



*The run-on-the-bank experiences of Bear and Lehman, driven by a crisis of confidence, had never occurred before in investment banking.”—Christopher Cox*

# Liability Dynamics

## A New Analytic Framework for Counterparty Risk Management?

••If data on **funding liquidity** can be organized into a theory of liability dynamics, it can be used to supplement credit ratings, VaR, and qualitative risk measures in evaluating counterparty risk.

BY ED BLOUNT

IN OCTOBER 2008, then SEC Chairman Christopher Cox was asked if he thought liabilities were a fruitful field for further regulatory development.

“Yes. The run-on-the-bank experiences of Bear and Lehman, driven by a crisis of confidence, had never occurred before in investment banking,” he said. “The rapid flight of customers, such as hedge funds, illustrated the benefits of more ‘sticky’ sources of financing. The liability side of the analysis certainly has the full attention of regulators.”

### The Crucible for Calibration

After the collapse of Bear Stearns and Lehman Brothers, investors were shocked to learn that even senior executives failed to appreciate how vulnerable their firms were when denied access to short-term funding markets. Similar funding denials preceded the de facto collapses, shotgun mergers, or bailouts of other

large investment banks, as well as AIG, Citigroup, Fannie Mae, and Freddie Mac.

As Fed chairman Ben Bernanke explained, such institutional failures resulted from “poor risk management [since] the spreading of risk, one of the purported benefits of the originate-to-distribute model, proved to be much less extensive than many believed. When investors were no longer willing or able to finance new structured credit products, many of the largest financial institutions had to fund instruments they could not readily sell or had to meet contingent funding obligations for which they had not adequately planned.” Simply put, contingent liabilities took down some of the largest, highest-rated counterparties in the world.

The financial market does not suffer shocks lightly. According to a report by the Basel-based Bank for International Settlements (BIS), the central bank for central banks: “Following Lehman Brothers’ bankruptcy on 15 September, conditions in financial markets deteriorated to new lows. Liquidity demand surged while perceived counterparty risk rose to record highs, resulting in the virtual shutdown of the unsecured interbank lending market. At the same time, flight to safe-haven government securities intensified. . . . Investors piled into Treasuries and became extremely unwilling to repo them out.”

The high tensions in credit markets could be seen, paradoxically, in the low prices paid for overnight cash loans in the U.S. repo and securities lending markets. “As the available supply of Treasury collateral dropped,” reported the BIS, “those market participants willing to lend out Treasuries were able to borrow cash at increasingly cheap rates. At times, this effect pushed U.S. GC [general collateral] repo rates down to levels only a few basis points above zero.” Conversely, those participants without high-quality collateral were rapidly forced to pay far more in the funding markets.

In other words, savvy investors wanted no part of the U.S. banking sector’s unsecured deposit liabilities. To avoid the risk, they were willing to forgo almost all the return in order to hold more secure U.S. government liabilities—that is, Treasury bonds. That’s not an unusual view for some investors, even without a crisis, but the significance in this case lies in the clarity of the resulting market effect. Rates paid by risky borrowers in the U.S. funding markets moved sharply and quickly away from rates paid by more secure borrowers. Moreover, the BIS report noted that the pricing effect was markedly different in the euro repo markets during the same period, due to the differences in counterparty-network composition and breadth, scale of activity, scope of collateral, and so on.

For risk analysts studying this market months later, it became clear that these herd-like global movements and regional market reactions in the autumn markets of 2008 could be used to help calibrate the local effect of interac-



**Axel A. Weber,**  
president of the  
Deutsche Bundesbank

© 2009 Deutsche Bundesbank

***“Market participants often relied solely on credit ratings and were attracted by the fact that these loan securities had larger spreads than similarly rated corporate bonds.” —Axel A. Weber***

tions among smaller networks of lenders and borrowers in later cash and securities markets.

