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THE FINANCIAL CRISIS: A CRISIS, TOO, FOR LAW AND ECONOMICS?

ABSTRACT: *Richard A. Posner's two books on the financial crisis focus on possible macroeconomic (Keynesian) causes of it, neglecting legal causes that would have had only microeconomic effects, yet could have been responsible for the crisis. Specifically, Posner accepts too readily the conventional wisdom that banks' leverage levels, hence their capital cushions, were deregulated; this ignores Basel I, Basel II, and the Recourse rule, which internationally and (in the last case) in the United States minutely regulated not only leverage levels but the composition of banks' assets. These regulations penalized banks for making business loans in comparison to mortgage loans, and it further penalized them for keeping mortgage loans rather than selling them for securitization and then buying back the "senior" tranches of the resulting mortgage-backed securities. These regulations may explain the overconcentration of mortgage risk in the banks, and thus the financial crisis.*

The recent financial crisis and the resulting recession have elicited major intellectual and literary efforts across disciplines and traditions. Among many authoritative voices, Judge Richard Posner bears the distinction of having published two books within little more than a year: *A Failure of Capitalism: The Crisis of '08 and the Descent into Depression* (2009) and *The Crisis of Capitalist Democracy* (2010), both from Harvard University Press. The first and the shorter of the two, *A Failure of Capitalism*, introduces

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the reader, in fairly broad strokes, to Posner's overall understanding of the manifold causes of the crisis and provides a critical assessment of intellectual and policy reactions to it. The second book, though in many respects a valuable stand-alone contribution, stays squarely within the analytical framework laid down in *A Failure of Capitalism* and constitutes largely an "effort to deal in greater depth, and from a longer perspective, with a crisis that has continued to evolve, to elicit new response measures and new proposals for regulatory reform, to engender new concerns about the future and spawn new controversies about the past" (Posner 2010, 4-5). It is therefore appropriate to approach the two books as a single contribution, especially because it is Posner's analytical contribution to our understanding of the causes and consequences of the financial crisis that is my concern.

As might be expected from perhaps the most prolific, innovative, and intellectually inquisitive legal scholar in the United States, indeed the world, Posner's contribution is outstanding but, in many respects, also quite unusual. It is provocative and highly stimulating. The book's content is sophisticated and written in a highly readable style. But the unusual thing is that while Judge Posner gained his fame as the dean of the law and economics movement—about which he literally wrote the book (Posner 1973)—there is plenty about economics in *A Failure of Capitalism* and *The Crisis of Capitalist Democracy*, but virtually nothing about law.

Reading these volumes, one might imagine that banking is a largely unregulated industry, such that law could not have played a significant role in causing the financial crisis. But banking remains highly regulated, and, I shall argue, these regulations can very plausibly be held responsible for the crisis.

The Limited Relevance of Macroeconomics

Systemic risk reduction is the normative target of Posner's two books. Reducing systemic risk entails understanding its sources. Posner recognizes this, but the main sources of systemic risk that occur to him are macroeconomic in nature (Posner 2009c). In his "Failure of Capitalism" blog, he has followed up by encouraging law schools to introduce macroeconomic training as part of the standard curriculum (Posner 2009b). This is a seismic shift indeed, because the intellectual

tools that Posner and the law and economics movement have contributed are all microeconomic.

Perhaps this shift is not so puzzling: Posner would be right to recognize that advanced training in microeconomics (game theory) does not help us understand what caused the crisis. And nothing could be more systemic than macroeconomic theories, which treat the dynamics of the entire capitalist economy. On the other hand, Keynes's *General Theory*, on which Posner relies, was published in 1936. The basic dynamics of capitalist economies may or may not have changed since then, but one thing that definitely has changed is the legal framework within which the financial industry works. Financial regulations are particular to a given country in a given year. They are constantly being amended and their details are crucial to the operation of the banking system at any given time. It is therefore at least conceivable that an adequate account of the financial crisis of 2008 will benefit more from an inquiry into particular legal rules than from a recounting of a 75-year-old general theory of business cycles, no matter how penetrating its insights are, and that the sources of systemic risk that emerged in 2008 may be found in the law, not the economy.

Both books cover three main areas. First, they provide a sequential analysis of both the proximate and deeper causes of the financial crisis. Second, they discuss government reaction to the crisis. Finally, they offer an intellectual diagnosis and a way forward for public policy. While all three topics reward careful attention, my main focus here will be on the diagnosis, touching other elements only on-the-go, since the causes of the crisis are as yet poorly understood, and an accurate grasp of them is necessary if reforms addressed to systemic risk will achieve their objectives.

I. RATIONALITY, IRRATIONALITY, AND MACROECONOMICS

If there is one sentence that serves as the nucleus of Posner's theory, it is this: "The culprit is cheap credit rather than irrational behavior by business or consumers" (2009, 105). In part this is a reiteration of Posner's old loyalty to *micro*economics, and therefore to rational-choice theory. But it also incorporates Posner's newfound Keynesian sensitivity

to the quandary facing rational actors when they confront an inherently uncertain future.

