instability that cannot be

constrained by monetary policy or the types of regulation that the U.S. government has attempted, at least until 2010.

In Part III, I will discuss how stress testing may permit a form of oversight that will tend to minimize the percentage of the time that the economy spends in panic mode. In the meantime, this Part II will continue to explore the parade of bipartisan regulatory and non-regulatory failure from 1970 to 2010.

Recycling Petrodollars

With access to Middle Eastern funding, by the late 1970s, major U.S. commercial banks were taking risks that were significantly different from the types they had taken in recent history. The biggest set of such risks was the collective lending to LDCs, mostly in Latin America, as part of the concept of “recycling petrodollars”. Led by Citibank Chairman Walter Wriston, the banks lent those dollars to LDCs that needed cash to build their industries and to pay for the increased price of imported oil. Citi was the most international American bank, but it turned out to be naïve when it came to sovereign debt.

This initiative turned out to almost bankrupt many of the largest U.S. banks. By 1983 it was estimated that LDCs owed seventeen large U.S. banks about \$100 billion, which was about 200% of their aggregate equity capital, and Mexico, at least, had announced that it could not continue to meet its obligations under the loans. See [here](#) at footnote 8 and [here](#) (FDIC history). A number of the 17 banks, including Citi, the ringleader, probably would have failed had the Fed insisted on full reserves for the potential losses. Instead the Fed, led by its chairman, Paul Volcker, apparently instructed the banks not to classify the LDC loans as non-performing and to continue lending so the LDC borrowers could continue to pay interest. Some commentators have suggested that by raising interest rates to historic highs to kill off inflation, Volcker had made it impossible for the LDCs to repay their (floating rate) dollar loans, and therefore he had to find a way to let the banks take loan loss reserves gradually and to earn their way out of the problem.

As to the weakened banks, the 1983 Act gave the Fed enough leeway that it could nurse the banks back to health over a period of time, rather than having to declare failures. Thus “at the end of 1986, [reserves] still averaged only approximately 13% of the total LDC exposure of the money-center banks,” according to the FDIC’s [history](#) of the period. And eventually (in 1989) Brady Bonds, with partial U.S. government guarantees, completed the bailout of the petrodollar lenders. Without these types of government assistance, along with IMF assistance to the debtor countries, we might well have seen a first wave of major bank failures—and perhaps a financial crisis—in the mid-1980s. Regulatory forbearance has many detractors, but sometimes it works.

The DIDIMCA (1980) and Garn-St Germain (1982)

Lumping these two laws together, they completed the deregulation of interest rates on deposits, increased the insurance on deposits from \$40,000 to \$100,000, made all depository institutions effectively members of the Fed, with attendant reserve requirements and access to the discount window, and removed restrictions on real estate lending. The Texas S&Ls took advantage of these changes to grow very fast and to “gamble for salvation”, which increased the eventual cost of the S&L problems by tens of billions of dollars. Removing restrictions on real estate lending also contributed to the commercial banking failures of the late 1980s, as did loosened loan-to-one-borrower rules that were backed by the OCC as well as the banks.

Taken together, the DIDIMCA and Garn-St Germain continued the trend toward deregulation of both sides of bank balance sheets and, thereby, maintained the march toward greater instability.

The Bloom was off the Commercial Banking Rose

As the Petrodollar recycling episode indicates, by the early 1980s, the commercial bank charter, while still of value, required a different management style than it had required in the immediate post-War years. Thus it is not surprising that some bank managements, despite the warnings that the petrodollar fiasco might have provided, took on too much risk, mostly in commercial real estate, which led to the failures of 1988-91.

The loan loss reserve problem

Credit risk typically is what causes banks to fail. It caused the failures of the 1988-91 period and the failures of the 2007-2011 period. Credit risk is difficult to manage for two basic reasons: (1) Risk must be taken in order to earn a spread that is large enough to cover the expenses of running the bank. (2) Potential losses through the business cycle are difficult to estimate and to account for in a way that properly reflects the period in which the losses were incurred.

Under prevailing methodologies, banks beefed up their inadequate reserves in recessions and, if they survived, took lower and lower reserves as the economy recovered. Thus, bank earnings in the good times have been overstated, and they tend to have been understated in recessions. The FASB (the Financial Accounting Standards Board) has changed the reserving rules again in 2016, effective in 2018.

