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CPCU eJournal

November 2012

Published by the CPCU Society

Insurance Securitization: A Ripe Market?

by Harvey Powers

Abstract

The financial markets have proven extremely efficient in distributing a wide range of investments and risk to a broad pool of investors, especially during the late 20th and early 21st centuries. MBSs and other asset-backed securities are multi-trillion dollar products, and market-traded options, credit default swaps, and other derivatives effectively provide insurance for financial investments. The concurrent trends of 1) securitization and 2) insuring financial risk pose a question: Why are the risks assumed by insurance companies underrepresented in the securitization market?

In recent decades, this process of securitization and reselling of risk has become commonplace for a wide array of financial risks, which have attracted investors seeking a better-diversified portfolio. Still, the question stands. Market size is certainly not the constraining factor, and technical competence can readily be acquired if the proposition provides enough opportunity. First, we examine the current state of the various types of insurance securitization and explore the associated risks and benefits of the securitization of the insurance market. Next, we seek to understand the current shortcomings of the insurance industry from the perspective of the capital markets and provide a perspective and recommendations for future discussion and implementation.

Great Expectations

The global insurance market is estimated to have earned $4.1 trillion in written premiums in 2011, of which, $170 billion of premiums were funneled into reinsurance (Datamonitor). However, the value of annual issuances of insurance securitizations was $15.5 billion dollars in 2007, a mere fraction of the available market, and issuances dropped to $4.1 billion in the 2008 recession (International Association of Insurance Supervisors). For comparison, of the $10.3 trillion U.S. mortgage market, about two-thirds of the value is securitized; credit card, auto, and student loans are also securitized en masse, providing liquidity and diversification to investors (Federal Reserve).

What is the fundamental source of disparity between the highly securitized asset markets and the insurance securitization market, which is dramatically underrepresented?

This article will try to understand how the incentives for securitizing insurance are different than those associated with securitizing mortgages or credit cards; additionally, this paper will explore the different types of insurance securitization currently available through the capital markets and provide a critical examination of opportunities for improvement on behalf of the capital markets and insurers alike.

Why Not Securitize?

On the face of things, it appears that the securitization of insurance is a win-win situation. Securitization could provide insurance companies with many benefits, such as improved capital structure, additional funding mechanisms, greater liquidity, and the realization of embedded profits. Investors stand to benefit from the underlying expertise that underwriters provide, and securitization would allow many investors to diversify into a broadly uncorrelated asset class, which could deliver a higher risk-adjusted return while making markets more efficient. Given that there are benefits to both issuers and investors in a securitized insurance product, there must be significant impediments restricting investors or issuers to prevent a massive expansion of securitization.

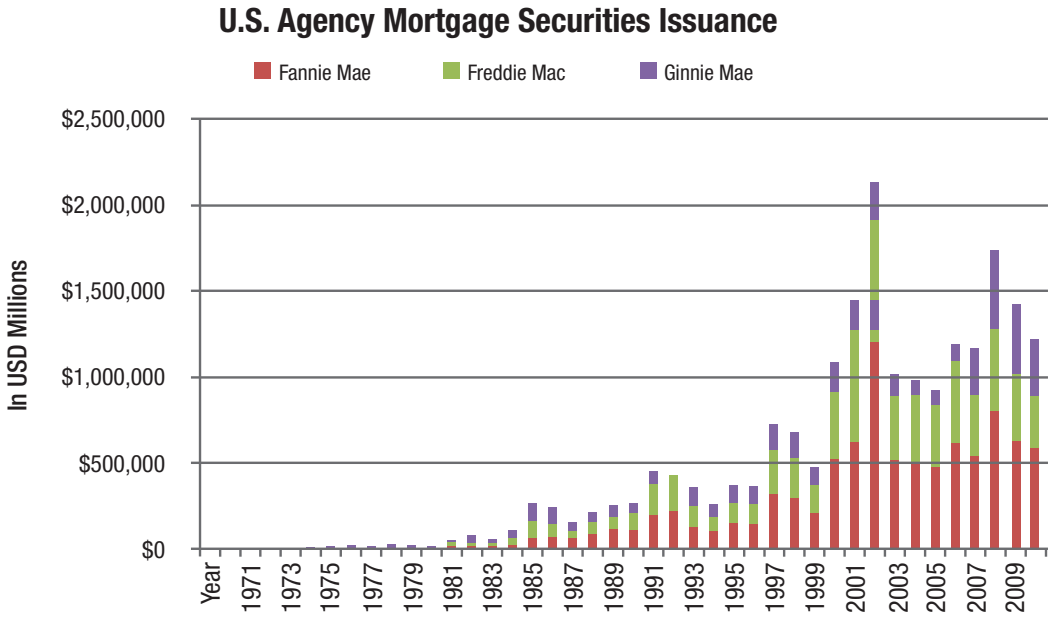
The first and most obvious point of difference is the type of company involved: banks and insurance companies, when viewed by the layperson, are comfortably grouped together as the two major parts of financial services. However, there is a very clear distinction between the functions of the two industries, and, more particularly, the interactions that these institutions have with their customers regarding the types of risk and return that are associated with the financial transactions in which they engage. Specifically, banks are typically engaged in the business of managing, investing in, and pursuing investments in assets, whereas insurance companies seek out compensation for uncertain liabilities. This fundamental distinction provides a framework for understanding the divergent paths taken by the banking and insurance industries concerning the securitization of their financial interests.

