It's Broke, Let's Fix It:
Rethinking Financial Regulation

by

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I. Why Regulate Finance?

This country, and indeed the whole world, is now grappling with how to redesign the financial regulatory system, which is widely perceived to have failed on a massive scale and with catastrophic consequences.[1] In June, the U.S. Treasury (2009a) released a lengthy White Paper with a long, comprehensive list of reform proposals. Naturally, that document has been the focal point of the discussion ever since. Treasury subsequently supplemented it with a 16-part draft bill and a variety of other documents. Congress has so far ….. (UPDATE AFTER CONFERENCE).

But before you set out to do something—such as revamping the entire financial system--it is always a good idea to figure out *why* you are doing it and *what* you are trying to accomplish. According to the standard economic canon, government intervention into private business affairs normally is justified under one of the following five rubrics:

1. to create and enforce rules of the game and keep the system honest;
2. to guard against undue concentration, thus keeping markets competitive;
3. to redistribute income, e.g., through the tax-and-transfer system;
4. to correct externalities or other market failures, e.g., those due to asymmetric information;
5. to protect the interests of taxpayers, e.g., in cases in which public money is being spent or put at risk.

Income redistribution is of only marginal concern in the context of the financial crisis.[2]

[1] This statement does not imply that regulatory failures were the *only* cause of the financial crisis of 2007-2009. But they were certainly among the causes.
[2] The main issue was that many low-income people were victimized in the subprime lending markets.

But the other four are all quite apposite and will be given substantial attention here--just as they are in the Treasury's White Paper. Rules were inadequately enforced, or in some cases never even made. Emergency rescue operations have increased concentration in the banking industry, and the too-big-too-fail (TBTF) doctrine may have been abused by many of our once-illustrious financial companies. A variety of miscreants imposed enormous costs on innocent bystanders by dragging the economy down. And taxpayers have been forced to shoulder a variety of huge actual and potential bills. All this suggests the need for fundamentally rethinking the rules and regulations that govern our financial system.

One other generic distinction is relevant before getting down to specifics. Economists typically draw a sharp distinction between regulation of prices, quantities, and entry, on the one hand, and regulations designed to promote health and safety and to protect consumers, on the other. Call these "price" and "safety" regulations for short. The prototypical attitude among those of us who live near oceans is deep skepticism about price regulations, which are normally designed to fleece someone, but open-mindedness about safety regulations. Pertinent questions must be asked, of course, on a case-by-case basis. Does a regulatory proposal really advance the cause it purports to advance? Does it do so fairly and efficiently? Is a better alternative available? But if the answers are yes, yes, and no, the proposed regulation may be worth supporting. With saltwater so evident in the air here, my discussion will focus on financial safety regulation, as did the Treasury proposals. If you are looking for someone who wants to bring back Reg Q or Glass-Steagall, you'll have to look elsewhere.

Within that general framework, I suggest the following four main reasons for (different kinds of) financial regulations, all of which play major roles in what follows:

A. *Consumer protection*: To protect customers from anti-competitive behavior (and hence from excessively high prices), from fraud, from deceptive practices, and perhaps even--this gets far more controversial--from their own foolishness and gullibility.

B. *Taxpayer protection*: To limit the costs to taxpayers of the government's safety net for financial institutions. The large bill that followed the savings and loan debacle in the 1980s and the huge bailout costs that taxpayers are now bearing are two spectacular examples. *Ex ante* taxpayer protection often involves guarding against or limiting moral hazard. *Ex post* taxpayer protection involves, *inter alia*, such things as least-cost resolution.

C. *Financial stability*: To protect the financial system against various sorts of systemic risks that might be triggered by contagious runs, breakdowns of the "financial plumbing," or failures of large institutions that are either too big or too interconnected with others to fail—or, rather, to fail messily.

D. *Macroeconomic stability*: To limit the adverse spillover effects of financial shocks on the real economy and/or to limit the financial propagation and magnification of shocks that originate outside the financial sector—in short, to mitigate booms and busts.

Notice that safe and sound operation of banks and other financial institutions contributes to each of these objectives. Sound institutions do not fleece their customers. Safe institutions do not hand taxpayers large bills. Safe and sound institutions contribute to, rather than undermine, financial and macroeconomic stability. It's no wonder that, when you wake a bank supervisor up from a deep sleep, the first words out of his or her mouth are liable to be "safety and soundness." That attitude pervades this paper.

II. Principles of Sound Regulation

I have already enunciated and emphasized two principles of sound regulation, whether financial or not:

1. *Regulation should be designed to mitigate some well-articulated problem.*

2. *Regulations should almost certainly concentrate on "safety" issues rather than on "price" issues.*

But these are not the only relevant principles. In addition,

3. *Regulation should not stifle valuable innovation.*

Stated thus, as an abstract principle, no one would object. But, perhaps especially in the financial sphere, the application of this principle to concrete cases is rife with ambiguities and judgment calls. Which innovations are "valuable"? In most areas of human endeavor, progress is unidirectional: Technology gets unambiguously better, albeit at variable rates; it never deteriorates. In finance, as in academia, I'm not so sure. For example, to me, simple interest rate swaps and plain-vanilla asset-backed securities (ABS) were clear technological advances. So were credit default swaps (CDS) that are used to hedge credit risk. But I am loath to defend the social utility of CDO^2's or "naked" CDS used for gambling (or to assist in bear raids)[3]—not to mention innovative mortgages and credit cards terms that seem designed to victimize naïve consumers. Others, however, hold different views.[4]

I have already mentioned that:

[3] A CDO is a collateralized debt obligation, which pools a variety of debt instruments and tranches them. A CDO^2 is a CDO of CDOs.
[4] For example, many people argue—with some validity—that naked CDS help provide liquidity to the CDS market. (But maybe this market got too liquid!) In any case, these positions should always be properly collateralized.

4. *Regulation should be efficient.*

To me, this means two main things. One is that regulations should not impose *unnecessary* costs on businesses or consumers. The *necessary* costs are, well, necessary. This simple principle is, of course, familiar from business applications, and the rationale for it is the same. Just as firms strive to produce any given level of output at the lowest possible cost, regulators should strive to achieve their goals at the lowest possible cost—including the costs imposed on others. The other important efficiency principle is that regulations should be designed to work *with* incentives rather than to fight them. Wherever possible, we want the invisible hand to assist the visible hand of government—and vice-versa.

But in the public domain, the efficiency principle has an important companion that is far less salient in, and far less understood by, the private sector:

5. *Regulation should be, and be seen to be, fair.*

This principle includes due process, of course. Good regulation follows the law and is not arbitrary or capricious. To the maximum extent possible (which will never be 100 percent), regulators' actions should be predictable and understood by the regulated. Notice also the phrase: "and be seen to be." In government, where officials serve and are accountable to the public, the *appearance* of fairness is almost as important as the reality. Without it, political legitimacy is thrown into question.

6. *The regulatory system should not leave large gaps, whereby important activities that should be regulated escape regulation.*

The financial industry is teeming with highly innovative, even ingenious people. That ought to benefit society. But when their prodigious talents are turned toward escaping regulation, the social consequences can be calamitous. For example, in the current crisis, the absence of a federal mortgage regulator and *any* effective regulator of either derivatives or asset-backed securities (ABS) played major roles in allowing a house-price bubble to turn into one of the biggest and most pervasive financial crashes in history.

That said:

7. *Regulatory overlap should not leave firms confused or needing to satisfy one regulator at the expense of another.*

Anyone who has ever been involved in financial regulation knows that some degree of overlap is inevitable. For example, within a bank holding company regulated by the Fed, the bank itself may be regulated by the Office of the Controller of the Currency (OCC) while the broker-dealer subsidiary is regulated by the Securities and Exchange Commission (SEC). It is a good principle to try to minimize, rather than maximize, such regulatory overlap. But perhaps even more important, a company should not get conflicting guidance or instructions from Regulator A and Regulator B. Anyone who has ever lived in the regulatory world knows that this sometimes happens, too.

There is an eighth principle, which is much in dispute. So I will offer both versions:

8a. Regulation should be by function or instrument, *that is, the same activity should be regulated by the same regulator, regardless of the type of institution that performs it.*

8b. Regulation should be by institution, *that is, all of the potentially disparate activities of a single financial institution should be regulated by the same regulator*.

Both principles make sense. But, obviously, no regulatory system can satisfy both in a world of multi-function firms. So which version should take precedence? I must admit to a certain ambivalence on this question, since neither pure model quite fits.[5] Strict functional regulation can founder on close inter-relationships across functions (e.g.,

[5] Reflecting its usual lack of ambivalence, the *Financial Times* entitled a recent editorial (May 26, 2009), "Regulation time: Authority must be assigned by function, not product." But as Saunders, Smith, and Walter (2009, p. 154), who generally favor regulation by function, note, "regulation by function is not enough in the case of LCFIs" (large complex financial institutions). I agree.

sound underwriting standards and consumer protection) and may leave significant gaps in the regulatory system (e.g., who was supposed to regulate credit default swaps?), especially since the managements of complex financial giants try to manage them as single enterprises.[6] But strict regulation by institution requires the regulator of a large complex institution to have a tremendous range of in-house expertise, else it may find itself at sea without much of a rudder (e.g., the Office of Thrift Supervision (OTS) trying to regulate AIG Financial Products). It is presumably this conundrum that has led several countries to create a single, all-purpose financial regulator with authority over substantially all financial institutions and all markets—the British FSA model. But that innovation is not noteworthy for its success.

III. When the Tide Goes Out, You See the Rocks

The rolling financial crisis of 2007-2009 revealed a number of weaknesses in the financial regulatory structure, some of which were not apparent before—though perhaps they should have been—and some of which were. There seems to be no natural way to order the items on what is by now a long laundry list of needed regulatory reforms; and many of the items overlap in complicated ways. So I'll simply proceed in a top-down fashion, starting with systemic risk and working my way down to the supervision of individual companies, and finally to consumer protection.[7] In each case, my focus will be

[6] *Cf.* Tarullo (2009, p. 8), who says that the Gramm Leach Bliley Act of 1999 "elevated the concept of 'functional regulation' to the potential detriment of a more effective consolidated supervision."