The evil attraction of construction loan accounting in the 1980s

Let me note here that not all the bankers took the large risks. Perhaps some of them even had learned from the petrodollar fiasco. I described two waves of bank failures—1988-91 and 2007-2011. In neither of those waves of failures did all or even nearly all the banks fail. Many banks survived; some of them never lost money

for even a single quarter. The difference in the vast majority of cases was the different reaction of management to the business possibilities of the time.

To understand management reactions to the boom times, we should know a little bit more about bank accounting—specifically about how banks have accounted for loan losses and for fee income—over the years.

There was an accounting incentive to make construction loans in the 1980s that was similar to the accounting incentive to make petrodollar loans a few years earlier. If a bank committed to make a construction loan, it required a “commitment fee” to be paid by the borrower (often the fee was paid at the first drawdown and paid out of that first drawdown, thereby making the fee effectively part of the loan). The fee was recognized as income when it was paid, even if the bank got no net cash.

In addition, during the construction period, the project would have no income. So long as the project was proceeding in accordance with the schedule and the prospects for rental (or sales in the case of homes or condominiums) remained acceptable, the interest on the outstanding amount of the loan was paid from the construction draw, and the bank recognized that interest payment as income as the construction process went forward.

Loan loss reserves were similarly loosely applied. Again, current income was maximized, and if the bank had a growing construction loan business, these accounting practices made its income look vastly better than a more realistic assessment of risk and spreading of income would have shown.

The banks in Texas and New England that failed in the 1988-91 period took advantage of these accounting techniques to enhance their income, which encouraged them to make more and more construction loans—until the market was saturated and there were no tenants for the new buildings or buyers for the new homes or condos. Then the loans went into default, the banks stopped receiving interest payments, the banks had to “reverse” the entries of income that they had taken during the construction process, and, gradually, losses also had to be recognized. Just as on the upside the banks got triple income boosts from the permissive accounting, on the downside the banks got the triple accounting whammy, causing large losses. And until the triple accounting whammy smacked them in the face, few bank managements were aware of what awaited them if times got tough.

It is easy to see why many managements took these risks. Bonuses and the value of stock options depend on reported earnings. GAAP permitted the methodologies, the market liked the results and drove the banks’ stock prices higher.

National Bank Real Estate Lending— A Story of Creeping Laxity

In the 1990s when he was President of the Federal Home Loan Bank of Chicago, Alex Pollock of the RStreet think tank wrote an important short paper (sorry, I do not have a link to it) on national bank rules on real estate lending. He has graciously permitted me to use it, and I base much of this section on his work.

From 1864, when the National Bank Act was passed, national bank real estate lending had been tightly circumscribed. Indeed, from 1864 to 1913, real estate loans were entirely prohibited to national banks. As Pollock put it, “Between 1864 and 1992, regulation of national bank real estate lending moved through the entire spectrum from complete prohibition, through waves of increasingly complex rules, to no limitations at all.” Some re-regulation did come as result of the Banking Act of 1991, known as FDICIA.

Interstate banking

The fairly stringent rules that prevented geographic competition gradually were relaxed by state actions and by provisions of the federal acts Garn-St Germain (1982) and Competitive Equality Banking Act (CEBA 1987) to permit interstate acquisitions of failing banks. The Riegle-Neal Act of 1994 basically ended the federal geographic restrictions entirely.

Thus by the mid-1990s, most of the anti-competitive restrictions had been removed, including restrictions on interest rates, lending, and geographic expansion. The forces behind these actions were both the reality of the marketplace that had eroded the usefulness of the restrictions, and the prevailing economic theories that favored competition and believed that the market was basically self-correcting.

Gramm-Leach-Bliley and Glass-Steagall

G-L-B was the culmination of about 20 years of work by many commentators and bankers who did not see the need to prohibit banks and securities firms from being under the same ownership structure. The Fed had joined in the movement to break down the wall when it approved the first so-called “Section 20” affiliate in 1987. It did so at the behest of Morgan Guaranty Trust Company by ruling that a bank holding company could own a subsidiary that was engaged in underwriting and dealing but whose “principal business” was some other financial activity that would have been permitted to the bank. That enabled a BHC to establish a subsidiary that had a lending business that was substantially larger than the underwriting business, which was not very difficult to do because the average assets devoted to underwriting do not have to be very large in order to conduct a substantial business.

