

INCENTIVE-ROBUST FINANCIAL REFORM

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Will Rogers, commenting on the Depression, famously quipped: “If stupidity got us into this mess, why can’t it get us out?” Rogers’s rhetorical question has an obvious answer: persistent stupidity fails to recognize prior errors and, therefore, does not correct them. For three decades, many financial economists have been arguing that there are deep flaws in the financial policies of the U.S. government that account for the systemic fragility of our financial system, especially the government’s subsidization of risk in housing finance and its ineffective approach to prudential banking regulation. To avoid continuing to make the same mistakes, it would be helpful to reflect on the history of crises and government policy over the past three decades.

The U.S. banking crises of the 1980s—which included the nationwide S&L crisis of 1979–91, the 1986–91 commercial real estate banking crisis (Boyd and Gertler 1993), the LDC debt crisis primarily afflicting money-center banks from 1979 to 1991, the farm credit crisis of the mid-1980s (Calomiris, Hubbard, and Stock 1986; Carey 1990), and the post-1982 Texas and Oklahoma banking crisis (Horvitz 1992)—were disruptive and pervasive. The resolution costs of the thrift failures alone amounted to about 3 percent of U.S. GDP. And, “large” troubled financial institutions (e.g., Continental Illinois Bank—actually a bank of moderate size and insignificant affairs—Citibank, and Fannie Mae) were either explicitly bailed out

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by the government or allowed to survive despite their apparent fundamental insolvency.

The underlying policy failures that had contributed to these crises were discussed and reasonably well understood by 1990. Clearly, the monetary policy changes of 1979–82, which caused interest rates to skyrocket and later decline, and which were associated with dramatic changes in inflation, term spreads, exchange rates, and energy prices, were the most important shocks driving events in the U.S. banking system during the 1980s. Changes in tax law in 1986 that eliminated accelerated depreciation were also important for promoting commercial real estate distress. But the U.S. banking crises of the 1980s were not primarily attributable to those shocks; three microeconomic policies substantially magnified the severity of the losses experienced by banks.¹

First, at the heart of the real estate disaster was a raft of government subsidies for real estate finance that proved destabilizing, especially to real estate markets and to financial institutions operating in those markets. These distorting subsidies included special advantages of the thrift charter, subsidized lending from the Federal Home Loan Banks, “regulatory accounting” rules that purposely masked thrift losses, the absorption of interest rate risk in the mortgage market by the inadequately capitalized government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, and the lending policies of the Farm Credit System that promoted the farm land bubble of the 1970s and early 1980s.

Second, the increased protection of banks removed deposit market discipline as a source of control over the risk-taking of banks and thrifts. Protection from deposit insurance increased dramatically in 1980 and has been further expanded subsequently,

¹Similarly, while loose monetary policy undoubtedly contributed to the underpricing of risk in 2002–05, and the housing and mortgage bubbles that culminated in the subprime crisis, the history of banking crises across countries and over time suggests that monetary policy errors alone are generally not enough to produce severe banking crises. Severe banking crises result from the incentives to finance risky assets during an asset price boom with high leverage. History suggests that absent microeconomic distortions, asset price booms and busts produced by monetary policy tend not to be associated with banking crises (although there are some counterexamples). For an overview, see Calomiris (2011a).

which substantially reduced the possibility that higher risk-taking by banks would lead depositors to withdraw their funds.²

Third, ineffective prudential regulation failed to substitute for the market discipline that deposit insurance and other government protection of banks removed. That was especially visible in the failure of supervisors to identify losses in failing banks and prevent those losses from growing larger as the result of increased risk-taking by “zombie” banks and thrifts.

In the wake of the banking crises of the 1980s, the U.S. promulgated an ambitious program of reform to prudential banking regulation and regulatory accounting practices, implemented through the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) in 1989 and the Federal Deposit Insurance Corporation Improvement Act (FDICIA) in 1991. The Mickey Mouse arithmetic of regulatory accounting for losses through the creation of special “goodwill” in the 1980s was eliminated, and the use of loan-loss reserves to count as capital was curtailed. FIRREA and FDICIA focused on the setting of higher capital standards for banks, and created a new “prompt corrective action” protocol for intervening to shut down weak banks and thrifts before they became insolvent. The Federal Home Loan Bank Board was eliminated and replaced by the Office of Thrift Supervision, which was charged with enforcing tougher supervisory and regulatory standards on thrifts.

Too-big-to-fail bailouts also were addressed in 1991 by FDICIA in a clever (but, it turned out, ineffectual) way: any protection of uninsured deposits should satisfy a narrowly defined “least-cost resolution” criterion (showing that the cost to the FDIC from protecting insured deposits was minimized by whatever protections to uninsured deposits were offered); failing that, the government, the Fed, and the FDIC would have to make a special exception to protect any uninsured deposits, and the cost of doing so would be financed by a special assessment on the deposits of surviving banks. The hope was that unnecessary bailouts of large banks (i.e., those that were not warranted by bona fide systemic risks) would be avoided by the lobbying of other large banks, which would bear a

²For discussions of the effectiveness of deposit market discipline in limiting banking system fragility, historically and today, see Calomiris and Wilson (2004) and Calomiris and Powell (2001).

large proportion of the costs of the bailout. Unfortunately, when the crisis arrived in 2008, FDICIA was simply put aside, and blanket guarantees of bank deposits and other support were provided irrespective of the contrary language of the FDICIA law.

Reformers in 1989 and 1991 promised that, under the new rules, banks' equity would now be sufficient to cover most problems that would arise. If a bank suffered a significant loss, it would either have to replace lost capital or face tough supervisory and regulatory discipline. Thus, disorderly failures of banks and thrifts would be avoided in the future. Also, the tough new rules would give banks an incentive to maintain adequate capital, because if they did not, they would be subject to the discipline of credible and orderly resolution, whereby their operations, assets, and liabilities would be transferred to new management before a disorderly failure could occur.

These rule changes were further enhanced by a continuous process of fine-tuning by U.S. bank regulators, sometimes working within the Basel Committee to set new global standards for measuring risk and budgeting capital (under Basel I and Basel II), and sometimes acting on their own (e.g., in the post-2000 reforms of off-balance sheet capital standards, described in Calomiris 2009a). Furthermore, in response to objections by European countries to the fact that investment banks were not regulated under the Basel system, in 2002, U.S. investment banks (including Bear Stearns, Lehman, Merrill Lynch, Goldman Sachs, and Morgan Stanley) became subject to the Basel capital requirements, under the supervision of the SEC.