In part because of the additional complexities inherent in securitizing liabilities, the growth of insurance securitization will necessarily be much slower and more limited than that of asset securitizations such as mortgage-backed or credit card-backed offerings. Reasons for this difference include: credit quality assurance, regulatory environment, modeling consistency, and analysis complexity.

Securitization History and Trends

In order to properly frame a discussion on the anticipated growth and difficulties with insurance securitization, it is important to first understand the sophistication of the asset securitization market and the readiness of capital markets to accept a securitized insurance obligation.

Chart 1
Mortgage-backed Securities Market Time Series (SIFMA)



Mass-scale securitization of assets was initially implemented during the 1970s through government agencies Fannie Mae and Freddie Mac, which converted an economic interest on a pool of mortgage loans into a tradable financial security (Federal Reserve). From here, financiers moved quickly to securitize credit card loans, home equity loans, auto loans, and student loans, which grew rapidly into prevalence by the late 1990s and 2000s. During the peak of the securitization boom during 2006, over $1.2 trillion of asset-backed securities were created from these new securities. Further complications to these structures were the various twists, such as floating and inverse-floating coupon tranches, and the recombination of subordinated MBS tranches into collateralized debt obligations (CDOs), among a plethora of other intricate devices to precisely divvy up the financial risks. Clearly, financial markets have demonstrated an ability to securitize assets, and investors are sufficiently acquainted with the products to support a liquid secondary market.

The distribution of financial risk through derivative financial products was another development that was genuinely exploited during the late 1990s, exposing financial markets to the idea of insurance on financial products through options, credit default swaps, and other hedging mechanisms. The purpose of acknowledging these

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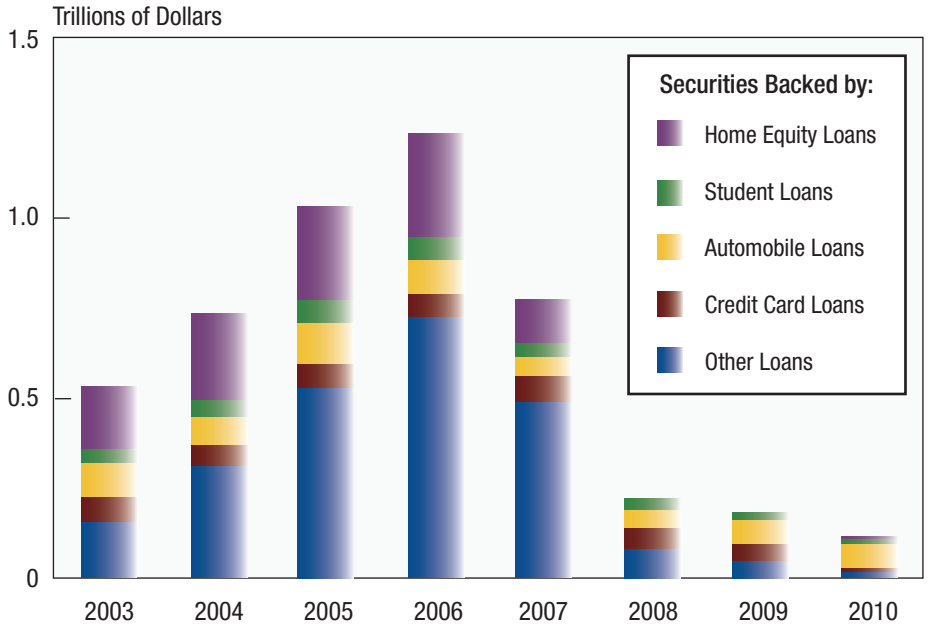
Chart2
Issuance of Non-MBS Asset-Backed Securities (CBO)



