The Political Economy of Financial Regulation after the Crisis

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There are so many alleged "causes" of the great financial crisis of 2007-08 that it is easy to lose count. The official body charged with explaining how the crisis happened, the Financial Crisis Inquiry Commission (FCIC), was specifically instructed by the Congress that created it to investigate at least 18 causes. The final report of the Commission did not disappoint.

But this should not be surprising because, in fact, like the multiple culprits in Agatha Christie's *Murder on the Orient Express*, there actually were many "but for" causes of the financial crisis (that is, "but for" each particular factor, the crisis would not have not occurred or would not been nearly as severe): the low interest rate policy of the Federal Reserve, steadily higher "affordable housing" mandates for the two dominant housing government-sponsored enterprises (Fannie Mae and Freddie Mac), greatly mistaken ratings of securities backed by subprime mortgages, to name just a prominent few.

The "but for" cause that is the taking off point of this chapter is massive regulatory failure: weak and weakly enforced capital standards for commercial banks and the formerly independent investment banks, and the essentially non-existent regulation of

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sub-prime mortgage origination by non-bank mortgage lenders.[2] Even with loose monetary policy, aggressive purchases by Fannie and Freddie of sub-prime mortgage securities, or lax screening by the ratings agencies, the crisis either may not have occurred or clearly would have been much less severe if regulators had implemented and enforced much tighter mortgage underwriting standards (so that there would have been far fewer subprime mortgage originations and "synthetic" mortgage securities) and/or had maintained and enforced sound bank capital standards (so that at least the banking system would have been far less leveraged).

Although I will do a bit of rehashing of the past, my main purpose here is to look ahead and to address a seemingly simple, but actually quite complex, question: from what we know about regulation generally, and financial regulation in particular, is the broad re-regulation mandated by the U.S. legislation that was enacted to prevent future crises, the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank" or "the Act"), likely to "work" or is it doomed, like many previous regulatory efforts in finance, to "fail"? This is essentially a question of political economy, not strictly economics, which requires informed guesses about the future of the behavior of regulators post-crisis, based on what is known about their behavior after past similar episodes, as well as in more normal times.

I concentrate my hopefully plausible guesses here primarily on the United States because that is where the crisis began and it is the country I know best. But many, if not most, of the observations I advance here could apply equally well to financial regulation in other countries.

[2] For a searing indictment of U.S. financial regulatory failure on many fronts, see Barth et al (2012).

To cut to the chase, even at this writing, roughly 18 months after the Act was passed, it is difficult to provide a definitive answer to whether the broad re-regulation mandated by Dodd-Frank will achieve its aims, not only because the future is inherently difficult to predict but because most of the rules mandated by the legislation have yet to be implemented. Nonetheless, I will defend several broad observations.

First, Dodd-Frank will not prevent all future financial crises. As the masterful and deservedly admired survey by Kenneth Rogoff and Carmen Reinhardt amply documents, financial crises have a long history in a wide variety of economic settings, and it would be foolish to claim that one bill or set of regulations will end the speculative boom and bust cycles that lead to them.[3] Instead, the Act should be judged in the future by whether it reduces the frequency and severity of financial crises and if so, whether these benefits outweigh the costs of complying with the Act's many regulatory mandates and any reduction in productive financial innovation that these regulations may cause. A related standard is whether a beneficial outcome apparently induced by Dodd-Frank or a similar policy intervention would have occurred anyhow, or emerged in a different better form, through the evolution of market activity.

Second, I believe, and will argue here, there is a reasonable prospect by the time all of the regulations mandated by the Act are written and implemented, that under either or both standards, the Act will have had a net positive impact on the financial system and the economy. This will be true, in my view, even if as many suspect and fear, the U.S. suffers its next (or a future) financial crisis due to loss of faith by creditors in the ability of the U.S. government to rein in spiraling deficits. Should that happen, the U.S. financial system will be more resilient on account of a number of the major reforms mandated by

[3] See Rogoff and Reinhardt (2010).

Dodd-Frank that would not have been generated by market developments alone. Indeed, the added resilience of the banking industry in particular has no doubt cushioned the impact of the weak economy in 2011 on the U.S. financial system.

Nonetheless, the extent to which this relatively sanguine view of Dodd-Frank actually is borne out depends heavily on the political economy of how regulators and the entities they regulate behave – which is the subject of this chapter. To explore it, I begin by briefly summarizing the major theories in the academic literature about why regulation in general exists and some of the features unique to financial regulation. This introductory material sets up the main part of this chapter, which applies these observations to project how the major regulatory mandates embodied in the Dodd-Frank legislation are likely to be set and/or implemented over time. Where relevant, I also discuss the political economy of the failures in regulation or public policies that led to some of these new mandates.

The Political Economy of Regulation: A Broad Overview

Three broad theories of regulation can be found in the academic literature. Each has a certain bearing on financial regulation, although as I argue in the next section, other considerations as well figure importantly into the nature and timing of regulation of the financial sector.

The first theory of regulation is the classic one taught in textbooks – that it is invoked and required to fix some "market failure" in the economy and is therefore pursued in the "public interest." Examples include externalities such as pollution, asymmetries in information between buyers and sellers, and monopoly power. In the real world, however, government does not always fix these externalities, or its attempts are not always optimal. The reasons are found in political economy. If the costs of regulating are imposed on a concentrated few, those parties have much greater incentive to resist regulation than do the multitudes of beneficiaries, each of whom may only benefit from correcting the market failure by a tiny amount. The failure by various government agencies to prevent the explosion of securities backed by subprime mortgages that shouldn't have been constructed and sold and whose subsequent defaults imposed huge external costs on the entire economy provides a classic illustration of this problem. Going forward, it will be a challenge for some form of the somewhat discredited "public interest" model of financial regulation to resurface and actually work – that is, for regulators to give consumer and taxpayer interests much more weight and to make rational decisions passing a benefit-cost test, as the economy recovers and risk-taking in multiple forms again becomes the norm.

A second theory of regulation is that it happens because regulated firms actually want it, largely as a way to raise barriers to others entering their lines of business and thus providing additional competition.[4] This "public choice" theory explained the long-time opposition of the non-banking industries, especially the securities industry, to increased competition in securities underwriting that eventually was provided by the elimination of the barriers to bank entry into that activity imposed by the Glass-Steagall Act. The process was launched by the Fed in the late 1980s, continued in the 1990s, and then completed by the passage of the Gramm-Leach-Bliley Act of 1999, but it has been incorrectly blamed by some for the financial crisis eight years later. As the facts clearly show, most subprime mortgages were originated by non-bank mortgage lenders, or by investment banks without any connection to commercial banks before the crisis (such as

[4] The seminal article on the public choice theory of regulation is Stigler (1971).

Lehman Brothers, Bear Stearns, Goldman Sachs, Merrill Lynch and Morgan Stanley). Likewise, commercial banks without links to investment banks were just as eager in packaging and underwriting mortgage securities as the few "one stop shops" (such as Citibank and Bank of America) that were allowed to operate that way after 1999.

The public choice theory also fails to explain other aspects of financial regulation because the industry now and always has been very heterogeneous, made up of firms in very different lines of business, of different sizes and with very different interests. Financial regulators are thus often put in the position of having to mediate these varying interests, as well as those of consumers. The Dodd-Frank rules offer multiple illustrations of regulators having to play this role.

Third, a close cousin of the public choice model of regulation is the notion of "regulatory capture," which holds that regulated parties strongly influence and even determine how regulators behave toward them. Regulators are susceptible to capture for various reasons – many of them eventually want to work in the industries they oversee so they don't want to make enemies, regulating is hard work (especially in finance, which is growing increasingly complex), regulated firms have the best information about how they operate, and regulators tend to see employees and representatives of the firms they regulate more frequently than they do consumers or those who purport to represent them. Regulatory capture provides a plausible explanation of why bank supervisors, for example, failed effectively to enforce bank capital standards, as will be elaborated shortly. Avoiding or limiting regulatory capture in the future will be a huge challenge for regulators charged with writing and enforcing the rules mandated by Dodd-Frank.

Special Features of and Motives behind Financial Regulation

Thirty years ago, former Federal Reserve Bank of New York President (and at the time President of the Federal Reserve Bank of Minneapolis) E. Gerald Corrigan, penned a highly influential piece entitled "Are Banks Special?"[5] For purposes of this paper, it is useful to paraphrase this question by asking "what makes *financial regulation* (not just banking regulation) special?" Two features of financial regulation, which are largely independent of the forces affecting regulation more generally, deserve mention.

One factor is that because the health of the financial system is inextricably linked with the health of the real sector of the economy, regulators and policy makers are acutely sensitive to how the regulation and supervision of financial institutions at any point affects the real economy. This isn't to say that other types of regulation do not have economic effects (good and unwelcome), which is surely true, but only to note that the financial sector (banking in particular) is especially important, which gives its regulation special importance. One has a hard time thinking, for example, of the regulation of any other sector of the economy whose failure contributed to an economic calamity of the magnitude of the 2007-08 financial crisis and subsequent recession.

Second, unlike environmental, occupational or other forms of regulation, when financial regulation fails, it can cost the government, and thus ultimately taxpayers, money, lots of it. The cost of cleaning up the savings and loan mess during the 1980s, for example, was roughly $150 billion. The ultimate direct cost to the government of the 2008 financial crisis may not be much larger, but when one adds in the much more extensive costs suffered by the entire economy and the millions of people who lost their jobs as a result of the recession triggered by the crisis, then the cost of this second crisis

[5] Corrigan (1982).

(including the loss in government tax receipts from reduced economic activity) is really quite staggering.