Posner discusses and dismisses a bucketful of allegedly ''deeper'' character or behavioral flaws, such as irrational optimism and the stupidity of financiers (Posner 2009a, 76–85). He points out that what might appear irrational and stupid *in retrospect*, such as buying a stock high and selling it low, is better explained by our profound uncertainty about future events *ex ante* than by *ex post* invocations of ''irrationality'' or by laboratory derivations of the conclusion that any market error must be due to the triumph of emotion over reason.

No one, regardless of how emotionless or intelligent, knew and could articulate beyond doubt either the probability or the eventual cost of the meltdown. Investors and firms use inferences from the past, theories, and information that seem to them ''rational'' bases for predictions in order to make their best guesses about the point at which profit opportunities may turn into losing propositions. However, such forecasts are always attempts to peek behind the rigid veil of ignorance that prevents absolute knowledge of the future, so they may be wrong. Posner firmly distinguishes rationality from omniscience, and should be applauded for doing so.

In place of psychological speculation about why so many errors were made in the years leading up to the crisis, Posner offers a structural analysis of the effects of cheap credit.[1] Cheap credit provided the means to stimulate overall economic activity, ''causing asset prices to rise, including the prices of residential real estate—a huge part of the nation's asset base'' (Posner 2009a, 105). The recent history of rising asset prices, especially in housing, created for many coolly rational observers the illusion that nothing was amiss. Among these observers, Posner (ibid., 253–54) points out, were Alan Greenspan and Ben Bernanke, both of whom noted that there had never been a significant nationwide real-estate bubble (as opposed to local ones, which clearly were in progress in some cities), and who attributed the general rise in home prices not to their own Federal Reserve System's monetary policy of near-zero interest rates, but instead to the influx of foreign capital and to the affluence of an ever-growing American population that was eager to spread out. As long as this illusion was sustained by a prodigious flow of easy money, not only were consumers willing and able to borrow more for new houses, but lenders were willing and able to satisfy their demand for debt.

Posner notices that there is nothing unique in this *general* pattern—an asset bubble following from an expansion of credit. Indeed, he claims, the pattern has been observed in all business cycles (Posner 2009a, 105). But "the usual result is just a recession." What served to bring about the Great Recession (which he insists that we count as a depression), Posner contends, was "a combination of a dearth of safe savings with a banking industry that is highly leveraged." The lack of "safe savings" was important since, later on, "as a result of heavy losses caused by excessive leverage, [as] the [financial] industry pulls back from lending, consumers will have great difficulty borrowing to maintain their consumption, and a steep fall in personal consumption expenditures can tip the economy into deflation by precipitating deep price discounts" (ibid., 106).

We can see Posner attempting here to meld his assumption that the Great Recession has causes that can be captured in Keynes's macroeconomics with the obvious fact that this particular recession was triggered by a banking crisis. The "dearth of safe savings" constitutes Posner's principal link between the Keynesian analysis of the "real" macroeconomy and the banking system. In a low-interest-rate environment, there is a shortage of investments that will produce more-than-negligible returns. One solution is to "lever up" by borrowing some of the cheap credit that is sloshing around in the economy. One may thereby magnify the potential gains to be extracted from relatively low-yielding positions.

Posner's analysis is mainly an elaboration of the mechanics of this process. His inroads into macroeconomic theory are impressive but by no means without problems. This, however, is not the occasion for discussing Keynesianism. The question is whether Keynesianism or any other macroeconomic theory is enough to connect the recession to the banking system in a manner that fits the facts. So in what follows, I will concentrate on what Posner says (and fails to say) about the leveraged banking system.

The Centrality of the Banks

To understand the dynamics of events that led to the "depression," Posner insists, a proper grasp of banks' central role is a necessary precondition. This role is captured in the economists' term for banks: "financial intermediaries." Financial intermediaries borrow money and

then lend (or otherwise invest) it. They include hedge funds, mortgage lenders, trust companies, investment banks, and commercial banks.

Posner makes the odd claim that today's "largely unregulated banking industry" (46) renders these distinctions irrelevant, since the repeal of the Glass-Steagall Act in 1999 allowed commercial banks to operate simultaneously in banking and securities markets. What is odd about this claim is that there is not a country in the world with a "largely unregulated banking industry"—certainly not the United States, despite the "repeal" of Glass-Steagall (actually an amendment to it).[2] Assertions about the degree of regulation sustained by the banking system are clearly claims about banking law in a given period of history (ours), and in making the claim that banking in the years prior to the crisis was largely unregulated, Posner is wrong.

What may well explain this mistake, however, is Posner's overly quick dismissal of the distinctions among the various types of bank. When it comes to the topic in which he is justifiably interested—the leverage of "the banks"—these distinctions remain very important. The banks that failed most spectacularly—Bear Stearns, Merrill Lynch, and Lehman Brothers—were all stand-alone investment banks. Now it is essentially (if not technically) true to say, as Posner does, that their leverage ratios were deregulated.[3] It is also true that investment banks were typically very highly leveraged: In 2008, Bear Stearns was leveraged at more than 33:1,[4] Merrill at 20:1,[5] and Lehman at about 30:1.[6] If there is indeed no distinction any more between investment banks and commercial banks, as Posner claims, then one might assume that such high leverage ratios were common across the entire banking industry.