[7] My list, while lengthy, is not encyclopedic. Several issues dealt with in the Treasury White Paper are not even taken up here (e.g., accounting standards, money market mutual funds, and insurance regulation). Furthermore, there are issues, such as what to do with Fannie Mae and Freddie Mac, that neither Treasury nor I take up.

on what failed, why, and what might be done to fix it. As I proceed down the list, I will discuss many (but certainly not all) of the Treasury's proposals.

A. The need for a systemic risk regulator

The term "systemic risk" connotes risks that threaten the entire (or at least a large portion of the) financial *system* and thus, by inference, threaten the entire economy. Even cataclysmic events, such as the bursting of the tech stock bust after 2000, may not pose truly systemic risks if they can be confined to a single market[8]—although a big enough market crash may undermine many institutions, and perhaps other markets. Similarly, the failure of a single large institution need not, but could, pose a systemic risk. That worry, for example, is the origin of the old "too big to fail" (TBTF) doctrine, its younger cousin the "too interconnected to fail" (TITF) doctrine, and the Treasury's focus on what it awkwardly calls "Tier 1 financial holding companies." (Is there a Tier 2?)

Since the summer of 2007, the U.S. and other nations have experienced a frightening cascade of financial ructions the likes of which the world has not seen since the Great Depression—when finance was far simpler. This searing experience seems to have created, among other things, a widespread agreement that we need a "systemic risk regulator" (really a systemic risk *supervisor*, but I'll stick to standard nomenclature) with a broad view over the entire financial landscape—an agreement reflected in the Treasury's proposal. But what would such a regulator do—and how?

Presumably, its main task would be to serve as an early warning-and-prevention system, constantly on the prowl for looming risks that extend across markets and/or across different classes of institutions and that are growing large enough to have systemic consequences if troubles arise. Easier said than done. Recognizing systemic risk *ex ante*

[8] This will normally require, among other things, that it's an equity market with little debt involved.

calls to mind former Supreme Court Justice Potter Stewart's famous test for recognizing pornography: "You know it when you see it." But do you? Just as with pornography, the problem is that different people see things differently.

That said, the task of identifying systemic risks while they are still bubbling up may not be entirely impossible, as long as we set appropriately modest standards. For example, Borio and Drehmann (2009) have developed a statistical indicator of bubbles based on the simultaneous occurrence of rapid increases in asset prices (of stocks or houses) *and* rapid growth of credit. Huang *et al.* (2009) propose a way to estimate the systemic risk of specific institutions by looking at their CDS spreads and stock prices. Barrell *et al.* (2009) predict banking crises in OECD countries with data on capital adequacy, liquidity ratios, and property prices. There are others. But all this research is very new, and probably none of it is ready for prime time. That said, the ideas hold enough promise to merit further study.

Here's a counterfactual case study to illustrate what a systemic risk regulator might have seen if one had been in place in 2005. It might have noticed that a variety of banks *and* non-banks were granting a very large volume of dubious sub-prime mortgage loans, *and* that a correspondingly large volume of fixed-income securities (some of them quite opaque) were being built on these shaky foundations, *and* that many systemically important institutions were acquiring extremely large positions in these very loans and securities, *and* that a truly colossal volume of derivatives (e.g., CDS) were being written on these securities without much capital behind them.

That was a long sentence. But its most important words are the four uses of the conjunction "and." The essence of the job a systemic risk regulator is to look *across* markets and *across* types of businesses. The lending practices of banks were, in fact, supervised--by four federal banking agencies and 50 states—albeit poorly, as it turned out. However, no one had much of a window on the lending activities of non-bank mortgage lenders, which accounted for most of the sub-prime mortgages—including an inordinate share of the worst ones.[9] Thus no regulator was keeping a watchful eye on the mortgage market *as a whole* even as the volume of subprime lending skyrocketed.[10] While many government bureaus (e.g., the SEC and the banking agencies) had some peripheral involvement with asset-backed securities (ABS), no regulator was responsible for overseeing the gigantic ABS markets—which, in many cases, buried their products in off-balance-sheet structured investment vehicles (SIVs) and conduits.[11] In addition, regulators either did not know how many of these ill-fated assets were on (and off) their institutions' balance sheets or, what would be even worse, allowed unconscionable risk concentrations to build up anyway.[12] Finally, as we all know, the government made fateful decisions in 1998 (with Brooksley Born's dressing down) and again in 2000 (with the Commodity Futures Modernization Act) to turn a blind eye toward derivatives--leaving, for example, the oversight of AIG's credit default swaps business in the hands of the badly over-matched OTS.[13]

[9] According to Chomsisengphet and Pennington-Cross (2006, p. 38), "subprime loans were originated mostly by non-depository and monoline finance companies."
[10] According to Morgenson (2008), the value of newly-issued subprime mortgages rose 159% from 2002 to 2006.
[11] This practice was, in turn, largely motivated by avoiding capital charges. More on that below.
[12] For example, the SEC's Inspector General later reported (SEC, 2008) that the Commission knew Bear Stearns was dangerously over-concentrated in subprime securities, and yet did nothing about it. Bank managements and boards failed, too. For example, the *New York Times* reported that Citigroup's CEO first learned of the company's $43 billion in mortgage-related assets in 2006. See Dash and Creswell (2008).
[13] AIG purchased a small savings bank in 1999, presumably to qualify as a Thrift Holding Company under the Gramm Leach Bliley Act of 1999, and thus to be regulated by the OTS. I have heard it claimed that AIG and others fashioned these contracts as swaps, rather than as insurance policies, to avoid insurance regulation and capital requirements.

How might things have been different if a systemic risk regulator had been in place then? The residential mortgage market, plus the MBS, CDOs, CDSs and other instruments built on these mortgages, constituted the largest financial market in the world. So you might have thought the systemic risk regulator would have kept a watchful eye on it. If it had, it would have seen what the banking agencies apparently missed: a lot of dodgy mortgages being granted by non-bank lenders with no federal regulator.[14] It might then have been natural for the systemic risk regulator to look into the solidity of the securities that were being manufactured from these mortgages. That investigation *might have* turned up the questionable AAA ratings that the rating agencies were showering on these securities, but it certainly *would have* uncovered the huge risk concentrations both on and off banks' balance sheets. And, unless it was totally incompetent, it would have been alarmed to learn that a single insurance company (AIG) was on the sell side of an inordinate share of all the CDSs that had been issued—and that the company did not have nearly enough capital to back them. Hmm. That counterfactual really does suggest that history might have turned out much better.

Some people would end the role of the systemic risk regulator right there. It would serve as an investigative body and a whistle blower whose job is to alert other agencies to mounting hazards. Maybe such a limited role is the right one. But if systemic problems and weaknesses are discovered, *someone* should presumably have enough power to take steps to remedy them—or at least to safeguard the rest of the system against them. Who?

Under one model, the systemic risk regulator would act like the family doctor, taking

[14] Journalists were calling attention to the dangers inherent in the rapid growth of subprime mortgages as early as June 2004. For example, the *New York Times*' Edmund Andrews (2004) wrote that "problems may be just over the horizon, especially in markets where housing prices have risen far faster than personal income."

a holistic view of the patient, making a general diagnosis, and then referring patients to appropriate specialists for treatment: to the SEC for securities problems, to the banking agencies for safety and soundness issues, to the _______ for potential problems with derivatives, etc. (We really do need to fill in that blank, don't we?)

There is a problem here, of course. If several different agencies are involved in the solution, the process will work much better if their actions are well-coordinated. Anyone who has been involved in a bureaucratic turf war knows that achieving coordination is harder than it sounds. Hence one key question is: Would the systemic risk regulator turn out to be the field marshal of a well-coordinated army, or find itself herding cats? I guess the Treasury's proposed Financial Services Oversight Council (FSOC)--consisting of (count 'em) the heads of the Treasury, the Fed, the proposed new National Bank Supervisor, the FDIC, the SEC, the CFTC, the FHFA, and the proposed new Consumer Financial Protection Agency--is supposed to solve that problem. But I wonder.

An alternative model would work more like a full-service HMO, where the internist/gatekeeper refers patients to in-house specialists for treatment as necessary. Establishing a comprehensive systemic risk regulator like that would mean giving it a much broader grant of authority—not only to *diagnose* problems, but to *fix* them. It would also require a tremendous range of in-house financial expertise, in both depth and breadth. This is, roughly speaking, the Financial Services Authority (FSA) model, which failed in practice--but with one big exception.

When problems of truly systemic proportions blow up, or threaten to, a lender of last resort is likely to be crucial to the solution—at least to the immediate rescue phase thereof. And only the central bank can serve this function. So this more expansive view of the role of the systemic risk regulator points straight to the Federal Reserve. In fact, it is the main reason why I see this question *of principle* being open and shut *in practice*. If there is to be a systemic risk regulator in the United States, it must be the Fed. Like Secretary Timothy Geithner, "I do not believe there is a plausible alternative,"[15] for at least five reasons.

First, if the systemic risk regulator is to be able to take strong actions (as I think it should), rather than just flag problems, then it really must have—among other things--lender-of-last-resort powers.[16]

Second, systemic risk regulation is a natural first cousin (if not a sister) of monetary policy. Both are, in the jargon, *macro-prudential* functions. Every central bank, including the Fed, sees itself as its nation's principal guardian of financial stability, whether or not its explicit legal mandate says so. Since synergies between monetary policy and financial stability abound, it is unnatural, inefficient, and probably even dysfunctional to separate them.

Third, and implicit in what I just said, the Fed—unlike any other agency—would not be starting from scratch in monitoring and thinking about systemic risk. It already has the eyes and ears (though not enough of them) to do this job, and the broad view (though, again, not broad enough) over the entire financial landscape.[17] It must have these things in order to do monetary policy properly. So the Fed, unlike any *de novo* agency, would hit the ground running.

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[15] Quoted on a variety of financial wires on June 17, 2009.

[16] Another possibility is the power to change capital requirements.

[17] Part of the "not enough" is that Gramm-Leach-Bliley makes the Fed only the "umbrella" supervisor of financial holding companies. In practice, that has meant that the Fed has not paid much attention to what is going on inside subsidiaries whose primary regulator is some other agency—indeed, it is not authorized to do so. See Bernanke (2009) and Tarullo (2009).