People who are unaware of this history of prudential regulatory expansion during the 1990s and 2000s—or government officials who ignore it because it is politically inconvenient to remember it—sometimes wrongly refer to the 1990s and 2000s as a time of prudential bank *deregulation*. Deregulation in the U.S. since 1980 did occur, but not *prudential* bank deregulation. The deregulation of the 1980s and 1990s had three main components: (1) interest rate ceilings on bank deposits were largely phased out beginning in 1980, which promoted greater competition in the deposit market; (2) banks' abilities to underwrite corporate securities were substantially increased (the so-called relaxation of the 1933 Act's "Glass-Steagall" prohibitions) beginning in 1987, and those limits were eliminated in the Gramm-Leach-Bliley Act of 1999; (3) banks were permitted to branch across state lines through a combination of

state- and federal-level initiatives that culminated in the Riegle-Neal Act of 1994, which was fully phased in by 1997.

None of those elements of deregulation can plausibly be regarded as having contributed to the subprime crisis. Indeed, the ability of investment banks to become commercial banks without ceasing to underwrite corporate bonds and stocks mitigated the cost of the crisis by allowing the orderly acquisitions of Merrill Lynch and Bear Stearns by Bank of America and JP Morgan Chase, respectively, and by allowing Goldman Sachs and Morgan Stanley to convert to commercial banking charters (to have expanded access to the government safety net) as the crisis deepened in September 2008. Branching is also widely recognized as a stabilizing influence on banks that promotes diversification and competition (Calomiris 2000, 2010).

Despite the various reforms of prudential banking regulation from 1989 to 2002, and the substantial addition of new prudential regulations during that period, there were three key policy errors, all of which had been at the core of the banking disasters of the 1980s, which returned with a vengeance in the 2000s: (1) the government subsidization of risk in mortgage finance, (2) the failure to measure in a timely and forward-looking manner the extent of risk taken by banks and require capital commensurate with that risk, and (3) the implicit protection enjoyed by “too-big-to-fail” financial institutions.

Subsidization of Mortgage Default Risk

With respect to the first of these problems, the successor to the political protection for thrifts in the 1980s was the affordable-housing mandates of the 1990s and 2000s. The federal government’s support for mortgage lending by U.S. banks dates from 1913. Prior to the establishment of the Federal Reserve System national banks were prohibited from mortgage lending, but as a political quid pro quo for passing the Federal Reserve Act in 1913, agricultural interests demanded a relaxation of that regulatory prohibition, which opened the door to mortgage lending by U.S. commercial banks on a large scale. Mortgage lending became further promoted by the establishment of a variety of special institutions and requirements beginning in the 1930s and continuing into subsequent decades (including Fannie Mae, the Federal Home Loan Banks, federal thrift chartering, Freddie Mac, the Federal Housing Administration

(FHA), and the Community Reinvestment Act (CRA)), all of which encouraged growth in mortgage finance on an increasingly levered and government-subsidized basis, and ultimately, with deteriorating underwriting standards.³

Despite the new discipline applied to the thrift industry in 1989 and afterwards, regulatory reformers of the 1990s did *not* roll back government subsidization of the mortgage market. On the contrary, the retreat of the S&L industry was more than offset by the expansion of Fannie Mae, Freddie Mac, and the Federal Home Loan Banks in the 1990s and 2000s, with the clear understanding in the market that their creditors enjoyed the implicit (now explicit) protection of the U.S. taxpayers. Initially, until the late 1990s, the main risks related to Fannie and Freddie were market risks (especially mortgage prepayment risks). The reason for that was simple: Fannie and Freddie did not absorb much default risk during that period. In the 1980s and 1990s, their portfolios of high-risk mortgages were small, and they generally required private mortgage insurance on risky mortgages (Calomiris 2001).

That began to change in the mid-1990s. The purposeful subsidization of mortgage default risk in the 1990s and 2000s by Fannie and Freddie was driven by the political agenda of promoting “affordable housing” through a combination of government initiatives: increasingly generous FHA loan guarantees provided explicitly by the government, mandates for increased “affordable housing” lending by Fannie Mae and Freddie Mac, and CRA mandates on commercial banks. HUD established mandates for Fannie Mae and Freddie Mac during the 1990s, which required increasing amounts of their mortgage portfolios to be dedicated to “low and moderate income” and “underserved” and “special affordable” borrowers over time (Pinto 2010a, 2010b; Wallison 2011). In 1996, the HUD goal for Fannie Mae for underserved borrowers was 21 percent of its portfolio; by 2006 it had risen to 38 percent.

The growth in government mandates meant that the amount of government-directed mortgage money chasing low-income

³Government subsidies can be created, and were created, through a variety of mechanisms, including underpriced deposit insurance for thrifts, underpriced mortgage insurance by FHA, unfunded CRA and Department of Housing and Urban Development (HUD) mandates that effectively taxed businesses to finance the government-imposed subsidy, and the implicit government guarantee of the debts of Fannie Mae and Freddie Mac.

borrowers was rising dramatically, while the number of creditworthy low-income borrowers did not rise commensurately. Filling that gap required the deterioration of underwriting standards so that the government-mandated increase of supply could be accommodated. The need to absorb the supply of government-directed mortgage lending was the key driver behind the dramatic reduction in down-payments during the 2000s, the changes in Fannie’s and Freddie’s mortgage default protocols in the late 1990s (which required originators to be much more forgiving of defaults), the decision by Fannie and Freddie to enter no-docs lending aggressively in 2004 despite the concerns of risk managers about its risks (Calomiris 2008), the GSEs’ decision to turn a blind eye to the fraudulent representations and warranties that became common in subprime mortgage securitizations during the boom, and the federal legislation in 2006 that sought to encourage more lenient ratings of mortgage-backed securities (MBS).⁴ All of this was associated with a near tripling of subprime originations that year, and a further doubling of them by 2006. According to Pinto (2010a, 2010b), Fannie and Freddie ended up holding a \$1.8 trillion exposure to subprime losses. Total outstanding government-program related subprime exposure (Fannie, Freddie, FHA, and CRA and other HUD related lending) totals \$2.7 trillion, while other private exposure totals \$1.9 trillion.

