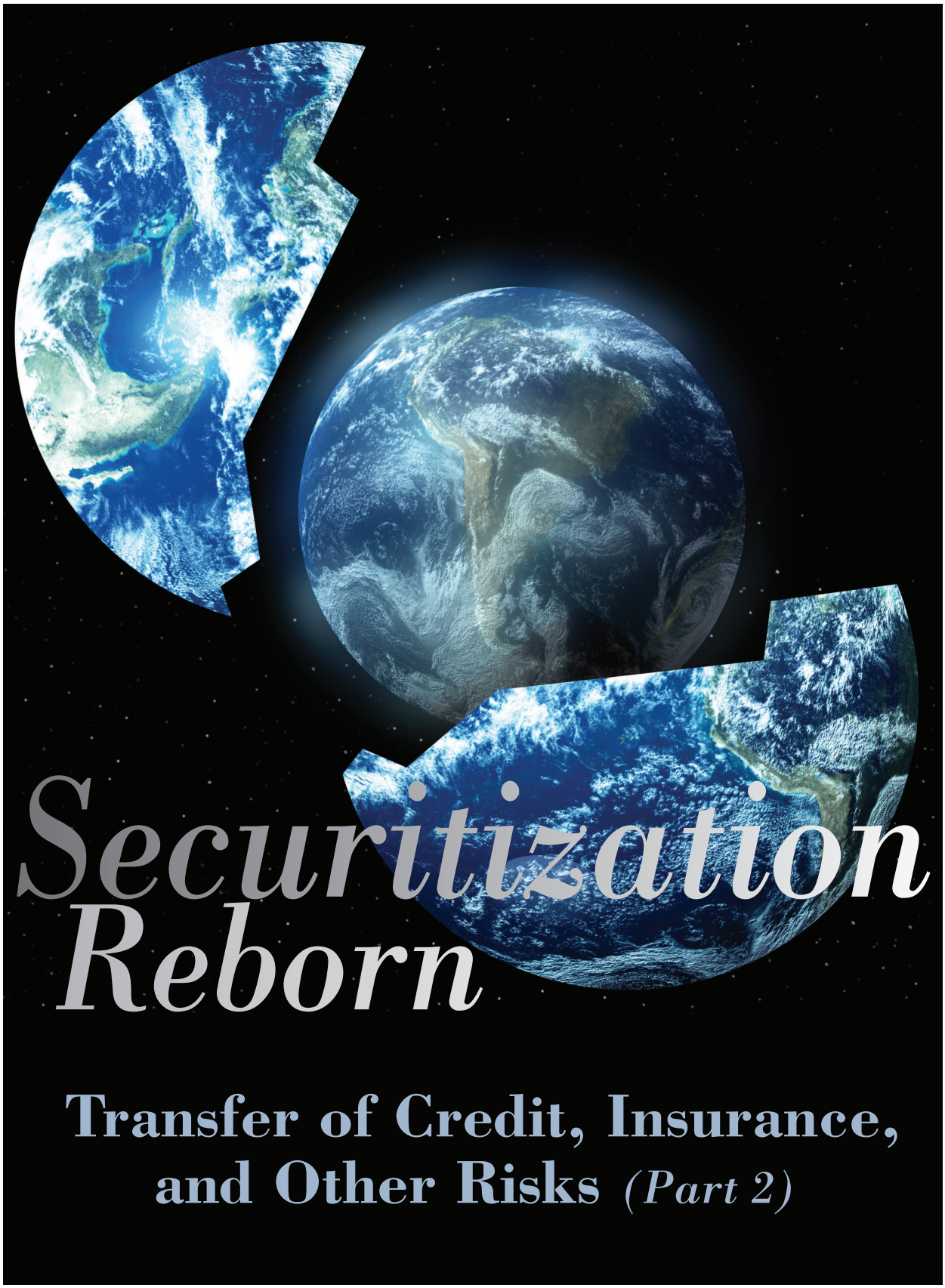

Securitization Reborn

Transfer of Credit, Insurance, and Other Risks *(Part 2)*

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..Securitization will be reborn

as a result of the recent meltdown of credit and investment markets. This rebirth will focus on transparency, hidden risks, and modeling accuracy related to the obligations being securitized. This article concludes a two-part series.