Fourth, the nature of the job requires an effective systemic risk regulator to be fiercely independent of politics. Probably no other agency of government has as much independence as the Fed--an independence that is more a matter of tradition than of law.[18] Perhaps an equivalent degree of independence might be developed in a systemic risk regulator other than the Fed. But doing so would certainly take time, probably a lot of it.

Fifth, I am deeply skeptical that the job can be done well by a consortium or committee of regulators. Creating such a hydra-headed systemic risk regulator, as some have proposed, invites delays, disagreements, and turf wars. It also dilutes accountability. So the Treasury plan sensibly puts the Fed in the driver's seat, with the FSOC playing only an advisory role. That said, if the systemic risk regulator is to have authority to shut down dangerous institutions, it probably should require consent from *someone*. In the Treasury plan, that someone is the Secretary of the Treasury—which is hardly surprising, given the plan's provenance. But the Secretary seems like a sensible choice to me nonetheless. After all, life-or-death decisions on individual companies are inherently political and may commit taxpayer money. So it is appropriate for someone with political legitimacy to serve as a check on the Fed's power. The Secretary of the Treasury, the country's CFO, is the President's designated agent.

In fact, the absence of such a political check is one source of complaint about the Fed's use of its Section 13.3 powers. That once-dormant but now-controversial provision of the Federal Reserve Act allows the Board, "in unusual and exigent circumstances," to "discount for any individual, partnership, or corporation, notes, drafts, and bills of exchange" as long as they are "secured to the satisfaction of the Federal Reserve bank"

[18] Congress can override any Fed decision by a simple majority vote. But it never does.

and the Fed has "evidence that such individual, partnership, or corporation is unable to secure adequate credit accommodations from other banking institutions." In short, in an emergency, the Fed is authorized to lend to *virtually anyone* against *virtually any collateral*. That broad grant of authority, obviously, is neither checked nor balanced. Perhaps the Fed should be required to seek permission *ex ante* from the Secretary of the Treasury and then to report *ex post* to Congress on why its use of Section 13.3 powers was justified.

Returning to the choice between the family doctor and HMO models, it is, of course, possible to envision hybrids. For example, even if the Fed takes on the more-limited family doctor role, it will probably be among the specialists that get called in to affect a cure. Alternatively, if the Fed takes on the more-powerful HMO role, Congress might want to strip away some of its other powers, lest the Fed become too powerful, or to check and balance the Fed in some other way. The Treasury proposal would remove the Fed's authority over consumer protection and require the Fed to get the Secretary's approval before utilizing its Section 13.3 powers. Congress might go further. [TO BE UPDATED]

B. The need for a orderly resolution mechanism for financial giants

The too-big-to-fail (TBTF) and too-interconnected-to-fail (TITF) doctrines have been roundly criticized in recent years, largely because of the moral hazards they create, but also on fairness grounds and because they expose taxpayers to potentially huge liabilities. All three objections are valid. Living under the government's protective umbrella gives financial giants an unfair competitive advantage (e.g., access to cheaper funding); it puts taxpayers on the hook; and it may encourage excessive risk taking.

But let's not forget the (valid) rationale for having a TBTF doctrine in the first place. Under current institutional arrangements, it is far too risky to let a giant financial institution—which will, of course, have thousands of counterparties and probably a global reach—go bankrupt. Lehman Brothers demonstrated that fact painfully in September 2008. Within days, the entire global financial system was melting down at a frightening pace. Within weeks, the Treasury and the Fed were all but declaring that no other large U.S. financial firm would be allowed to fail (and none has), and backing that pledge with piles of taxpayer money.

Yet the aforementioned objections to the *status quo ante* are both powerful and valid. So it's no wonder that recent experience with TBTF and TITF, though "successful" (e.g., the financial meltdown was halted), seems to have left no one happy—not the regulators, not Congress, and certainly not the public. What to do? There are several options.

First, we could try to jettison the two doctrines, replacing them by "sink or swim," presumably coupled with a heavy dose of *caveat emptor*. In my view, this option is attractive mainly in *laissez-fairey* tales. In the real world, it is probably neither possible nor advisable. Not possible because genies do not easily go back into bottles; the precedents already set would undercut any future proclamation of "never again." Not advisable because, as just noted, there really is a good reason to have some sort of TBTF doctrine, even though failure is an inherent part of market capitalism. Yes, it feels right to punish miscreants. But it doesn't feel right to see millions of innocent bystanders go down with them. Recent experience also suggests that market discipline is highly over-rated, some might even say oxymoronic. Where was the market discipline, until the very last minute, of Bear Stearns, Lehman Brothers, and others?

Second, we could adjust our regulatory and anti-trust policies to make it difficult or impossible for any financial institution to grow too big to fail in the first place. Frankly, I think it is probably a good idea to impart some greater anti-bigness tilt to our regulatory policies once the crisis is over.[19] But our expectations should be realistic, which in this case means modest. We are not going to create a market environment in which no U.S. financial institution is either TBTF or TITF. The United States is a huge country. Our biggest firms are extremely large in almost every industry. Why should finance be different? And modern finance is all about interconnections. Furthermore, the U.S. is and must remain a global leader. Globalization itself involves some minimum scale and scope that depends, *inter alia*, on developments in other countries. So international competitive considerations suggest that both the size and scope of our largest financial institutions will at least approximate those of other major nations.[20]

Third, we could recognize the inevitability of having some TBTF institutions, and charge them for the privilege. I think that is, in Sherlock Holmes's words, a capital idea (pun intended), and so does the Treasury. I will return to it later.

Fourth, we could develop a new resolution mechanism, perhaps patterned on what the FDIC now does with small banks (often *before* the bank's net worth goes negative), that would enable the authorities to wind down a systemically-important financial institution (including a non-bank) in an orderly fashion—rather than just throwing it to the Chapter 11 wolves. This last idea is among the key ingredients of the Treasury's reform plan, has substantial support in Congress, and may well become law. If so, it

[19] For example, crisis-induced mergers and acquisitions have left us with a banking system that is too concentrated according to the Riegle-Neal Interstate Banking and Branching Efficiency Act (1994).
[20] That said, two-trillion-dollar balance sheets are probably not necessary to, and may be inimical to, business success. Here, the "too big to manage" doctrine may hold sway.

would have several desirable effects.

- The TBTF doctrine would morph into "too big to be put into Chapter 11," but not "too big to be seized and its management thrown out." That change alone would go a long way toward reducing moral hazard.

- Taxpayers would (mostly) be relieved of the burdens of costly bailouts. I say "mostly" because even least-cost resolution under FDICIA often imposes costs on taxpayers, and because the "systemic risk exception" (discussed below) explicitly recognizes that costs are justified if they mitigate systemic damage.

- Regulators would no longer have to keep large "zombie banks" (and non-banks) on life support for fear of the systemic consequences of shutting them down.

As in many aspects of financial reform, the details matter a great deal. Many of the most important issues are lawyers' questions, regarding which I have no comparative advantage. But let me make a few points about good design—beginning with this question: What do we want the new resolution authority to accomplish that present arrangements do not? I would list six objectives. To the extent possible, it should:

1. maintain the continuity of the payments and settlements systems, which might mean continuing the core operations of some firms;

2. create resolution procedures that are both well-defined (though legal certainty may be unattainable) and expeditious;

3. reduce, or in the limit eliminate, contagion to other institutions;

4. minimize the threat and/or the severity of disruptive runs prior to resolution;

5. minimize costs to taxpayers;

6. as part of objective 5, *not* make all liability holders whole (in contrast to recent bailout practice).

Notice, however, that some of these objectives conflict with others. For example, to the extent that the resolution procedure imposes (even well-defined and predictable) losses on debt holders (objective 6), as a way to minimize taxpayer burdens (objective 5), debt holders will still have incentives to run whenever they smell trouble (thus contradicting objective 4 and maybe even objectives 1 and 3). Perfection will never be achieved, and we should keep that in mind when appraising concrete proposals. One valid objection should not be seen as a show-stopper.

To me, there are two basic approaches, each with its advantages and disadvantages.

The first would be to establish a special resolution authority to do for systemically-important financial institutions something like what the FDIC does so well for failing (small) banks: make the resolution process orderly, predictable, and fast. This is roughly what Treasury wants to do. But notice at least three critical differences. First, resolving a multi-function financial giant goes way beyond what the FDIC is accustomed to doing over a weekend. The job is so different, both quantitatively and qualitatively, that closing on Friday afternoon and re-opening on Monday morning for business as usual seems out of the question. Second, such a resolution authority would need to keep systemic risk and financial stability in mind, rather than be narrowly legalistic, as a referee in bankruptcy might be. Doing so would no doubt push decisions away from the legal realm and toward the realm of political economy--which has both costs (possible political interference) and benefits (political legitimacy and attentiveness to broader economic concerns). But it is necessary, if systemic risk is to be contained. One critical focus of a special resolution authority would be to limit externalities, which a normal bankruptcy proceeding does *not* do. Third, a special resolution authority would presumably be allowed to impose something akin to prompt corrective action *before* insolvency, again in stark contrast from what a bankruptcy proceeding does.

The Treasury White Paper would model the new resolution procedure "on the 'systemic risk exception' contained within the existing FDIC resolution regime" and reserve it "only for extraordinary times" in which an actual or impending default by a systemically-important institution "would have serious adverse effects on the financial system or the economy."[21] Treasury would be empowered to invoke this authority after consulting with the President and obtaining approvals from the relevant regulators. Treasury would "generally" appoint the FDIC as the conservator or receiver with "broad powers to take action."[22] But Treasury would decide on the appropriate remedies, including "providing loans to the firm, purchasing assets from the firm, guaranteeing the liabilities of the firm, or making equity investments in the firm."[23] The conservator or receiver would be authorized to borrow from the Treasury, paying the costs of any such loans by levying assessments on *all* bank holding companies (*not* just the Tier 1 FHCs) in proportion to their total liabilities (*not* just their deposits).