Prudential Regulation and Supervision’s Failure to Measure *ex ante* Risk and *ex post* Loss

Although it is tempting to blame the subprime crisis entirely on the sins of commission of the government in affordable housing policy, that would be an incomplete account. The warning signals of subprime lending—including the adverse-selection problems of deteriorating underwriting standards (especially in the form of no-docs lending), the risk of a house price decline, and the inflation of ratings on subprime mortgage-backed securities—were clearly apparent in advance of the crisis (Calomiris 2009a), and some firms reacted to those warning signals, thereby avoiding debilitating exposures to subprime risk. Deutsche Bank, Goldman Sachs, JP Morgan

⁴The federal government’s actions in trying to prevent “notching” is a little-known attempt to encourage the rating agencies to relax their standards. See Calomiris (2009a, 2009b, 2009c) for further discussion.

Chase, HSBC, Standard Chartered, Morgan Stanley, Santander, BBV, Credit Suisse, and Bank of America (prior to its acquisitions during the crisis) suffered relatively little from subprime losses, while others—Fannie Mae, Freddie Mac, Citibank, UBS, Bear Stearns, Merrill Lynch, and AIG—were deeply exposed to subprime loans. What accounts for the different experiences of these two groups?

Failures of prudential regulation and supervision are part of the explanation for banking problems, but as this list of divergent experiences shows, regulatory failure can only be a part of the story, since the relatively successful and unsuccessful financial institutions were regulated under similar rules by the same set of regulators. Putting aside the decisions of Fannie and Freddie—which clearly reflected political pressures that were unique to their charters (Calomiris 2008)—what explains why some institutions took the plunge into subprime while other financial institutions avoided subprime? To what extent can regulatory explanations of bank risk-taking be said to be relevant, given that the same regulatory and supervisory policies were associated with such different consequences across banks?

The interaction of agency problems with prudential supervision and regulation can explain the observed differences across banks in their subprime risk exposures. The first line of defense against unwise investing on the part of bank management should be its fiduciary obligation to pursue the interest of stockholders. A manager that was properly incentivized to identify investments with a desirable risk-return profile should have avoided subprime investments during the crucial boom period of 2004–06. Subprime securities on an *ex ante* basis offered small expected returns relative to the outsized risks coming from potential slowing or decline of house prices and the adverse-selection problems related to no-docs lending. As Rajan, Seru, and Vig (2011) show, more than half of the difference between the actual subprime loss experience and the losses forecast at the time of origination of subprime securitizations is attributable to adverse-selection problems related to no-docs lending, and the remainder of the difference reflects the effects of house price declines. These adverse-selection problems should have been anticipated, and in some cases were anticipated. If a lender makes it known in the market that it will cease to verify employment and income information, then that lender will predictably attract a biased and less-creditworthy group of borrowers. Freddie Mac's risk

managers were aware of that principle, and had experienced these adverse-selection related losses in the late 1980s, which was the basis for their vocal opposition to entering no-docs lending in 2004 (Calomiris 2008).

Of course, not all employees or all organizations will choose to avoid “value-destroying” investments like subprime, if incentives within the organization encourage portfolio managers to take excessive risks in the interest of growing the portfolios that they manage. Poorly designed compensation systems for rewarding portfolio managers can contribute greatly to that problem. For example, to the extent that portfolio managers’ compensation depends on the size of assets under management (e.g., when managers receive a bonus in proportion to the assets they manage), a portfolio manager may see substantial private gains from expanding investment, even in an undesirable security, if that security offers the easiest path to growing the portfolio. That is especially the case if he believes that competing portfolio managers (within or outside his firm) are riding the same wave, based on the same exaggerated debt ratings; when the bubble collapses, they all can expect to point to the supposed collective error of judgment and the opinions of rating agencies to insulate themselves from the reputational consequences of having made such bad investments. Call that the “plausible deniability” equilibrium.

The key to avoiding these sorts of problems is to establish a healthy risk management culture. Such a culture rewards long-term performance of portfolios, not just short-term growth. It does so in part through the structure of compensation, and by limiting the concentration of investments in any one set of risks.

Not all organizations have equally effective risk management cultures, and there is substantial evidence that variation in the quality of risk management matters greatly for limiting the potential exposure of an institution to risks like the subprime bubble. Ellul and Yerramilli (2010) find that commercial banks with a strong commitment to risk management (which they measure by the ratio of the compensation of the chief risk officer relative to the compensation received by the chief executive officer) fared much better during the subprime crisis than those with weaker commitments. Those *ex post* differences were also visible in *ex ante* implied volatility differences of stock prices. Banks that paid their risk managers more experienced less *ex ante* risk and less *ex post* loss.

While risk managers, acting in the interest of their own stockholders, are the first line of defence against imprudent investing, prudential supervision and regulation is the second line of defense. If prudential regulation measures risk accurately, and requires the budgeting of sufficient capital to absorb risk, then agency problems should be substantially mitigated. The undesirable investments and the concentration of risk that poorly managed institutions would fail to observe and prevent should run afoul of the capital budgeting process required by effective prudential regulation, enforced by attentive prudential supervisors. Only if regulations and supervisors fail to establish a framework capable of accurately measuring risk and requiring an adequate amount of capital (i.e., an amount sufficient to absorb losses commensurate with that risk), can the failures of risk managers lead to the disastrous level of excessive risk-taking observed in firms like Citibank, UBS, Merrill Lynch, and AIG.

That is the sense in which ineffective prudential supervision and regulation bears a significant share of the blame for the disasters that befell those institutions. The failure of supervisors and regulators to measure risk has been the rule rather than the exception in banking for the past three decades, in the United States and abroad. Under the Basel system—unbelievably—the risks of the largest banks are measured in two ways: by employing rating agency opinions about the debts the institutions hold to gauge the risk of those debts, and by asking the banks themselves what they believe their risk is. Obviously, relying on banks to gauge their own risks prevents prudential regulation and supervision from identifying and correcting errors in risk measurement and management that are occurring within the banks. The opinions of rating agencies are also unreliable (as discussed further below), and this has been known since at least the early 1990s (Cantor and Packer 1994, Calomiris 2009a). The regulatory use of ratings to control risk means that regulated buy-side investors (at banks, pensions, mutuals, and insurance companies) prefer that ratings be inflated. Ratings inflation relaxes suitability rules and capital requirements that otherwise would bind more tightly on the regulated buy side, and in particular, rating inflation allows buy-side banks and insurance companies to budget less equity capital when making their investments. Given investors' natural desire to avoid regulatory mandates—which is more pronounced if agency problems are present—rating agencies have every incentive to cater to the preferences of their buy-side clients, who prefer ratings inflation.