developments is to better understand the degree of sophistication in the financial markets, which have become more able to quantitatively model and estimate the insurance costs for financial products. Although this does not necessarily entail a full and clear understanding across the financial markets regarding the management, measurement, and insurance of risk, there is a clear case that the financial markets and financial investors have developed an ability to get comfortable with the risks associated with being on the short side of an insurance option.

The relevance of this observation is that the capital markets are willing to take on risks that are extremely similar to those associated with a securitized insurance product. The risks embedded in an investment in an insurance securitization are most obviously similar to those assumed in the reinsurance market with which a securitization market would effectively compete.

Types of Insurance Securitizations

Insurance must be divided into several sub industries that each requires special attention in a discussion on securitization: life insurance, catastrophe insurance, and other property-casualty insurance. Life insurance in the United States since 2000 has been forced to provide what some consider overly conservative reserves against life insurance claims through Regulations XXX and AXXX (Wu and Soanes); additionally, life insurance policies are likely to accumulate embedded value as time progresses, which could cause liquidity shortages for a company seeking to write new policies (but with insufficient excess reserves) (May). Catastrophe insurance was the first to be securitized through "cat-bonds," which allowed investors to participate in the low-probability and uncorrelated weather risk associated with particular natural phenomena (Wattman and Jones). Property-casualty groups are likely most interested in these weather-linked CAT bonds, which provide protection against major losses.

As alluded to in the preceding paragraph, there are several distinct types of insurance securitization on the market today, in various forms of maturity and popularity: XXX or

AXXX redundant reserve securitizations ($8.7 billion), embedded value securitization (over $7 billion), CAT bonds ($12.0 billion), sidecars ($4 billion), and industry loss warranties (ILWs—$4 billion) (Michael J. Moody) (May) (GC Securities) (Modu).

There is a significant upfront education effort required to participate in any of these investment opportunities for a capital market participant, and these investors therefore expect to be able to leverage expertise over multiple transactions (Connolly).

XXX Securitizations

Valuation of Life Insurance Model Regulation XXX was first enforced for insurance and reinsurance companies in 2000, and Actuarial Guidelines 38 details the reserving methodology for universal life products with non-lapse secondary guarantees (Wu and Soanes). These two statutory changes effectively required life insurance companies to maintain access to reserves beyond the anticipated economic required reserves, often tying more capital to each policy than insurers may believe is necessary to maintain sufficient economic reserves (as is illustrated below).

Figure 1
Illustration of XXX Redundant Reserves
Based on a 20-year term policy issued to a male-preferred non-smoker, age 45 (Wu and Soanes). Original source: Moody's.