But they were not. The aggregate leverage ratio of *all* banks, lumping together both commercial and investment banks—and therefore inflating the figure, due to the relatively high leverage ratios of investment banks—stood at about 8:1 on January 1, 2008, at the threshold of the crisis. A leverage ratio compares a bank's loans and other investments to its capital. United States banking law does not permit the amount of capital held by a "well-capitalized" commercial bank to fall below 10 percent, yielding a 9:1 maximum leverage ratio at all times. But at the beginning of 2008, the aggregate capital cushion of all American banks was 12.8 percent—down a mere two tenths of one percent from the end of 2003.

Now it is true that even the resulting 7.8:1 leverage ratio might be disastrously high if the assets in which banks were leveraged turned out

to be bad bets. And we shall see that this may be an accurate description of what happened. Thus, by pointing out the relatively low leverage level of commercial banks in comparison to investment banks, I do not mean to suggest that commercial banks' leverage was not a problem. My point, however, is threefold.

First, Posner may have been misled by the Glass-Steagall "deregulation" narrative into assuming that all banks' leverage ratios after 1999 were essentially unregulated, as investment banks' ratios were. This assumption abolishes by fiat the quite elaborate regulations—the Basel accords—that govern commercial banks' leverage ratios in most of the industrialized countries of the world, including the United States.

Second, these elaborate regulations may have impinged on the leveraging ambitions of individual banks, but they did not affect American commercial banks in the aggregate, which got for themselves a third less leverage than the legal ceilings allowed to them. This presents a major problem for Posner's thesis, as we shall see, for Posner assumes that bankers were intent on taking the maximum possible risk in pursuit of the maximum financial gain. If that was their aim, then they should have driven leverage levels up to their legal maxima by driving capital cushions down to their legal minima, but as we have just seen, they did not.

Third, then, the story of banks' leveraging may not be something that can be captured in abstract reasoning, of the sort in which Posner engages, about the incentives that would have faced financial intermediaries in a totally deregulated world. Commercial bankers did not face a totally deregulated world: not just their maximum leverage levels but the *composition* of the assets purchased with leverage was governed by the Basel accords. If bank leverage offers the key to understanding the crisis, we may have to understand the details of the regulations that were based upon, and that amended, these accords. In the details of these regulations—not in the absolute amounts of leverage that they allow—we may well find the *legal* roots of the greatest *economic* crisis since the Great Depression.

If we agree with the fundamental law-and-economics thesis that the legal framework matters, i.e., that it has consequences for economic behavior, and perhaps even consequences for the economic system as a whole, then it is imperative, first off, that we know what the legal framework is—in detail. Studying these details might be less sexy than theorizing about "animal spirits" (or demolishing these theories, as

Posner does brilliantly); calculating spending multipliers; exploring the paradox of thrift; etc. But such study is, arguably at least, even more important than macroeconomic theorizing. Macroeconomics is a function of whatever conditions determine microeconomic behavior, and among these conditions are not only psychological states, and the uncertainty emphasized by Keynes, but legal rules.

To say that is not to deny the benefits of an interdisciplinary approach to understanding the crisis. But Judge Posner would be the first to agree that the economics profession was unprepared for the crisis and is now in theoretical disarray. The tools of macroeconomic analysis deemed sound just three years ago turned out to be much less than reliable. It is therefore far from self-evident that the best step, or the first step, toward coping with the intellectual challenges posed by the crisis is to resurrect macroeconomic tools that seemed solid seven decades ago, or for that matter eight (Hayek's), or thirteen (Marx's), or fourteen (Mill's). Perhaps we should not discard the traditional law-and-economics emphasis on the importance of the legal framework just yet.

Banks and Subprime Lending

The consensus view, with which Posner agrees, is that the roots of the financial crisis were sown in the subprime portion of the housing market. In many respects, Posner tells a comprehensive and enlightening story about this, with many key actors moving in tandem. But the basic problem is to explain why so much money was lent to subprime borrowers (and Alt-A borrowers, and borrowers without documentation, and borrowers who made low down payments or none). In treating this topic, Posner does not begin with the basic mechanism for avoiding the waste of capital: the fear of losing one's money.

In principle, we should find rational lenders being very careful to weigh (on the one hand) the risk of default on any given loan against (on the other hand) the interest the loan would command if repaid. No individual lender can significantly affect the market rate of interest. But absent regulation, a lender has discretionary power regarding who receives his or her loans. So if we find lenders handing out mortgage loans as if they did not care about default risk, it represents a *micro*economic paradox.

One possible solution, embraced by Posner, is that rising house prices tended to negate the very possibility of default, since a borrower who later could not afford to make payments on the loan could always sell the house for a profit—as long as prices kept going up. Thus, a cornerstone of the conventional wisdom about the crisis has been that bankers were ''irrationally exuberant'' about the prospect that house prices would keep rising (forever). We have already seen, however, that Posner has no patience for irrationality theories. So what rationality-friendly theory can Posner use to square this circle?