G-L-B came about largely because Citigroup acquired both a securities firm and an insurance company, in plain violation of the BHC. The Fed, which played along on the deregulatory movement again, gave Citi a temporary waiver for two years to allow Congress to act.

Many commentators have blamed G-L-B at least in part for the GFC. I do not think that perspective withstands scrutiny. Although Citi might not have taken some risks without being a financial holding company, the institutions that got into big trouble were not financial holding companies enabled by G-L-B. I wrote about that subject [here](#).

In Part IV, however, I will discuss the potential issues for BHCs that own substantial securities firms. The problems that I see have nothing to do with underwriting securities, but that is not the principal business of most of today's large securities firms. The potential problems have to do with trading, derivatives, opaque complex assets, and runnable liabilities.

Capital as the substitute for anticompetitive protectionism

By 1983, the regulators were convinced that minimum capital rules should be applied to all banking institutions, and in various forms, they were adopted. Risk-based capital rules were adopted beginning in 1988 with the international agreement called Basel I, which was a rough risk-based capital standard. These regulatory capital rules were based on historical financial statements. In general, regulatory capital requirements can be seen as a replacement for financial repression.

In 1991 Prompt Corrective Action rules were enacted as part of FDICIA. But the PCA rules suffered from the same defects as earlier supervisory formulations in that the triggers were based on historical financial statements, which clearly showed the bank's problems ex post but failed to show them ex ante. By the time the risks have caused serious losses, the bank often, despite management's best efforts, is unable to overcome the vicissitudes of a local, regional or national recession and decline in real state prices. And it would not have mattered if the historical financial statements had been marked to market because even in liquid markets, market prices do not reflect what is likely to happen when there is a recession.

Basel III now requires higher capital than previous rules and substantial liquidity as well. But standing by itself, it still relies too heavily on historical financial statements. Thus the level of measured capital under Basel III is not likely, absent forward-looking stress testing, to be a good predictor of future distress. And as good custodians of the financial system, we (regulators and students of regulatory policy) should move on. Moving on from historical-financial-statement-based capital, and, more generally, prudential regulation based on similar standards—that is in what this book is driving toward.

In the absence of Real Estate Recessions, few banks Fail

Whereas in Part I we saw that the Texas and New England recessions caused many bank failures in the 1980-1993 period, the 1994-2006 period saw few bank failures despite the recession of 2001. Only 70 banks failed in those 15 years, as compared with over 1500 in the 1980-1993 period. And of the 70 failures, 20 were in California, and 10 of those were leftovers from the California real estate depression of 1991.

Even more strikingly, the total assets of the failed banks over the fifteen years 1994-2006 was about \$11 billion, barely the assets of one medium-sized bank of the era.

The main reason for the dearth of failures was that no significant lendable asset class declined in value during the period. The recession of 2001 saw a big fall in stock prices, but banks had lent relatively little based on stock prices, and real estate prices, which are the normal signal for bank failures, were little affected.

Real estate and its associated credit almost always are at the heart of boom/bust events that lead to bank failures and financial crises. The reasons are simple: (1) Real estate is a large asset category. The value of real estate tends to dwarf the value of any other non-financial asset category. (2) Lenders, particularly banks, prefer to lend on security of an asset rather than unsecured. (3) The asset that most borrowers have that they can pledge is real estate. (4) As a real estate market improves, lenders are willing to lend more and more against the same asset, since the usual benchmark is a percentage of appraised value or sale price. The willingness to lend more against the asset tends to further increase the value of the asset. The process tends to feed on itself.

That process is what leads to a boom in real estate values that eventually becomes too overheated and crashes. George Cooper has some excellent illustrations of this process in *The Origin of Financial Crises*, written early in 2008, before the onset of the full GFC. Cooper was not the first to explain this process, but his book is especially clear.

In the 2000s, this syndrome attacked the real estate market for individual homes, especially in the Sunbelt states of California, Nevada, Arizona and Florida. Texas did not experience the same syndrome in the 2000s, perhaps because it had more restrictive laws on residential real estate lending.