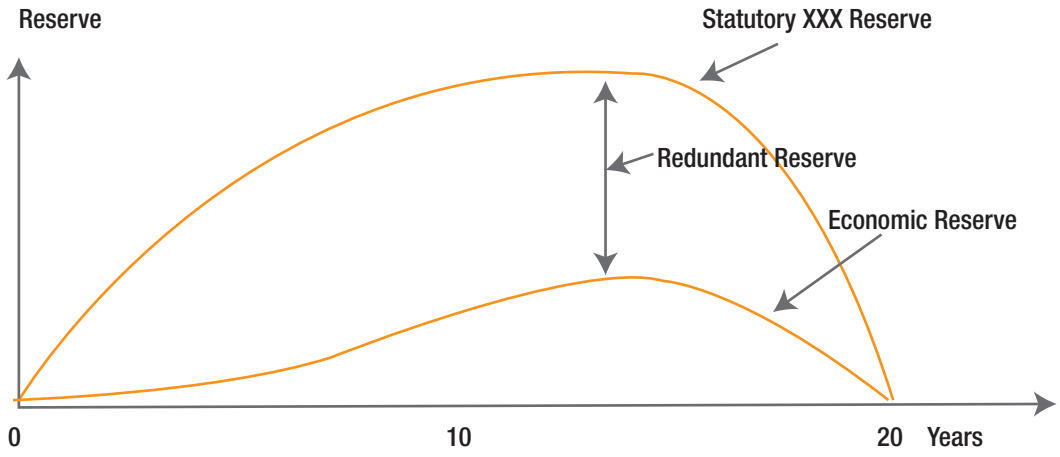
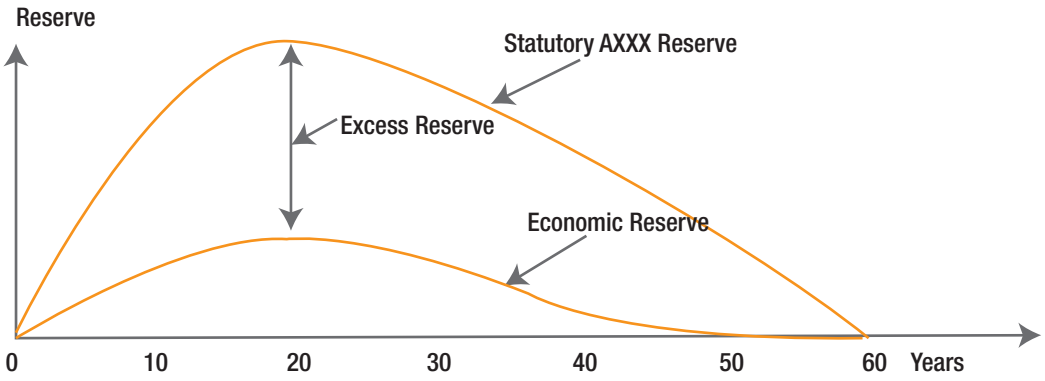
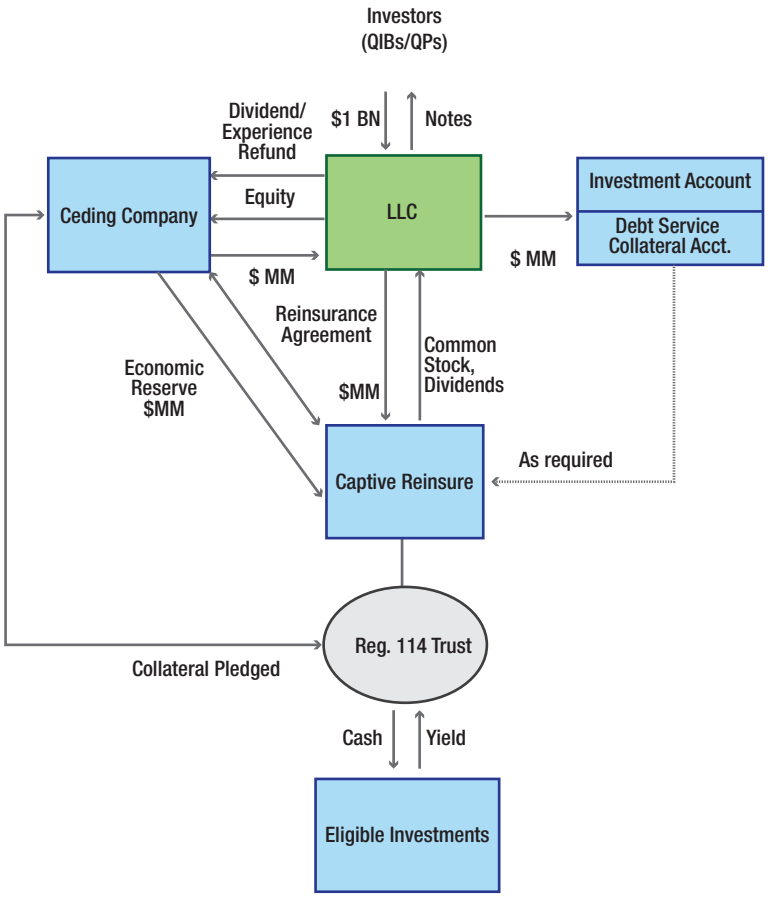


Figure 2
Illustration of AXXX Redundant Reserves
Reflects one year of production for a hypothetical portfolio of UL secondary guarantee business. Original Source: Moody's.