These two features of financial regulation in particular – the interconnection between finance and the real sector, and the fiscal penalties for getting it wrong – have several noteworthy implications for how financial policy makers and regulators behave.

First, when the financial system, especially depository institutions, get into trouble, policy makers' first impulse typically is to hope and pray that whatever caused the problem – a spike in interest rates, the popping of an asset bubble, a drop in GDP, or any combination of these – reverses itself and solves the problem on its own without the need for government funding in any way. In the mid-1980's, for example, U.S. regulators of both the banking and thrift industries exercised massive "regulatory forbearance" – looking the other way when losses on loans or asset holdings were clearly evident to all – in order to avoid to lending or adding to the government deposit insurance funds for each industry and using the money to close down, force the merger, or recapitalize the struggling or failed institutions. Japanese banking regulators did the same thing in 1990s. And throughout 2010 and 2011, European policy makers and bank regulators also followed the same strategy, until that course became untenable and European leaders agreed in the fall of 2011 on a comprehensive strategy for haircutting Greek sovereign debt, while shoring up the capital positions of weakened European banks. At this writing (December 2011), it is not clear whether these steps will be enough to forestall haircuts on the sovereign debt of other Eurozone countries, or even whether the Eurozone will continue in its present form.

It is not difficult to explain the impulse toward regulatory forbearance. Elected government officials are understandably reluctant to explain to voters the need to pay for the crises in some way and so delay comes naturally. The storm of protest following the U.S. government's Troubled Asset Repurchase Program (TARP), which quickly morphed into a massive recapitalization of hundreds of banks during the height of the 2008 financial crisis, clearly validated why regulators would rather hope and pray than confront and pay for cleaning up the financial sector when it runs into trouble. Indeed, the backlash against the perceived "bailout of the banks" (actually their creditors) has been so great (and, at least to this author, somewhat of a surprise) that policy makers now and the future are unlikely to forget it.

Second, whether or not government funds have been used in some manner to avert or diminish the impact of a financial crisis, there is a natural tendency for policy makers (by law or by regulation) to tighten regulation and supervision *after* a crisis and to proclaim that such actions will ensure that crises like it will "never happen again." In effect, this is the public policy version of the financial theories associated with the late Hyman Minsky, who noted the tendency of bankers and other private sector actors to ignore the warnings signs of a potential crash in boom times, and then to become excessively cautious thereafter.[6]

We have encountered this pendulum idea in regulation many times, and it is one that I will expand on shortly. The U.S. financial regulatory landscape certainly reflects this impulse to legislate and regulate after crises. The Federal Reserve System was created in 1913 as a direct response to the financial panic of 1907. A multitude of regulatory statutes, including one establishing federal deposit insurance, were enacted

[6] See, e.g. Minsky (1978).

after the stock market crash of 1929 and thousands of bank failures that followed during the Depression. New minimum capital standards for depository institutions were legislated after the thrift and banking crises of the 1980s and early 1990s. New financial reporting and corporate governance requirements were added in the Sarbanes-Oxley Act of 2002 after the disclosure of financial scandals at a number of large publicly traded companies. And a sweeping bill like Dodd-Frank, with its numerous regulatory mandates, was a predictable response to the financial crisis of the 2008 and the specific and more general government bailouts/rescues mounted thereafter. At each point, some policy makers claimed that these fixes would prevent future reoccurrences of the events that had just occurred. But, as Reinhardt and Rogoff remind us such claims are never borne out. Still, that doesn't mean that new rules or institutions can't delay the occurrence of future crises or reduce their severity, and there is a case to be made that in each of the foregoing examples, that is exactly what happened.

Third, financial actors, often aided by their attorneys, nonetheless often eventually find their way around the new, more restrictive rules, or find clever ways to live with and exploit them. Such never-ending games of "regulatory cat and mouse" – or as Sam Peltzman has called it in a more general context, "progress strikes back" – are not necessarily bad, and indeed can be constructive, if the new rules go too far and are clearly counter-productive. [7] A well-known historical example is the Depression-era limit on interest paid on bank deposits, a rule that later contributed to the initial thrift crisis of the early 1980s when market interest rates soared and regulation-bound thrifts ("banks" that specialized in extending mortgage loans) faced the loss of much of their deposit funding.

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[7] One of the first economists to identify the "cat and mouse" feature of financial regulation is Ed Kane (1998). For the more general point about market circumvention of rules, see Peltzman (2004).

On other occasions, however, financial innovations spawned by efforts at circumventing the effects of regulation that are taken too far and not stopped or slowed by regulators themselves can cause great damage, and later help bring about a crisis that eventually spawns another round of even more restrictive regulation. The securitization of subprime mortgages and the eventual adoption of Dodd-Frank is a prime example.

Although securitization of prime mortgages was launched by the federal government and later the two housing government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, the idea was extended in the 1990s and especially during the next decade to subprime mortgages, pushed both by Congressionally-mandated higher "affordable housing" goals on the GSEs and by aggressive "private label" securities developed by mortgage lenders, and commercial and investment banks. For banks in particular, the ability to package large pools of mortgages and use them to back new kinds of securities (especially collateralized debt obligations, or CDOs) was a way of originating more loans and generating more fees with a given amount of required capital than was possible by simply holding the mortgages in their portfolios. The subprime mortgage process was turbo-charged by yet another financial innovation, the ostensibly off-balance sheet "structured investment vehicle" that warehoused these new subprime mortgage securities until they were sold and that was an even bolder and more explicit attempt by commercial banks to avoid the binding effects of bank capital regulation. Along with the ill-advised blessings of the ratings agencies that made all these maneuvers possible, the excessively innovative mortgage securitizations led to disastrous results, which in turn led to Dodd-Frank (and thus eventually, surely another round of financial innovation, whose developments regulators must closely monitor, of which more will be said shortly).

Fourth, totally apart from whether new rules are written after a crisis, regulators of banks and any other relevant financial institutions at least for some time become substantially more risk averse and thus intensify their supervision. This is the other side of the “policy pendulum” I referred to earlier and it should not be surprising, for it reflects human nature. When you burn your hand on the stove, you are likely to be much more careful approaching it again. Moreover, regulators typically have longer time horizons than elected officials and thus face the prospect of being blamed by their overseers, a future body of Congress, if they are perceived to have fallen down on the job (although when many other things go wrong all at the same time, as they did in the run-up to the 2007-08 financial crisis, regulators can escape much deserved criticism).

Fifth, intensified financial regulation and supervisory scrutiny nonetheless can later lead to a backlash or regret if economic performance, either in the aggregate or in a specific sector, is widely viewed to be unsatisfactory and regulatory arbitrage has not yet undone the effects of the new regulatory regime. As an example of the former, consider the continuing debate over the wisdom of the Sarbanes Oxley Act of 2002 (SOX), enacted to clean up and prevent the kinds of corporate financial reporting scandals typified by Enron and Worldcom. Criticism of SOX, especially regarding the more costly than expected auditing requirements in Section 404 of the Act relating to public firms’ “internal controls”, began almost as soon as the ink was dry on the bill, and intensified during the rest of the decade, even through and after the subsequent financial crisis. Responding to concerns over the significant drop off in initial public offerings in the

United States, but not elsewhere (notably in Asia) after SOX was enacted, the SEC provided a series of temporary exemptions for Section 404 compliance by firms with market capitalizations under $75 million, which Dodd-Frank made permanent by legislation.

Elected officials and political appointees also are tempted to blame sluggish macroeconomic performance on excessively tight bank supervision, even though loan demand typically plummets during recessions or sluggish growth. So far, however, in the two recent episodes when such attacks have been mounted, during the 1991-92 recession and its aftermath and in the several years since the great contraction of 2008-09, bank regulators and their staffs haven't buckled. To the contrary, anecdotally one hears complaints from bankers that supervisors have become excessively cautious, which would be consistent with the "pendulum" behavior in both markets and public officialdom. At the same time, when it comes to tightening of the rules on a *forward looking basis*, notably the rewriting of the Basel capital standards after the crisis, the pace of the pendulum was explicitly taken into account. The policy makers who negotiated the new Basel standards (who also had supervisory duties) did factor in the weakness of the economy by providing for a lengthy (many academic observers thought too lengthy) transition period before the new standards were to become fully effective.

Sixth, if regulators are going to relax their guard, it is far more likely they will do so when times are good then when they are bad. This reflects the opposite of the "hot stove" reaction. Again, it is human nature to want go along for the ride when the economy is humming, and to avoid being blamed for taking the proverbial "punch bowl away from the party" just when it is going in full swing. Of course, this is the primary job of central bankers, and most of them in most countries over the past several decades have tightened when necessary (though, again, critics often charge they are late to do so, since monetary policy authorities also understandably do not want to cause or be blamed for recessions). But central banks are aided in three very important respects in having their counter-cyclical duties carried out: they typically have a clear legislative or organizational mandate to keep inflation in check, they are generally independent of any elected branch of government (that is certainly true in the United States), and there are clear and well recognized measures of inflation by which all can judge their success or need to act.

In contrast, there is yet no such well-recognized "asset bubble" measure or indicator for regulators who since the crisis have been charged (in different ways in different countries) with monitoring and avoiding systemic risk. In theory, the presence of a bubble should be reflected in a high and rising ratio of price to some measure of income, such as housing prices to average incomes, or stock prices in relation to earnings, and so forth. The higher the price or the growth rate in prices relative to some measure of income, presumably the greater the risk that a bubble is forming and the lower is the risk of a "false positive", namely of taking action to "pop" a presumed bubble that is no such thing. While, as discussed below in connection with the systemic risk responsibilities under Dodd-Frank, I support the publication of price-to-income ratios (levels and rates of change) and measures of leverage, among other indicators of bubbles in formation and thus systemic risk,[8] such measures will never establish as much certainty of a systemic problem in the making as an inflation statistic, which is an explicit target of monetary policy and is widely agreed as an indicator that needs to be held in check.

