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# Risk and Systemic Risk

## By John H. Makin

Speaking on August 22 at the Federal Reserve Bank of Kansas City's Annual Economic Symposium in Jackson Hole, Wyoming, Federal Reserve chairman Ben Bernanke entitled his important address "Reducing Systemic Risk." Bernanke outlined three key elements of the Fed's response to what he described as "one of the most challenging economic and policy environments in memory." First, the Fed has eased monetary policy, cutting the federal funds rate from 5.25 percent to 2 percent. Second, the Fed has expanded its liquidity support by developing new special lending facilities to mitigate "very severe strains in short-term funding markets." The third and, as yet, unfinished element of the Fed's strategy involves "a range of activities and initiatives undertaken in our [the Fed's] role as financial regulator and supervisor."

Chairman Bernanke identified "the collapse of Bear Stearns" as a wake-up call regarding the absence of an adequate financial regulatory infrastructure for dealing with the systemic problems that can affect the viability of the entire financial system. "In the Bear Stearns case," he said, "the government's response was severely complicated by a lack of a clear statutory framework for dealing with such a situation." He suggested that the U.S. Treasury might play a key role in setting up such a framework to "intervene in cases in which an impending default by a major nonbank financial institution is judged to carry significant systemic risks."

The recent Treasury effort to shore up Fannie Mae and Freddie Mac—together the holders of more than 40 percent of all U.S. mortgages—is not reassuring concerning the Treasury's possible future role in containing systemic risk. The Treasury's initial effort fell far short of a decisive move that would have either nationalized those sad institutions or, mercifully, initiated an orderly procedure to put them to sleep forever. The virtual collapse of the common share prices of Fannie and Freddie since the Treasury's aborted effort to reassure investors does not provide much encouragement that the Treasury is well on the way to developing a comprehensive framework for dealing with systemic risk, notwithstanding the "blueprint" it put forward in March to modernize the financial regulatory structure.

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### Systemic Risk Emerges

It is important to understand clearly the concept of systemic risk in the midst of an intense credit crisis that coincides with the onset of a global recession. As Chairman Bernanke clearly suggested, the U.S. credit crisis revealed glaring inadequacies in the regulatory and supervisory framework of the United States. One of the primary purposes of that framework should be to avoid having risk-management failures at individual institutions such as Bear Stearns engender systemic risk to the entire financial system. Again, in Bernanke's words: "the collapse of Bear Stearns was triggered by a run of its creditors and customers, analogous to the run of depositors on a commercial bank." Acknowledging that he was surprised by the run on Bear Stearns because its borrowings were largely secured, Bernanke went on to say that "the illiquidity of markets in mid-March was so severe that creditors lost

confidence that they could recoup their losses by selling the collateral [on Bear Stearns]."

Bernanke's description of the Bear Stearns episode reveals the error of describing it as a "liquidity problem." Liquidity did dry up for Bear Stearns, but the real problem was an "incipient solvency" issue. All of Bear Stearns's counterparties knew that if the firm was forced to sell assets in order to satisfy its counterparty claims for liquidity, the price of those assets would drop so sharply that the solvency of Bear Stearns and other investment banks would be compromised severely. What I am calling the "incipient solvency" issue provides the critical link between the liquidity problems that arise for a given institution because of its failure of risk management and the systemic solvency problems that can arise from the consequences of such a failure.

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## Hedge Funds and the Financial System

It is essential to understand how the credit crisis came about and created the underlying set of conditions whereby a counterparty run on a relatively small investment bank like Bear Stearns could have threatened the global financial system. More broadly, the answer to this question is important in understanding why the frequency of financial crises has been increasing since the Asian crisis flared in 1997.

A good start toward understanding the difference between ordinary risk and systemic risk is to ask how a hedge fund resembles the banking system—especially with respect to risk management—and how it does not. A generic hedge fund can be seen as a collection of traders, each of whom is charged with earning as much money as possible. To that end, the trader is provided with ceilings on the size of investment positions he or she can take and is given incentives in the form of an agreement whereby he or she retains a percentage of the profits earned for the firm. The fundamental risk-management problem for a hedge fund is related to the fact that traders do not personally share in losses, just in gains. An individual trader therefore has the incentive to take too much risk because he or she captures all of the upside of large winning trades without a downside for net losses. Specifically, if a trader loses over the course of a year, the company has to absorb the loss. The trader receives no bonus and may have to make up the loss in subsequent years, but the company absorbs the loss on a year-by-year basis. The "zero-bound problem" (again, my term) breaks into the headlines when a single trader, having taken far too much risk, loses so much money that the entire company is forced to either close or take a massive loss, while the downside for the trader is limited to dismissal from the company.