One advantage that the financial markets perceive when investing in life insurance is that there are well-understood risks of mortality, which are readily measurable across a large population. This characteristic allows investors to better understand the pricing and valuation of an insurance-linked securitization tied to life insurance reserves.

Figure 3
Example of XXX Securitization Process and Structure (Wu and Soanes)



The structure of the typical deal is designed to provide the issues with an efficient source of funds and to fulfill the "huge demand for capital" (Connolly).

Embedded Value Securitizations

Part of the difficulty in managing an insurance company's balance sheet is that it can be difficult to realize the full value of the expected profits that are locked into current policies. A particularly interesting outlet is the release of capital through embedded value securitization, which can provide financing for new business activities, product-specific applications, while mitigating mortality and longevity risk on profitable policies (May).

These securitizations often involve seasoned life insurance policies in which companies have already established significant future profit expectations, and the securitization process allows the issuer to monetize those profits upfront (Wu and Soanes).

These embedded value securitizations allow companies to access a more fluid capital market with non-recourse financing, which provides funds for investment in higher-return business lines.

Figure 4
Embedded Value Transaction Structure (Wu and Soanes)

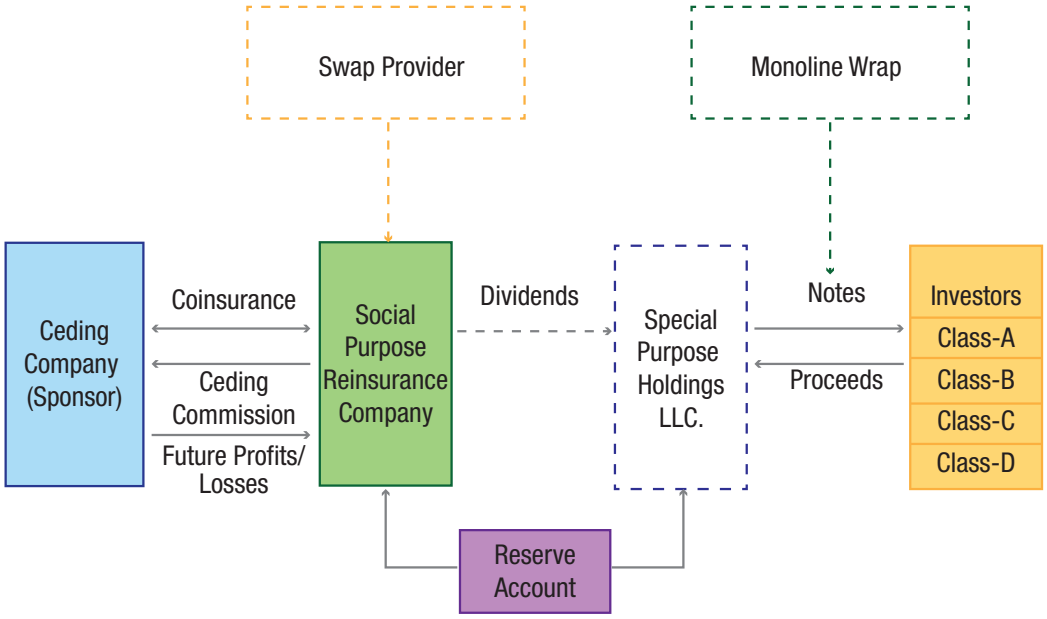
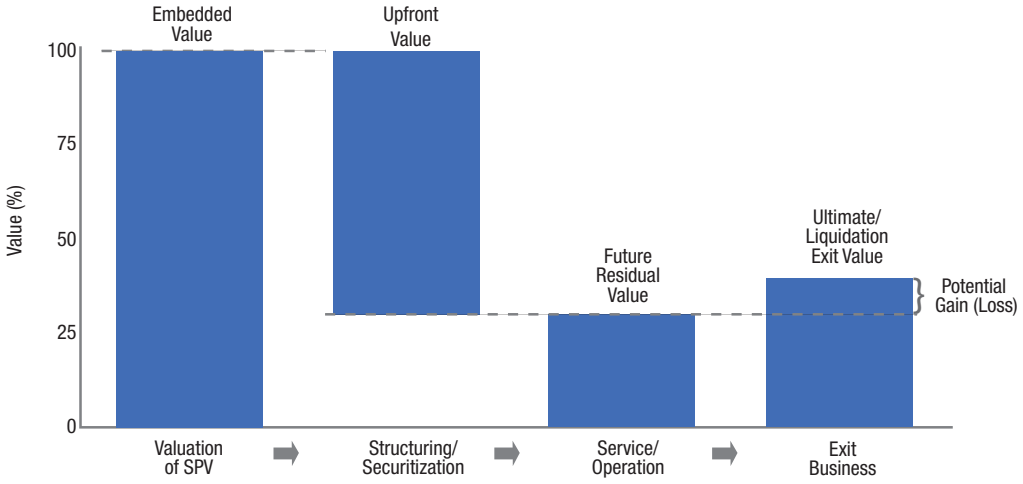