Posner offers three theories, two of which are somewhat at odds with each other. First, since the popping of a bubble is a matter of uncertain timing, the upside of a bubble may contain enough profit opportunities to warrant continued investment in it, even after a banker suspects that he is indeed betting into a bubble (Posner 2009a, 91–92). Second, executive compensation, in the form of golden parachutes and bonuses for traders, encouraged excessive risk taking. Neither the executives nor the traders who bought such securities as mortgage-backed bonds were penalized if their actions led to losses, but they were rewarded if their actions led to gains (ibid., 92–98).

These first two of Posner's three explanations have it both ways. The first explanation suggests that bankers late in the housing cycle were making reasonable (albeit incorrect) bets that the cycle would continue long enough for their firms to profit unscathed from continued investments in it; the second suggests that they did not care about escaping unscathed because they were, in effect, being paid to ignore risk, even *excessive* risk. This second explanation has become widely accepted as true. It may be true; there is little research on it. Two studies (Fahlenbrach and Stulz 2009; Gropp and Köhler 2010) have found that banks whose executives held more bank stock did worse in the crisis than banks whose executives held less; these findings have not been contradicted.[7] They tend to confirm Posner's first explanation while undermining the second, since they suggest that the executives were not choosing, for pecuniary reasons, to ignore excessive risks of which they were aware. If they had been aware of such risks, they would have sold their stock.

Even if Posner were right about this, moreover, he misses another opportunity to transcend the theory-rich, evidence-free tendencies of mainstream economics and, all too often, law and economics. If executive-compensation schemes at the banks *did* account for the

bankers' *ex post* excessively risky bets, is it not odd that such perverse compensation structures were (and remain) in place at all? One explanation might be found in the work of Amar Bhidé (2011), whose research suggests that 1930s SEC regulations that, in effect, created the modern stock market shifted investment-allocation decisions to mass investors and their advisers, none of whom were allowed by law to have the inside access that had previously enabled intelligent investment decisions. Instead, investors now had, and continue to have, little choice but to rely on gross heuristics such as quarterly earnings estimates, which therefore skew corporate management to try to deliver short-term returns. Discovering whether these regulations are thus indirectly responsible for the now-derided executive-compensation systems at banks and other corporations would certainly be an important contribution for scholars of law and economics to make.

Subprime Mortgages, Securitized

Posner's third solution to the mystery of why bankers got themselves into so much trouble is that they thought they were offloading the risk by turning mortgages into mortgage-backed securities (MBS) and retaining only the least-risky slices of them. With securitization, Posner begins getting to the nub of the matter.

Securitization worked in the following manner. Commercial banks would sell their individual ("whole") mortgages to one of the GSEs, Fannie Mae and Freddie Mac, or else to one of the investment banks; the GSEs and investment banks pooled hundreds or thousands of mortgages into MBS. The GSEs' MBS implicitly had a triple-A rating because the GSEs were established by acts of Congress[8] and were sure to be bailed out if they got into trouble. In the case of investment banks, however, the mortgage pools had to be "tranched" into bonds with different ratings (AAA, AA, A, BBB, and so on). Buyers of the triple-A tranche were contractually entitled to the highest priority when the mortgage and interest payments generated by the entire pool were distributed to the investors. If any of the mortgages in the pool defaulted, holders of bonds from the lowest-rated tranche would be the first to bear the loss. If enough mortgages defaulted, holders of bonds from the next-lowest-rated tranche would start to receive diminished payments, and so on, with the AAA tranche hit last.

Due to this tranching system, all of the mortgages in a pool could be subprime (or Alt-A, etc.), yet there would still be an AAA-rated tranche. The ratings did not indicate any differentiation within a mortgage pool between the risk levels of different types of mortgages (fixed-rate, adjustable-rate, low or high down payment, etc.) or of the types of mortgagors (prime, subprime, no-documentation, etc.). All of the mortgages in the pool were treated the same: as sources of income streams. The different ratings merely indicated the contractual order of priority by which these streams would be divided among different investors, with the "senior" investors, those possessing AAA bonds, being the last to suffer from any interruption in the stream from the entire pool. In exchange, however, these investors sacrificed the higher yield that always goes with riskier, lower-rated bonds.

Posner (2009a, 52) notes that commercial banks "tended to buy the top tier in each mortgage-backed security." But the banks' preference for these bonds produces a quandary for Posner's theory. There is nothing inherently better about holding an AAA bond rather than one rated BBB. The lower risk of the AAA bond brings with it a lower yield, precisely because it is considered to be less risky than the BBB bond.[9] In passing up lower-rated MBS, banks were passing up higher returns. Yet the heart of Posner's theory is the notion that banks wanted to increase their leverage—and thus their risk level—so as to *drive up* their returns. He writes:

> We should consider why a lender would want to make a risky loan. The basic reason is that the greater the risk, the higher the interest, to compensate the lender for the possibility that the borrower will default and as a result the lender will not be repaid.

Why, in that case, would the same risk-and-interest-seeking lender buy less-risky, lower-yielding, triple-A bonds instead of higher-yielding, riskier triple-Bs? If a lender wanted higher risk and the compensating higher return, it was available. Yet the lenders chose the higher-rated, safer, less-lucrative bonds.