The second approach to special resolution would be to enact a new "Chapter 16" of the bankruptcy code, designed to remedy the defects of Chapter 11 in cases of systemic risk—defects that were painfully obvious when Lehman collapsed. For example, Chapter 16 would maintain the continuity of payment and settlements systems,[24] provide for uniform treatment across different types of businesses (e.g., banks, insurance companies, securities firms, etc.), and work relatively smoothly across national borders. As compared to the Treasury's recommended approach, Chapter 16 would presumably be less

[21] These words almost precisely mimic the words in FDICIA Section 13(c)(4)(G): "serious adverse effects on economic conditions or financial stability." It is noteworthy that the systemic risk *exception* is an exception to the principle of least-cost resolution. It thus recognizes that avoiding systemic risk can justify the expenditure of public money, as noted above.
[22] But the SEC instead, if the firm's largest subsidiary is a broker-dealer or securities firm.
[23] All the quotations in this paragraph come from pages 77-78 of the White Paper.
[24] Chapter 11 goes some way in this direction already, by exempting repos and derivatives from the usual automatic stay in bankruptcy, that is, by allowing payments to continue to be made.

political/economic and more legalistic. It would thus engender greater legal certainty, and perhaps harsher penalties for failure, at the cost of less flexibility in dealing with "unusual and exigent circumstances." It would almost certainly be far less attentive to macro-prudential aspects, perhaps excluding them altogether. And it would probably also be slower. For example, it is hard to imagine how a Chapter 16 proceeding could be brought *before* the institution has failed to make payments. These last two drawbacks strike me as particularly significant.

In either case, prompt resolution would be assisted by a novel regulatory requirement that Treasury proposes in its White Paper (p. 25): that "…each Tier 1 FHC … prepare and continuously update a credible plan for the rapid resolution of the firm in the event of severe financial distress." In other words, systemically-important firms would be required to write detailed "living wills" and keep them up to date. Like seemingly everyone, I find this idea attractive. But I wonder how practical it would be. For example, how often would the plan have to be updated? Every time a new division was created, spun off, or amalgamated? Every time the firm's balance sheet changed in a major way?

Whichever approach is selected, there is a serious human resources concern that seems to have been mostly ignored. Special resolutions of systemically-important financial institutions will presumably be rare events, perhaps occurring only once every several decades, and requiring the skills of possibly hundreds of attorneys, accountants, bank examiners, etc. How could the FDIC, or anyone else, keep such a large, highly-skilled resolution force at the ready, prepared to descend *en masse* on a failing institution on short notice, without even knowing in advance whether the main problems would lie in banking, securities, trading, or insurance? Presumably, the law would have to provide for personnel to be seconded from several federal agencies. Analogously, where on the federal bench would we find a judge prepared to take on a massive Chapter 16 case, when he or she had probably never seen one in his entire judicial career? In this respect, at least, Chapter 16 seems to have one advantage: In a bankruptcy proceeding, the burden of working out the details of the financial restructuring falls on the company and its creditors, not on the court.

C. The roster of financial regulators

Our nation's crazy-quilt of banking and financial regulators, which has been substantially unchanged for a long time, has come in for a great deal of criticism of late—much of it well-justified. Starting from scratch, I think it is safe to say that no one would ever design our current system. The org chart is a management consultant's nightmare, with overlaps and gaps galore. I'll divide this broad issue into parts, starting with the one that may be the most delicate politically.

Rearranging the regulatory deck chairs

Unlike many other aspects of its proposal, where it was bold, the Treasury proposal was timid when it came to trimming the number of regulators and rationalizing their functions. Only one of the four current federal banking agencies would be merged out of existence (the OTS). Thus, even if the reforms are adopted in their entirety, many banks will still be able to shop around for a friendlier federal regulator. Their choices will just be narrowed to three, not four. Furthermore, despite the similarities in their functions (how different are futures and options, really?), and the potential dysfunction inherent in their traditional (and sometimes bitter) rivalry, the SEC and the Commodity Futures Trading Commission (CFTC) are not slated to be merged. A 25-year-old McKinsey consultant could have done better.

Why such timidity? One reason might be the presumed (by some) virtues of competition among regulators. But I believe the Treasury's main reasons were grounded in *realpolitik*. Tidying up the org chart by eliminating the CFTC and collapsing all four banking agencies into one makes good sense in the abstract. It's what I'd want my students to recommend in a classroom exercise. But either proposed reorganization would likely trigger fierce bureaucratic and congressional turf wars that the Treasury might lose. So I'm willing to forgive Treasury for its decision to husband its political capital for more important—and, hopefully, more winnable--fights. Furthermore, tidying up the org chart is almost certainly *less* important than getting the regulators—all of them—to improve their performance. After all, regulatory failure on a grand scale was one major cause of the mess.

Still, this paper is about *principles* for regulatory reform. So I feel obliged to state the obvious: Having two regulators rather than five would be much better, as Senator Christopher Dodd, the chairman of the Senate Banking Committee, also seems to believe.

Filling regulatory gaps

The unhappy history that has unfolded before our eyes since the summer of 2007 highlights at least five major regulatory gaps. First, we have no federal mortgage regulator. Second, we have no effective regulation of derivatives. Third, we don't even have much knowledge about, much less regulatory authority over, the activities of hedge funds. Fourth, regulators, and perhaps even top executives, had inadequate understanding of what was going on in off-balance-sheet entities such as conduits and SIVs. Fifth, no one was effectively regulating the gigantic ABS markets.

Remember that one of the main regulatory principles mentioned earlier was that large gaps in the regulatory structure are to be avoided. The *status quo* fails miserably on that criterion. And while nature may abhor a vacuum, financial market participants will rush to fill one--as they did.

Banks certainly played a key role in the sub-prime lending debacle, but the problems really burgeoned out of control in the unregulated, non-bank sector. Securitization ran wild. No regulator understood what AIG was up to in the CDS market. To this day, I think no one really understands the role hedge funds played in the drama. And a vast profusion of conduits and SIVs were used to hide assets from prying regulatory eyes. The Treasury plan proposes to fill all five gaps. Let's hope they succeed.

Mortgages: All residential mortgages (and other consumer products) would fall under the jurisdiction of the new Consumer Financial Protection Agency (CFPA). This agency could, among other things, mandate that mortgage lenders (whether banks or not) provide simple, clear disclosures (a one-pager would be nice) and offer consumers "plain vanilla" mortgage options whose standardized terms would be intelligible and would facilitate comparison shopping.[25] I would have preferred a true federal mortgage regulator with authority over both banks and non-banks,[26] but the CFPA is clearly a step in the right direction. Similarly, to protect consumers, I had hoped that all mortgage lenders would be forced to abide by a suitability standard, like the one that now applies to

[25] As of this writing, these important provisions appear to have been watered down considerably, under industry pressure, in the House bill.
[26] Brunnermeier *et al.* (2009) seem also to take this view.

financial advisers.[27] Instead, the Treasury proposes only a "duty of care" on all financial intermediaries.[28]

Derivatives: While the regulation of derivatives is fraught with peril, it is not hard to improve upon what we have now—which is practically nothing. I have argued for years that the most important step the government could take would be to push as much derivatives trading as possible into organized exchanges—whether by cajoling, regulatory incentives, or regulatory coercion. Cajoling might mean, for example, letting banks know that their regulators view over-the-counter (OTC) derivatives as far riskier than exchange-traded derivatives; arched eyebrows often work. Incentives might mean, for example, higher capital charges on OTC derivatives than on exchange-traded derivatives. Under such a regime, regulatory arbitrage might actually enhance rather than undermine safety and soundness. Coercion might mean, for example, banning certain types of institutions (e.g., insured depositories) from trading in OTC derivatives, except perhaps for unambiguous hedging and/or market-making purposes. I have long advocated the middle approach: providing strong regulatory incentives to move trading onto organized exchanges.

Once again purity should not be our goal. There are cases in which customized ("bespoke") derivatives really are appropriate, and those arrangements will never be sufficiently standardized to be traded on exchanges. Furthermore, any financial contract whose payoffs depend on any other financial price can be considered a "derivative." But

[27] Treasury proposes to raise the responsibility of financial advisors to a "fiduciary duty" which, in law, is substantially higher.

[28] In tort law, a "duty of care" requires a party to an agreement to adhere to a standard of reasonable care in exercising its responsibilities. A suitability standard goes further. It makes it a violation (of ethics or law) to sell someone a financial product that requires greater sophistication or ability to absorb losses than he or she possesses.

government certainly does not want to prevent two companies from making a one-off financial deal that is in both parties' interests--as long as the deal poses no systemic dangers. However, genuinely customized derivative contracts, by their very nature, should not be of systemic importance. If and as they outgrow that status, they should become standardized and forced onto exchanges where, among other things, sufficient capital and collateral would be maintained.

The Treasury White Paper (p. 48) proposes to subject OTC derivatives to a "robust regime" of regulation that includes "conservative capital requirements," margins, reporting requirements, and "business conduct standards." The subsequent draft legislation, sent to Congress in August, allows for either clearinghouses or exchanges to accomplish that. What's the difference? Either mechanism offers the advantages of central clearing, multilateral netting, greater transparency, and the interposition of a third (and very creditworthy) counterparty between buyer and seller--which would substantially reduce (and in most cases eliminate) counterparty risk. The main difference between a clearinghouse and an exchange seems to be the public reporting of price and volume data that an exchange would offer. Since that seems desirable both for public policy and market efficiency reasons, I have always favored exchanges. But the biggest gains, especially from a systemic-risk standpoint, come from moving from the *status quo* to clearinghouses. The further move from clearinghouses to exchanges would be icing on the cake.

Hedge funds: The supervision and regulation of hedge funds is the dark continent of financial regulation; we have virtually no experience with it. Complexities abound in this domain for many reasons, not the least of which is that the term "hedge fund" connotes a form of legal organization, not a type of financial activity. The truth is that hedge funds do almost everything. Some are risky, others are safe. Some use a great deal of leverage, others use none. Some specialize in large directional bets, others shun them. And so on. Furthermore, aside from some notable roles in bear raids, it does not appear that hedge funds played major parts in the crisis.

Recognizing that maintaining the secrecy of their investment strategies is often a key component of a hedge fund's business model, I have long thought that most of the answer is to require "regulatory transparency," meaning that funds should keep regulators—but not the public—informed about their portfolios and exposures, almost in real time. That seems, more or less, to be the Treasury's attitude as well.[29] The White Paper (p. 12) proposes that all funds above "some modest [size] threshold" register with the SEC and disclose information that is "sufficient to assess whether" it "poses a threat to financial stability." It goes on to explain that regulators need to know "how such funds are changing over time and whether any such funds have become so large, leveraged, or interconnected that they require regulation for financial stability purposes" (p. 37)—e.g., by being declared a Tier 1 institution. Treasury proposes to treat private equity and venture capital funds in essentially the same way, though it seems unlikely that any venture fund would ever grow large enough to pose systemic risks.