Not only has the regulatory framework failed to provide adequate *ex ante* protection against aggressive risk-taking, supervision has also failed to identify losses on a timely basis once they have occurred. The pattern of delayed recognition of loss has been visible in many countries for decades, and is generally understood to reflect a combination of low supervisory effort (it is not their money, after all), low supervisory skills (the smartest people are paid princely sums to hide losses from less-smart and less-highly paid supervisory folk), and the pressuring of supervisors by government officials to “forebear” (that is, purposefully to delay the recognition of losses) in the interest of postponing bank failures and continuing the flow of bank credit.

Japanese banks in the 1990s pretended for a decade that their losses were much smaller than they actually were, which allowed them to delay the economic and political costs of recapitalizing, effectively permitting banks to continue to gamble with the house’s money (the implied backing of the taxpayers) in a “heads I win, tails you lose” game of “resurrection risk-taking.” The Mexican bank supervisory authorities allowed Mexican banks to pretend that their capital was much larger than it was for several years after the Mexican crisis of 1995, and only strengthened their accounting rules for loss recognition as banks’ profits and portfolio values rose sufficiently to allow the banks to meet the more stringent and realistic criteria. U.S. recognition of bank and thrift losses in the 1980s was postponed for many years (until after the 1988 election) to avoid the political consequences of recognizing the magnitude of those losses, and avoiding the disruption that regulators feared might accompany an honest accounting of the money center banks.

Notwithstanding an attempt to address the loss recognition problem through FDICIA’s prompt corrective action regime, the same pattern was visible in the post-FDICIA period (before and during the recent crisis); failing banks were not identified as weak and forced to recapitalize before they became insolvent. Contrary to the promise of FDICIA, banks can lose capital over a long period of time with impunity, as supervisors and regulators fail to force banks to recapitalize before it is too late.

Calomiris and Herring (2011) calculate the ratio of the market value of equity relative to the market value of assets of the largest U.S. financial institutions from 2006 to 2008. That ratio declined persistently over many months prior to the September 2008 collapse. The market for equity capital was wide open, and in the year prior to

September 2008 global banks raised about \$450 billion in new capital (Calomiris 2009a). But Merrill Lynch, Lehman, and AIG (among others) chose not to raise substantial amounts of capital prior to September 2008, in hopes that equity prices would rise, allowing them to recapitalize with less dilution of existing stockholders. And regulators did not intervene to force them to raise capital. The bailout of Bear Stearns (and the expectation of too-big-to-fail protection that resulted from that bailout) further encouraged the delay in raising capital, since banks felt protected on the downside if matters got worse.

If the measurement of risk and the measurement of loss are such crucial problems in prudential regulation and supervision, then why haven't these problems commanded more attention? After all, Treasury Secretary Geithner argued before Congress that the key to effective reform was "capital, capital, capital." Of course, sufficient capital is essential, both to discourage banks from wilfully taking on excessive risk (because they are playing with the house's money), and because capital is the absorber of shock that keeps banks from failing when adverse shocks occur. But the emphasis should be on maintaining a sufficient amount of capital *commensurate with risk*. If equity capital is raised by 2 or 3 percentage points (as envisioned under the new Basel rules) but banks are free to increase risk as much as they like, then banks can offset the stabilizing effect of higher capital with higher risk.

The importance of budgeting capital relative to risk is illustrated nicely by the experience of the recent crisis. Differences in bank capital ratios prior to the crisis did not predict which banks would suffer the worst fates during the crisis. Some of the banks with relatively high amounts of equity did very poorly (Citibank being an obvious example), while other banks with lower capital ratios (e.g., Goldman Sachs) survived much better. In April 2006, Citibank's market equity ratio (defined as the ratio of Citibank's market value of equity relative to the sum of the market value of equity and the face value of debt) was above 13 percent, while Goldman Sachs market equity ratio was half that (Calomiris and Herring 2011). The obvious source of the difference between the experiences of the two institutions was their levels of risk, not their capital ratios.

Furthermore, choosing an initial capital level during good times does not guarantee that capital will be maintained. When banks suffer loan losses, those losses destroy capital. If supervisors fail to

recognize those losses, book values of capital will become overstated, and will cease to be an adequate buffer for future losses.

In summary, the focus of prudential capital regulations must be on the credible measurement of risk and the budgeting of capital commensurate with that risk, and the amount of capital must be monitored continuously to ensure that it has not disappeared as the result of losses. These challenges have a technical component, but they are not merely or even mainly technical. For the measurement of risk to be credible, the incentives of the party doing the measurement are the key factor. Banks cannot be trusted to measure their own risks, and (under existing incentives) rating agencies cannot be trusted to measure banks' risks either.

Before deposits were protected by government insurance, depositors (especially large, informed depositors, many of which were bankers themselves) played the role of supervising banks, imposing discipline on banks that were seen as too risky by withdrawing their deposits, which forced banks to deleverage, and encouraged transparent and credible risk management. In the absence of that discipline, weakly incentivized government-employed supervisors, many of whom are less skilled than their more highly paid counterparts at the banks, and who rely on the opinions of conflicted parties to measure risk and capital, are unlikely to provide a substitute for that sort of discipline. The key to resolving the incentive problems of adequate prudential capital regulation, therefore, comes down to finding ways to produce and use information about *ex ante* risk and *ex post* loss that are informed and "incentive-robust," by which I mean that the measures are not undermined by the incentives of banks, rating agencies, supervisors, regulators, and politicians to understate both *ex ante* risk and *ex post* loss.

Too Big to Fail

After the bailout of Bear Stearns, large and complex financial institutions with global reach had a reasonable expectation (albeit not a sure thing) that if they faced mounting losses, the government would step in to provide some assistance in support of an orderly acquisition by another firm, as it did in JP Morgan's acquisition of Bear Stearns. During the crisis, that expectation of protection likely led Merrill Lynch, Lehman, and others to delay the issuance of substantial amounts of stock, especially in the summer

of 2008. Firms reasoned that prices could improve, and sought to avoid the dilutive consequences of issuing stock into an illiquid and worried market.

Whatever the economic pros and cons of too-big-to-fail bailouts, the path of least political resistance will generally be to bail out large, complex firms. It is hard to manage the orderly transfer of control over operations, assets, and liabilities of large firms with complex subsidiary structures, operating in many countries and engaged in a large number of counterparty transactions with other large financial institutions. Without a clear and credible plan (a so-called living will) in place that would guide the orderly transfer of operations, assets, and liabilities, and allocate losses in a way that would be transparent, legally enforceable, and perceived as unlikely to create further knock-on failures related to losses imposed on counterparties, the pressure for the government to avoid potential problems with a bailout will be too tempting. Furthermore, the coincidence of the failure of Lehman and the post-September 2008 financial collapse has decreased the prospect for “tough love” decisions in the future.