BY DAVID KOEGEL

THE FIRST ARTICLE in this series, appearing in the June issue, discussed the advantages and disadvantages shared by nearly all securitizations and the efforts already under way to rejuvenate the market for the securitization of credit-linked securities (CLS). This second article will describe the development of insurance-linked securities (ILS) and their expanding role in risk management and investment programs.[1]

The Reinsurance Market

Banks rely typically on the capital markets for credit risk transfer, whereas insurance companies have relied historically on the reinsurance market for insurance risk transfer. The reinsurance market is well developed and includes 1) specialized reinsurance companies that assume risks from primary insurance companies and self-insured entities, 2) primary insurance companies seeking diversification by assuming a blend of risks from other primary insurers, and 3) reinsurers assuming risk from other reinsurers through a process known as *retrocession*.

The market includes insurance and reinsurance companies regulated by U.S. state governments or by authorities in other countries, underwriters at Lloyd's, and lightly regulated reinsurance enterprises in Bermuda and some Caribbean islands. Reinsurance premium rates are generally affordable thanks to reinsurers' large capital bases, well-diversified portfolios, and good access to financial markets. Supply and demand factors also are at play in the reinsurance market, however, as demonstrated by depletion of capacity and increasing cost following a series of major catastrophes. Depending on the magnitude of post-event spikes in pricing, the after-effect can be increased demand for alternative risk-transfer solutions such as insurance risk transfer to capital markets.

Two catastrophes, Hurricane Andrew in 1992 and the Northridge earthquake in 1994, were notable for causing far greater damage than most experts had ever predicted for disasters of these types. As an example, Allstate paid out Hurricane Andrew claims totaling $1.9 billion, $500 million more than it had made in profits from its Florida operations from all types of insurance and related investment income over the 53 years it had been in business. That storm resulted in almost 700,000 claims for Allstate, including more than 150,000 for damage to automobiles. Two years later came the Northridge earthquake, which measured 6.8 on the Richter scale. It shook the San Fernando Valley, 20 miles northwest of downtown Los Angeles, resulting in more than 60 deaths, 12,000 injuries, 8,000 destroyed homes, 114,000 damaged buildings, and 430,000 filed claims. For both Hurricane Andrew and the Northridge earthquake, homeowners accounted for the bulk of claims and claim dollars.[2]

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Hurricane Andrew led to a shortage of catastrophe reinsurance capacity in the United States, driving insurers, reinsurers, investment banks, and others to look for new ways to spread the risk of natural disasters. Consequently, over the past 15 years, insurance companies have relied increasingly on transferring insurance risk to the capital markets. Investors have since become progressively more interested in purchasing debt instruments at the higher levels of attachment (after reinsurance has been exhausted) where the chance of loss is calculated as unlikely and there is an opportunity for a relatively high rate of return. These separate insurer and investor communities of interest have met in the market for ILS.

Evolution of Insurance-linked Securities

The evolution of ILS has facilitated a means to transfer risk for a wider range of issuers and has expanded the risk-taking segment to a broader range of institutional investors (including insurance companies). Over time, capital markets are

being viewed more commonly as a large resource that can be tapped to cover insurance claims. The advantage to investors is diversification. Catastrophe losses are unrelated to the usual speculative risks, which are generally economic. Additionally, investors find favor in the historical lack of correlation between turbulence in the credit markets and shockwaves under the earth, as well as the relative unlikelihood of earthquakes destroying multiple parts of California and several of the Hawaiian Islands in the same year.

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A popular form of ILS used by property and casualty (P&C) insurers is the catastrophe bond, or *cat bond*. Cat bonds effectively represent securitization of insurance liabilities, whereby investors are exposed to occurrence of one or more predefined insured natural catastrophic events such as an earthquake, hurricane, or windstorm. Cat bonds have become a familiar means of insurance risk transfer that complements the intermittently limited capacity and cyclically high pricing seen in the global reinsurance marketplace. As in a traditional reinsurance transaction, a cat bond does not fully transfer risk in a legal sense because the insurance company retains its obligation to pay policyholder claims. The financial burden of risks (including mortality and lapse risk in life insurance securitizations), however, is assumed by investors.