However, Brunnermeier *et al.* (2009) raise a point that, while reinforcing the need for regulatory transparency, suggests that it may not be enough. Suppose many hedge funds, each of them too small to pose systemic risk, exhibit strong herding behavior, that is, they all (or most of them) move at once and in the same direction. Then the "herd"

[29] Both Calomiris (2009, p.87) and the Committee on Capital Markets Reform (2009, p. 93) also advocate this.

might pose systemic risks that no single hedge fund, acting alone, would. In such a case, which sounds all too realistic, the systemic risk regulator will certainly need the transparency just discussed. But it may also need some authority to alter behavior in unusual circumstances for macro-prudential reasons—a tricky task, to be sure.

Off-balance-sheet entities: Thinly capitalized conduits, SIVs, and other off-balance-sheet entities were among the most viral transmission mechanisms for the crisis. Small losses on, e.g., ABS were sufficient to render them insolvent. The slightest "runs," which generally took the form of inability to roll over commercial paper, were sufficient to render them illiquid. The size and prevalence of SIVs and conduits were also among the biggest surprises to regulators, to the investing public, and sometimes, it seemed, to the top executives of the parent companies.

While there may be legitimate business reasons for taking certain activities off balance sheet, many such arrangements were designed primarily to avoid or minimize regulatory capital charges. That should always have been considered a bad reason. The Treasury proposal would require financial institutions to report off-balance-sheet exposures and would amend the capital standards to impose higher charges on off-balance-sheet entities. I'm not sure why Treasury didn't take the next step and require that such entities be consolidated onto the parents' balance sheets.[30]

Asset-backed securities: Problems with asset-backed securities have, of course, been pervasive during this financial crisis, and the ABS markets are still largely lifeless—apart from the Fed's purchases of MBS. In addition to a general lack of regulation and supervision, one specific problem was that securitization enabled—perhaps even encouraged--a dangerous game of "hot potato." Mortgage originators quickly passed

[30] Sufficient capital is not the only issue here; sufficient liquidity is another.

credit risks along to securitizers who, after a short delay, passed them on to investors.[31] Neither the originators nor the securitizers, it appeared, paid enough attention to the quality of the credits they were passing along. Thus, *homo economicus* notwithstanding, the process seemed to hide risks rather than extinguish them.

This perceived weakness of securitization has spawned suggestions to require originators and/or securitizers to retain a fraction of their handiwork in their own portfolios. As one example, the Treasury White Paper calls upon bank regulators to require originators of securitized loans to hold on to 5 percent of them—adding, however, that the regulators might prefer "to apply the requirements to securitization sponsors rather than loan originators" (p. 44). I applaud this approach, but would like to see it strengthened in two ways. First, the 5 percent requirement seems rather puny—less than the sales tax, so to speak. Second, I would like to motivate *both* originators *and* securitizers to conduct more serious due diligence. Mandating 5 percent retention by *both* parties would kill both of these birds with a single stone.

The Glass-Steagall issue

A number of vocal critics have argued that tearing down the walls that formerly separated commercial banking, investment banking, and insurance (under the Glass-Steagall Act) was among the fundamental causes of the financial crisis.[32] I hear this claim almost every day.

First, a personal confession: When I was Vice Chairman of the Federal Reserve Board, I was always lukewarm toward repeal of Glass-Steagall. I supported the Board's pro-repeal position for two main reasons: because markets had torn huge holes in the

[31] Sometimes there were even more links in the chain.
[32] For one example, see Kuttner (2007).

alleged walls anyway, and because the government should not ban activities unless it has good reasons to do so (which I did not see in this case). That said, I think the Gramm-Leach-Bliley (GLB) Act of 1999 has gotten a bad rap in this episode.

I have often posed the following question to critics who claim that repealing Glass-Steagall was a major cause of the financial crisis: What bad practices would have been prevented if Glass-Steagall was still on the books? I've yet to hear a good answer.[33] Mortgage underwriting standards were disgraceful, but they were promulgated by banks and mortgage finance companies and did not rely on any new GLB powers. The dodgy MBS were put together and marketed mainly by free-standing investment banks, not by newly-created banking-securities conglomerates. All five of the giant investment banks (Goldman, Merrill, Morgan Stanley, Lehman, and Bear) got themselves into severe trouble without help from banking subsidiaries,[34] and their problems certainly did not stem from conventional investment banking activities (the target of Glass-Steagall). Similarly, Wachovia and Washington Mutual died (and Bank of America and Citigroup nearly did) of banking diseases, not from entanglements with or losses imposed on them by related investment banks. In short, I don't see how this crisis would have been any milder if GLB had never passed.[35]

D. Dysfunctional compensation incentives

I come now to a dangerously jagged rock that was plainly visible for many years before the tide went out, but was nonetheless ignored: the perverse incentives for

[33] The closest is that Citicorp would not have been allowed to merge with Travelers, which had previously acquired both Smith Barney and Salomon Brothers. But Citi could probably have done everything it did in the mortgage markets anyway.
[34] Merrill Lynch had a big bank, but it was not the source of Merrill's problems.
[35] One possibility is that AIG Financial Products would have been regulated better by someone other than the OTS. But, given the more-or-less blanket exemption of derivatives from regulation by the Commodity Futures Modernization Act of 2000, this seems unlikely.

excessive risk taking that are built into many compensation schemes.

Consider the prototypical compensation plan for a trader, whether employed by a commercial bank, an investment bank, or a hedge fund. If, through skill or luck, he earns copious profits for his firm, he will receive a non-trivial share of that profit in his year-end bonus. In the halcyon days, it was not uncommon for such bonuses to run into multiple millions of dollars; some traders amassed dynastic wealth. If, on the other hand, a trader loses tens of millions of dollars of the firm's money, his bonus (which is most of his annual compensation) will be lost. Other than that, he will not share in the firm's pain. In particular, profits in one year are often *not* clawed back when there are losses in subsequent years.[36] He may not even lose his job.

Pay plans that are structured in such a "heads I win, tails I don't lose" way create powerful incentives for traders to go for broke gambling with OPM ("other people's money"). Add to that the typical demographic profile of a trader--young, smart, brash, single, and risk-loving—and you have the potential for nightmares.

Amazingly, financial executives were aware of these perverse incentives for decades, and did nothing to correct them.[37] Why? One brilliant and famous hedge fund executive explained to me about 15 years ago that it was because everyone else paid their traders the same way; a firm that deviated from the industry norm would expose its top talent to competitive raids. That answer is a variant of what should be called forevermore *the Chuck Prince principle*: "As long as the music is playing, you've got to get up and

[36] Even worse, traders sometimes collect profits on a mark-to-market basis on trades that are still open. That said, some companies *do* claw back profits when there are subsequent losses.
[37] When Raghuram Rajan (2005) made this point at the August 2005 Jackson Hole conference, he encountered such vociferous criticism that I rose to defend him "against the unremitting attack he is getting" (p. 394).

dance."[38] It seemed a terrible answer to me then, as it does now.

A second possibility is that bosses face analogously skewed incentives and therefore *want* traders to go for broke. Just like the traders who work for them, top executives of corporate financial institutions derive the lion's share of their compensation from bonuses that are normally linked to the firm's annual profits, not from salary. They, too, get rich in the fat years and pass the losses on to shareholders in the lean years. So they, too, rationally want to go for broke. In fact, the situation is even worse for CEOs, for they typically are blessed with "golden parachutes" that pay off handsomely if their contract is terminated. So they don't even lose when the coin comes up tails.

Notice that I used the adjective "corporate" to modify the noun "financial institutions" in the preceding paragraph. Outside the corporate sector—e.g., in the hedge fund and private equity worlds—the risk-taking incentives for the CEO and other top executives (but not for traders) are quite different. While the general partner will, of course, pass on most of the firm's losses to the limited partners, he will be stuck with a pro-rata share himself. Indeed, it is typical for the head of a hedge fund (or family of funds) to have much of his net worth tied up in the fund(s). This fact transforms OPM into what I (Blinder, 2009) have called MOM ("my own money"), which people have a way of treating more carefully. I don't think it was a coincidence that the big Wall Street firms became more adventurous when they switched from being partnerships to being corporations.

If this analysis of compensation incentives is anywhere near correct, it points toward several possible remedies. One, which I will explore later, might be to move most trading activities out of the corporate sector, and especially out of the systemically-important

[38] Quoted in the *Financial Times*, July 10, 2007. Note the date. The music stopped just one month later.

firms that potentially share their losses with taxpayers. Another might be to regulate compensation practices, e.g., by treating them as an integral part of the firm's risk management system. The Treasury White Paper advocates this idea. It says (page 11), "Federal regulators should issue standards and guidelines to better align executive compensation practices of financial firms with long-term shareholder value and to prevent compensation practices from providing incentives that could threaten the safety and soundness of supervised institutions." And media reports in September 2009 [TO BE UPDATED] say the Fed is on the verge of doing precisely that—in particular, by requiring "claw-back" provisions that would force traders and executives to give back previously-earned compensation from trades that subsequently go bad. A third option might be to enact (or voluntarily adopt) "say on pay" provisions, which give shareholders a voice and a vote on CEO pay—a notion the House of Representatives passed last summer. The Treasury plan supports this idea, too.

I myself am a bit skeptical that government can legislate compensation practices effectively. State-imposed rules will be avoided, evaded, and twisted into knots by private sector participants who have vested interests in doing so, and who are much deeper in the weeds. So, to me, the job of fixing compensation practices must fall mainly on the (heretofore narrow) shoulders of corporate boards of directors and, more specifically, on their risk and compensation committees. In saying that, I realize that relying on better board performance is like standing on a thin reed--which, of course, raises a far bigger issue that is beyond the scope of this paper: How do we make corporate boards take their responsibilities to shareholders (as opposed to management) more seriously? One possibility might be to pay board members 100 percent in restricted stock. That, in turn, might help directors see the virtues of also compensating traders and CEOs mainly with restricted stock.[39]

E. Reforming regulatory capital standards

It has been said that only three things matter in bank regulation: capital, capital, and capital. While I don't agree, the capital cushion is extremely important. At the conceptual level, our current bank capital standards--whether under Basel I, Basel II, or some mixture--have come in for two sorts of (well-deserved) criticisms: (a) the minimum capital they prescribe is inadequate, and (b) capital requirements are procyclical.[40] Let me take up each in turn.