In essence, a set of liability-driven metrics has been uncovered to assist risk managers during more normal conditions. If the data on funding liquidity can be organized into a theory of liability dynamics, it can be used to supplement credit ratings, VaR, and qualitative risk measures. For instance, when the rates paid by a counterparty in a particular funding market begin to rise, these metrics may be able to signal to those monitoring it that the network knows more about changes in the borrower’s risk profile than the rating agencies, securities analysts, and others outside their trading group. In current markets, monitoring the liabilities of key counterparties can help even an outsider avoid the administrative snares of an extended bankruptcy.

### **A Cauldron of Claims**

The run-up to the financial market crisis was characterized by growth in the linkages within the markets, mainly through expanded use of securitization, credit derivatives, and off-balance-sheet vehicles. The resulting complexity now embedded in modern markets is both a benefit and a danger. The social benefits of risk diversification are partly offset by the greater danger from concentration of



**Mario Draghi,**  
governor of the  
Bank of Italy

© 2009 Bank of Italy

*“One striking aspect of the crisis is precisely how its unfolding has continued to catch both policy makers and private-sector players by surprise.” —Mario Draghi*

unidentifiable exposures. That concentration proved to be unexpectedly contained in the very largest, most closely regulated global financial institutions.

The cascade of problems in these financial institutions, triggered by the U.S. subprime collapse, caught everyone off guard. In December 2008, Governor Mario Draghi of the Bank of Italy told a group of central bankers that “one striking aspect of the crisis is precisely how its unfolding has continued to catch both policy makers and private-sector players by surprise.”

Draghi, who also is chairman of the influential Financial Stability Forum (FSF) in Basel, admitted, “Our knowledge of all the interactions within the financial services industry in a global world was quite superficial at the beginning of the crisis. ... Our collective understanding of these processes has certainly deepened during the last year, but we do not yet have a conscious and fully fledged view of how the financial sector will look in the years to come.”

The redistribution of market and credit risks conceals their final locations and interlinkages. “This loss in transparency [during the crisis] meant that market participants did not evaluate their credit risk adequately,” said Axel A. Weber, president of the Deutsche Bundesbank, in December 2008. In particular, the systemic exposures that evolve in the market for collateralized debt obligations are not factored into risk management systems, either by originators, regulators, or investors. As Dr. Weber reminded his listeners, “Market participants often relied solely on credit ratings and were attracted by the fact that these loan securities had larger spreads than similarly rated corporate bonds.”

Over-the-counter credit derivatives add to the transparency problems because no one knows the magnitude of liabilities for credit default swap (CDS) dealers and guarantors. “This not only aggravates the misvaluation

of counterparty risk,” said Dr. Weber. “It also causes an evaluation problem concerning the systemic risk in the CDS market. This, in turn, exacerbates uncertainty and loss of confidence among market participants.”

It was a crisis of confidence that brought down Bear Stearns, Lehman Brothers, and AIG: Their counterparties couldn’t accept the uncertain magnitude and quality of the firms’ hidden liabilities due to credit derivative exposures. FSF Chairman Draghi captured the problem when he said, “The rapid growth of the CDS market, which in 10 years went from zero to \$44 trillion in notional amounts, created an entirely new definition of counterparty risk that was much more difficult to assess, evaluate, and collateralize.” It took the disclosure and repatriation of contingent structured investment vehicles and conduit liabilities for Citigroup to survive—and then only with the support of the U.S. government.

### Managing Risk in the Global Lattice

FSF Chairman Draghi challenged his colleagues in the global supervisory and regulatory community: “Much of the effort has gone so far into initiatives to address the short-term and medium-term weaknesses in the system, but now we may be approaching the time when it will be appropriate to start thinking about reconstruction.”

The same can be said about counterparty risk management. The time has come to reconstruct the analytic framework, but one must wonder after the recent difficulties how a counterparty can assess the risk profile of entities intertwined so completely in a global lattice of securities and derivative systems? Perhaps the problem can offer a solution if outsiders can tap into that network to learn what the inner circle of a firm’s funding counterparties believes is a fair price for the exposures.