The role of liquidity

Banks are fragile, not only because they make loans that have unknown losses in their futures, but also because banks promise to repay their liabilities more immediately than they can realize on their assets. When a bank's ability to repay is cast into doubt, a run on short-term, not-government-insured liabilities ensues, and it is very difficult for a bank in such a position to ride out the run—at least without

liquidity assistance from the government. Thus many—or perhaps even most—bank failures look like liquidity failures. My contention is that, at least with the backstop of the Fed as lender of last resort, runs doom banks only when they have inadequate capital. For a contrary view, see Prof. Gorton’s book cited earlier and Morgan Ricks’ *The Money Problem*, which is discussed in my article [here](#). Both Gorton and Ricks would disagree with my formulation. They would assign a greater role to lack of liquidity in bank failures.

Other Sources of Instability

Banks are not the only potential source of financial instability, as illustrated by the stock market crash of Monday, October 19, 1987. After a sizzling summer, the market had gone down about 5% on Friday, October 16, which left investors and market professionals jittery over the weekend. And on Monday, their jitters were justified, as trading shaved about 25% off the market values of listed companies.

That action exposed two vulnerable important sets of participants in the American financial system: NYSE specialists (brokers that made markets in listed securities) and clearing houses for exchanges such as the Chicago Mercantile Exchange. The specialists were highly leveraged, and many of them were rendered insolvent by Monday’s losses. They could not continue in business on Tuesday without significant loans from somewhere at exactly the time when they were least bankable. The Merc had a similar problem. A number of its major brokers could not pay their Monday losses, which threatened the (undercapitalized) exchange with having to remain closed until they could pay.

It was only with the assistance of the Fed and jawboning from the White House that the situation was saved.

PART III

STRESS TESTING CAN AMELIORATE THE TENDENCY TOWARD FINANCIAL INSTABILITY

Forward-looking capital requirements, robust disclosure rather than secrecy, and automatic enforcement through restrictions on payment of dividends and repurchase of stock are the three key pillars of the new capital regulation regime that make it qualitatively, not merely quantitatively, a leap forward from prior practice.

Dodd-Frank, although in many ways a monstrosity of a law, focused on some important progress that could be made in preventing future debt-fueled asset bubbles and preventing future financial crises. This progress was in the areas of dealing with large bank holding company failures and in preventing debt-fueled bubbles and bank failures by measuring capital levels under stress-tested severe scenarios. Historical financial statements tell us yesterday’s values. But in evaluating capital strength, we want to know what capital will be when a period of

economic stress (which from time to time is inevitable) reduces the value of assets and perhaps raises the costs of liabilities.

The excesses of Dodd-Frank should not blind analysts and legislators to the value of the stress-testing regime.

At the same time, the stress-testing regime that applies to large banks need not be the same stress-testing regime that applies to medium-sized banks. The medium-sized banks do not threaten the financial system as a whole, even if a few of them fail.

But medium-sized banks should be subject to a less intrusive regime designed to support the macro goals that are discussed later in this Part III.

The macro goals of stress-testing (especially of real estate loans) are important because any thought that regulators are going to step in to prevent a debt-fueled boom at the right time is a pipe dream.

There is no panacea for the loan loss reserve conundrum. But stress testing makes the issue of far less importance because the stress test looks forward to a severe recession scenario for the entire balance sheet, which makes the reserve shown on the historical balance sheet of little importance for regulatory capital requirements.

As evidence of the changes in risk management that already have taken place at the big banks, look at the consequences of the drop in the oil price in 2014-15 compared with the drop of 1981-86. The shock of the 1980s threatened many banks, not only those in the oil patch. The 2014-15 shock, though by some measures greater than the 1980s shock, threatened no large banks at all.

Macro shocks, such as oil price busts, occur with some frequency. Policy makers have not learned how to prevent them. But regulators and bankers have learned how to make banks stronger. Whether they will stick to those practices remains to be seen. It is still early days and the benefits are not generally accepted.

In addition, there is a perverse pro-cyclical aspect of banker psychology that seems to hold generally true over many years, including in the recent GFC and its aftermath, to the effect that bankers fear to make loans after asset prices have gone down, which is when lending should be safest. One would think that such pro-cyclical conduct obviously would be against the interests of banks and bankers. But they engage in it time and again, apparently fooled by the increase or decrease in the market value of assets. Stress tests should show more favorable results for the future when the severe scenario already is taking place, thus encouraging lending when asset values are low.

Macro benefits

Stress tests are a tool that does both a micro and, through relative universality (that gradually is being enhanced), a macro job as well by influencing the overall conduct of lending institutions in the economy.