Reform proposals to address too-big-to-fail usually focus on the creation of credible procedures for taking control of troubled financial behemoths in a way that would limit adverse systemic consequences of their failure while avoiding blanket bailouts of creditors and stockholders. The too-big-to-fail problem also adds urgency to the need to design reforms that would address the key challenges of credible risk measurement and loss measurement; too-big-to-fail protection aggravates the incentives of large institutions to minimize equity capital and raise risks in order to profit from risk-taking at public expense.

Dodd-Frank to the Rescue?

Yogi Bera might have said of the Dodd-Frank Act of 2010, “It’s déjà vu all over again!” As in the regulatory response to the 1980s crises, regulatory reformers have promulgated many prudential reforms, including new capital standards, new supervisory procedures, and new protocols resolving “too-big-to-fail” financial institutions, which advocates say will end taxpayer-supported bailouts of large banks. And once again, the three core problems of the subsidization of housing finance risk, the failure to credibly measure bank

risk and loss, and the too-big-to-fail problem remain largely unaddressed by the reforms.

Although Dodd-Frank calls for the imposition of higher capital on banks, especially on systemically important financial institutions, its very long list of new regulatory initiatives and mandated studies does little to address the problem of risk measurement and nothing to address the problem of credible loss measurement and timely replacement of capital.

The one important change in the Act with respect to risk measurement is the elimination of the regulatory use of rating agency opinions. It may make sense to eliminate the regulatory use of ratings eventually (which has been the primary source of the incentive for ratings inflation). But absent a better measure of risk, eliminating ratings only adds more weight to the internal assessments that banks make of their own risks. Furthermore, ratings are currently an integral part of the Basel system of measuring risk, in which the United States remains a key participant. For both reasons, there are already many calls for repealing the elimination of the regulatory use of ratings.

After the bailouts of Bear Stearns and AIG, and Lehman's chaotic failure, Congress and the Obama administration regarded the status quo of available resolution procedures for large financial institutions as unacceptable. In 2008, the government chose between, on the one hand, extremely generous bailouts (as in Bear Stearns and AIG, where their creditors remained whole and even their stockholders avoided being wiped out), and on the other hand, allowing a potentially disorderly failure (as in Lehman). The goal of Dodd-Frank's resolution reform was to find a middle way—to give the government the power to take over failed firms in an orderly manner, avoiding adverse systemic consequences while imposing some losses on creditors and stockholders.

The reforms of bank and nonbank resolution procedures under Dodd-Frank are meant to address the too-big-to-fail problem by creating new powers and procedures that will govern the resolution of large bank and nonbank financial institutions. My reading of Dodd-Frank, however, offers little hope that generous bailouts of creditors will be avoided in the future. Despite the stated intentions to impose costs on creditors, the likely path of least political resistance will be generous bailouts, rubber-stamped by whichever politicians, judges, and bureaucrats are asked to provide their

approval. Financial institutions in trouble will argue that anything less will bring the world to an end, and few politicians, bureaucrats, or judges will want to bear the personal risks of standing in the way. That is especially so when one considers that the funding for those bailouts will take the form of a special assessment on large financial firms. That tax will, of course, be borne by the clients of those banks just as if the taxpayers had paid for the bailouts from general government funds, but politicians will still find comfort in claiming that special assessments imposed on banks avoid costs to taxpayers. For these reasons, I see Dodd-Frank's new resolution authority as likely to result in the institutionalization of bailouts, rather than their avoidance.

That is not to say that there is no hope for improving Dodd-Frank resolution policies. The key to achieving some improvement is to add rule-based constraints to the process to ensure some expectation of loss on the part of creditors of failed institutions, even in a taxpayer-assisted resolution. Expected losses by creditors of failed firms would encourage the *ex ante* market discipline necessary to restrict excessive risk-taking.

What Would Work Better?

In this section, I briefly describe a set of proposed reforms that would address the four fundamental problems outlined above: (1) distortions induced by mortgage risk subsidization, and the prudential regulatory challenges of (2) inaccurate risk measurement, (3) inaccurate loss measurement, and (4) too-big-to-fail bailouts. A fuller program for reform addressing a broader range of issues is presented in Calomiris (2011b); here I focus on the parts of that program that pertain only to the aforementioned four goals.

A central principle that should guide all proposed reforms is "incentive robustness." An incentive-robust reform is one that satisfies two key criteria: (1) market participants will not find it easy to circumvent it via regulatory arbitrage, and (2) supervisors, regulators, and politicians will have incentives to enforce it. Indeed, I suggest that all future proponents of regulatory reforms should have to fill out an "incentive scorecard" in which they explain why they believe that their proposed reforms would meet these two incentive-robustness criteria.

Eliminating Mortgage Risk Subsidization

The central problem in mortgage risk subsidization has become the tolerance for extremely high leverage by government-subsidized lenders. Without high leverage the subprime boom and bust could not have happened. In particular, risky no-docs lending (a major driver in the subprime loss experience) was made possible by high leverage; noncreditworthy borrowers would have been unwilling to deceive lenders if they had been required to pledge a large amount of their own savings as a downpayment. House price declines would not have produced huge loan losses if homeowners had retained, say, a minimum 20 percent stake in their homes.

During the 1990s and 2000s leverage tolerances on U.S. government-guaranteed mortgages rose steadily and dramatically at FHA, Fannie Mae, and Freddie Mac. The average loan-to-value (LTV) ratio of FHA mortgages rose to 96 percent, and a third of Fannie and Freddie's purchases leading up to their insolvencies had LTVs of greater than 95 percent. Not only are high LTVs destabilizing, they undermine the objectives of housing policy. Its central goal is promoting stronger communities by encouraging residents to have a stake in them. But a 97 percent LTV creates a trivial stake; homeowners become renters in disguise, able to abandon homes at little cost.

I propose a three-part plan for redesigning housing finance: First, replace leverage subsidies with means-tested downpayment assistance alongside reduced LTVs; second, offer means-tested assistance in mitigating interest rate risk; and third, offer means-tested, tax-favored savings accounts for would-be homeowners.

An obvious alternative to subsidizing mortgage risk is subsidizing down payments. This is the approach of Australia's (non-means-tested) housing policy, which gives A\$7,000 to all first-time home buyers. An improved variant would offer means-tested subsidies for first-time home buyers, while also phasing in increases in minimum down payments. For example, first-time home buyers with houses worth less than a (regionally adjusted) maximum, who earn less than a maximum family income, would be eligible for a lump sum housing grant equal to the smaller of, say, \$10,000 or 30 percent of the down payment on their home.