### Desk Monitors to Supplement Ratings and Ratios

Credit rating agencies look at an entity’s ability to pay off its obligations, so liability analysis isn’t entirely new ground, but the crisis has pointed out the flaws and potential for bias in the “issuer-pay” model that rating agencies follow. Counterparties must find ways to supplement the ratings that are publicly known, especially for high-exposure and sensitive counterparties. Any supplement must be dynamic, since the adoption of fair-value accounting means capital ratios can fluctuate widely during volatile markets. As a result, some formerly solvent entities can be constrained by regulatory capital rules so that they are no longer able to meet their obligations and manage their liabilities.

***“Financial regulation should be an incentive for financial system participants to develop a sound and efficient management framework.” —Christian Noyer***

In another regulatory dynamic, it seems clear that regulators will wish to avoid a recurrence of the post-Lehman dislocations, so firms regarded as “too connected to fail” will now be shielded along with those that are “too big to fail.” For all the others, risk analysts must analyze the lattice of their funding networks, especially the reported rates and the resulting concentrations of liability holders. The funding desks of banks and brokers can help regulators and customers monitor relative changes in the prices that market participants demand for taking on exposures to one another. In addition to rates, information about change in the distribution and accumulation of a counterparty’s liabilities can be an invaluable source of market and credit risk intelligence.

### Market Monitors for Liability Metrics

Financial “market monitors” may be able to track the concentration of an active market’s liabilities, especially the existence of a significant block of correlated maturities. Blocks of liability holders can create a liquidity squeeze, relative to working capital, if the holders fail to renew their holdings in a systemically significant institution when debt rollover time approaches. That seems to have been the final impetus for the Treasury’s emergency appeal for Congressional funding in September 2008. Specifically, the pressure on the U.S. government to bail out Fannie Mae and Freddie Mac intensified when it became known that the Chinese and other central banks were hesitating to roll over \$223 billion they held of the housing agencies’ maturing debt. Similarly, a form of correlation risk—by which an entity’s refunding and redemption exposure is concentrated in liabilities sensitive to correlated movements by blocks of investor sectors, countries, industries, or markets—also proved to be the downfall of many hedge fund managers during the crisis.

Liability analysis may serve as a market monitor for financial market regulators since nonlinear systemic exposure can result from the fact that one bank’s asset is often another’s liability. The necessity of bonding those linkages tightly was underlined when the U.S. government guaranteed certain obligations of banks in order to secure the assets of other banks. Similarly, from a counterparty perspective, a market risk manager should look for the rates and degree to which a specific set of counterparties’ unsecured liabilities are secured with reliable guarantees from stronger parties. To the degree that those rates change, like insurance premiums, market regulators may be able to calibrate the level of systemic risk exposure as perceived by the guarantors.



**Christian Noyer,**  
governor of the  
Bank of France

© 2009 Bank of France

### Next Stop: Basel

None of this will be easy or quick, but it will be necessary. There are still preliminary questions to be answered:

- Is the recent crisis really a “once in a lifetime” event, or the first in a series of credit-stimulated liquidity events?
- Did the sudden exposure of banks’ hidden, contingent liabilities trigger an overreaction during the crisis, or did transparency result in an overdue rational reaction to years of misdirected risk sensitivity?
- Were the capital-reduction incentives in Basel II the major stimulus for the fateful expansion of the CDS market that is now blamed by policy makers for exacerbating the crisis?

These questions are likely to be debated for quite some time, but one consideration appears certain: Regulators are not likely to be as patient in developing the next regulatory capital regime as they have been during the 10-year Basel II consultative process.

Speaking to the urgent challenge facing financial risk managers, Christian Noyer, governor of the Bank of France, made this observation at a round-table discussion in December 2008: “It would be unrealistic to believe that financial regulation is the answer and, above all, that it is capable of protecting us from the risk of financial instability. Indeed, the crisis can largely be attributed to financial institutions’ inadequate risk management, which stems from an irrational trust in quantitative tools. Financial regulation should be an incentive for financial system participants to develop a sound and efficient management framework. It is no substitute.” ❖



*Ed Blount is executive director, Center for the Study of Financial Market Evolution, based in Dallas and Zurich. Contact him at [ewblount@csfme.org](mailto:ewblount@csfme.org).*