How much capital?

Were banks holding enough capital when the crisis hit? The question seems to answer itself. Indeed, the Treasury has recently declared that "higher capital requirements for banking firms are absolutely essential."[41] But I am not as quick as some to condemn the 10-12 times leverage that typified U.S. commercial banks under Basel I. After all, with 10-to-1 leverage, a bank earning 1% on assets—which is about par for the banking course—will earn just 10% on equity. Can we really expect to attract much risk capital into banking with much lower returns than that?[42] Rather, I think, the real leverage problems arose with (a) investment banks that operated (under a different regulatory regime) with 30 times leverage and more, and (b) gimmicks such as thinly-capitalized SIVs and conduits that (legally) avoided capital requirements, making actual leverage far

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[39] I owe this suggestion to Burt Malkiel.
[40] In addition, there are many practical criticisms—such as that capital requirements are too easily avoided by using off-balance sheet entities such as SIVs.
[41] U.S. Treasury (2009b), p. 1.
[42] However, Elliott (2009) argues that modest increases in loan rates (in the 20-50 basis point range), plus a few other small adjustments, could--and likely would--blunt the need for reduced returns on equity.

greater than putative leverage.

That said, Basel II seems to take several major steps backward. First, it generally reduces capital requirements relative to Basel I, which is almost certainly a mistake—especially for systemically-important financial institutions. Second, its "advanced internal ratings-based approach" places far too much weight on banks' internal risk models--which have been found wanting, to put it charitably. Third, well-known quantitative tests by U.S. regulators a few years ago discovered that different banks, each using their own internal models, calculated alarmingly different capital charges for the *same* portfolio of assets. Fourth, the Basel II "standardized approach" relies far too heavily on ratings assigned by credit rating agencies, which performed miserably.[43] (More on the rating agencies shortly.)

I am not a Neanderthal. I realize that the simple risk-buckets of Basel I were crude, misclassified many assets, and set up perverse incentives for regulatory arbitrage. It was not for naught that the world's bank supervisors labored for a decade trying to improve upon Basel I. Unfortunately, it is not clear that they succeeded. If you believe that Basel II is deeply flawed, as I do, two huge questions arise: First, what capital standards would be better? Second, given that leveling the international playing field has always been a central objective of the Basel accords, and that Europe and Japan have already adopted Basel II, what should the U.S. do now?

I would prefer to leave such vexing questions to people more deeply knowledgeable on these matters than I—Eric Rosengren, for example! But here's my quick answer, at least as a stop-gap: Instead of letting banks use their own internal risk models to assess capital adequacy, create an admittedly-imperfect standardized model that every major

[43] Among the many places where these and other issues about Basel II are discussed, see Tarullo (2008).

bank in the world must use for regulatory purposes. That's not a perfect solution. But it would at least eliminate the four problems listed above while regulators try to conjure up Basel III.

This approach, however, is *not* favored by the Treasury, which recently issued a statement of "high-level principles" that should govern any new Basel-type regulatory framework.[44] These principles (in my phrasing, not Treasury's words, except where quoted) are:

1. Capital requirements should be higher.
2. Capital requirements should be even higher for the systemically-important Tier 1 firms.
3. Most regulatory capital should be should be common equity.
4. Capital requirements should take macro-prudential considerations into account.
5. The "relative risk weights [must] be appropriately calibrated," and also "reflect the systemic importance" of the various exposures.
6. Procyclicality should be reduced.
7. An overall leverage constraint should be introduced, *in addition to* the risk-based capital rules.
8. A liquidity standard should be added to the capital standard.
9. The regulatory regime must be extended to non-banks that potentially pose systemic risks.

I have already dealt with item 1, and I will take up items 2, 6, and 8 below. But first a few brief comments on some of the others.

[44] U.S. Treasury (2009b). The quoted phrase comes from page 2 of that document.

Items 4 and 5 on Treasury's list seem eminently sensible, but devilishly difficult to implement, especially if international agreement is required. That said, one important sub-point under item 5 is that banks should hold more capital against trading positions—another capital idea. The overall leverage constraint (item 7) is also appealing, but far trickier than it sounds. Treasury's draft (p. 10) correctly notes *both* that "a simple leverage constraint would make the regulatory system more robust" (which is good) *and* that it "is a blunt instrument that… can create its own set of regulatory arbitrage opportunities and perverse incentive structures" (which is bad). The latter, of course, is why Basel I and II applied risk weights in the first place.

What about special, higher capital requirements on Tier 1 institutions that have the potential to impose large costs on taxpayers (Treasury's item 2)? It seems axiomatic to me that, because TBTF status gives those institutions a competitive advantage in the capital markets, they should be required to pay for the privilege. But how? One natural answer is to impose higher capital charges on them, as Treasury proposes. Another, discussed below, is to force them to hold some sort of contingent capital that would become real capital during a crisis. A third is to assess higher FDIC insurance premiums on Tier 1 institutions with insured deposits. It might be appropriate to do all three.

Notice, however, that imposing any such extra charges on TBTF institutions requires that regulators name them, and thus "officially" confer TBTF status on them—as opposed to the current regime, which is sometimes characterized as constructive ambiguity. (Try guessing: Was Bear Stearns TBTF? Was Lehman?) Because some people prefer maintaining constructive ambiguity, they oppose naming the Tier 1 institutions. I disagree for at least three reasons. First, except around the edges, people will always know who the TBTF institutions are, anyway. Second, surprises in this regard (e.g., letting Lehman fail) can have catastrophic consequences. And third, the government cannot collect extra "fees" from TBTF institutions—which I consider crucial—unless it names them.

Procyclicality

The second main accusation that has been leveled against the existing capital standards is that they are procyclical.[45] They aggravate credit cycles by allowing too little provisioning for losses when times are good (and loan-loss experience is favorable), and then stiffening requirements when times turn bad (and loan losses mount)—thus forcing banks to book more losses and scramble for more capital exactly when capital is hardest to find. The Treasury draft explicitly recognizes this shortcoming and urges the Basel Committee to address it. But it proposes nothing concrete for the United States.

Maybe it should have. In the U.S., the tendency toward procyclicality in loan-loss provisioning is exacerbated by practices of both the SEC and the Internal Revenue Service (IRS). The SEC requires banks, like all companies, to report GAAP earnings as a guide to investors—which is certainly a legitimate part of its job. However, one unfortunate side-effect is that the Commission sometimes accuses banks of using loss provisions to smooth earnings by *over*-provisioning in good times and *under*-provisioning in bad times. But that, of course, is precisely what we want in order to reduce procyclicality. The IRS, for its part, wants to collect the taxes that companies owe according to the tax code. Again, that's part of their job. But in doing so, the Service has been known to prevent banks from setting aside "excessive" loan-loss reserves because

[45] Among other studies of this issue, see Bikker and Metzemakers (2005), Bouvatier and Lepetit (2008), and Repullo and Suarez (2009). The later takes specific aim at Basel II.

that would reduce their taxable income.

What do to? It's debatable. But in my view, the legitimate concerns of the SEC and the IRS must be subordinated to the needs of macro-prudential supervision in this case. However, the SEC and the IRS may see things differently. In any case, effectuating such changes might require changes in law.

While removing SEC and IRS impediments to prudent provisioning would help, we must still address the *inherent* procyclicality problem. After all, loan losses *really are* smaller in booms and larger in busts. Spain seems to have handled this issue better than most countries with its system of "dynamic" or "statistical" provisioning. The name derives from that fact that provisions for loan losses are increased when actual losses run *below* statistically-expected losses, e.g., in boom periods—and are analogously reduced in busts. The Spanish system is designed to be neutral over the business cycle, but to "stock up" on loss provisions during the upswing so as to be ready for the downswing.

I myself am attracted to a particular idea for "contingent capital" suggested recently by the Squam Lake Working Group on Financial Regulation, an *ad hoc* panel of academic experts.[46] Their idea, which derives from Mark Flannery's (2005) clever earlier proposal for "reverse convertible debentures," is to *require* certain banks to issue a novel type of convertible bond. Conventional convertible debt gets exchanged for equity at the option of the bondholder; and because this option has value, convertible debt bears lower interest rates than ordinary debt. The proposed new form of convertible debt would reverse the optionality by giving it to the regulators instead.

Under the proposal, regulators would have the power, by declaring a systemic crisis,

[46] See their "An Expedited Resolution Mechanism for Distressed Financial Firms: Regulatory Hybrid Securities," April 2009.

to *force* holders of these special convertibles (but not holders of other debt instruments) to convert to equity[47]—thus giving banks more equity capital (and less debt) just when they need it most. Naturally, the existence of such an option would *detract* from the value of the bond and therefore would make the interest rate on reverse convertibles higher than on ordinary debt. Indeed, if the requirement was limited to TBTF institutions, as seems appropriate, that higher interest rate on a fraction of their debt would constitute a natural penalty cost for being TBTF. Furthermore, the spread on this new type of debt over regular debt could become a useful market indicator of the likelihood of a systemic crisis.

As in many cases, one key question is price—specifically, how large an interest rate premium would investors demand to cover the risk that their bonds could be converted into equity against their will? If this premium proved to be very large, these new convertibles would be a very expensive form of "capital" that banks might shun, preferring ordinary equity instead. Only experience will tell.

The rating agencies

The discussion of Basel II's shortcomings brings up another problem: what, if anything, to do about the rating agencies—which were supposed to be among the built-in safeguards of our financial system, but failed us badly.