Even if foreign banks and other foreign types of lenders are not subject to stress testing, foreign lenders rarely are responsible for the origin of a debt-fueled boom. The boom begins with domestic institutions.

Public disclosure of stress test results

As administered by the Fed, stress test results are now released publicly. This is a great departure from traditional U.S. bank supervision, under which it was a federal crime to reveal the results of a bank examination. Now depositors and stockholders can know what the supervisors think about the financial strength of their bank and the bank management's ability to conduct risk management professionally. Although some commentators have argued that secrecy has engendered trust, the dynamics of bank runs show that such blind trust is extremely fragile. Trust based on knowledge is likely to be more robust.

Automatic enforcement through capital planning restrictions

The CCAR process that requires large banks to submit capital plans that pass muster after the severe scenario has been taken into account gives the Fed an automatic way to enforce regulatory capital requirements, regardless of the exact content of those requirements. This is a useful aspect of the program because it removes the need for the Fed or another supervisor to make an enforcement decision.

Stress Testing and financial system resiliency

Some respected commentators say that macro forces control and that, therefore, it does little good to regulate micro forces. As one economist friend has put it: "It is my belief that ill-advised macroeconomic policy will always trump even the best micro-based regulatory system." That could be true. Macro forces are constantly changing and constantly posing new challenges for bank managements. However, government policies are not good at controlling macro forces, and often government policies and financial institutions' reaction to them are the cause of the most pernicious macro forces.

Therefore regulation at the micro level that makes individual financial institutions and categories of institutions stronger and more resilient is the only way to promote financial stability through the variety of macro shocks that one should anticipate may occur.

Forward-looking capital requirements and an ethical corporate culture are the two necessary pillars of bank supervision. An ethical

corporate culture starts at the top. If senior officers wink or seek the safety of deniability, the culture will appear to rot from the bottom, but appearances will be deceiving.

Market-based solution

Stress testing actually is a market-based solution to the problem of bank supervision that prevents excessive risk-taking but that allows the bank to decide for itself what assets, liabilities and businesses the market will support with a reasonable level of risk. The Fed can focus on process and on the stress-tested bottom-line capital. The bank then has to determine how to accomplish its goals, given market realities and the need to maintain adequate capital even in severe economic scenarios.

If the supervisors understood this principle better, they would cease jawboning banks about certain asset categories such as leveraged loans. If the leveraged loans, seen in the context of the severe scenario and an entire portfolio, do not prevent the bank from maintaining adequate capital, then whether or not to make such loans should be the bank's decision, without supervisory intervention.

The point of stress testing is not to eliminate any chance of a bank failing, nor is it to state with certainty what the result of difficult economic times will be. It is, rather, to make an informed guess as to what may happen in the future. We should not be so naïve as to believe that we can know with certainty the impact of changes in a complex economy on a complex bank's balance sheet. But making informed guesses about the future is a giant step forward from relying on historical financial statements and flawed internal risk management.

Unforeseen business changes

It is possible—indeed I think likely—that stress test scenarios will not accurately forecast changes in the banking business that will result from technological change. Such changes, however, likely will take place over a number of years, and stress test scenarios will gradually catch up. My guess is that the most abrupt business model changes are not likely to be so great as to materially change a stress test result.

The question of whether the Fed will see the future clearly enough to identify the right risks is an important one to some commentators. But as I look at the process, the Fed can be wrong but the stress test still can be effective because the impact in general of a stressful scenario may be enough to require prudence, even if the Fed lacks very good foresight.

The same sort of analysis applies to the question of back-testing the CCAR system. Would it have prevented the last phases of the boom in 2003-2006? Some would say that it would not have done so because the Fed would not have predicted what happened. I agree that probably the Fed would not have predicted what

happened. But the process might well have changed bankers' conduct significantly enough that history might have been altered—especially if the big investment banks and their large conduits had been subjected to the process.

The Role of Greater Fed Transparency

Many banks contend that the Fed treats its stress testing methodology as a “black box”, and in large measure, that has been true. One might defend that practice as a means to prevent banks from gaming the stress-testing system. And that defense has some merit. However, the more important goal of transparency is to allow the public and Congress to evaluate what the Fed is doing and whether that is adequate. This value of transparency could become especially important after a change of administration and change of the Fed vice chair responsible for supervision. Enabling academic comment could be quite important.