Minimum down payments on all mortgages would rise by, say, 1 percent a year over 17 years to the new minimum of 20 percent.

Phasing in the rising down-payment requirement would avoid disruptive declines in housing prices that might result from a sudden change in mortgage finance. Given the potential for government bailouts of mortgages even when they were not explicitly part of any government program, this rising minimum should apply to all mortgages, not just those of buyers receiving explicit government assistance. Recipients of down-payment assistance would pay no interest on their grants. The assistance would take the form of a junior equity lien on their homes (senior to their own equity investments, but junior to mortgages). Principal would be repaid in full upon sale or refinancing of the house.

Reducing the cost of locking in a long-term fixed rate—of particular importance to low-income households—should be the second part of supporting affordable housing. Rather than providing invisible interest rate subsidies through FHA, Fannie, and Freddie, the government should subsidize low-income buyers of privately supplied mortgage interest rate swaps (limiting the subsidy to, say, the lower of \$5,000 or 30 percent of the cost of the swap).

Tax-favored treatment of savings accounts that could be used by low- and moderate-income families to accumulate adequate down payments would further encourage “skin in the game.” Given that low-income Americans pay little or no income tax, it may be desirable to allow some reduction in payroll taxes on funds placed into “Home Savings Accounts.”

The small costs (relative to current programs) of these proposals include: the time value of money and losses from default on down-payment assistance, the cost of interest rate swap subsidies, and forgone payroll taxes. All these costs should be recognized explicitly in the government’s budget. These programs would replace existing implicit mortgage risk subsidies provided through FHA, Fannie, and Freddie. FHA mortgage guarantees would end; Fannie’s and Freddie’s assets would be sold into the market; and Federal Home Loan Banks would also be phased out.

Measuring Risk: Credit Rating Agency Reform

What is the evidence that rating agencies performed badly in measuring credit risk on the debts that they rate? Were rating agencies suborned, and if so, by whom and to what purpose? The evidence of rating agency failure shows up in *inflated* ratings and

low-quality ratings. The inflation of ratings is the purposeful underestimation of default risk on rated debts. Low-quality ratings are ratings based on flawed measures of underlying risk. The recent collapse of subprime-related securitizations revealed both problems in the extreme.

What harm do these deficiencies do? Inflation subverts the intent of regulations that use ratings to control risk-taking, resulting in ineffectual prudential regulation. If rating inflation is accompanied by low-quality ratings, this causes deeper problems. Investors can “reverse engineer” a debt rating that is merely inflated and recover the true measure of risk; the revelation of severe flaws in risk modeling that usually occur in response to a financial shock leaves investors unsure how to price the debts they are holding, and unwilling to buy additional debts of similar securitizations, resulting in severe market disruption.

Evidence abounds that severe errors in subprime ratings were predictable. The two most important modelling errors relating to subprime risk were both assumptions that contradicted logic and experience, namely that U.S. house prices could not decline, and that the underwriting of no-docs mortgages would not lead to a severe deterioration in borrower quality (Rajan, Seru, and Vig 2011).

Who was behind these biased models? Many policymakers incorrectly believe that securitization sponsors are the constituency that controls ratings. That is false. Ratings that exaggerated the quality of securitized debts were demanded by the *buy*-side of the market (i.e., the institutional investors whose portfolio purchases are being regulated according to the ratings that are attached to those purchases) because inflated ratings benefited them.

Ratings that understate risk are helpful to institutional investors because they (1) increase institutional investors’ flexibility in investing, (2) reduce the amount of capital institutions have to maintain against their investments (the objective of re-remics alchemy), and (3) increase their perceived risk-adjusted profitability in the eyes of less-sophisticated ultimate investors (mutual fund, bank, and insurance company shareholders, pensioners, or policyholders) by making it appear that a AAA-rated investment is earning a AA-rated return. If buyers wish rating agencies to inflate ratings to overcome regulatory hurdles and make them appear more favorable in the eyes of their ultimate investors, rating agencies can reap substantial profits from catering to buyers’ demands for inflated ratings. This has an

important implication: rating inflation on securitized debts is done at the behest of the *buy-side*.

Consider the case of the collateralized debt obligations (CDO) market. CDOs were constructed using unsold debts from other securitizations (often subprime MBS). CDO issuance volume increased dramatically in the early 2000s, rising from \$100–150 billion a year in 1998–2004 to \$250 billion in 2005 and \$500 billion in 2006.

Were institutional investors aware of the high risk of CDOs prior to the 2006 boom? Yes. Moody's published data on the five-year probability of default, as of December 2005, for Baa CDO tranches of CDOs which showed that these Baa debts had a 20 percent five-year probability of default, in contrast to Baa corporate debts, which showed only a 2 percent five-year probability of default. Despite the rhetoric rating agencies publish claiming to maintain uniformity in rating scales, institutional investors knew better: in 2005 CDO debts of a given rating were 10 times as risky as similarly rated corporate debts.

Why did institutional investors play this game? Asset managers were placing someone else's money at risk and earning huge salaries, bonuses, and management fees for being willing to pretend that these were reasonable investments. On one occasion, when one agency was uninvited by a sponsor from providing a rating (because the rating agency did not offer to approve as high a percentage limit for AAA debt as the other agencies), that agency warned a prominent institutional investor not to participate as a buyer but was rebuffed with the statement: "We have to put our money to work."

Strong evidence that buy-side investors encouraged the debasement of the ratings process comes from the phenomenon of "ratings shopping." Before actually requesting that a rating agency rate something, sponsors ask rating agencies to tell them, hypothetically, how much AAA debt they would allow to be issued against a given pool of securities being put into the CDO portfolio. If a rating agency gives too conservative an answer relative to its competitors, the sponsor just uses another rating agency.

It is crucial to recognize, however, that for ratings shopping to result in a race to the bottom in ratings, the race to the bottom must be welcomed by the buyers; if institutional investors punish the absence of a relatively good agency's rating of an offering (by refusing to buy or paying a sufficiently lower price), then would-be ratings shoppers would have no incentive to exclude relatively reputable

rating agencies. Thus, the evidence that ratings shopping tends to produce a race to the bottom implies that the buy side favors the low-quality, inflated ratings that result from the race to the bottom.