Risk management for a hedge fund, given this background, is relatively straightforward. First, traders are given limits on the size of positions they can take, and their activities relative to those limits are monitored. (This is true in most cases. There are exceptions, however, as with the spectacular losses by an unsupervised trader at Société Générale at the end of 2007.) Sometimes traders press to exceed their predetermined trading limits. If they do so consistently and their returns become too volatile or too negative, traders are usually asked to take a "timeout." If the excessive risk-taking continues, the offending trader is dismissed. The important point here is that the trader's dismissal and the negative consequences of poor risk management or bad trades do not have systemic consequences. Rather, the losses are absorbed by the hedge fund, which may or may not prosper, depending on its risk management going forward. Further, dismissal of a trader who fails to manage risk is clearly in the interest of the hedge fund owner or manager who has a strong incentive to contain trading losses.

Now consider the statutory and regulatory problems referred to by Chairman Bernanke: risk management of the global financial and banking system. Banks and other financial institutions assume the role of individual traders, while central banks and regulators take on the role of hedge fund management. The incentives for banks and individual financial institutions to assume too much risk are similar to those of traders, especially in institutions deemed "too big to fail." The "Greenspan Put"—in which investors rely on the central bank's claims that it cannot identify market bubbles as they build but can contain the damage to financial markets after bubbles have burst—encourages a buildup of systemic risk. Regular readers of this publication will recall that in July 2007, just before the credit crisis intensified sharply, former Citicorp CEO Charles Prince said "as long as the music is playing, you've got to get up and dance." It is the compulsion for banks to "dance" while a

bubble is inflating that creates systemic risk. Individual banks and investment banks know they are taking too much risk—recall the virtual disappearance of risk premiums during 2006 and early 2007—but they lose market share if they stop taking the risks that other institutions are taking to inflate the bubble further. The central banks' silence on a bubble encourages the process, as does its complicity to manage postbubble fallout once the bubble bursts. When the music stops, if you are too big to fail, the Federal Reserve helps to cushion the pain by sharply cutting interest rates, providing liquidity, and otherwise acting to contain systemic damage. Yet, with the bursting of the bubble well over a year behind us, the real concern lurking in the background at this year's Jackson Hole symposium was the failure, so far, of the financial and regulatory structure—despite considerable efforts—to contain the collateral damage from the collapse of the housing and mortgage market bubbles.

Banks and financial institutions individually strive to maximize profits while counting on the Greenspan Put to minimize the costs on the downside. For the systemic-risk managers who oversee the financial and regulatory framework that governs them, perhaps the trickiest part of their role is how to discipline the bad actors. Bear Stearns was a classic case in point. Bear Stearns behaved very much like a rogue trader, taking on far too much risk in the mortgage sector by starting up hedge funds specifically designed to take such risks even as the real estate bubble began to collapse. Regulators and system managers really had no means available to force Bear Stearns to take a timeout. When the time came to "fire" them in March 2008, it was not possible simply to let them fail because of the systemic risks entailed by such a step.

## Hazy Incentives for Systemic-Risk Managers

The other big breakdown in the analogy between risk management at a hedge fund and risk management in the banking and financial system concerns the incentives of the managers. In the case of a hedge fund, management is highly motivated to discipline traders who take too much risk because the managers have a large stake in the survival and prosperity of the fund itself. They want to weed out irresponsible traders, and they have the means to do so in ways that do not entail risk to other institutions or to the financial system. In fact, their diligent risk management is both in their interest and in the interest of the system at large.

> Those entities that are not subject to the constraints imposed by institutions like the Fed with the power to provide relief in times of distress should be constantly reminded that such relief will not be available to them. The public should be reminded as well.

In the case of the banking and financial system, however, the regulators and central banks that manage the financial and regulatory framework do not have the clearly defined self-interest of a hedge fund manager. In the vernacular, they do not have as much "skin in the game"—that is, personal risk and reward at stake—as hedge fund managers when it comes to risk management. In addition, the Greenspan Put framework—whereby bubbles are allowed to rise while central banks try to clean up the damage after the bubbles burst—reinforces the strategy of too much risk-taking by individual institutions run by managers whose compensation may not suffer overall if they can retain huge gains during a bubble buildup while cushioning losses after it bursts, especially if the Greenspan Put provides a successful hedge. Of course, the bursting of the housing bubble has been so violent that some managers have not survived, but most—with the notable exception of managers at Bear Stearns—have managed to hold on to gains accrued while the bubble was inflating.

In his paper presented to the Jackson Hole symposium this year, my AEI colleague Charles W. Calomiris captured brilliantly the problem with the activities of risky banks in a financial system. He quoted John Maynard Keynes's 1931 essay "The Consequences to the Banks of the Collapse in Money Values": "A sound banker, alas! Is not one who foresees danger and avoids it, but one who, when he is ruined, is ruined in a conventional way along with his fellows, so that no one can really blame him."

Keynes brilliantly puts banks into the role of children who, having been caught doing something really stupid, can reply that "everybody else was doing it," as the now-departed heads of Citibank, Merrill Lynch, and Countrywide have done. That such an observation may be true offers little consolation when "everyone else"—all of the other banks and financial institutions overextending credit in the middle of a housing bubble—now faces losses on a scale that threatens the viability of the global financial system. Beyond that, the losses have

been substantial enough and pervasive enough to precipitate a severe global recession that may further intensify the credit crisis and, in turn, further weaken the global economy. The dreaded, unstable adverse feedback loop looms.