It is true that in doing so, the lenders offloaded much of the risk of a popped housing bubble (although not enough of it, in the end) to the purchasers of lower-rated tranches. But lenders did this at the cost of the very quest for revenue, heedless of risk, that was, according to Posner's third (and second) hypotheses, driving the banks' lax lending policies in the first place.

Therefore, we are left with Posner's first theory, that bankers were betting on the continued inflation of the housing bubble, and on their

ability to extract themselves from this bet before the bubble burst. This is conceivable, but it leaves an even bigger quandary: Why did *commercial banks*, among all of the world's investors, place such a heavy bet on the housing bubble? Commercial banks were in the best position of anybody to know about the underlying fragility of the bubble, especially inasmuch as they often issued the subprime mortgages that formed the weakest part of the housing market. Yet no other class of investors—not hedge funds, not pension funds, not mutual funds, not insurance companies—so dramatically overinvested in mortgage-backed bonds (Acharya and Richardson 2011, Table 7.1.) Why?

II. CAPITAL-ADEQUACY REGULATIONS AND THE FINANCIAL CRISIS

To answer such questions, we have to leave Posner's theory behind, even though his discussion treats the general subject of bank leverage in a sophisticated and enlightening fashion.

This discussion quickly identifies the inherent riskiness and fragility of the (commercial) banking business. Banks are not only big lenders; they are also big borrowers. Among their creditors are depositors, who put money into checking or savings accounts. Most of the money that a bank takes in from these depositors is lent out at interest to borrowers such as mortgage holders or businesses seeking to expand; or it is invested in securities, such as mortgage-backed, corporate, or sovereign bonds. The income from these loans and investments is the source of a bank's profit. So a bank is inherently leveraged: Its income comes from funds lent by depositors (which is then re-lent or invested).

This situation gives rise to the need for a capital cushion. The more of a commercial bank's depositors' borrowed funds are lent out to other borrowers, or are invested, the more money the bank makes (*ceteris paribus*). But the bank needs to keep a *liquidity* cushion to cover unexpected withdrawals by depositors—as used to occur during bank runs. A bank also needs a *capital* cushion to cover the possibility that borrowers, such as mortgage holders, will default on their loans—a matter that is usually predictable within general bounds, but not always, as the financial crisis reminds us. And since a bank's funds are borrowed, it also needs a capital cushion against the possibility that its investments will not turn out as hoped. Otherwise, a bank would be in the position

of the stock-market investors who famously used borrowed funds to bet on equities just before the stock market crash that preceded the Great Depression. These are the investors who jumped out of windows because they had nothing to cover their highly leveraged losses.

Posner explains this very well, but then he says nothing about the actual bank-capital regulations that were in place before and during the crisis (the Basel accords), which directly regulate the amount and, crucially, the composition of commercial banks' leverage.

The long history of bank failures and financial panics that occurred periodically since the beginning of the nineteenth century prompted numerous efforts at regulation and legal supervision of the banking system.[10] Posner provides only a very sketchy history of the many reforms that followed, of which deposit insurance and capital-adequacy regulations were the most important for commercial banks. Whenever and wherever deposit insurance has been instituted, as it was in the United States in 1933,[11] it has been accompanied by capital-adequacy regulation, since the financial regulators have feared that otherwise, banks that were now insured against bank runs by the government might be tempted to shrink their capital cushion too low to cover unanticipated losses on their loans (or other investments) (Cooper and Ross 2002).

Eventually, in 1988, the bank-capital regulations of the G10 countries (and very quickly those of most other countries) were harmonized by guidelines agreed upon by the Bank for International Settlements' Basel Committee on Banking Supervision. The first set of Basel accords, now known as Basel I, was agreed to in 1988; a new set of much more detailed and complex recommendations, Basel II, was issued in 2004. The Bank for International Settlements has no authority to impose its recommendations on anyone, however, and each country introduces them in its own fashion. In the United States, Basel I did not take effect until 1992, and Basel II never was implemented. Basel II took effect in various other countries on different dates and to different degrees in the years 2004–2008 (Blundell-Wignall and Atkinson 2008).

The Recourse Rule

In the interim, in 2001, the Federal Reserve Board, the FDIC, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision issued an amendment to the Basel I-based U.S. regulations

on capital-adequacy. This new regulation, colloquially known as the Recourse rule,[12] took effect on January 1, 2002—a date that, perhaps coincidentally, might be said to mark the beginning of the housing boom.

Basel I had distinguished between different asset classes according to their (presumed) riskiness, and it accordingly required different amounts of capital to be held against them, up to 8 percent. In the United States, the financial regulators made the base capital cushion higher—10 percent—for banks desiring the important legal privileges that came with being categorized as "well capitalized."