Under pressure from Fitch, Congress and the SEC also played a role in encouraging the debasement of ratings of subprime MBS and related securities. Congress passed legislation in 2006 that prodded the SEC to propose “anti-notching” regulations that would have facilitated ratings shopping in the subprime MBS market. “Notching” arose when CDO sponsors brought a pool of securities to a rating agency to be rated which included debts (often subprime MBS) not previously rated by that rating agency. When asked to rate the CDOs that contained those subprime MBS, Moody’s, say, would offer either to rate the underlying MBS from scratch, or to notch (adjust by ratings downgrades) the ratings that had been given by, say, Fitch.

The new anti-notching rules would have forced each rating agency to accept ratings of other agencies without adjustment when rating CDO pools. This policy constituted an attack on any remaining conservatism within the ratings industry: trying to swim against the tide of ratings inflation would put a rating agency at risk of running afoul of its regulator.

Once one recognizes that the core constituency for low-quality and inflated ratings is the buy-side in the securitized debt market, that carries important implications for reform. Proposals that would require buy-side investors to pay for ratings, rather than the current practice of having securitization sponsors pay for ratings, would have no effect in improving ratings.

Any solution to the problem *must make it profitable for rating agencies to issue high-quality, non-inflated ratings*, notwithstanding the demand for low-quality, inflated ratings by institutional investors. This can be accomplished by objectifying the meaning of ratings, and linking fees earned by rating agencies to their performance. If fees are linked to the quality of objectified ratings, then ratings agencies would find it unprofitable to cater to buy-side preferences for inflated, low-quality ratings. How could this be done?

Require all agencies wishing to qualify as Nationally Recognized Statistical Ratings Organizations (NRSROs)—the rating agencies whose ratings are used in regulation—to submit ratings for regulatory purposes that link letter grades to specific estimates of the probability of default. For example, for NRSRO purposes BBB could

be defined as a forecast of a 2 percent five-year probability of default from the date of origination, and A could be defined as a forecast of a 1 percent five-year probability of default.

Once the ratings are equated to numbers, rating agencies could be held accountable for their ratings. For example, if an NRSRO's ratings at origination for a particular product were found to be persistently inflated to an egregious (quantitatively defined) degree, then it would face a penalty. That penalty could "claw back" fees the agency had earned on that product (enforced by requiring that agencies post some of their fees as a "bond" to draw upon). Alternatively, a rating agency found to have exaggerated its ratings could simply lose its NRSRO status for a brief time (say, several months), which would also provide powerful incentives not to inflate.

The second approach likely would be the easier one to implement. It would be desirable to use a several-year moving average of actual experience when gauging performance. That approach would preserve the "through the [business] cycle" quality of ratings and also ensure a sufficient sample size. The universe of rated products would be divided into several categories (MBS, credit cards, etc.). Each category would use an identical definition of BBB and A (2 percent and 1 percent probabilities of default). If either the five-year backward looking moving averages of the proportion of rated BBB tranches or the proportion of rated A tranches substantially exceeded their 2 percent and 1 percent respective benchmarks, then the rating agency would be barred from providing ratings for regulatory purposes for that class of debt instruments for several months. The threshold for substantially exceeding the 2 percent target could be 4 percent, and the threshold for substantially exceeding the 1 percent target could be 2 percent. The reason to focus on BBB and A is that these are sufficiently risky that their default experience will be observable over short periods of time. If A and BBB ratings are reasonably accurate, that will go a long way in constraining the overrating of the related AA and AAA tranches.

Why is this approach to ratings reform incentive-robust? First, it creates strong incentives for rating agencies to provide high-quality, non-inflated ratings. If a rating agency is suspended from being able to provide NRSRO ratings for a significant period of time on a class of debt, that would have a major impact on their fees. Second, there is no discretionary role for supervisors, regulators, or politicians in this proposal, and thus no concern that they will shirk or forbear from

enforcement. And the record of ratings is observable to the public, ensuring that no hidden forbearance could occur.

Using Loan Spreads to Measure Loan Default Risk

For debts held by banks, reformed ratings could provide reasonably accurate measures of default risk, but how can regulators credibly measure the default risk of bank loans? Ashcraft and Morgan (2003) show that, not surprisingly, interest rate spreads (all-in interest cost on the loan minus the comparable maturity riskless interest rate) are accurate forecasters of the probability that a loan will become nonperforming. In Argentina in the 1990s, interest rate spreads were used as a measure of loan risk for purposes of budgeting capital buffers for loans; higher loan spreads required higher capital budgeted in support of the loan. As Calomiris and Powell (2001) show, the Argentine approach to prudential regulation worked quite well in the 1990s.

This means of measuring risk is incentive-robust because banks cannot easily circumvent it. Clearly, banks would not have an incentive to lower interest rates just to reduce their capital budgeting against a loan, since doing so would reduce their income. To avoid any attempt to manipulate the formula using teaser rates, regulation should use the highest possible all-in spread during the life of the loan as the measure of the all-in spread. If this rule had been applied to subprime loans, the capital budgeted against those loans would have been substantially higher, and the subprime boom and bust might never have occurred.

Measuring Loss and Ensuring the Timely Replacement of Capital

Calomiris and Herring (2011) develop a contingent capital certificate (CoCo) requirement proposal whose primary intent is to identify equity losses and incentivize banks to replace lost equity with new offerings on a timely basis. Calomiris and Herring (2011) show that the large declines in the market equity ratios of large U.S. and European banks occurred gradually over many months. Markets for raising new equity were open, and there was plenty of time to raise capital, but some banks (most notably, Lehman and Merrill) avoided significant equity issues, which they viewed as dilutive, hoping the crisis would pass and they would be able to avoid issuing equity or

issue it at a higher price. And even most of the banks that issued significant amounts of capital prior to September 2008 allowed their market equity ratios to decline dramatically over the period from March 2007 to March 2008.

Calomiris and Herring (2011) show that CoCos, if properly designed, would be an incentive-robust means of encouraging the timely replacement of lost capital. The three key features of that proper design are: (1) a sufficiently large quantity of CoCos (e.g., roughly equal as a proportion of assets to the tier 1 capital ratio, which they also propose raising significantly above its current required ratio), (2) a conversion trigger based on the moving average of the market equity ratio, and (3) a sufficiently dilutive conversion ratio, if conversion occurs.

The market equity ratio is a desirable trigger because it is an observable and forward-looking market indicator of the value of bank equity capital. Using a market trigger means that the implementation of CoCo conversion is automatic, rather than subject to regulatory discretion (as is the case when the trigger is defined using a book value of equity ratio). Using the market equity ratio as the trigger avoids supervisory forbearance problems, and also implies that the prospective variation over time in the ratio can be modelled quantitatively, which also permits the embedded conversion option to be priced by the market (a highly desirable feature for any financial instrument).