Probabilities of default on catastrophe bonds are typically estimated to be below 1% (that is, expectation of occurrence is less than one year in a hundred). Underlying asset patterns of these bonds are relatively easy to project, which is important in obtaining necessary ratings and reasonable pricing. Actuarial insurance risk models used to price the bonds are viewed as more precise than the credit risk models used to price other debt instruments because two components of credit risk that are most difficult to assess, market risk and default correlation risk, are of less concern in determining adequate pricing for catastrophe bonds. Nevertheless, convergence of the credit and insurance markets within the current financial crisis has influenced pricing of ILS.

"For non-U.S. perils, a gap has been created in pricing between the insurance and securitization markets that has stalled transactions," said Luca Albertini, chief executive officer of Leadenhall Capital Partners in the United Kingdom. "ILS issued in 2009 are all in U.S. perils and valued at double-digit spreads over LIBOR as securitization looked attractive to both protection buyers and investors at the higher end of the risk spectrum, whilst more remote risk layers are still uncompetitive relative to the reinsurance market due to minimum rate requirements of capital market investors.

"Yet, capital markets are still a significant provider of capacity, and when overall capital markets pricing eventually recovers from the current crisis, the cost of ILS will become more competitive at the remote risk layers as well as for diversifying perils."

Life insurers also use ILS. Transactions in the life sector have been dominated by what are referred to as *life bonds* for companies seeking relief from capital tied up by more conservatively valued reserves required under statutory Regulation XXX for level-term premium policies (or under the analogous actuarial standard known as Guideline AXXX for secondary guarantees on whole life insurance policies). The result of Regulation XXX (originally adopted in 1995 and revised in 1999) was a substantial increase in the reserves on related policies that life insurers must hold on their statutory accounting statements. These statutory reserves are far greater than economic reserves, which more closely approximate reserves calculated by actuaries and accountants under generally accepted accounting principles. The excess or redundancy in reserves under Regulation XXX survives for up to 20 or 30 years, depending on the policy term, and increases for the first 10 years of the life of the policy before gradually declining.

A second type of life securitization is the *embedded value* transaction, which offers life insurers the opportunity to unlock the embedded profits in blocks of insurance carried on the balance sheet. This provides an alternative source of financing in an industry where traditional funding mechanisms are often restricted by regulation.

These bonds, and the regulatory requirements for them, differ from catastrophe bonds in a very crucial respect: They're used typically as a financing tool in that they are secured by the flow of future profits from life insurance policies. For life bonds, investors and protection buyers share the benefits and losses in the development of the underlying policies that have been securitized. "Regulation XXX securitizations are almost identical in structure to embedded value transactions, the major difference being one of intent," said David Rains, managing director of Guy Carpenter & Company, LLC. "The objective of Regulation XXX deals is primarily to maximize capital efficiency by using investors to fund redundant reserves, whereas embedded value transactions harvest inherent margins for immediate use by the sponsor."

Another form of ILS, the *extreme mortality bond*, is used by life insurers to address exposure to pandemic risk that can throw ordinary mortality tables out of whack. These bonds are a subset of the broader class of cat bond assets used by P&C insurers; they, too, are fully collateralized and have a specified trigger. Instead of being linked to catastrophe event triggers, the benchmark for extreme mortality bonds is a mortality index that may be based on an existing reference point, such as the U.S. Centers for Disease Control or a customized mortality index using several data sources.

Life bonds used for Regulation XXX purposes are held for a much longer time than extreme mortality or other cat bonds. While the typical cat bond's shelf life might be three to five years, XXX bonds usually have a 30-year maturity and AXXX bonds might have a 45-year maturity.

"Extreme mortality bonds have, so far, only been issued using an industry index trigger that takes longer to develop than the industry index or other coverage triggers found in cat bonds," Rains said. "They have been less popular than other ILS because they typically trade further out of the money and because issuers receive no credit for reserves or capital for transferring risk with these instruments."