Under Basel I, gold, cash, and government bonds held by a commercial bank received a 0-percent risk weight, so they required no capital cushion. Bonds issued by GSEs, such as Fannie and Freddie, received a 20-percent risk weight, requiring a 2-percent capital cushion for "well capitalized" banks ($.20 \times 10$ percent). Whole mortgages received a 50-percent risk weight, requiring a 4-percent capital cushion ($.50 \times 8$ percent). Commercial loans, corporate bonds, and equities received a 100-percent risk weight, requiring a 10-percent capital cushion. To this list, the Recourse rule in 2001 added asset-backed securities, such as bonds backed by pools of credit-card debt, bonds backed by pools of automobile loans—or bonds backed by pools of mortgages—that had received an AA or AAA rating from a "Nationally Recognized Statistical Rating Organization" (Moody's, Standard and Poor's, or Fitch). These securities received the same 20-percent risk weight as agency bonds. This American innovation was spread to the rest of the world by Basel II.

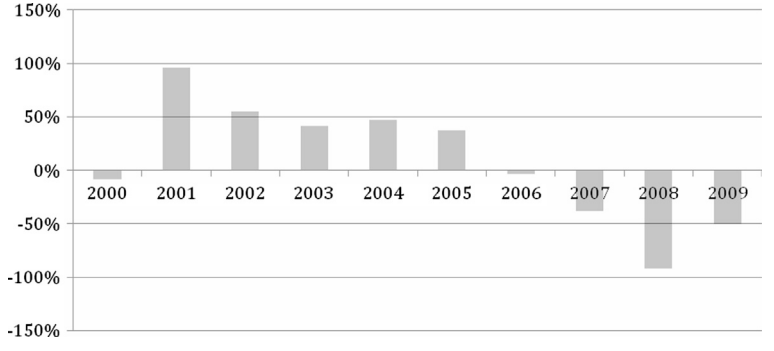
The result of this innovation in the United States was that, as of January 1, 2002, commercial banks were required to devote 80 percent more capital to commercial loans, 80 percent more capital to corporate bonds, and 60 percent more capital to whole mortgages than they were required to devote to mortgage-backed securities, as long as these securities were agency bonds or PLMBS rated AA or AAA. To the extent that a bank wanted to reduce its regulatory capital cushion, the Recourse rule would make that bank 80 percent more inclined *(ceteris paribus)* to reduce it by buying agency or private-label AA/AAA rated MBS (or other asset backed-securities) instead of corporate bonds, 80 percent more inclined to reduce it by buying mortgage-backed bonds (or other asset backed-securities) instead of making commercial loans, and 60 percent more inclined to reduce it by buying mortgage-backed bonds (or

other asset backed-securities) instead of, or in exchange for, whole mortgages.

The Recourse rule can thus be expected to have drastically altered not the *amount* of leveraged assets that so concerns Posner, but their *composition*. And it was this composition—the high concentration of mortgage-backed bonds held by commercial, not investment banks—which directly precipitated the financial crisis when, in September 2008, unexpectedly high default rates on subprime mortgages called into question the safety of the huge inventory of mortgages held by Lehman Brothers, the investment bank, which was pooling them for sale to commercial banks (and other investors). Arguably, then, without the Recourse rule, there would have been no financial crisis and no worldwide recession. On the other hand, Fannie and Freddie had been bailed out on September 7, so the inducements to invest in agency bonds that had been offered by Basel I cannot be said to have contributed to the crisis, except inasmuch as these inducements undoubtedly contributed to demand for the mortgages from which agency bonds were created, thus pumping up the housing bubble.

Indirect support for this hypothesis can be found in Figure 1, which shows an explosion in the issuance of PLMBS in 2001, when the final Recourse rule was finally issued, after preliminary versions going back to 1994[13] had reiterated the U.S. financial regulators' determination to calibrate the capital requirements for asset-backed securities according to their riskiness—as determined by the rating agencies (Moody's, S&P, and Fitch).

Figure 1. The Rise of Private-Label MBS (annual change)



Source: Friedman and Kraus 2011, Figure 2.1.

More direct support for the role of the Recourse rule would be a time series showing the acquisition of PLMBS by each major bank in the years before and after the Recourse rule was adopted. Even more direct support—or disconfirmation—might come from confidential interviews with bank decision makers. Since these data are as yet unavailable, we must infer the possible effect of the Recourse Rule from the overall outcome of whatever factors were at work. This outcome is displayed in Table 1, which shows the concentration in the banks of various types of mortgage bonds that, under the Recourse rule (and in the case of GSE-issued MBS, under Basel I, which was still in effect in the United States), received a risk weight of 20 percent.

I do not mean to imply that the Recourse rule was the sole cause of the financial crisis. It might have been a necessary cause, but not sufficient. (Another necessary cause might have been the low interest rates that stimulated the housing bubble.) Moreover, the crisis was international in scope, and the Recourse rule affected only American banks. On the other hand, Basel I applied internationally, and it encouraged mortgage lending rather than business ("commercial") lending, by requiring twice as much capital for commercial loans as for mortgage loans, risk weighted at 50 percent. Moreover, Basel II, which followed the example of the Recourse rule in its risk weights for highly

Table 1. The Overconcentration of Private-Label MBS in Commercial Banks

	Senior (AAA) mortgage bonds* as proportion of of total assets	Junior mortgage bonds* as proportion of total assets	All non-agency bonds as proportion of total assets
Commercial banks/thrifts	4.3%	0%	4.3%
Nonbank U.S. investors**	1.2%	0.2%	1.4%

*includes collateralized debt obligations.
**excludes GSEs, monoline insurers, and investment banks, which (in the first case) had political reasons to buy subprime private-label mortgage bonds (Wallison 2011), and (in the second and third cases) were involved in the production of those bonds.
Source: Derived from Friedman and Kraus 2011, Table 2.3.

rated asset-backed securities, reduced the risk weight for mortgages to 35 percent.