[8] For a more thorough defense of this measure, see Borio and Drehmann (2009).

Finally, and this is a point I cannot over-emphasize, until the financial crisis, supporting home ownership and extending it to low and moderate income families, many of them minorities, was as close to a national secular religion as America has had. Owning one's own home is almost the essence of the American Dream. Rajan also has argued persuasively that policies aimed at raising the homeownership rate, especially those enabling low and moderate income families to buy homes with little or no down payments, were ways of offsetting growing income inequalities during the 1990s and the following decade.[9] Hindsight critics of legislators and regulators who made the laundry list of mistakes that led up to the crisis sometimes overlook how deeply rooted the support of home ownership (including mortgage refinancing) was in Congress and by successive Presidents from both political parties, and thus how much political fortitude any of the responsible regulators would have had to display had they taken the housing punch bowl away even as the party was clearly getting out of control.

The Political Economy of Regulation under Dodd-Frank

It is now time to apply the foregoing general and finance-specific insights about the political economy of regulation to questions surrounding the content of the many rules mandated by Dodd-Frank, and perhaps more important, how they are likely to be enforced over time. In addition, these insights can help explain some of the "but for" causes of the crisis itself.

It is useful to begin, however, if these observations are first framed in a broader context. The policy debate after the great financial crisis of 2007-08 largely centered around two broad but very different views, of the crisis and how to respond to it, which

[9] Rajan (2010).

divided almost exactly along party lines in Congress, but also was reflected in academic and popular discussions of what happened.

Democrats broadly believed the crisis was due to a combination of failed market discipline (by shareholders, debt holders, management and ratings agencies), coupled with a massive failure in offsetting government regulation of financial institutions, principally banks but also the “shadow banking system” of non-bank mortgage originators, investment banks, money market funds, and insurer-hedge funds (AIG). The largely Democratic response to these failures was to direct various federal financial regulatory agencies to write a comprehensive set of new rules to prevent all actors in the system from again taking such huge risks.

Republicans, in contrast, argued that market-based governance of finance did not fail, but was hugely distorted by government, in at least two major respects. Policy makers in both parties took home ownership too far, in this view, especially by requiring Fannie Mae and Freddie Mac to purchase ever larger amounts of mortgages extended to increasingly unqualified borrowers. In addition, critics (not just Republicans) aimed their fire at the Federal Reserve for maintaining excessively loose monetary policy, which fueled the demand for housing and created a bubble that eventually popped. The low interest policy also encouraged investors to search for yield, which they found in a new form of mortgage-backed securities (CDOs) backed by subprime loans that were given safe ratings (unwisely) by the ratings agencies. On the Republican view, the fixes for the future lie in withdrawing or significantly cutting back housing mandates and subsidies, coupled with monetary policies that avoid the creation of future bubbles, not with more regulation and supervision by the same regulators who (they agree here with the Democratic view) failed so badly in the run-up to the crisis.

Although the Democratic narrative of the crisis prevailed in the legislative debate that led to the enactment of Dodd-Frank, the debate between the two views goes on. After the mid-term 2010 Congressional elections, Republicans took control of the House and had a large enough of a minority in the Senate to prevent cloture on debate under the Senate's 60 vote majority rule. They have used that new power to hold down appropriations and intensify oversight of the federal financial regulatory agencies charged with writing the more than 240 rules mandated by Dodd-Frank. This strategy has effectively delayed the issuance of most of these rules (which, to be fair, were so numerous and complex they would have been late in any event, though the shortage of money has made the problem worse).

In what follows I provide a brief synopsis of the major regulatory mandates of Dodd-Frank, including their rationale for being in the bill and the design and implementation issues that will be subjects of continuing debate and scrutiny by affected parties, the media, the Congress, and perhaps a future Administration. Readers interested in further details can consult other chapters in this volume, and excellent summaries elsewhere.[10] After the description of each regulatory mandate, I hazard some guesses, informed by the prior discussion about the political economy of regulation in general and of finance in particular, about how well each component of Dodd-Frank is likely to perform, and for how long. Along the way, where relevant, I apply some of the insights

[10] See, e.g. the excellent provision-by-provision summary by the law firm of Davis Polk and Wardwell of New York, available at www.davispolk.com.

advanced earlier in the paper to help explain the problem(s) that led to each particular new mandate.

Bank Capital Rules: The cornerstone of any sound financial regulatory system is effective minimum standards for bank capital, since shareholders must have their own "skin in the game" to have incentives to deter excessive risk-taking by bank managers, while the government, as insurer of last resort, must know that banks have a cushion to absorb losses.[11] The U.S. and international bank standards failed miserably, however, to prevent banks both from originating unsound mortgages, or more importantly, packaging them into complex securities, and selling them to other investors, including some of the largest banks' own ostensibly off-balance affiliates. In the run-up to the crisis, the banks felt compelled for reputational and legal reasons to rescue these affiliates and thus absorb their losses, which contributed importantly to the banks' own capital shortfalls. Likewise, securities regulators permitted investment banks during this period to substantially increase their leverage too, which put these institutions at much greater risk of failure (as shareholders of Bear Stearns and Lehman Brothers learned to their dismay when the first was forced into the arms of J.P. Morgan and second was permitted to fail) as the subprime mortgage crisis unfolded later in the decade.

What accounts for these massive failures in regulation? Complacency and misplaced trust in private sector bank management certainly played a large part. The strengthened bank capital rules after the banking debacles of the 1980s and early 1990s worked for a long time as bank failures stayed low and reported bank capital ratios kept increasing. Given these trends, bank regulators not surprisingly gave the benefit of the

[11] Technically, the FDIC is operated in such a way that only insured banks cover the costs of failed banks. But in a major crisis, such as the one that occurred in 2007-08, the FDIC can become short of funds and need to borrow from the Treasury, which in fact was done during that episode.

doubt to the banks they regulated; securities regulators acted in the same way when they permitted investment banks to escalate their leverage ratios in 2004.

As for the foray of the large banks into the subprime mortgage business, it was primarily done indirectly – through loans to non-bank mortgage originators that later had to be rescued or went out of business, or through the creation of the SIVs that were ostensibly off the banks' balance sheets. Only a thorough history yet to be written will uncover how much and when regulators knew of the SIVs and the circumvention of the capital rules they represented (illustrating the classic "cat and mouse" problem in finance referred to earlier). Furthermore, as long as the economy was expanding, virtually everyone, including regulators, bankers, and investors, was seduced into believing that residential real estate price inflation, which made the subprime mortgage bubble possible, would continue at some pace. Hardly anyone believed home prices would eventually plunge so rapidly, deeply, and throughout the country as began to happen in 2006. As George Akerlof and Robert Shiller have described it so well, it is consensus views like these that have created bubbles in the past and that account for the real estate bubble that led to the crisis.[12]

When the bubble popped, of course, it turned out that much of the reported bank capital was illusory (for those banks that had large commitments to their SIVs) or insufficient (in the case of investment banks in particular). Dodd-Frank responded to the bank capital problem, in particular, by requiring federal banking regulators to set new, higher capital standards, which the relevant agencies have since done, in coordination with other advanced countries that are party to the Basel Capital Accord (the main international bank regulatory mechanism that has been in place since 1989). Roughly

[12] Akerlof and Shiller (2009).

speaking, the new standards require three times as much capital as the ones they replaced, but are formally phased in over an eight year period (and thus are not fully effective until 2019). U.S. regulators, however, have effectively already implemented the new standards by making clear to the largest U.S. banks that they cannot pay dividends unless they can prove they will be in compliance with the Basel rules by 2013.[13]

It is safe to say that higher bank capital requirements would not have occurred through market pressure alone, or thus without action by the Basel Committee (which as suggested in the introduction, given the magnitude of the crisis, would have acted whether or not Dodd-Frank was enacted). I can write this with confidence because of the vigorous objections mounted by the banking industry to the higher standards, which confirms that bank managements were not being pressed after the crisis by their shareholders or creditors to enlarge their capital cushions.

Although the Basel standards also call for additional capital to be maintained by "systemically important" banks, this term has not been standardized across countries (Dodd-Frank set the threshold at $50 billion in assets for U.S. banks). Nor is there a uniform number for this capital surcharge or add-on, but rather a favored range of 1% to 2.5% of risk-weighted assets.[14] The largest U.S. banks strongly opposed application of

[13] One disappointment in the new Basel rules is that the Committee rejected contingent capital instruments (or "Cocos") as counting for part of required equity capital. Coco's normally count as debt but automatically convert to equity upon some triggered event, such as a decline in the bank's measured capital ratio below some minimum threshold. One advantage of Cocos is that the newly converted equity provides an additional cushion to absorb losses when it is most needed – that is, when the bank is in trouble. Furthermore, the prospect that the holder of the instrument will have its debt converted into equity, without a stated right to an interest payment, should give Coco buyers strong incentives to monitor and discourage excessive risk-taking by bank management. Hopefully, U.S. regulators will take a kinder view toward Cocos in implementing any supplemental capital rules, especially for systemically important banks.

[14] The standards also allow, but do not require, member countries to assess a third "counter-cyclical" capital surcharge of up to 2% of risk-weighted assets that would not have to apply during times of economic stress. Having such a surcharge in place, in theory, should help smooth out national economic cycles.

the systemic risk surcharge by U.S. bank regulators given the other measures in Dodd-Frank aimed at ending taxpayer bailouts in the future (and discussed further below), but ultimately the Basel Committee rejected the banks' views and agreed on the 1-2.5% range in late fall of 2011.