Typical Transaction Structure for ILS

With respect to ILS, the sponsor (that is, the transferor of risk) forms a special-purpose vehicle (SPV) that sells bonds in the capital markets. Proceeds are deposited into a separate collateral account for the beneficial interest of the sponsor as security for the contingent payment obligations of the SPV under a related risk-transfer contract. Investment guidelines for the collateral account are limited typically to only the highest-rated fixed-income securities, thereby earning a return that approximates a "risk free" rate. The bonds, however, pay significantly more than the risk-free rate, the difference being made up by the sponsor in the form of periodic payments to the SPV. These payments represent the cost of the catastrophe protection and are analogous to the premiums that would be paid to a reinsurer for comparable coverage. It's the premium on top of the swapped-out risk-free rate that makes the investor willing to think he or she might be reasonably compensated for risk of a disaster striking with a consequential loss of both principal and the future stream of interest payments.

Any portfolio concentrations or other qualities that could result in excessive investment risk may affect the ratings of the ILS. Additionally, a total return swap is entered into in order to convert investment income earned on assets in the collateral account to a basis consistent with the stated interest rate in ILS (typically a function of LIBOR). This swap transaction also guarantees the principal amount of the assets in the collateral account.

Transfer of catastrophe risk is accomplished through a contract between the sponsor and the SPV providing for reimbursement from the collateral account to the SPV in the event a specified catastrophe occurs within a specified period of time. SPVs are thinly capitalized and conduct no other business. If funds are disbursed from the collateral account, the SPV will be unable to make its full interest payments or repay bond principal at maturity. Since the bondholders have no recourse to the sponsor for repayment, this is the mechanism through which the risk of natural catastrophe is transferred from the sponsor to the purchasers of the bonds.

Disbursements to the originator sponsoring the bond are permitted only in the event of the specified catastrophe. Four common methods for determining whether a reinsurance obligation of the SPV has been triggered are:

- *Indemnity*—based on actual losses of the sponsor.
- *Industry index*—based on an industry-wide loss index (such as that compiled by information provider Property Claim Services in the U.S.).
- *Modeled loss*—mapped by a calculation agent to one occurrence of thousands of simulated events in a database.
- *Parametric*—based on easily observed values of the physical event (such as magnitude of earthquake measured by the Richter scale or category of hurricane measured by the Saffir-Simpson scale).

If no reinsurance obligation is triggered, the funds are used to repay bond principal at maturity.

Market Crisis Implications

One of the first users of ILS was personal lines insurer USAA, which has employed securitization of insurance risk annually since 1997 to help manage its exposure to different weather perils and natural disasters along the coastal states California and Hawaii. One of the more recent originators of securitized catastrophe risk exposure is Allstate, which to date has sponsored ILS on two occasions, in June 2007 and June 2008. The first was for hurricane exposure in New York, New Jersey, and Connecticut (the "North-East agreement") and the second involved similar exposure in Texas (the "Texas agreement").[3]

The North-East agreement provides protection of roughly $250 million (42% of $600 million) between $1.7 billion (retention) and $2.3 billion (exhaustion point). The Texas agreement provides protection for 100% of $250 million of catastrophe losses between $1 billion (retention) and $1.25 billion (exhaustion point). Both agreements provide aggregate coverage over a three-year period, with retentions and exhaustion points reset annually based on updated industry and Allstate exposure data. Both transactions were placed with Willow Re Ltd., an SPV formed in the Cayman Islands. The coverage triggers are on the industry-index basis, as described above, applying predetermined percentages representing Allstate's market share to insured personal property and auto industry losses in the covered areas, limited to Allstate's actual losses. In exchange for receiving the multiyear reinsurance coverage, Allstate makes periodic premium payments to Willow Re.

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Under the North-East agreement, Willow Re entered into

a total return swap with Lehman Brothers Special Financing, Inc., which guaranteed the value of the collateral and a predetermined fixed rate of return to be paid to note holders. Upon the failure of Lehman in the third quarter of 2008, the total return swap was settled and terminated without replacement. Allstate continues to make the required premium payments to Willow Re and the reinsurance remains in place, but the underlying assets have not generated enough interest to meet the quarterly bond interest payment requirement due in February 2009, resulting in a default to note holders.