The best indirect test of the effects of these regulations would be a comparative study of mortgage versus commercial lending, and of the acquisition of highly rated PLMBS (on and off the balance sheet),[14] on the part of U.S. versus other countries' banks during the period 2001-4 (after the Recourse rule had been issued in the United States, but before Basel II was enacted) in contrast to 2004-8 (as Basel II began to take effect in various countries). Until such research is done, however, it is important to remember the most compelling argument against Posner's attribution of the crisis to reckless risk-taking on the part of the banks: that in the United States, at least, the overconcentration of highly rated subprime (private-label) mortgage bonds in the commercial banks appears to have been strongly influenced by the much higher amounts of capital required for most other investments under the Recourse rule.

III. CAPITAL ARBITRAGE WITHOUT INCREASING LEVERAGE

One might well ask, however, whether the banks' apparently keen interest in taking advantage of the Recourse rule's (and Basel I's) provisions does not prove Posner's larger point: that bankers were recklessly taking (known) risks.

After all, buying low-risk-weighted assets, such as highly rated mortgage bonds, reduces banks' regulatory capital requirements—and therefore allows them to increase their leverage. Yet, as I pointed out before, the fact is that U.S. banks' leverage levels remained essentially flat throughout the seven years before the crisis, in the aggregate (Friedman and Kraus 2011, ch. 2). This may indicate the simplistic nature of the usual understanding of the purpose of regulatory capital arbitrage.

It is true that banks need a capital cushion, and reducing that cushion, by increasing a bank's leverage, increases its risk. But there is a tremendous difference between a *regulatory* capital cushion and a *usable* capital cushion. A regulatory capital minimum is not a "cushion" at all: If it is breached, negative legal consequences follow for the bank. It is more like a hard floor than a pillow that can absorb unexpected losses.

Thus, a bank that maintained a *non*-regulatory capital cushion of 10 percent would be able to let it fall to 9, 7, 5, or 1 percent to absorb losses

in times of trouble. When the financial crisis struck, however, this was not possible for banks that wished to retain the legal privileges associated with being a "well-capitalized" bank capitalized at 10 percent, or for banks that did not want to be seized by the FDIC if they fell below the 8-percent "adequately capitalized" level and could not recapitalize within 90 days. During those 90 days, the FDIC might also have removed bank management (GAO 2007).

The distinction between regulatory capital "cushions" and usable capital cushions may resolve a quandary in the banking literature: the question of why banks consistently maintain capital levels well in excess of the legal minima (e.g., Tarullo 2008, 141–50; Hanson et al. 2010). Prior to the crisis, the typical well-capitalized bank had 12.85 percent of risk-adjusted capital. The "extra" 2.85 percent was the banks' *usable* capital cushion—their margin for error before they hit the hard legal floor of the 10-percent capital minimum—assuming, for the sake of simplicity, that the banks' assets were all risk-weighted at 100 percent. However, if a bank engaged in regulatory capital arbitrage by issuing only mortgages and no business loans, its assets would all be risk-weighted at 50 percent, such that a 12.85-percent level of risk-based regulatory capital would contain a 7.85-percent usable capital cushion. And for purposes of illustration,[15] if a bank were to invest entirely in 20-percent risk-weighted assets, such as triple-A subprime mortgage bonds, this would have left it with a 10.85-percent usable capital cushion, since that is the amount of leeway it would have before it hit the legal floor of 2 percent capital (10 percent × .20).

This analysis may explain why commercial banks would have collectively acquired capital at a pace that exactly matched the growth of their *non-risk-weighted* assets during the 2000s (Friedman and Kraus 2011, figs. 2.4 and 2.5), even while they shifted the composition of their balance sheets toward low-risk-weighted assets such as agency bonds and triple-A PLMBS. In conjunction, these actions suggest that in the aggregate, U.S. bankers were using the Recourse rule not to lower their *usable* capital cushions, but to increase them by lowering their *regulatory* capital *floors*.

Consider a well-capitalized commercial bank that on January 1, 2001, had risk-adjusted capital amounting to 14 percent of its $100 in assets, all of which were business loans risk weighted at 100 percent. This bank's usable capital cushion was $4, while its regulatory capital cushion was $10. If in 2001 it exchanged $5 of its business loans for $5 of triple-A

mortgage bonds, then when the Recourse Rule went into effect on January 1, 2002, the bank would have lowered its regulatory capital floor by 80 percent of the value of the bonds, or $4. Now its usable cushion would have expanded by $4, to $8, because its regulatory capital floor would have been reduced by $4, to $6.