With central banks and regulators playing a role with respect to systemic-risk management analogous to the role played by hedge fund managers with respect to hedge fund risk management, this question arises: how can we give the regulators or central banks with regulatory and supervisory authority over the financial system some financial stake in the markets so that they have an incentive to act preemptively to contain systemic risk? Walter Bagehot's dictum that in a crisis central banks should lend freely but at a penalty rate has not been followed and—to be honest—could have led to disaster in the case of Bear Stearns. Alternatively, as Willem Buiter suggested in the paper he delivered at the Jackson Hole symposium on August 16 ("Central Banks and Financial Crises") that was highly critical of central banks' role (especially the Fed's) in the management of the crisis over the past year, it might have been possible for the central bank to support the market for Bear Stearns's illiquid assets as a step toward containing systemic risk.

Yet, when it comes to designing a supervisory and regulatory system that gives regulators the incentive to constrain risk-taking before it gets out of hand, there still is no easy answer. Applying to regulators the system of financial rewards and punishments such as exist for individual managers would probably help, but the political viability of such a framework is highly questionable. There could be punishments for regulators whose inaction or inattention to an emerging crisis has abetted the excesses that led to that crisis. Members of the Federal Open Market Committee would, no doubt, attest to the reality that punishment exists, at least in the form of ample public criticism of their actions over time. The upside financial incentives for preemptive systemic-risk management, however, are absent. The financial compensation for regulatory authorities and central bankers falls far short of that earned by private sector participants in the financial markets—especially the managers of successful hedge funds—but authorities do get paid whether or not the system prospers.

The ultimate lesson from the experience we are undergoing with the collapse of the housing bubble and an attendant credit crisis is that financial and economic cycles will always be with us.

## Better Systemic-Risk Management

The problem of designing a global framework for preemptive systemic-risk management—Chairman Bernanke's "heavier macroprudential focus"—is a very difficult one, and it remains with us in the midst of an intense credit crisis, as the presentations and discussions in Jackson Hole made amply clear. Since there are no clear answers to these knotty problems, it may be appropriate to offer a few modest suggestions. First, regulators and especially central banks ought to give consideration to attempting early identification of signs that a bubble is emerging. By 2005, it was clear that practices in the mortgage market—including zero down payments, no documentation on mortgage loans, and negative amortization loans—were fueling a bubble in the housing market, with prices rising at unsustainable rates while massive volumes of derivative credit instruments, whose value was highly sensitive to the assumption that house prices did not fall, were being created and distributed globally. Just as a central bank might step in to tighten the money supply in the face of incipient inflation pressure, central banks might intervene in the face of incipient bubbles. While not infallible, such a procedure is probably preferable to having to intervene aggressively (as in the case of Bear Stearns) to avoid having a liquidity problem turn into an insolvency problem that implies substantial systemic risk to the financial sector and the global economy.

The problem of procyclical leverage, identified in a number of the papers presented at Jackson Hole, is a close relative of the need to attempt to identify bubbles and to constrain the rise in leverage that accompanies the expansion of a bubble and the rapid contraction of leverage that accompanies the bursting of a bubble. In those circumstances there is probably no substitute for the closer supervision of banks and any other institutions that, while not currently within the purview of the central bank, may conceivably seek relief in the event of an ultimate collapse in some financial excess. The lesson from Bear Stearns is clear. Since its excesses ultimately led to systemic risks that the Fed had to truncate, it would not have been inappropriate for the Fed to have regulated the actions of Bear Stearns and other investment banks during the run-up of the housing bubble.

Going forward, the lesson is clear. The dividing line between constrained and unconstrained financial entities has to be clearly drawn and adhered to. Those entities that are not subject to the constraints imposed by institutions like the Fed with the power to provide relief in times of distress should be constantly reminded that such relief will not be available to them. The public should be reminded as well. The latter step, apparently, is very difficult to effect. Most prospectuses and descriptions of financial offerings by investment banks and other financial institutions contain so much legal boilerplate that a rational reader would conclude that the touted investment would only be undertaken by a fool. That said, the sad outcome with respect to Bear Stearns and, perhaps, other financial institutions in this credit crisis may provide a platform to supply the public with meaningful reminders about the risks entailed in certain investments.

Of course, the ultimate lesson from the experience we are undergoing with the collapse of the housing bubble and an attendant credit crisis is that financial and economic cycles will always be with us. Perhaps the best we can do is to make a greater effort to design a regulatory and supervisory framework that recognizes the intimate links between the financial and real sectors of each economy and among the financial and real economies of the global economic system. Maybe the shared stake of the global economic system and financial stability will aid in the design of a superior financial and regulatory framework. Be assured, however, that such a framework is not yet in place, nor is its outline very clear.

Risk is always with us. In modern times, so, too, is intensified systemic risk. We are just more aware of both than we have been for a while. Maybe that is a good thing.