In my view, however, the large banks should count themselves lucky. The systemic-risk surcharge can be viewed as a tax on the externalities imposed on the rest of the financial system (and potentially taxpayers if orderly liquidation mechanisms in the Act do not work as planned) caused by the failure of large and/or highly interconnected banks. A number of prominent analysts, including former Fed Chairman Alan Greenspan,[15] urged during the debate on Dodd-Frank that the largest banks be broken up to solve this problem. Calls for breakup of the largest banks continue at this writing, surprisingly from elected officials or those seeking election in both political parties. The large banks and their supporters in Congress (and the Administration) had sufficient clout to resist any efforts at immediate breakup through legislative fiat, although Dodd-Frank gave regulators that power under the "living will" provisions of the Act (to be discussed shortly), largely because supporters of the final bill could point to the systemic risk charge as a substitute for breakup. Without a meaningful surcharge in place, large U.S. banks would have had a more difficult time convincing legislators to resist calls for breakups.

Ultimately, even more important than the specific capital standards themselves is how they will be enforced over time. For example, will regulators be able to thwart banks from coming up with variations of the SIVs that were used to warehouse CDOs but eventually banks felt compelled to absorb? So far, the evidence suggests a positive

[15] See also Johnson and Kwak (2011).

answer to this question, but we are only a few years out from the crisis. We know from Minsky's pendulum theory of finance that memories are short, especially as new people come into organizations that got burned in the last crisis. The same is true for regulators, who will have to be highly vigilant in the years ahead to prevent SIV-like dangerous financial innovations, as well as new games that surely will be played with the new Basel bank standards.

A related challenging question is whether regulators will consistently compel banks to set aside realistic provisions for future losses on their loans and other assets that are charged against capital. As suggested earlier, recent financial history does not provide a lot of comfort that this posture can be maintained indefinitely, especially when the financial system suffers shocks from the real economy or asset markets. Indeed, European banking regulators, despite adopting new "stress tests" for their banks, have gone easy on their banks during the sovereign debt crisis afflicting Greece and other (mostly southern) European countries. Perhaps, once the European sovereign debt crisis is resolved and if the U.S. economy can avoid another major recession or asset bubble during at least the phase-in of the new Basel standards, the larger capital cushions mandated by those standards might reduce the likelihood that regulators will have to return to the time-honored practice of forbearance for some time thereafter (though most assuredly, not likely forever). But this may also be wishful thinking.

Systemic Risk Regulation: Until the financial crisis, all bank safety and soundness regulation in all countries was directed at ensuring the financial health of individual banks rather than the financial system as a whole. In theory, central banks (including the Federal Reserve Board in the United States) had responsibility for the latter through their mandate to provide liquidity to banks and non-banks in temporary financial distress. But no central bank, to my knowledge, nor any other regulatory agency of the U.S. government had any direct authority to set rules to prevent events that could lead to system-wide distress in the first place.

Dodd-Frank changes that by establishing a new federal interagency body, the Financial Stability Oversight Council (FSOC) to monitor systemic risk and to recommend rules to minimize it. The FSOC is also charged with designating non-bank systemically important financial institutions (SIFIs), a designation that banking organizations with over $50 billion in assets are given by Dodd-Frank itself. With input from the Fed, the FSOC is supposed to define what additional capital any SIFI (bank or non-bank) is required to have (presumably, but not necessarily, to be consistent with the Basel standards at least with respect to banks). The FSOC also should be aided by the analytical capabilities of a new Office of Financial Research which Dodd-Frank established within the Treasury Department.

Although there was broad support among the advocates for Dodd-Frank for charging some new entity explicitly with systemic risk monitoring and prevention responsibilities, there was much debate over which governmental body should be given this authority. Initially, there was some support for making the Fed responsible, given its large staff and lender-of-last-resort tools, but as the debate over the bill wore on the Fed's reputation was somewhat tarnished over its own admitted regulatory lapses in the run-up to the crisis, and the controversy over the Fed's participation (or even orchestration) in the bailouts of creditors of large troubled financial institutions. In the end, the decision was made, driven by supporters and even ultimately some opponents of Dodd-Frank, to lodge the systemic risk authority instead in an interagency body composed of all of the key federal financial regulators, a representative of state of insurance regulators, and the Fed, with the chair occupied by the Secretary of Treasury. As a practical matter, because of its large staff and expertise, the Fed will be the primary or lead agency on the FSOC.

It has already become evident that the new FSOC will be slowed in reaching decisions by turf battles among its regulator-members (I initially preferred giving the Fed systemic risk responsibility in order to avoid this precise problem, despite the Fed's prior regulatory failures, and I question whether any new truly independent systemic risk monitor would have been given the resources and could have had the stature to have carried out this function). At this writing, although regulators have set forth the criteria for determining which non-banks should be on SIFI list, the actual names of the institutions as of this writing had not yet been announced, nor is it clear how much additional information from non-banks the FSOC, through its member regulators, will require, or what if any, counter-cyclical regulatory measures it will adopt. There also remains great skepticism about the ability of the FSOC, and its two analytical arms (the new Office of Financial Research and the Fed), to identify bubbles in formation and then to "prick them" in a timely and least-cost manner.

Perhaps an even more fundamental problem is that the FSOC, or any other body that would have been given its charge, has the inherent problem of proving its worth. The FSOC never will be able to convincingly identify systemic crises its actions avoided or reduced in severity in the same way that the Department of Homeland Security theoretically can disclose (though perhaps in confidence) the potential terrorist acts that it has prevented. To make matters worse, if future systemic crises do arise, requiring future bailouts (despite the best efforts of regulators to prevent them), it is virtually certain that Congress will blame the FSOC for not being sufficiently proactive.

This inherent public relations problem is a severe one, and makes the job of the FSOC much more difficult than pursuing counter-cyclical monetary policy (specifically, raising interest rates to combat inflationary pressure). Earlier I suggested the only way I know of to minimize this problem is for the FSOC to agree upon and publish one, or even better several, "bubble indicators" that are meant to highlight, *in a probabilistic fashion only*, the potential danger of a future systemic event caused by increases in asset prices or credit aggregates (in relation to measures of income) above historical norms. Publishing such indicators at least should help make transparent decisions that the FSOC may take – such as raising capital standards, margin requirements or minimum loan-to-value ratios – to reduce potential systemic risks that inevitably will be resisted by the financial sector and by borrowers.

To be sure, no single systemic risk indicator or set of indicators will be perfect and for that reason the FSOC and its members will need to apply some judgment. Inevitably, there will be false positives, namely actions that would slow down the economy when, in retrospect, such actions might not be justified. In addition, in light of the huge costs of the 2007-08 crisis it may be more difficult for the FSOC to *lower* capital requirements or LTV ratios in a weak economy – for fear of being blamed for thereby having contributed to a subsequent crisis – than to raise those standards. Nonetheless, precisely because of the scale of the costs of the 2007-08 crisis, I believe the benefits of averting future such events are likely to exceed these very real costs and risks. It is better that some body (even one divided by turf battles) be given the chance, indeed the responsibility to try to monitor and help avert those outcomes, than to have no entity charged with these duties at all.

Financial Derivatives, Clearinghouses and Quasi-Exchanges: Arguably among the most important provisions of Dodd-Frank are those aimed at pushing financial derivatives previously traded off exchanges (over the counter or "OTC") onto more organized trading platforms and through central clearinghouses. The opaque nature of the credit default swap market in particular, and the fact that such instruments were "cleared" bilaterally solely between the two parties involved (buyer and seller), were the features that led the Treasury and the Fed to bail out the creditors of AIG, whose derivatives subsidiary could not honor the hundreds of billions of dollars of CDS commitments it had made after Lehman Brothers was permitted to fail in September, 2008. The authorities feared that creditor or counter-party losses from an AIG failure could have caused financial havoc.

The New York Fed, at the urging of then Fed Chairman Greenspan, began working in 2005 on ways to reduce systemic risks in OTC derivatives markets, starting with requiring the major dealers to clean up their disheveled paper-based methods of keeping track of trades, and later by urging the creation of a clearinghouse for such trades, the use of which was voluntary. AIG didn't use the facility, nor did many of the dealers, and it is not difficult to understand why: they were making more by not having to post margin to a third party. In addition, the major dealers had no interest in seeing their bids and asks, which were communicated in private over the phone, made public, although they did see some benefit in having actual transaction prices reported after the fact (typically a day late), so that market participants would have at least some benchmark for conducting deals. On the whole, however, the New York Fed apparently believed it lacked the power to mandate clearing or pre and post trade transparency, while the handful of bank dealers in these markets had no financial incentive for making them more transparent. They were making too much money from opacity.[16]

In principle, the clearinghouse mandate for standardized derivatives in Dodd-Frank, coupled with requirements that trades be conducted on more transparent exchange-like venues (“swaps execution facilities” or SEFs under the Act), should make an AIG-like episode – a derivatives counter-party with huge obligations it cannot honor – far less likely in the future. In addition, the CFTC is charged under the Act with making sure that the clearinghouses set adequate capital requirements for clearing members, and margin or collateral requirements for trading parties, whether or not their instruments are sufficiently standardized to be cleared centrally. The Commission also is charged with setting rules for how the SEFs will operate, specifically the extent to which derivatives bids (offers to buy) and asks (offers to sell) can or must be posted electronically on some type of platform or can continue to be relayed over the telephone between the parties (as is the case now), and how transactions will be reported (hopefully more frequently than is now the case).