Regulatory arbitrage need not increase leverage levels and thus risk; it may instead increase usable capital levels at the expense of regulatory capital levels, *reducing* risk (other things equal). The same effect could be achieved by adding (instead of trading for) AAA mortgage bonds while the balance sheet was expanding, as long as the bank also added enough capital to keep pace. This may account for banks' use of capital arbitrage during the years leading up to the crisis, even while their leverage levels remained essentially unchanged.

On the eve of the crisis, the net effect of the banks' purchases of AAA-rated mortgage bonds (risk weighted by the Recourse rule at 20 percent), even while adding enough capital to keep up with the overall growth in the banks' assets, would have been to reduce the amount of regulatory capital they needed by 3.44 percent—that is, 80 percent of the 4.3 percent of their assets that was invested in these instruments (Table 1, row 1, col. 3)—assuming, for the sake of simplicity, that this 4.3 percent otherwise would have been risk weighted at 100 percent. Using the same assumptions for purposes of exposition, the net effect of banks' purchases of *all* MBS, including agency bonds, would have been to reduce their legal capital minimum by 80 percent of the 12 percent of their assets thereby placed into the 20-percent risk bucket (Friedman and Kraus 2011, Table 2.2), increasing their usable capital cushion by 9.6 percent. In reality, of course, banks might have been trading whole mortgages risk weighted at 50 percent, not business loans risk weighted at 100 percent, for MBS. But even if they were thus "exchanging" *no* 100-percent-risk-weighted assets for agency bonds or triple-A PLMBS, the effect of the 12 percent of their assets devoted to these 20-percent risk-weighted assets instead of whole mortgages would have been to increase their usable capital cushion by 4.8 percent.

The problem, then, was not that banks were overleveraged, except inasmuch as one can always say, in retrospect, that a bank that runs through its usable capital cushion should have had a bigger usable capital cushion. The problem was that, to minimize pointless expenditures on regulatory capital *minima*, which cannot serve the loss-absorbing function of real capital *cushions*, banks had shifted into assets that had been assigned

a low risk weight by the Basel Committee on Banking Supervision in 1988 and by the U.S. financial regulators in 2001—among which were the senior tranches of private-label mortgage-backed bonds.

This is an explanation of the financial crisis that targets the effects on real-world banks of real-world laws. It should thus be a fit topic for research in law and economics. That instead, the founder of the law-and-economics movement has chosen to theorize about the incentives that *must* have driven banks into the ditch, with no reference to the actual laws that created entirely different incentives for entirely different behavior—that is, risk-averse behavior, not reckless behavior—may say something about the fraught nature of contemporary economics, which is too often abstracted from realities that can only be discovered through empirical research, not a priori speculation.

In any case, attention to the economic consequences of banking regulations (and other regulations)[16] seems to provide a much more powerful framework for understanding what caused the financial collapse than the path that Posner has chosen. And it seems like a natural approach for scholars of *law* and economics to pursue.

NOTES

1. Cheap credit and low rates of interest denote essentially the same concept—the ability of the borrower to obtain low-cost money, either for investment or consumption purposes. In the period of 1998 to 2005, interest rates on 30-year mortgages fell from 7 percent to 5 percent. See Federal Home Loan Mortgage Corporation (FHLMC), 30-Year Fixed-Rate Mortgages Since 1971. http://www.freddiemac.com/pmms/pmms30.htm
2. Banking Act of 1933, ch. 89, 48 Stat. 162 (codified as amended at 12 U.S.C. §§24, 78, 377-78 (1994)) (repealed 1999).
3. The deregulation consisted in SEC permitting the five publicly held investment banks to be exempted from its traditional Net Capital Rule, which prescribed specific ratios of debt to equity. See Net Capital Requirements for Brokers or Dealers, 17 C.F.R. § 240.15c3-1 (2008). In its place, the five firms were allowed to design their own individualized credit models, which the SEC then could reject.
4. Securities and Exchange Commission, Quart. Rep., Form 10-Q, at 62, 4 April 2008.
5. Securities and Exchange Commission, Quart. Rep., Form 10-Q, at 113, 26 September 2008.
6. Securities and Exchange Commission, Quart. Rep., Form 10-Q, at 88, 7 July 2008.
7. See Friedman and Kraus 2011, Appendix 1.

8. Fannie Mae, 12 U.S.C. 1716 et seq.; Freddie Mac, Public Law No. 91-351, 84 Stat. 450.
9. In the case of asset-backed bonds, the contractual structure of the tranches *guaranteed* that the lower-rated bonds were indeed riskier.
10. See, for example, Schweikart 1991.
11. Public Law No. 66, 73d Cong., H. R. 5661.
12. 66 FR 59614.
13. 59 Fed. Reg. 27116 (May 25, 1994).
14. See Friedman and Kraus 2011, Appendix 2.
15. That is, setting aside the separate requirement that a well-capitalized U.S. bank maintain at least 5 percent of Tier 1 capital to total (unweighted) assets. See Tarullo 2008, 145.
16. E.g., securities laws, housing laws, and accounting laws; see Friedman and Kraus 2011, ch. 3.

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