Figure 5
Embedded Value Monetization from the Issuer's Perspective (Wu and Soanes)



CAT Bonds

CAT bonds are a derived necessity for an insurance and reinsurance industry with limited resources to absorb potentially insurmountable losses in the face of "the big one," which would be comparable to the 1906 San Francisco earthquake—leveling a major city and resulting in tens, if not hundreds, of billions of dollars in insurance claims.

CAT bonds are typically focused on property-casualty reinsurance that is concerned with weather-related events such as hurricanes, earthquakes, cyclones, or windstorms, but there are examples of mortality-tied bonds (that would be triggered in a pandemic), which can provide catastrophic backing for life insurance companies as well (Wattman and Jones). Property-casualty catastrophe bonds were introduced in 1995 after Hurricane

Figure 6
CAT Bond Schematic (Wu and Soanes)

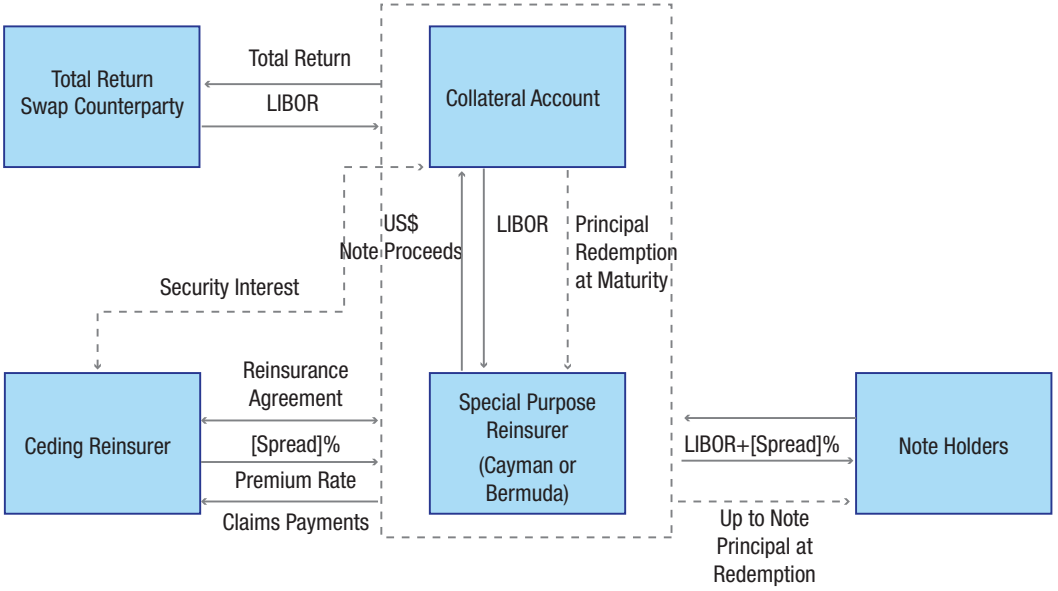
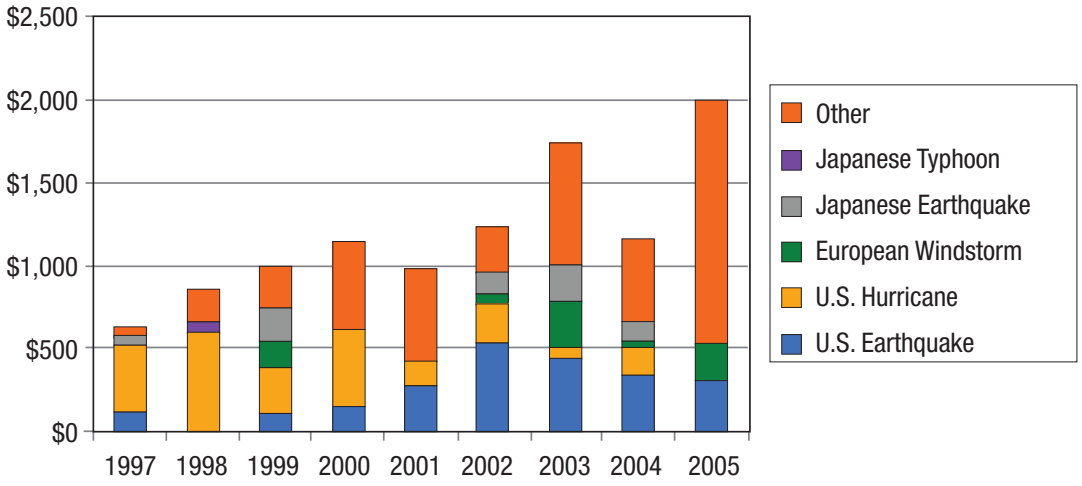