Stress Testing Banks Pushes Risk into the Shadow Banking System

Many commentators charge that by stringently stress testing the formal banking sector, risk will not go away; it will merely migrate to less formal banking sectors that often are described as shadow banks. Therefore, these commentators charge, stress tests are counterproductive because the risk becomes more opaque and more difficult for regulators to manage. It was shadow banks, they point out, that were the source of the greatest damage in the GFC.

I reject those charges on two grounds: (1) There is no fixed amount of risk in the financial system or in the economy as a whole. A bank not taking a particular risk does not mean that someone else has to do so. (2) Most of the “shadow” entities are themselves regulated, and they have changed markedly since the GFC.

In evaluating the risks inherent in various types of non-banks that hold large amounts of financial assets, one should distinguish between institutions that have runnable liabilities and those that do not. (See, e.g., Morgan Ricks' *Money Problem* book.) We should examine all short-term financing arrangements with the expectation that they are runnable, regardless of how riskless they may appear.

“Liquidity illusion”, a misperception to which almost all market participants are prey, should be accepted as a significant danger. Most instruments appear to be liquid—until the stressful time when market participants want to sell them—at which time they become almost universally illiquid.

Managing to the Test

One criticism of basing capital regulation on stress testing is that it induces banks to manage themselves “to the test”. However, I take that as a support for the idea rather than a criticism. The appropriate goal of capital regulation is to induce

banks to manage themselves with a view to good results under the test every year, even though the severe scenarios sometimes may include surprising assumptions.

Profitability

How does profitability fit into the stress-testing regime?

In practice, profitability is at the center of the stress-testing regime.

If a bank is only marginally profitable, then in the severe scenario, it is likely to fall into a loss, with corresponding consequences for its capital levels and severely diminished capacity to pay dividends and repurchase stock.

But does capital stress testing itself reduce bank earnings? It may have that tendency in the short run. Although a well-capitalized bank should have lower funding costs than a shakier institution, a bank that takes less risk will tend to have lower income in the short run. Over the long term, however, risks tend to bring concomitant losses, which usually wipe out the short-term gains.

Calls for banks to take more risk

The grave and proximate danger is that the many voices calling for banks to take greater risks in their lending in order to promote economic growth will prevail. Economic growth is good. But if it leads to boom and bust, then history shows that the trauma of the setback is greater than was the benefit of the boom.

The lessons of the last 30 years seem to me to be clear: A major recession and an accompanying financial crisis injure too many people and leave scars too deep for public policy to err on the side of allowing banks themselves to decide what *level* of risk to take. They tend to follow each other up the scale of risk in the name of competition, thus tending to create an unstable financial system that eventually endangers the economy.

Therefore the appropriate level of risk is of concern to the public. The actual risks taken within the publicly approved level of risk (as measured by a bank's post-stress-test capital) is for the banks themselves to decide.

With stress testing firmly in place, the remainder of the bank supervisory system could be greatly simplified.

PART IV

SECURITIES FIRMS AND TRADING

AS PART OF MODERN BANKING

Large modern American banks usually have large securities firms as part of their holding company structure. In part because of the "living wills" provisions of Dodd-Frank, the big banks all have been organized with the securities company and the commercial bank as separate subsidiaries of the top holding company (sometimes with an intervening sub-holding company). And the top holding

company has, in effect, been prohibited from issuing short-term debt. This means that the top holding company is not likely to fail because of a run. (Wells Fargo has not yet adopted this type of structure, but it will have to do so, it appears.) [The Davis Polk website FinRegReform is an excellent [place](#) to study this subject.]

The risks that the securities subsidiaries incur are different from the historical risks of commercial banking. If in times of financial stress the securities firm risks were not correlated with commercial banking risks, the lack of correlation would provide beneficial diversification. Unfortunately, the commercial banking and securities risks appear to be relatively correlated, both tending to cause losses in weak economies and times of rapidly changing markets. Thus, although theoretically the securities subsidiary could provide counter-cyclical assistance by taking a “short” stance, it does not appear in historical practice to do so. Indeed, it appears that securities subsidiaries tend to exaggerate the difficulties of difficult economic times rather than to ameliorate them.