The Treasury White Paper proposes to solve, or perhaps I should say to mitigate, this problem with tougher regulatory oversight: "The SEC should continue its efforts to strengthen the regulation of credit rating agencies, including measures to promote robust policies and procedures that manage and disclose conflicts of interest, differentiate between structured and other products, and otherwise strengthen the integrity of the

[47] The actual Squam Lake proposal has both a systemic (macro) trigger and a bank-specific (micro) trigger.

ratings process" (p. 14). I agree, and as a matter of fact, the rating agencies are working hard on these "integrity" issues right now.[48]

But many observers think the fundamental problem lies deeper: with the issuer-pays model. As long as rating agencies are for-profit companies, paid by the issuers of the securities they rate, the agencies will have a natural tendency to try to please their customers—just as any business does. Unfortunately, the most obvious alternative, switching to an investors-pay model, is probably infeasible except in markets with very few investors. Otherwise, information flows too readily, and everyone wants to free ride. What to do? The way out of this dilemma, it seems to me, is to arrange for some sort of third-party payment. The government (e.g., the SEC) or an organized exchange or clearinghouse seem to be the natural alternative payers. In either case, they could raise the necessary funds by levying a user-fee on all issuers.

F. Liquidity regulation

I said earlier that I don't accept the notion that capital is the only thing that matters for safety and soundness. One reason is that banks and other financial institutions can also founder on insufficient *liquidity*. Indeed, this crisis has demonstrated many times that there is no bright line between illiquidity and insolvency. It is at least arguable, for example, that institutions such as Bear Stearns, Lehman Brothers, Merrill Lynch, and others crumbled, or nearly did, from lack of liquidity rather than from lack of assets—just as in an old-fashioned bank run.[49] The point is that, where there is severe maturity mismatch between assets and liabilities, a liquidity crisis can morph quickly into a solvency crisis. For example, when firms cannot roll over their short-term debt, they may

[48] I happen to have personal knowledge of the strenuous efforts being made at one of the rating agencies to erect Chinese walls, to empower an ombudsman, etc.
[49] See, among many others, Gorton and Metrick (2009).

be forced into fire sales of illiquid assets at distressed prices.

The business models of what were once the Big Five securities firms—Merrill Lynch, Goldman Sachs, Morgan Stanley, Lehman, and Bear—were based on extreme leverage, as has already been mentioned. But they were also based on incredible reliance on extremely short-term financing, e.g., from the overnight repo market.[50] These liabilities were massive in volume and could run in a day. In a somewhat different way, many large bank holding companies (e.g., BofA and Citi) also put themselves in perilous liquidity positions by providing explicit or implicit liquidity guarantees to their SIVs and conduits. When the crisis hit and the SIVs could no longer roll over their commercial paper, they turned to their parent banks for massive liquidity support.

Thus, I think, one regulatory lesson learned in this crisis is that minimum capital requirements need to be supplemented by minimum *liquidity* requirements, as the Treasury recommends. The White Paper vaguely recommends (a) that the Fed "impose rigorous liquidity risk requirements on Tier 1 FHCs" (p. 24) and that (b) the Basel Committee "improve liquidity risk management standards for financial firms" (p. 83). What that might mean in practice in anybody's guess, except that, if it is delegated to Basel, it won't come quickly.

Since liquidity issues result largely from maturity mismatch between the asset and liability sides of a firm's balance sheet, there are two basic approaches. Regulators could insist on, e.g., less reliance on very-short-term non-deposit funding,[51] or they could constrain the composition of assets, insisting on more liquid ones.[52] In either case,

[50] Among many sources that could be cited, see Morris and Shin (2008).
[51] I say "non-deposit" because even demand deposits are very sticky; they don't "run."
[52] See again Morris and Shin (2008).

problems of assigning the right “liquidity weights” arise. This is perfectly analogous to the Basel II problem of finding the right capital weights, and may be just as difficult.

When Treasury subsequently elaborated on its ideas, it evidenced considerable schizophrenia. U.S. Treasury (2009b, pp. 11-12) states that “the liquidity regime should be independent from the regulatory capital regime” even though “capital regulation and liquidity regulation are highly complementary” so that there may be merit in “making regulatory capital requirements a function of the liquidity risk.” Furthermore, liquidity regulations should be “strict but flexible.” Got that?

G. Risk management

The “M” in CAMELS stands for *management*. One essential aspect of bank management that failed badly was *risk* management—and not just at commercial banks. Some of the most elementary precepts of sound risk management, such as limiting asset concentrations, were violated massively and repeatedly by allegedly smart financial institutions. Incompetence is one thing; and it can be mitigated, though never eliminated, by more rigorous supervision. But I think there also was—and still is—a structural flaw.

Think of the typical position of a risk manager within the hierarchy of a large financial company that is making handsome trading profits while the good times roll.[53] She becomes worried that a certain business line is taking excessive risks with the firm’s capital. The line manager disagrees; after all, his traders are making millions for the bank’s bottom line. So they take their dispute to the CEO, where the argument may go something like this:

RISK MANAGER: Joe’s traders are taking huge risks with the company’s money. This could all blow up in our face

[53] The best eye-witness account of this problem may be the anonymous “Confessions of a risk manager,” *The Economist*, August 7, 2008.

BUSINESS LINE MANAGER: No way. We're beautifully hedged. Besides, my guys made $500 million for the bank last quarter. How much did your folks make, Jane?

RISK MANAGER: Well, actually, my risk controllers didn't earn the bank a dime. We're a cost center. You know that, Joe.

Soon the meeting is over, with the CEO siding with the business line manager,[54] who probably out-ranks her in the corporate hierarchy, anyway.

Can this built-in bias against risk managers be overcome? I fear the answer may be no. One way to try is for the board of directors—those alleged guardians of shareholder interests—to hold management's feet to the fire by elevating the importance of the risk management function, including giving the chief risk officer a direct reporting line to the board's audit or risk committee. But history suggests that this degree of board activism may require—at least--an external prod. To provide this, bank supervisors could insist on such changes. Since money talks in a financial institution, another, complementary approach might be to direct top management to design a compensation and promotion system that treats risk controllers on a par with (or even higher than) the traders they allegedly control—the objective being to get as much (or more) talent into risk management as in trading.[55] Maybe there are better ideas—such as the idea to pay traders, CEOs, and directors all in restricted stock, mentioned earlier. But in the interim, bank supervisors should keep a sharp eye on companies' risk management functions, as the Treasury White Paper recommends.

[54] Remember the previous discussion of CEO compensation incentives.

[55] According to Tett (2009, Chapter 7), J.P. Morgan Chase raised the status and pay of risk managers when Jamie Dimon became COO. I have also heard it claimed that Goldman Sachs has been following this practice for years. Is it just a coincidence that these two firms weathered the storm better than most of their peers?

H. Consumer protection

I come, finally, down to ground level—to the consumers of financial products.

Perhaps the greatest financial crisis the world has ever known had its roots in risky subprime mortgages in the United States, most of which should never have been written. Of course, some of the mortgagees put themselves in the financial line of fire knowingly and deliberately by gambling that ever-rising house prices would bail them out of otherwise-untenable mortgages. It is hard to stop consenting adults from engaging in reckless behavior. But other people, especially poor and unsophisticated ones, either had no idea what they were signing up for or were duped into dangerous mortgage contracts they did not understand. It is this group that commands our attention and needs our help.

Some would seek the answer in greater financial education, but I'm skeptical--not because I doubt that financial literacy is desirable, but because I fear it may be unattainable. Surveys of consumers regularly turn up evidence of mind-blowing levels of financial illiteracy. Even the simplest ideas, such as compound interest or the notion that diversification reduces risk, are foreign to most people.[56] Maybe I'm wrong, but the situation looks hopeless to me. It's like teaching adherence to speed limits to people who don't understand that 60 mph is faster than 30 mph. So I fall back on the second line of defense--state intervention to protect people from deceptive practices.

What might that mean in practice? Banning certain financial products? Maybe some, but I'd hope not many. There really are people for whom an adjustable-rate mortgage (ARM) with a teaser rate makes perfect sense, maybe even an option ARM. And we don't really want to squelch financial innovation. But people who do not understand complicated financial products should be warned—or if necessary, guided--away from

[56] Among many sources that could be cited, see Lusardi (forthcoming).

such products. What we need, instead, are:

- suitability standards for consumer financial products, so that sellers who lure unsophisticated customers into inappropriate (for them) products face legal peril, just as stock brokers do today;
- simple, plain-English disclosures, perhaps modeled on food labels, which tell people "what's inside" at a glance and thereby facilitate comparison shopping;
- requirements that financial institutions offer "plain vanilla" options that are straightforward, easy to understand, and easy to comparison shop;
- good "default options" so that people who simply cannot or do not make up their minds are put into reasonable options.

With the exception of the first, the Treasury White Paper calls for each of these. Unfortunately, bowing to industry pressure, the House banking committee has dropped the recommendation for "plain vanilla" options, and Secretary Geithner has agreed.

One final point about consumer protection, which I make with some regret at a Federal Reserve conference. The Congress, in its wisdom, gave much of the responsibility for enforcing the various consumer financial protection laws to the Fed. No one would call this duty an integral part of central banking. Furthermore, I believe it will always be a "weak sister" in a central bank, which attaches much greater importance to its other responsibilities, such as monetary policy. In practice, the Fed performed its consumer protection duties poorly and deserves to lose that authority--not as a punishment, but because another agency, focused on the mission, will probably do the job better. That, I think, is the reasoning behind the Treasury's proposal to create a new Consumer Financial Protection Agency, and I concur.

IV. The Propriety of Proprietary Trading

This crisis has raised numerous questions about the proprietary trading (aka gambling) activities of large financial firms, both in the U.S. and elsewhere. Before diving into these perilous waters, I want to make it clear that I have no puritanical aversion to gambling, that I realize that risk-taking is an integral part of capitalism, and that I understand that even the simplest financial businesses (e.g., lending to business) are inherently risky. All that said, I am among those who wondered, even before the crisis, whether our leading financial institutions hadn't taken proprietary trading too far. And now that so many big gambles have gone awry, I'm pretty much convinced that they did.

Let me approach the conceptual issues by analogy. Start with the case of an isolated *homo economicus*, meaning a completely rational person who confers (and imposes) no externalities on anyone. Call him Harry. That means, among other things, that Harry has no family to support, no employees, and no access to any social safety net. (If this sounds unrealistic, keep reading.) If Harry chooses to wager most of his net worth on something, society should presumably let him. If he fails, he bears the entire cost.

Now suppose Harry supports a family, or runs a business whose employees depend on him for their livelihoods. Since going broke now has serious consequences for others, someone might want to put limits on Harry's ability to gamble—as a way to protect these innocent bystanders. Precisely what those limits might be is a hard question, however. Since risk-taking is such an important part of capitalism, we certainly don't want to overdo it. And if Harry is a sole proprietor, rather than a corporation, it's far from clear who might constrain his behavior. Besides, Harry should recognize his responsibilities to others and impose sensible limits on himself. Some people will stop right there, leaving the government no role. Certainly, not much, if any, state intervention is justified on this count.