By making conversion predictable, by making the amount of converted CoCos sufficiently large, and by making the conversion ratio sufficiently dilutive, the prospect of a triggered conversion would be so dilutive of existing stock that management would be keen to avoid conversion, if possible. Since the conversion trigger is based on the market equity ratio, banks could avoid conversion by issuing equity into the market to replace lost equity. Thus, the key advantage of a properly designed CoCo requirement is the incentive that it provides for the voluntary timely replacement of lost capital via preemptive issues of equity that are intended to avoid conversion. In cases where equity offerings are not feasible (e.g., if the decline in equity is caused by reports of accounting fraud), then a sufficient decline in the market equity ratio would trigger conversion of the CoCos, which would reduce the amount of debt and debt service payments made by the bank, and thus improve its prospects for surviving, and reduce resolution costs to taxpayers if it fails.

Reforming Too-Big-to-Fail Resolution Policy

The above reforms to risk measurement, loss measurement, and the encouragement of timely replacement of lost capital would go a long way toward reducing the moral hazard problems and taxpayer loss exposures associated with the too-big-to-fail problem. There is also potential for improving the resolution procedures under Dodd-Frank in a way that would make the imposition of losses on creditors of large failed banks more credible, which would also ameliorate the moral hazard and fiscal costs of too big to fail.

As discussed above, Dodd-Frank institutionalizes the bailouts of creditors of large, complex banks that fail. FDIC officials and politicians, of course, deny this, and argue that they can be trusted to use their discretion to impose losses on creditors. Maybe, but why not be sure? Why not require that any deviations from strict priority enforcement of creditors' rights during a resolution (i.e., bailouts) must impose a minimum haircut on unsecured creditors of, say, 10 percent of principal and all accrued interest? Adding this simple amendment to Dodd-Frank would place a hard limit on discretionary bailouts, and thus put a roadblock on the political path of least resistance.

Why not make the minimum haircut 20 or 30 percent of principal plus all accrued interest? There certainly may be good economic arguments in favor of a larger minimum haircut than 10 percent of principal, but there is an incentive-robustness argument against raising the minimum haircut to too high a proportion of the debt exposure: If politicians and regulators can make a reasonable sounding argument about potential "systemic risks" from "daisy chains" of failing banks, brought down by the losses imposed on concentrated exposures to a failed counterparty, then that could encourage ad hoc bailouts that sidestep the rules-based resolution system established under the law. If that seems far-fetched, note that this is precisely what happened during the recent crisis: the FDICIA safeguards against bailing out uninsured bank creditors simply were put aside in the heat of the moment. The implication is clear: If a rule has too much tough love, it will be less credible. That is a reason to limit minimum haircuts to 10 percent, a number too small to permit a reasonable fear of systemic risks from counterparty losses of failing banks. In other words, no counterparty would be able to argue reasonably that

losing 10 percent of the principal of the debts it holds from another large bank would create systemic risk.

The Clear ex ante Allocation of Legal and Regulatory Authority over Resolution

It is much harder to impose losses on creditors of failed global banks if the regulatory and legal authorities governing the disposition of the assets and liabilities of the bank are not clearly established in advance. During the Lehman bankruptcy, for some of the assets of the company it was not clear which country's subsidiary had legal ownership of those assets. Banks, of course, have little incentive to clarify such matters in advance, since the lack of clarity improves their chance of receiving a bailout.

It is not realistic to expect legal systems or regulatory systems to be able to coordinate actions effectively in real time on an ad hoc basis in the middle of a crisis, especially since the regulators will often have conflicting incentives (each will want to maximize his claim on assets, and minimize his claim on liabilities). It is necessary, therefore, to establish a "ring-fencing" approach, whereby every asset and liability of the bank is assigned in advance, as part of a "living will," to a particular location. Those assignments should be approved in advance and in writing by the regulatory authorities of each of the countries in which the bank operates, to ensure accountability and to avoid potential disagreements during the crisis. This arrangement would make speedy and orderly resolution possible, and thus encourage the imposition of haircuts on failed banks' creditors, thereby mitigating too-big-to-fail problems. And, of course, this is just one of the many aspects of resolution that should be dealt with in advance by the living will, to ensure a speedy, orderly, and predictable means of resolving failed global banks.

Conclusion

Contrary to conventional wisdom, it is possible to craft fairly simple rules that would be effective in meeting the main challenges that have destabilized the U.S. financial system in the past several decades. Indeed, simpler rules (which tend to be more transparent and predictable, and therefore, more credible) are more effective, particularly if they are crafted to be "incentive-robust." Incentive-robust rules (which take into account the incentives of market

participants, supervisors, regulators, and politicians) are designed to be difficult for market participants to circumvent, and easy for supervisors, regulators, and politicians to enforce.

This article argues that four crucial goals of financial reform—(1) the elimination of destabilizing subsidization of mortgage risk by the government, (2) the credible measurement of bank risk and the establishment of prudential capital requirements commensurate with that risk, (3) the credible measurement of loss and the incentivizing of the timely replacement of lost capital, and (4) the reduction of too-big-to-fail costs associated with moral hazard and taxpayer exposure to bank losses—are attainable through simple, incentive-robust rules. Those proposed rules include (1) the replacement of mortgage risk subsidization with a new means-tested down-payment assistance program, (2) the reform of the regulatory use of ratings that would quantify the meaning of debt ratings and hold NRSROs accountable financially for egregious inaccuracy in forecasting the probability of default of rated debts, (3) the use of loan interest rate spreads to forecast non-performing loans for purposes of budgeting capital to absorb loan default risk, (4) the establishment of a contingent capital (CoCo) requirement that would measure loss and incentivize large banks to replace lost capital in a timely way, (5) a reform of resolution procedures for large financial institutions that would require a minimum haircut on unsecured creditors whenever the resolution authority employs taxpayer funds in the resolution (i.e., whenever there is a departure from the enforcement of strict priority in the resolution process), and (6) the establishment, as part of the “living wills” of global financial institutions that govern their prospective resolution, of clearly demarcated lines of legal and regulatory jurisdiction over the disposition of all the assets and liabilities within the bank.

This program of reform would be effective in addressing the real challenges that have threatened our financial system for decades, and continue to threaten it. And this approach would avoid much of the collateral damage that comes from the many hundreds of pages of costly and misguided mandates and limits that can be found in the Dodd-Frank Act of 2010.

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