The benefit of having the securities subsidiary is, however, that it may provide greater profitability than the commercial bank subsidiary in some markets and, in general, it permits the bank as a whole to have greater geographical and product reach and scope in terms of servicing large corporate clients. Those attributes add to the profitability of the enterprise as a whole. And additional profitability is good, so long as it does not involve risks that may substantially deplete capital in bad times.

Broker-Dealer Subsidiary

The major securities business risks do not appear to reside in the broker-dealer subsidiary that principally deals in stocks and bonds on behalf of clients. Even in the case of Lehman, that subsidiary probably would not have failed had it been on its own. The Lehman customers did not lose money, and the limited part of the derivatives book that resided in the broker-dealer subsidiary was quickly taken care of.

Where the Trading Is

The preponderance of the assets—and risks—of a modern securities firm are not in the broker-dealer subsidiary that deals with the public. They are in the less regulated part of the firm that invests the firm’s own money. Those subsidiaries are not subject to the same restrictions on investments as the banking subsidiaries.

Almost all trading in securities has to be done in the securities subsidiary, not in the commercial bank, because, although Gramm-Leach-Bliley repealed some of the Glass-Steagall restrictions, it did not repeal the restrictions on commercial banks trading in securities or even owning any securities other than “investment securities”, which means investment-grade debt securities. For further detail, see my article [here](#).

Many types of derivatives, by contrast, can be held and traded in the commercial bank because they have not been deemed to be securities. That designation may be wrong, but it is of long standing.

The modern securities firm has existed for a relative few years, perhaps since the mid-1990s. Because this kind of structure is relatively new, it is not amenable to the length of historical analysis on which the commercial banking parts of this book are based. Therefore history will tell us less than we might like to know about today's investment banking risks.

In the 1970s and 1980s, the nature of investment banking changed. The inefficiency of the bond market made it highly lucrative for securities firms that understood how to take advantage of those inefficiencies. A firm that was "in the market" knew what prices were good and which were for chumps to trade. Bear Stearns and Drexel Burnham understood these markets very well. It was their bread and butter, and they almost never had to be on the losing side of a trade. Their success attracted other firms into more bond trading, and Salomon Brothers, Goldman Sachs, Lehman Brothers, and others also were successful.

Also during the same era, derivatives proliferated. And like bond trading, with no central market and fragmented and individualized instruments, the institutions at the center of the markets could make vast sums based on their knowledge of others' trading and positions.

Bank holding company structure

The regulators are right to be suspicious and to demand simplified structures that will firmly place the securities subsidiary outside the commercial bank's line of control. The failure of the securities subsidiary should not be permitted to bring down the commercial bank as well, which the wrong structures and cross-default provisions easily could do. (FDIC Vice Chair Honig would go further in separating the securities side from the banking side. See his March 2017 speech [here](#).)

Ex-ante, markets seldom evaluate embedded credit risks adequately. Instruments tends to trade based on the current state of the credit markets, not on the assumption that some time during the existence of the instrument there will be a recession or other severe economic event. For this reason, market value is of little utility in evaluating the adequacy of the capital of firms that hold instruments such as CDS, CMOs and other credit-based products, even if there purports to be a relatively deep trading market. In all such cases, the regulatory stress test has to simulate what might occur in the stressful market—and to base capital adequacy on the results of that simulation. In a sense, all instruments that have embedded credit risks are level three assets, or should be assumed to be such in stressful markets. (For a definition of level three assets, see [here](#).)

The regulators appear to understand this analysis of embedded credit risks. Therefore they approach the valuation of instruments that have such risks differently from the valuation of instruments with minimal credit risk. Whether they do that to a sufficient extent, I do not know. It is a difficult area where the level of irrationality that enters into markets is difficult to estimate.

The point, however, should not be lost that capital requirements are fairly meaningless when applied to current market conditions. But it is not only valuations and potential liabilities that make a trading business difficult to forecast in various economic scenarios. The trading business itself is inherently uncertain and prone to large swings in income (or loss). Thus, although stress testing can be fairly accurate for a lending business, it is bound to be less accurate for trading and investment banking—but especially for trading. Some banks' FICC business may prosper. But some may not, and it is not possible to predict ex-ante which will succeed and which will fail. Thus the Fed is wise to require ample capital for trading operations after application of the stress tests.

Should Investment Banking Be Permitted in Bank Holding Companies?