These technical rules are crucially important because they will have a large impact on what up to now has been a highly profitable business in a highly concentrated market dominated by only a handful of major bank dealers. Moves toward transparency and central clearing will squeeze some, if not much, of the “spread” between the bids and asks, and thus reduce dealers’ profits. Little wonder it is then that the major dealer banks have been fighting and urging their allies in Congress to combat and slow down the

[16] See Litan (2010).

issuance of any new derivatives rules, including those that might restrict the ability of dealer banks to control, through voting and/or governance, the clearinghouses. Likewise, “end-users” of financial derivatives that use them primarily for hedging purposes, were able to convince the Congress to carve out an exemption for them from margin and other rules, and have continued their campaign to convince regulators who must write the specs on the exemption to keep it as wide as possible. All of this opposition clearly and directly contradicts the public choice notion that regulated parties want regulation, though it is consistent with the view that they want to “capture” the agencies by delaying and/or substantially watering down the content of the rules.

A further complication, which regulators acknowledge, is that U.S. authorities are constrained by how other countries attempt to achieve the same derivatives goals embodied in Dodd-Frank: to move more of them on exchanges and through central clearinghouses. If U.S. rules make derivatives trading more difficult and/or more expensive, counter-parties will gravitate to off-shore markets in Europe and Asia to conduct these trades. Overall financial risk will have been shifted, not reduced. Mindful of this problem, U.S. regulators have been negotiating with their counterparts abroad to harmonize or achieve rough parity in the rules. As a practical matter, however, since other countries historically have looked to the United States to lead, it is likely (though not a sure thing) that once U.S. regulators set rules, other key nations will follow.

Harmonized rules will not prevent the proliferation of national or at least multiple clearinghouses for different kinds of financial derivatives originated in different geographic markets. National pride and an eagerness to capture clearing business motivate the formation of multiple clearinghouses and competition among them, up to a point, can be healthy, by encouraging efficiencies and innovation in clearing services. Nonetheless, multiple clearinghouses make derivatives clearing more expensive, since parties doing business through one clearinghouse are unable to set off their trade obligations (at least not with current technologies and under current rules) against obligations originating in other venues. In addition, multiple clearinghouses may compete with one another through laxity of their credit terms that may not be caught by vigilant regulators monitoring margin requirements. There still is some optimal number of clearinghouses greater than one that will both encourage competition yet afford parties cost savings by consolidating their clearing through just a few venues. Although it is extremely unlikely that governments will be able to agree to stop the proliferation of national or even sub-national clearinghouses, over time economic forces will drive consolidation for cost reasons, just as has happened with exchanges.[17]

And so, in the end, the derivatives reforms mandated by Dodd-Frank eventually should make the derivatives market safer, more transparent and less susceptible to AIG-like events in the future. Indeed, there is already some evidence that derivatives markets have moved in the right direction since Dodd-Frank, reflected in $14 billion of new collateral pledged to back up CDS transactions in particular, as of August 2011.[18] More progress will depend on the content and timing of the various new rules the CFTC is charged with issuing. Already the agency has been delayed twice its main body of new rules, and at this writing, is not expected to issue them until as late as July, 2012.

There are two further caveats that should be noted. One is that because they concentrate risk in themselves, clearinghouses need to be closely watched and regulated –

[17] For an excellent analysis of the market structure issues in derivatives markets, see Duffie (2010).
[18] Leising (2011a).

specifically, that they have adequate capital and liquidity and loss-sharing, features which the CFTC is charged with overseeing by Dodd-Frank. As has been commonly quipped, when you put all your eggs in one basket, you need to watch that basket very carefully. The importance of this challenge was underscored by the failure of MF Global in November, 2011, which required the CME to cover much of that institution's clearing losses. Nonetheless, I believe this is a manageable issue. Clearinghouses for banks, stock exchanges, and futures and options exchanges have long existed. Adding derivatives clearinghouses to the list should not pose an exceptional challenge for regulators.

Second, the clearing and quasi-exchange requirements of the Act apply only to "standardized" derivatives, which should cover a healthy majority of interest rate, foreign currency, and credit default swaps (assuming that foreign currency swaps are included in any final rules, which at this point is uncertain). Dealers and private actors can still engage in customized or "bespoke" transactions outside of these requirements, although the CFTC does have authority to set margin requirements for these deals. Given the opportunity cost of posting margin (the interest foregone on the securities eligible for collateral), end users and dealers will continue pressing the Commission to keep these margin requirements low. Depending on how this dynamic plays out, the margins could be set high enough to discourage the proliferation of customized derivatives (not necessarily a bad thing), or so low that such proliferation happens and leads to future AIGs. Only time will tell.

Finally, the whole debate over derivatives regulation raises a fundamental question: are these financial products even desirable? Do they not legitimate a casino-like activity that simply moves money from one set of parties to another set, with the "house" (the dealers through whom these deals are currently arranged) collecting the equivalent of vigorish (the "vig") in the process? I am not that cynical, though I certainly recognize that betting can get out of control and is socially dangerous if the bettors do not have the means to honor their debts and cumulatively those debts (which may be leveraged) are large.

Derivatives, financial instruments whose values are "derived" from some other underlying assets, such as futures contracts, have been around for several centuries, and arose for very good economic reasons. In a world of uncertainty, some actors (farmers for example) wanted to lock in the prices they would get in the future for their crops or they would pay for their supplies. More recent financial derivatives perform similar functions, allowing different parties to "hedge" against price fluctuations in an underlying asset. This is true even of the infamous (in some quarters) credit default swap, or CDS. These instruments permitted holders of bonds to hedge their bets, though they also gave other parties the ability to gamble on the possibility that bondholders would go bankrupt. CDS prices have performed a very valuable function, providing additional signals of financial distress which *may* be more accurate than the thinly traded bonds that underlie these particular derivatives.[19]

Still, many raise questions about the social desirability of letting parties who do not actually *own the underlying assets* bet on their value, or their demise. As some have put, CDS' are equivalent of insurance policies on *other peoples' houses*. We don't let

[19] The statement in the text is the conventional view, which I admit may not be correct. In September, 2011, two journalists from the Wall Street Journal published a revealing article indicating that CDS trading is a lot thinner that widely believed, perhaps even thinner than bond trading. See Mollenkamp and Ng (2011). To the extent this result is validated, it calls into question or at least reduces the social benefits from at least the "single name" CDS market (contracts written on the possibility of default of bonds issued by individual companies).

people do that, presumably because it would give insurance holders incentives to commit arson. Why allow its equivalent in the financial world?

I see CDS speculators no differently than speculators in other kinds of financial instruments, such as stocks (where short sellers, for example, often do not own the stocks they are selling, but instead borrow them temporarily from someone else). The fact is that hedging markets do not work as well without speculators as with them. Unless speculators are willing to take the other side of trades, hedgers may not have anyone to deal with, or at least fewer parties to do so. Speculators, who do not always take one side of a trade or the other, add much liquidity to derivatives markets that narrows spreads and makes it easier for the true hedgers to conduct their trades. In turn, hedging, like insurance, serves an important social function by reducing financial risks for those engaged in hedging (much like limited liability reduces risks for entrepreneurs).

A major social problem arises when speculators or hedgers can't pay off. That is the central lesson of AIG, and Dodd-Frank applies it by mandating central clearing, backed by regulation of margins and capital of the parties, where the contracts are standardized. This, to me, is the right answer, although I would hope that regulators eventually require more pre and post trade transparency and actual exchange trading of these same instruments. Precisely because these moves will reduce the "vig" collected by the major dealers, these moves no doubt will be strongly resisted. We will learn in the coming years whether the public interest or the capture theories of regulation of these markets better explains what eventually happens.

A final complex question turns on the use of derivatives to create "synthetic products", such as collateralized debt obligations that were really bundles of derivatives rather than of mortgages. Derivatives therefore in this instance became the underlying instruments that helped inflate a bubble in securities that should not have occurred. Since the crisis, the market for these synthetic instruments has collapsed, but the fact that derivatives were used in a way that contributed to the crisis provides yet another illustration of the vigilance that regulators need in order to watch out for potentially dangerous financial innovations that can turn out to be destructive.[20]

Failure Resolution and Living Wills: To the general public not well-tuned into the fine points of financial regulation, clearly the most disturbing part of the financial crisis was the government bailout of creditors of large "too big to fail" (TBTF) financial institutions, non-banks (especially AIG, but also Fannie Mae and Freddie Mac) even more so than banks. The authorities who mounted these bailouts clearly did not like what they were doing, but felt it necessary to protect these creditors in order to prevent a wider financial panic. The only exception to the pattern was the refusal of the Fed and the Treasury to protect creditors of Lehman Brothers, a decision that was much criticized for aggravating the crisis at its most sensitive time (mid-September, 2008).

So, when legislators turned to writing a reform package, a top priority was finding a way to make it much more difficult to grant such bailouts again, as the rule rather than the exception. After much wrangling, the solution they came to was to provide a bank-like resolution process for non-banks, even giving authority for executing it to the FDIC, which has long been charged with "resolving" (forcing the merger, recapitalization, or liquidation) troubled banks at "least cost" to the bank deposit insurance fund.

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[20] I am indebted to Kim Shafer, who worked on the staff of the Financial Crisis Inquiry Commission for making this point.