The default does not create any obligations for Allstate and the reinsurance contract remains in place, although the value of the reinsurance recoverable from Willow Re depends upon the market value of the underlying assets held in a reinsurance collateral trust account with Allstate as the beneficiary. The underlying assets held in collateral are comprised largely of illiquid mortgage-backed securities and cash with a current market value of less than $250 million. The Texas agreement placed with Willow Re is independent of the North-East agreement and is not impacted by the termination of the North-East agreement's total return swap.

In May 2009, a second cat bond backed by Lehman defaulted on account of failing to make full payment of outstanding principal due at maturity. The $100 million bond issued in 2007 by Ajax Re Ltd. (a Cayman Islands SPV) covered Bermuda-based Aspen Insurance Holdings Ltd. against losses from California earthquakes. Default of the bond, however, did not impact Aspen since the reinsurance coverage period had already expired without any recovery due from Ajax Re.

Securitization Reborn

ILS have weathered recent financial market turmoil fairly well. New issuance came to a halt, however, when Lehman, which often participated as a total-return-swap counterparty, went bankrupt and exposed ILS investors to unanticipated credit risk. This led to a re-examination of invested assets and related swaps in catastrophe bonds and a recognition that increased transparency in the ILS market is needed. ILS have now been restructured to include better protection for investors. Underlying collateral has been improved by increased transparency and assurance that underlying assets in the collateral account are invested in duration-matched government securities, reducing exposure to credit markets. Additionally, a top-up "margining" facility has been established to constantly replenish any decline in the value of the collateral.

Financial innovation has allowed many types of risk to become more tradable, including credit, insurance, interest rate, equity, and foreign exchange risk. However, insurance risk still lacks a fully liquid, transparent, and tradable market. Nevertheless, ILS issuance and trading activity have been growing steadily from a small base, with ample room for further growth and possibly new applications.

"A European loss index is being developed called 'PERILS,' which will enable participation in ILS by insurers and reinsurers in Europe that are not sufficiently sized to currently participate in cat bonds," Albertini said. "We're now looking at a sleeping noninsurance securitization market. Once the more customary uses of securitization come back, then maybe we'll see some new applications in the securitization of high-frequency and low-severity insurance risk, which would be in part palatable to investors in senior securitized paper."

Improvements in risk transparency and modeling accuracy for the overall practice of securitization could spur further growth and widening of ILS applications. The life insurance securitization movement has made efforts to bring to the capital markets the risk of longevity (that is, unanticipated reduction in mortality risk). For example, several transactions have been attempted that link the security to a pool of life insurance policies that are sold for less than their face value (known as *life settlements*). However, only a few life-settlement-linked securitizations have been completed.

"In order to attract investors to ILS, actuaries can be helpful to the market in reaching agreement on a fair risk price that's easier to see and feel," Rains said. "Also needed are consistent ratings and continued surveillance to know how these instruments are performing, which could additionally serve to create a more tradable market."

To best accomplish their rightful purposes, transactions in both credit-linked securities and insurance-linked securities will need to be less complicated, and Wall Street must do a better job of making securitizations more transparent and understandable to corporate and individual investors. In the interim, at least one thing can be counted on: Should the rebirth of the securitization process be delivered successfully, financial markets will function more efficiently and less mysteriously, creating a universally welcome change in these most turbulent economic times. ❖

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Notes

1. A list of most major insurance risk securitizations since 1994 can be found on the Web site of Artemis: The Alternative Risk Transfer Portal (http://www.artemis.bm/deal_directory/index.html).

2. Periodic updates of catastrophe insurance issues can be found on the Web site of the Insurance Information Institute (http://www.iii.org/media/hottopics/insurance/catastrophes).

3. A description of the North-East and Texas agreements can be found in an update of Allstate's catastrophe reinsurance program provided to investors during the first quarter of 2009 (http://media.corporate-ir.net/media_files/irol/93/93125/corpgov/Catastrophe_Reinsurance_Program_3_20_09.pdf).