The differences between stress testing a commercial bank and stress testing an investment bank are sufficiently stark that one is forced to ask the question whether they should be permitted to exist under same holding company umbrella. Essentially, that question amounts to whether or not to restore Glass-Steagall Act Section 21.

Protecting the banking system may indeed require such re-separation. I am not yet in favor of it, however, because the affiliations can provide significant benefits to business customers and to the bank holding companies' profit profiles over the long run. Therefore I am in favor of trying to manage the risks of the investment banking business (including the trading business) through a skeptical stress-testing process and, possibly just as important, using the living wills process to protect the commercial banking business from what I consider the more likely failure of the wholesale investment banking side of the holding company structure. The two regulatory approaches go hand-in-hand to try to prevent failures of investment banks affiliated with major commercial banks and, if that is unsuccessful, to protect the commercial banking side from contagion.

In my opinion, despite the line-drawing problems that the Volcker Rule prohibiting proprietary trading to commercial bank affiliates created, that rule is, at least in principle, a good one because it reduces the size of the trading book—and therefore its risk in relation to the other risks in the combined commercial and investment banking business. Proprietary trading has no great social benefit, except, perhaps, to those who deny that in a crisis much liquidity is illusory.

PART V

SUMMARY, CONCLUSIONS AND SUGGESTIONS FOR ACTION

In response to the GR and GFC, legislatures and regulators, particularly in the U.S. and Europe, adopted new rules designed to prevent a recurrence. Many of the new rules, are, I believe, of limited benefit. But at least one set of rules is of great benefit. That is the set of rules that subject major financial institutions to stringent stress tests and impose limitations of their ability to pay dividends and buy back stock if they fail to show that they will continue to have adequate capital after application of the severe stress test.

Mistakes will be made in stress testing. But the imperfections will work themselves out over time. **It is only important that an honest look into the future reveal an approximate picture of what will happen in the severe economic scenario.** That then can be enforced automatically by prohibiting dividends and buybacks by banks that fail the stress test.

Telling the public about the results also is extremely important. The secrecy of bank examinations has always, in my view, been misguided. Telling the public about the predicted risks helps to persuade bankers to focus more on long-term profitability.

Nothing is foolproof, but this mechanism has the best chance to avoid the worst of financial instability in the future, especially if greater transparency in administering the tests can give the broader scholarly community the opportunity to discuss the details of the Fed's administration of the process.

Stress testing is built and should continue to be administered based on the lessons of what has caused financial instability in the past and on an understanding of why previous attempts at amelioration have failed.

The proper purposes of prudential bank regulation and supervision are:

- To promote steady economic growth, as opposed to debt-fueled booms and busts.
- To prevent financial crises.
- To promote the certain operation of the payments system.
- To assure the availability of credit support for creditworthy borrowers in times of recession or other financial distress.
- To protect the deposit insurance fund.

- To enable uninsured depositors to evaluate the riskiness of individual banks of deposit.

The living wills and stress tests go hand in hand to provide a safer banking system that can fulfill its basic goals.

After the GFC, “macro-prudential supervision” was the catchphrase of regulation for a few years. Macro-prudential supervision supposes, however, a number of impossible things, and although fictional characters are permitted to suppose as many as six impossible things before breakfast, bank supervisors should not suppose impossible things at any time of day.

Macro-prudential supervision requires the following impossible things:

1. Identify when asset prices or credit levels have become too high.
2. Do that at the right time.
3. Implement policies to dampen the market’s enthusiasm without causing a panic or killing the market altogether.
4. Have the markets react as policy was designed to induce.

At least in the aggregate, those things are impossible because:

1. Markets change too fast.
2. Technologies the markets employ change too fast.
3. Institutional inertia is too great.
4. Political realities. Almost everyone loves the bubble.
5. Available tools are not sufficiently subtle and targeted.

The FSOC was a product of believing in those impossible things. Although its data-gathering and coordinating abilities seem to me to be positive attributes, it cannot perform the macro-prudential function that it was, at least in part, designed for.

Apply stress testing to other large lenders

If the benefits of CCAR-type stress testing are understood, then applying similar stress tests to large lending institutions that are not BHCs would make sense, rather than subjecting them to comprehensive regulation and supervision. For types of institutions that do not have capital regulations, capital regulations need not be imposed. Public disclosure of the results would be sufficient, with publicly owned entities being required to include the results in their SEC-filed disclosure documents.