But things get murkier when there is any sort of social safety net, for then taxpayers are obligated to pick up part of the bill for failure. If Harry, his family, or his employees are entitled to state-provided benefits in the event he goes broke, then the state—acting in the taxpayers' interest--seems to have an inherent right to limit the risk that Harry can take either by restraining his behavior in some way (example: requiring seat belts in cars), or by requiring him to purchase insurance (example: automobile collision insurance), or by levying taxes or fees to finance state-provided insurance (example: unemployment insurance). Except on the libertarian fringe, these ideas are widely accepted. But practical applications are often contentious.

One direct application in the financial context is to FDIC insurance, whereby the federal government socializes some of the risks of bank failures by collecting insurance premiums on (certain) deposits and paying off (insured) depositors when necessary. Recent events raise a parallel question in the case of proprietary trading losses: If the government will, in practice, shoulder some of the losses in the event of failure, should it either limit or "tax" risky trading activities?

Before attempting to answer that question, let me consider some possibly pertinent deviations from the norm we have just discussed. First, suppose Harry is not a rational person. Then, especially if innocent bystanders are involved but perhaps even if not, most people would consider it reasonable to impose some limits on Harry's gambling—on the paternalistic grounds that he needs to be "protected from himself." If this consideration seems irrelevant in the financial context, wait a few paragraphs.

Next, imagine that Harry is so rich that his financial ruin could have serious systemic consequences. Harry might then be considered "too big too fail." We could try telling Harry that he's on his own, but the words would not be credible. In such a case, society might want to charge Harry for the special safety net that's under him. The financial-sector parallels here are obvious—and germane to proposals (such as those mentioned earlier) to charge institutions for the privilege of being TBTF.

Third, suppose Harry is not rich enough to be systemically important *per se*, but is nonetheless heavily entangled in counterparty relations with dozens, if not hundreds, of other institutions, some of which are systemically important. His failure might then undermine the viability of these counterparties, and perhaps the entire financial system. One possible reaction, in this case, would hold that Harry's counterparties should limit their exposures to him so that his failure would *not* bring them down, too. Fair enough. But what if they don't? What if, instead, Harry's failure threatens to bring down a significant portion of the house of cards? Then, again, we have a plausible case for state intervention. In finance, this thought is the origin of the "too interconnected to fail" doctrine. Think Bear Stearns or, for that matter, Long-Term Capital Management in 1998.

The morals of this story are two. First, when "no man is an island," various (but not all) forms of state intervention into risk-taking behavior become at least *potentially justifiable*. Second, when, in particular, a taxpayer-financed safety net will pick up some of the bills, state intervention of some kind becomes not merely justifiable, but perhaps even *obligatory*--as a way to protect taxpayers.

This reasoning leads straight to a pretty radical-sounding question: Does proprietary trading belong in *any* financial institution that has access to the financial safety net—including FDIC insurance, the Fed's discount window, and other safeguards?[57] Answering "no" leads to some radical departures from current practice because the list of such institutions obviously includes *all* insured depositories and *all* TBTF (or TITF) institutions.[58] But I must admit that I have a hard time getting to "yes"—unless capital charges against trading activities are raised enormously. So the radical solution seems to merit serious consideration. For example, the Group of Thirty (2009, p. 28)—hardly a bunch of wild-eyed radicals--recently concluded that, "Large, systemically important banking institutions should be restricted in undertaking proprietary activities that present particularly high risks…and large proprietary trading should be limited by strict capital and liquidity requirements." That's not quite a ban, but it's getting close.

But there is a downside. Roping off "proprietary trading" from other, closely-related activities of banks is not as easy as it sounds. For example, banks buy and sell securities, foreign exchange, and other assets for their clients all the time. Often, such buying and selling is imperfectly synchronized or leaves banks with open positions for other reasons. Does that constitute "proprietary trading"? Furthermore, market-making has obvious synergies with dealing on behalf of clients. Do we want to label all such activities as "proprietary trading"? The point is: There is no bright line. That is why Adair Turner (2009), the chairman of Britain's FSA, concluded that "we could not proceed by a binary legal distinction—banks can do this but not that—but had to focus on the scale of position-taking and the capital held against position-taking."

Next, consider explicit trading in various sorts of assets. Suppose a firm owns a

[57] I exclude *de minimus* amounts.
[58] It does *not*, however, include modest-sized hedge funds. More on this shortly.

corporate bond and buys a CDS to insure it. It has hedged, not gambled, because the CDS extinguishes the default risk of the bond. But buying or selling a "naked" CDS creates, rather than destroys, risk. The trouble is, we cannot always tell the two apart. And what if the truly hedged bank subsequently sells the bond, leaving itself an "open" position in the CDS? It seems hopeless to expect regulators to monitor banks' trading activities with that degree of precision.

Is there a way out? Certainly not a perfect one. One idea might to be require banks to segregate all their trading activities (including dealing for customers and market making) into one or more separately--but not thinly--capitalized subsidiaries, and then to make it clear that these subs have *no* claim on the safety net and *no* claim on the parent. That's a step. But, of course, the parent company will still suffer both a financial loss and a reputational hit if its trading subsidiary goes under. So the Chinese wall can never be impermeable.

Furthermore, this suggestion evokes the notorious SIVs that were the source of so much trouble during this crisis. There would be two important differences, however. First, if the parent has access to the safety net, the law should make it *illegal* for the parent to downstream cash to the subsidiary in times of stress.[59] Second, and presumably as a consequence of the first, trading subsidiaries would need sizable capital and liquidity cushions of their own. Creditors of the trading subs need to know—*with legal certainty*—that they are on their own. One corollary of this, of course, would be that no trading sub should ever be permitted to grow large enough to be TBTF in its own right.

[59] An analogous provision exists in bank supervision. The Fed's "source of strength" doctrine allows the holding company to transfer funds to help the bank, but not vice-versa. But Congress has never enshrined this principle into law.

Finally, let's go back to Harry and now suppose he represents the leadership of a corporation. In that case, his putative risk controller is supposed to be clear: the board of directors. But it's equally clear that too many boards were far too passive and permissive, if not somnolent, and did not effectively safeguard shareholder interests. Their failures raise a host of questions about corporate governance that extend well beyond the scope of this paper. But I want to close with one last issue: the difference between proprietary trading inside and outside the corporate form.

As I mentioned earlier, skewed compensation systems give both corporate executives and traders incentives to gamble too much with stockholders' money. For them, it's often: Heads, I win; tails, the stockholders lose. But there is an alternative to the corporation, mentioned earlier: the partnership. Partnerships internalize most of these externalities because decisionmakers are "playing" with their own money. It is also true that, e.g., hedge funds rarely grow large enough to be systemically important. Both of these considerations suggest that the financial system might be sturdier if more proprietary trading migrated out of the giant corporations and into, e.g., the hedge funds.

V. Brief summary

The efficient markets hypothesis notwithstanding, the case for *laissez-faire* in financial markets now looks extremely weak. Finance does not appear to be self-regulating—except at enormous cost. Regulation of financial businesses is readily justified by the needs to protect consumers from being duped, to protect taxpayers from shouldering large bills, and to protect citizens from the dangers of financial and macroeconomic instability.

But that mandate for regulation is not a license for government to do anything it pleases. Regulation should be well-targeted at specific problems. It should be efficiently designed and run. It should rarely (and only with very good reasons) regulate prices, quantities, or limit entry.[60] And it should strive both to be fair and to avoid stifling valuable innovation. A sound regulatory structure will minimize both regulatory gaps (places with no regulator) and regulatory overlaps (places with multiple regulators). It will harness incentives rather than fight them. And its success will not require outguessing the markets, which is a hopeless task in any case.

America's current regulatory system falls short on many of these criteria, and it failed miserably when put to the test earlier in this decade--with appalling consequences. The system therefore cries out for change.

While recognizing that no one can do the job perfectly, I believe the country would benefit from having a systemic risk regulator—and that that regulator must be the Fed. In these respects, my views align with those of the Treasury White Paper. I also believe that having some financial companies that are "too big (and/or interconnected) to fail" is inevitable, and so we need a new mechanism to resolve such institutions in an orderly way. While the most appropriate form of such a mechanism (e.g., a special resolution authority versus a new chapter of the bankruptcy code) is not quite clear, it appears that a special authority holds some significant advantages over "Chapter 16".

Simplifying the existing maze of federal regulators is highly desirable. And going down from six agencies (the Fed, OCC, FDIC, OTS, SEC, and CFTC) to five hardly qualifies as a great leap forward. But I understand the Treasury's decision to tread lightly

[60] This last point is germane to Glass-Steagall.

here, and the proposed new Consumer Financial Protection Agency—though bringing us back up to six!--should help fill an important gap.

What to do about regulating derivatives, which caused a great deal of trouble, and hedge funds, which (probably) did not, is far from clear. But pushing the trading of as many derivatives as possible onto organized exchanges, and insisting on regulatory transparency from all sizable hedge funds—both of which the Treasury favors--strike me as valuable first steps.

The Basel capital standards need work, to put it mildly. They probably require too little capital and are procyclical to boot. They place far too much faith in both ratings agencies and banks' internal risk models, and they are too permissive about off-balance sheet entities. They also need to be supplemented by liquidity requirements for, as we have noted, illiquidity can turn quickly into insolvency. And that's just for starters. But the really bad news is that fixing Basel II requires international agreement, which comes slowly (if at all). Since we cannot wait another decade, this poses a difficult question for the American authorities: Should we go it alone?

Last, and certainly not least, the recent serial financial catastrophes have highlighted three huge jagged rocks that were concealed by the high tide: dysfunctional compensation systems (for both traders and CEOs), sleepy if not irresponsible corporate boards, and the question of how much proprietary trading should be allowed in institutions that have (tacit or explicit) government backing. None of these problems are easy to solve, though I have made some suggestions about compensation. What is abundantly clear is that the *status quo* will not do. "If it ain't broke, don't fix it" is a wise, old adage that I quote frequently. But it does not apply here.

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