In brief, the Act gives the Treasury Secretary, with approval of 2/3 of the members of the Federal Reserve Board and 2/3 of the directors of the FDIC, the authority to appoint the FDIC as the receiver for *any* troubled non-bank financial institution (not just those deemed by the FSOC to be systemically important). Among other things, the deciding authorities must determine that undertaking such action “would avoid or mitigate serious adverse effects on the financial stability or economic conditions of the United States.” Unless the board of the troubled entity consents, the Treasury Secretary must gain approval, under an expedited process, for the receivership from the federal district court in the District of Columbia. The FDIC nonetheless is instructed to resolve the institution under a *presumption* that priority claims under the bankruptcy code apply, which means that all unsecured creditors – *except derivatives counterparties* -- can be expected to suffer some loss. The FDIC also has the authority to recover (or “claw back”) pay from senior executives and directors “substantially responsible” for the failure of the institution. In sum, then, Dodd-Frank puts all unsecured creditors (except derivatives counter-parties) and management of all large, important financial institutions, bank and non-bank, at risk if the institution fails.[21]

There is another escape hatch, but it is a narrow one. The Act gives the FDIC the authority to provide a wide variety of temporary or up-front financial assistance to the troubled entity in order to ease its resolution, and if necessary to borrow from the Treasury, but unsecured creditors still can receive no more than they have a right to under

[21] The fact that derivatives counter-parties still may be protected in full under the Dodd-Frank resolution process is no different from the bankruptcy code. That code presumably treats derivatives contracts differently because derivatives counterparties are in a position to immediately seize the collateral backing their contracts and so they can make themselves whole. Mark Roe has offered a thoughtful critiques of this exemption, however. See Roe (2011).

liquidation, while management must be removed. The Secretary of the Treasury can establish a resolution fund to pay for any borrowings the FDIC might need, financed by assessments on large banks and systemically important financial institutions. Meanwhile, the Fed is prohibited under the act from using its lender of last resort authority under Section 13(3) of the Federal Reserve Act to bail out any specific institutions or their creditors. In combination, these provisions should prevent any *taxpayer* bailouts of individual institutions or their creditors in the future (it is quite possible, however, that some creditors may be better protected by the resolution fund than they would in bankruptcy). Whether all of this will work as designed will not be known until the process is tested in a future crisis, but it is about as airtight as could be constructed while giving federal authorities at least some flexibility to use cash, as needed, to ease any temporary liquidity problems associated with the resolution of a large troubled financial institution.

Will all these anti-bailout provisions allow a future financial crisis to get out of hand? Again, we won't know until the process is tested, but the Fed still can provide generalized liquidity to the market if it sees a panic developing. My hunch is that this will be sufficient, but I (and no one else) can know this with certainty.

Dodd-Frank also anticipates future financial troubles by requiring all systemically important financial institutions to have resolution plans or "living wills" that enable a receiver or trustee to dismantle or liquidate them at least cost. This provision is especially important to provide a guide to resolving large, complex financial organizations with hundreds, if not thousands, of subsidiaries and affiliates, often domiciled in different countries. The FDIC approved its living will rule in September, 2011, but no rule in this area can become final until the Federal Reserve Board also acts. The FDIC rule phases in its requirement, beginning with the largest banks, effective July 2012, and requires annual updating of the plans (plus updates within 45 days of any material changes in bank operations).

Although no one should be under the illusion the presence of a living will eliminates all creditor disputes over priority in claims, the mere act of having such a document prepared, and signed off on regularly by both the board of the holding company or top-level legal entity in charge of the organization, but also by the appropriate regulators, helps to focus attention on legal structures that clearly delineate creditor priority.[22] Simply having to go through the exercise could help reduce the costs of resolving the institution in the event of failure.

As already noted, the living will provisions give the regulators the "nuclear option" of forcing the organization to divest certain operations or even break up entirely if the resolution plan is not deemed satisfactory. To be sure, it is doubtful that regulators would ever take such a step. Nonetheless, the mere threat that they could roll out this weapon gives the authorities powerful leverage to force large, highly interconnected entities either to reduce their complexity (often constructed for tax reasons) or at least to provide clearer guidance to a future receiver or trustee in bankruptcy.

Large financial institutions surely had mixed motives about all these provisions. Those that were then currently well managed did not want ever to be in the position of having to pay in the future for the mistakes of their competitors. In addition, large financial institutions could not have been happy about the compliance costs associated

[22] It is important that regulators insist on regular sign-offs, otherwise the living will become stale and therefore ignored.

with the living will requirements in particular. Given the public furor over the creditor bailouts during the financial crisis, this is one instance in which philosophical objections to future bailouts and wider public revulsion about that prospect were the deciding factors. Elected officials and regulators clearly wanted to be able to say “no more bailouts” in the future, though regulators and financial policy makers still wanted the ability to tap some source of cash assistance to douse any financial fires, if necessary. Everyone got what they wanted (although those who voted against the bill wanted to eliminate any possibility of cash-assisted resolutions of any non-bank financial enterprise).

Ratings Agency Reform: The three major credit ratings agencies – Standard & Poors, Moody’s and Fitch – were high on the list of villains in the financial crisis, and deservedly so. CDOs and the subprime mortgage backed securities collateralizing them would never have been sold in the massive volumes they were, if at all, without the AAA blessings conferred on them (unwisely, given the absence of sufficient historical data to justify such a high rating) by the ratings agencies. In turn, without buyers of the securities, subprime mortgages would not have been originated in the first place.

There are no easy answers to fixing the ratings agency problem, however, since in principle, investors want due diligence performed by third parties, but have been reluctant to pay for ratings information that, in an age of instant communication, is quickly disseminated to the public. As a result, the agencies have for several decades, and still continue, to charge the issuers of securities of ratings. Despite the previous efforts and new mandates (under Dodd-Frank) to erect and maintain Chinese walls between their sales and ratings staffs, the agencies still inevitably have major conflicts of interest (since they make more money the more securities they rate, and high ratings facilitated the issuance of large volumes of securities backed by subprime mortgages).

Dodd-Frank nonetheless contains several constructive policy changes that could improve matters going forward. First, the Act authorizes suits against the agencies for reckless ratings, under the same standards that have been in place for investor suits against accounting firms or securities analysts. Up to now, the ratings agencies have been insulated from suit by court rulings validating their claims that ratings are opinions or speech protected by the First Amendment. It may be some time for the courts to sort out whether the new liability provisions of Dodd-Frank are constitutionally permissible, but if they are, liability exposure should induce the agencies to be far more careful (though it also may drive them to be excessively cautious, too).

Second, the Act charges the SEC with issuing rules requiring the ratings agencies to provide users with more information about the methods and data the agencies use to generate their ratings, and to satisfy the SEC that the agencies have adhered to the methodologies it claims to use. In addition, the SEC must issue rules directing the agencies to regularly publish the performance of their ratings. Collectively, these provisions better arm users of ratings with useful information about them, which can only improve the efficiency of the markets for rated securities. So far, there appears to be no resistance, even by the agencies, to any of these reforms.

The third set of reforms, however, is proving to be more controversial, at least among regulators: these provisions require the removal of federal statutory and regulatory mandates that ratings be used as a standard of creditworthiness, and that an alternative standard (not specified in the Act) be substituted. Thus, for example, federal rules limit money market funds to investing only in investment grade securities, while the Basel bank capital standards for years have based (and continue to base) their risk weightings for most banks on ratings assigned to their loans and securities.[23] In the years preceding the crisis, the ratings mandates were criticized by a number of academic scholars for artificially boosting the demand for ratings, while giving investors a false sense of comfort that the ratings made other due diligence unnecessary before purchasing (or selling) the rated securities. But as the proposed rules to implement these provisions were made public, banking regulators have expressed reservations, unsure of what alternatives to put in the place of the ratings. Somewhat surprisingly, the ratings agencies themselves have not opposed the removal of the mandates; having been chastened by their role in the crisis, they seem, so far, willing to compete to prove their usefulness going forward.

They are likely to get the chance. The agencies' prominent role in the ratings of sovereign debt of both the troubled European economies and of the United States during the summer 2011 debate over raising the U.S. debt ceiling, and especially the downgrade of U.S. Treasury debt by S&P immediately after a ten-year $2.1 billon deficit reduction package was enacted, has provoked a backlash at least in the United States against the agencies that should put a stop to any efforts to roll back the Dodd-Frank requirements that ratings be deemphasized by the regulatory agencies. The swift and negative reaction to the S&P downgrade certainly disproves the claim by some that, in the wake of the agencies' failures during the mortgage crisis they have become irrelevant. To the contrary, investors at least initially treated the S&P action as quite serious, as U.S. equities fell roughly 5% on the Monday following the downgrade, though equity prices recovered quickly by the end of that week (though falling the next), while the yields on

[23] For a fuller discussion of this topic, see White (2010).

Treasuries actually *fell* as scared investors ran to the safest asset they could find, even one that had just been downgraded. How the agencies would react to the failure in late November of 2011 of the Congressional "Super-Committee" to come up with $1.2 trillion in ten-year deficit reduction was also very much in the news at and around the time of this event, too. In any event, S&P and the other agencies still seem to be betting that investors want their ratings, although the agencies still will probably have to rely on the "issuer-pays" business model to stay in business.

One final nagging question about the ratings agencies, of course, is why did market participants or regulators not scrutinize their ratings of securities based on subprime mortgages more closely in the run-up to the crisis? For investors the answer is easy: they simply assumed that the agencies knew what they were doing and they saw no need to pay for their own due diligence. Regulators at the SEC almost surely believed the same thing, but even if they hadn't, the SEC was spread thin as it was trying to execute its many other responsibilities (not so well, as the Madoff affair certainly showed), and in any event the Commission was specifically prohibited from being substantively involved in the ratings process. Even so, surely few, if any, at the SEC believed they had the knowledge to second-guess what the ratings firms were doing, especially as long as real estate prices were rising and mortgage default rates were low. What is more troubling is that banking regulators around the world continue to mandate the use of ratings under the Basel capital standards, even though regulators had to have known that ratings of mortgage securities in particular were based on sample periods without significant housing deflation.

