

## Proposals Concerning the Current Financial Crisis

Harry M. Markowitz

**A** basic cause of the current financial crisis was the mandate by the U.S. Congress for the Federal National Mortgage Association (Fannie Mae) to vastly increase its support of low-income housing. This mandate required a lowering of lending standards. These lower standards encouraged people with relatively high incomes to buy more expensive houses than they otherwise would have or to buy speculative second homes with the option of walking away from them if house prices fell.

The problem was aggravated by novel, obscure, highly leveraged financial instruments that were not well understood by the companies that used them. These instruments caused an information crisis in which parties refused to enter into transactions with each other whenever doing so involved counterparty risk because no one knew who held bad paper.

Part of the cure for the current crisis—which would also remove one potential cause of future crises—is for Congress to stop pressuring Fannie Mae to acquire mortgages with insufficient borrowing standards. On the contrary, any mortgages that Fannie Mae purchases should meet solid, traditional down-payment and documentation requirements. Inducing families to buy houses they could not afford did not benefit them, the U.S. and international financial systems, or the world economy.

Reducing the pressure on Fannie Mae to promote low-income housing, however, would not address the financial transparency crisis involving such instruments as collateralized mortgage obligations (CMOs), which pool mortgages and slice them into “tranches” that are sold to clients that, in some cases, use these tranches as inputs to other exotic instruments, such as collateralized debt obligations (CDOs). The result is that the parties do not know the risks to which they and their possible counterparties are exposed. My proposal concerns this lack of transparency of such financial instruments as CMOs and CDOs. Credit default swaps (CDS), which have additional problems, are treated separately.

### The Transparency Crisis

When Bear Stearns first signaled that all was not well with some of the complicated financial instruments it held, lending between financial counterparties started to dry up. The Fed addressed this problem by adding liquidity to the financial system, the effect of which was to devalue the dollar. The prices of such commodities as gold, oil, and grains went up; dollars per euro went up. Finally, the unthinkable

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happened: The dollar sold on a par with the loonie (the Canadian dollar). But despite this devaluation and the continued increase in liquidity, the problem remained because the problem was not a lack of liquidity; it was a lack of confidence.

Since then, the commodity bubble has burst, and the resulting paralysis of the global financial system has started the global economy on a typical downward cycle: Worried businesses and households try to cut back, which means less spending and corporate layoffs. Therefore, the next round of the cycle requires even more cutting back because not only does worry remain high but also receipts have fallen and the chances of being laid off have increased. Meanwhile, increased risk aversion, as well as poor earnings reports, has caused stock markets to fall, which increases worry and the desire to cut back. As economic theory shows, and as always happens in fact, this process reaches an equilibrium. Eventually, confidence returns and the economy resumes its upward trend. But many suffer while the stock market and the economy seek their bottoms.

In the meantime, hundreds of billions of dollars of obscure paper remain, and much of it will continue to remain for years. Judging the worth of the holder as well as the worth of the paper itself is difficult with regard to instruments in private hands. If the government wishes to purchase such instruments, the obvious question is what a fair price would be. If such instruments pass into government hands and as the housing situation changes, questions about the instruments' fair value will continue to arise, essential to determining at what price someone should be willing to buy them from the government and the government be willing to sell them back to private hands.

Thus, the problem of valuing these instruments will continue for years to come if nothing is done to bring transparency to them.

## A Proposal

My proposal for gaining insight into these instruments is fourfold:

1. Take a census of the institutions that own various instruments—CMOs, CDOs, CDS, and the like—noting the assets, liabilities, and “rules of the game” of each instrument. Although this proposed survey is large, it is no larger than such government efforts as the U.S. Census Bureau’s Annual Survey of Manufactures.
2. Calculate the direct and indirect exposures of each instrument. For example, CDO A contains Tranche B of CMO C, etc., and thus is exposed to these amounts of those underlying mortgages. The mathematics of tracing out these direct and indirect relationships is similar to the techniques by which a search engine (e.g., Google) finds thousands of web pages that match a given phrase.
3. Aggregate the direct and indirect exposures of a given instrument (and the instruments of a given institution) into meaningful categories. Simply knowing that a given instrument is directly or indirectly exposed to a long list of mortgages is insufficient. These mortgages should be aggregated in various ways (e.g., by zip code and late-payment history). The leverage of the instrument and of the institution that holds it should be analyzed, both directly and indirectly (e.g., has the institution borrowed to buy a tranche in an instrument that is itself leveraged?).
4. This information should be disseminated on a need-to-know basis to various parties, including stockholders, counterparties, regulators, and academicians. As with Census Bureau data, the more public disclosures may be aggregated more than those disclosures that are less public.

Over time, these direct and indirect exposures change. Therefore, the survey and the analysis would need to be updated periodically—daily, if possible. A proposed clearinghouse for these obligations seems to be gaining ground. The required daily reporting and updating would be part of such a clearinghouse. Absent a clearinghouse, less frequent updating—monthly, quarterly, or, at worst, annually—would have to do.

A possible objection to this proposal is that its results would not be available in a timely fashion. Even if the census specified in step 1 is conducted and the mathematicians, clerks, programmers, economists, and computers required by steps 2 and 3 are assembled on a crash basis, the results in step 4 would not be available for many months. The agony of such a wait might seem unbearable. But the bursting of the Japanese real estate bubble and the sluggish Japanese economy in the decade that followed showed that covering over and ignoring structural problems is an insufficient response. Japan’s structural problem consisted of “zombies”—bankrupt companies that Japanese banks refused to recognize

as such on their books. Our own structural problem is that we have hundreds of billions of dollars' worth of paper whose value no one understands. No matter what laws are passed and no matter where these pieces of paper are moved, we will have this problem for years to come. Finally, note that if my proposed program had been undertaken in the second half of 2007, when it became clear to many that we were facing an information crisis rather than a liquidity crisis, the results of the program would be available now.

### Credit Default Swaps

Among the pieces of paper (or book entries) that played a prominent role in the current crisis, credit default swaps deserve special mention. CDS are insurance against the default of various obligations. Some insure against the default of corporate bonds, for example. Others have obscurity problems like those of CDOs because they are, in fact, insurance against the default of CDOs.

Questions about obscurity—namely, the direct and indirect exposures of CDS to various risks—should be addressed as part of the process of tracing out the direct and indirect exposures of such instruments as CDOs. But even the straightforward “non-obscure” CDS have not been well understood.

Presumably, credit default swaps are called “swaps” rather than “insurance” to avoid the level of reserves required by regulators to back insurance policies. But CDS *are* insurance and, in fact, should require greater reserves than does life insurance.

Deaths are fairly uncorrelated events, but business risks are usually correlated. If Ford Motor Company does badly, General Motors Corporation probably will too, as will their dealers and suppliers. When risks are uncorrelated, sufficient diversification drives volatility toward zero. When risks are correlated, no amount of diversification will eliminate risk. A substantial amount of risk remains even in a broadly diversified portfolio of correlated risks.

### Conclusion

First and foremost, Congress should instruct Fannie Mae that the safety of the banking system must take priority over the objective of providing housing for low-income families. Second, the government should sponsor a survey of direct exposures and an analysis of indirect exposures of obscure financial instruments. This action is necessary to help restore clarity and trust to the financial system. Third, regulators should recognize that credit default swaps are insurance against correlated risks and are thus subject to much greater *portfolio* risk than is a portfolio of uncorrelated risks.

In general, businesses should understand that financially engineered products are based on assumptions regarding not only parameter estimates but also model specification (model risk). With a highly leveraged portfolio of marked-to-market products, such a misspecification can have disastrous consequences.

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