Consumer Financial Protection: One of the sharpest dividing lines between supporters and opponents of Dodd-Frank centered around the question whether many subprime borrowers were duped by unscrupulous, predatory lenders, or brought troubles on themselves, and by implication the rest of the financial system, by borrowing far too much for houses they could not afford. In the end, the first view prevailed and culminated in the establishment of a new Consumer Financial Protect Bureau, charged with reducing the complexity of consumer protection rules for virtually all financial products (except insurance, securities and derivatives products regulated by other state or federal agencies) and with enforcing federal financial protection laws. In a nod to the tougher anti-predatory laws in some states that federal authorities had sought to preempt before the crisis, the Act generally did not give preemption authority to the new Bureau, so that with some exceptions, states are now free to adopt even tougher financial consumer protection laws. Most unusually and controversially, the Act located the new agency within the Federal Reserve, but gave it budgetary independence from Congress by funding it instead from earnings of the Fed. The Director of the Bureau also sits on the potentially powerful FSOC, which also retains authority, by 2/3 vote, to set aside any rule established by the Bureau.

The Bureau has been the flashpoint of continuing controversy from the day that Dodd-Frank became law (July 21, 2011), but especially after Republican gains in the mid-term elections. The banking industry, especially the larger banks with multi-state operations, has been very wary of having its consumer functions regulated both by a potentially aggressive federal regulator and 50 separate state regulators. The creation of the Bureau thus does not fit well with the public choice theory of regulation, although eventually it could be captured by a more industry-friendly director. Republicans generally have continued to oppose the creation of Bureau on philosophical grounds, and especially have been critical of its structure (with a single director rather than a multi-member commission) and its exemption from the normal Congressional appropriations process. Indeed, through the fall of 2011, Republican leaders in the Senate had refused to confirm as Bureau Director the Administration's proposed nominee until and unless the structure of the new agency is changed.

Even without a director, the Bureau has a substantial budget and can be expected at the very least to go through with its plans to simplify mortgage and possibly other credit disclosures. How aggressive it will be in the future is likely to depend heavily on the outcome of future Presidential and Congressional elections. Nonetheless, unless this part of Dodd-Frank is altered, the new Bureau *potentially* could be a powerful agency and significantly affect the nature of and disclosures relating to banking products and services in particular for the indefinite future.

As to why regulators, federal and state, were not more aggressive in policing subprime mortgage originations – especially those with no money down and low initial teaser rates – the reasons are well known. Fed Chairman Greenspan has confessed to mistakes in trusting market forces, although it still is not clear (at least to this author) whether the Fed had the legal authority to crack down on non-bank lenders who originated most of the questionable mortgages. But even if the Fed didn't have this authority, it could have made such a request to Congress. In addition, the Fed and its sister federal banking regulators, as well as their state counterparts, could have more closely scrutinized bank lending to the most aggressive non-bank subprime mortgage originators. That they didn't reflects a combination of complacency and an unwillingness to take the punch bowl away from the "housing party" that was widely embraced by the public and their elected representatives, as noted earlier in this chapter.

New Securitization Rules: Although there are large differences over the wisdom of many of the provisions in Dodd-Frank, there seems to be a consensus that one significant factor contributing to the crisis that led to passage of the bill was that the commercial and investment banks that securitized subprime loans had insufficient incentives to encourage sound underwriting of those loans in the first place. As long as the mortgage securities could be sold to an all-too-willing investor community, why bother looking at the collateral and borrower incomes that were supposed to support them?

The Dodd-Frank fix for this problem is to require loan originators and/or securitizers of asset-backed securitized instruments to retain at least a 5% equity or at-risk *unhedged* interest in the underlying loans or the securities packages sold to investors. Regulators are directed to determine the allocation of the 5% risk retention requirement between originators and securitizers, as well as to permit an exemption for "qualified residential mortgages", a term left to the banking, housing and securities regulators to define. These regulators have since proposed a rule requiring that originators and/or securitizers bear the entire 5% requirement, which is not to be applied to securities backed by prime mortgages (essentially those with at least a 20% down payment).

The carve-out for prime mortgages has taken much of the sting out of the criticism of the risk retention rule. The continuing problem in implementing the requirement for other securities is for regulators to define and monitor what is an "unhedged" position. Clearly, a very specific hedge, such as a credit default swap taken out on the security, would qualify. But it is much more difficult to police a reasonable practice of portfolio diversification, which can hedge at least some of the retained risk. Moreover, even though a risk retention or "skin in the game" requirement seems entirely plausible, critics point to the fact that many banks that engaged in securitizing CDOs also held open positions in these or similar assets, and this didn't stop them from taking the risks they did, so a new risk retention rule should have very little effect going forward. My response to this line of argument is that we now know that much of the large banks' *subprime* mortgage exposure was farmed out to their ostensibly off-balance sheet SIVs, for which bank managements may have been deluded into thinking they would never be responsible. To the extent that is true, then the new risk retention rules, however limited they may be, are a step in the right direction.

We won't know for sure for some time, however, because at this writing, the market for mortgage securities is essentially dead, as it has been since the onset of the crisis. Although some may blame the risk retention rule for delaying a comeback in this market, the better explanation is the continuing poor state of the housing market and much tougher bank supervision, a combination that almost surely would have kept a lid on subprime mortgage origination and securitization even in the absence of any new risk retention requirement. In addition, the fact that subprime mortgages in their previous incarnation have not returned to the marketplace is not a bad outcome. If policy makers want to assist low and moderate income householders to buy homes, they are likely in the future to have to come up with much more transparent and on-budget means of subsidy for these borrowers.[24]

Volcker Rule: Like much legislation that makes its way through Congress, Dodd-Frank had Christmas tree elements to it, too – namely provisions that had little or nothing to do with rectifying the causes of the crisis that preceded it, but nonetheless were politically useful in one manner or another in attracting support for the overall bill and for punishing the large banks – which were at the center of the financial storm. The so-called "Volcker rule" is one such provision. Although simple to state, it has subsequently proved devilishly difficult for regulators to implement, and I predict, could easily be one of many targets in the bill for regulatory arbitrage or circumvention at some point in the future.

With some exceptions and subject to a transition period, the Volcker rule prohibits any bank or thrift institution, or a bank or thrift holding company, from engaging in "proprietary trading." The Volcker rule was not in the initial drafts of what became Dodd-Frank, until several months later when President Obama endorsed the idea, at the behest of Paul Volcker, the chair of his outside economic advisory board, the former distinguished Chairman of the Federal Reserve Board, and a long-time critic of bank speculative activities.

Given the lack of evidence that bank proprietary trading (much of which centered on the trading of stocks, bonds, and currencies) played a significant role in causing the

[24] One additional potential problem with the risk retention rule, taken alone, is that unless the managers of the financial institutions involved have some of their own skin in the game, any risk retention requirement imposed on the institutions may have little or less-than-desired effect on the behavior of the managers or loan officers. One way to address this problem would be to require that any loan origination or securitization fees be payable over time and be subordinate to the revenues earned by the financial institutions on the transaction. In this way, managers and loan/securitization personnel would have some personal stake in how well the transactions perform after they are completed. For an elaboration of this suggestion, see Shafer (2011).

crisis, the best that can be said for the Volcker rule is that proprietary trading arguably is not the kind of activity that should be supported or subsidized by deposit insurance and that prohibiting it could contribute to preventing a *future* crisis. At the same time, however, to the extent that such trading has been profitable for banks, denying them the ability to pursue it could thus detract from their safety and soundness.

The more practical question relates to how the rule is actually implemented. Under the Act, financial regulators must spell out the details of the rule. But the term "proprietary trading" is inherently difficult to define. Some activities, such as running an internal hedge fund, are clearly off limits and easily stopped. Indeed, even in advance of a final rule from the regulators implementing the Volcker provision, virtually all banks affected by it had divested themselves of any hedge fund activities.

Drawing a sharp line between permissible hedging of customer transactions and conducting trades for the banks' own accounts, however, is not easy to do and fraught with potential negative unintended consequences.[25] In early November, 2011, federal banking regulators released a 300 page proposal that attempts to flesh out the legislative language, an effort which Volker himself criticized for being too complicated and reflecting lobbying by the banking industry.[26] In my view, Volcker is certainly right about the influence of the banking industry on the regulatory process (see the foregoing discussion of the derivatives rules under Dodd-Frank), but the complexity of the implementing rules for the Volcker provisions was entirely predictable. As a practical matter, the real implementation will have to done by banking supervisors on a case-by-case basis, which will mean uncertainty for at some period of time. Depending on how

[25] See, e.g. General Accountability Office (2011).

[26] Quoted in a story by Reuters available at www.reuters.com/assets./print?aid=USTRE7A83KN20111109.

strictly regulators enforce the proposal, the Volcker rule could significantly diminish liquidity in the trading of financial instruments, imposing a social cost on the markets that could outweigh any benefits of risk reduction it is meant to accomplish.

In any event, given the way that banks, or any financial institutions, historically have behaved, it will not be surprising if the banks affected by the rule continue to push the envelope if they believe it requires pushing. If U.S. regulators push too hard back, U.S. banks are likely to move any potentially questionable trading activities off-shore. In the end, it is the opinion of this author that the Volcker rule, however it is finally implemented, will do little to enhance the safety and soundness of the banking or the financial system.

Lincoln (or "Swaps Pushout") Rule: Another anti-bank rule that made it into the Dodd-Frank bill was the so-called "swaps pushout" or the "Lincoln rule", named after its sponsor, former Senator Blanche Lincoln.[27] Briefly summarized, this particular provision denies Federal Reserve loans to support a "swap entity," or any organization, including a bank, that "regularly enters into swaps with counterparties as an ordinary course of business for its own account." Like the customer exception in the Volcker rule, the Lincoln rule exempts banks entering swaps entered into in connection with loans to customers, or if banks limit their swaps activities to hedging.

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[27] I omit discussion of yet another anti-bank provision, the "Durbin amendment," that directed the Federal Reserve to put limits on debit interchange fees banks above $10 billion in assets charge retail merchants (which the Fed did, after a notice-and-comment procedure in early 2011), because this provision was clearly unrelated to any of the causes of the financial crisis. Given the strong opposition of the banking industry (even the smaller community banks that formally were exempted in the amendment) to these limits, this provision clearly is not consistent with the public choice theory of regulation (except to the extent it favored merchants, who wanted the limits but were not subject to them). It is also far from clear it is consistent with the public interest theory either, since banks have been raising other fees or changing the way they charge for debit transactions to offset the per-transactions limits required by the amendment. It should be noted that I co-authored (with David Evans and Richard Schmalensee) comments to the Fed on behalf of a select group of banks in the Federal Reserve's rulemaking opposing the Fed's proposed 12 cent-per-transaction limit on debit transaction fees (which the Fed raised to 21 cents in its final rule implementing the Durbin amendment).

Regulators will have difficulty over time enforcing a strict line between customer or hedging related swaps transactions and all others the Lincoln rule is meant to cover. These difficulties are likely to surface most pointedly during a financial crisis when the Fed is trying to decide whether it can extend a loan to a troubled bank that, like many of banks, engages in swap transactions. The Fed takes a political risk if it construes the Lincoln prohibition too liberally, but an economic risk to the financial system if it construes the prohibition too strictly. I cannot predict in which direction the Fed is most likely to err.

Unlike banks' ability to circumvent the Volcker rule by moving otherwise prohibited activities off-shore, there is no profit for U.S. banks (including subsidiaries or branches of foreign banks) subject to the Lincoln rule to move swaps activities to non-U.S. locations, unless the banks have the prospect of receiving crisis support from central banks in those jurisdictions. But precisely because the home offices or holding companies of these banks would be in the United States, such assistance is not likely to be forthcoming, or at least cannot be counted on. So U.S. banks' only counter-measures are likely to consist of ongoing pushback against pre-crisis attempts by regulators to cover swap activities within the scope of the Lincoln prohibition. In response, banks will have incentives to find creative ways to avoid such measures by constructing their swap operations so that they fit within the statutory or regulatory exceptions to the rule.

Compensation rules: Another likely contributing factor to the 2007-08 financial crisis was the short-term nature of many compensation packages, not only for bank or financial executives, but for more junior personnel, such as loan officers. To the extent any of these individuals were paid on loan volume originated or processed, for example, these compensation arrangements weakened incentives to pay attention to sound underwriting or banking practices, especially when the loans were simply sold to another entity for securitization.

Dodd-Frank seeks to end these practices by requiring federal banking regulators to issue regulations aimed at encouraging the use of compensation arrangements that discourage excessive risk-taking, which as a practical matter mean the use of long-term bonus arrangements and/or salaries, rather than compensation tied to short-run targets. In fact, the banking regulatory agencies issued proposed guidance on bank compensation arrangements in 2009, as Dodd-Frank was being debated, and finalized these rules in June 2010, before the Act was enacted. These rules require compensation for many bank employees (not just executives) to be consistent with safe and sound banking practices, and that banks have monitoring arrangements to see whether these arrangements are successful in balancing risks against potential rewards.[28]

These rules pushed banks in a direction they were already taking after the crisis, shifting the composition of their compensation packages more toward restricted stock or longer-term bonus arrangements. Banks did this not only to comply with the new rules, but also out of self-interest, to satisfy pressure for better alignment of incentives and risk from shareholders and the wider public. So it is not clear how much incremental effect Dodd-Frank has had or will have in the future in this regard. And even under Dodd-Frank and the prior compensation rules, there is nothing to prevent financial institutions from

[28] More generally, the Act also requires the SEC to issue rules requiring, among other things, publicly traded companies to disclose relationships between their executives' compensation and the firms' financial performance, and to provide shareholders at least once every three years with an opportunity to have a non-binding vote on executive compensation (the so-called "say on pay" provision).

raising base level salaries as a means of recruiting or retaining highly talented individuals, as some institutions already have done.

No Provisions for the Future of Fannie Mae/Freddie Mac: The one glaring omission in the "comprehensive" financial reform embodied in Dodd-Frank, of course, was the failure to define the future role, if any, for the two housing GSEs, Fannie Mae and Freddie Mac. At one level, this is surprising and disappointing, because the final taxpayer bill for rescuing their creditors is already above $100 billion, and thus will be the most costly (on a net basis, after recoupment from asset sales or re-floating of shares) budgetary component of the overall financial rescue. At another, more political level, the omission is more readily understood. Fannie and Freddie were two of the largest engines of public policy (along with the mortgage interest tax deduction) favoring home ownership since their creation many decades ago, and both institutions, even in conservatorship, had continued through 2011 to buy virtually all of the residential mortgages securitized in the United States since the crisis. In light of the extremely weak housing market that has persisted once real estate prices topped out in 2006, it is little wonder that elected officials have been reluctant to tamper with the two of the only institutions that have kept the market from being even worse than it already has been.

At the same time, there is widespread recognition post-crisis, that the quasi-public, quasi-private nature of Fannie and Freddie should not and cannot be permanently maintained. Given the complex politics surrounding not only these two GSEs, but housing policy in general, it is virtually certain that the final fate for Fannie and Freddie will not be determined until after the 2012 Presidential election.

At this writing, the two main competing ideas are to phase out the two entities over some gradual period (most likely by lowering the “conforming limit” of mortgages the GSEs can purchase or guarantee), or to explicitly make them government entities subject to stricter safety and soundness oversight. If the latter route is chosen, the regulatory dynamics are likely to be similar to those for banks: initial tough scrutiny by regulators who would have the political freedom to act that way during some post-crisis “honeymoon period,” followed by a tendency to relax their guard if and when the economy, and especially the housing market, recovers.

Concluding Thoughts on the Likely Impact of Dodd-Frank

If there is one safe prediction about how Dodd-Frank and its implementation will play out it is this: the debate over the law and the rules set under it will continue for some time. Because the law was passed by a partisan vote, its legitimacy will continue to be in question. But because it takes 60 votes in the Senate to stop debate on any bill, it is unlikely for the foreseeable future that the law will be dismantled or changed in a fundamental way. If statutory alterations are made, they are likely to be of an incremental nature (similar to the slight easing of the Sarbanes Oxley Act requirements for smaller and newer public companies written into the Dodd-Frank Act itself).

The major caveat to this forecast is if and when another financial crisis materializes in the United States or significantly affects U.S. financial institutions (at this writing, in early December, 2011, the U.S. economy is growing weakly, but European government debt and banking markets are in crisis mode, though the impact on the U.S. financial sector so far has been modest). If the projections here are correct, even with the controversy over the law and its implementation, Dodd-Frank is likely to delay the onset of a U.S. crisis centered in the financial sector in particular and to reduce its severity. But if history is any guide, there will be no way to completely avoid another crisis,[29] and when it comes then history also suggests the nature of any legislative and regulatory response: yet another ratcheting up of regulation and supervision, and most likely, an attempt to close whatever loopholes in Dodd-Frank that clever financial institutions and their attorneys discover in the years to come. Indeed, if large banks have anything to do with the next crisis, or require more bailouts, then the voices for breakup of the largest institutions may yet prevail, for then they will have “proof” that regulation alone couldn’t stop the damage. Whether a system of 10-20 $100 billion banks will be safer than the more concentrated banking system we now have (and have had in the wake of the 2007-08 financial crisis) surely will be the subject of future papers and books of this kind.

As for Dodd-Frank on the merits, I take a cautiously positive view, recognizing that the law, like most laws, is far from perfect and that its regulatory implementation will continue to be plagued with the political economy issues identified in this chapter. As noted earlier, the crisis and subsequent recession/slow growth that it triggered have entailed trillions of dollars of costs to the U.S. and other economies. Even if the law has the effect of slowing future growth by 0.1 or 0.2 percentage points, preventing for some significant period a repetition of events of the last crisis or at least a significant reduction in the costs of a future crisis, as I believe this law broadly will do, justifies the Act even with its warts. A challenge for quantitatively-oriented economists in the future will be to

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[29] I am putting aside for this purpose the possibility of a crisis triggered by the failure of Congress and the Administration to materially reduce future fiscal deficits at some point in the future when their magnitude again triggers another round of political brinksmanship of the kind put on display over the acrimonious debate to lift the federal debt ceiling during the summer of 2011.

shed more detailed light on this judgment, as well as on ways to improve the benefit-cost ratio of possible future financial regulation.

Finally, what do the academic theories have to say about Dodd-Frank? The overriding conclusion here is that the Act generally is not consistent with the public choice model of regulation; the regulated institutions clearly did not want most of this Act, and many of them are fighting and will continue to fight its implementation. The more interesting question is whether in the future regulators carrying out the Act's many mandates will act in the public interest or whether they will eventually be captured by the institutions they regulate. The answer will help determine the timing and severity of the next financial crisis.

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