Figure 7
CAT Bond Issuance (Wu and Soanes)



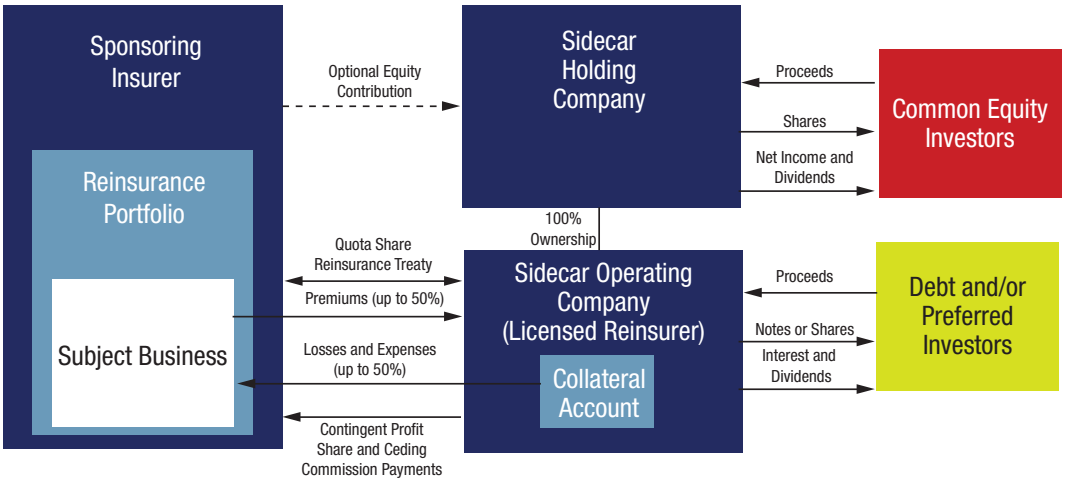
Andrew and the Northridge earthquake (May). To invest in a catastrophe bond, an investor must be a "qualified purchaser" under the U.S. Securities Act of 1933, which limits the pool of potential investors to professionals and affluent individuals (FINRA).

One consideration for CAT bonds is the possibility of basis risk (both for the investors and the issuer), which can derive from the way in which the catastrophic damages are calculated. About half of CAT bonds have objective criteria for payment triggers (wind speeds, etc.), while the other half of CAT bonds are indemnity bonds that are tied to actual reported insurance losses (May).

Sidecars

A sidecar securitization allows an investor to directly provide capital alongside an insurance provider. The sidecar is a quota-share partnership in which a reinsurer becomes affiliated with a capital market source (frequently a hedge fund) that can provide a renewable source of capital, a strategy that most reinsurance experts believe started in early 1999 (Michael J. Moody). This approach is often pursued in hard markets, when investors can take full advantage of the underwriting specialization of the insurer, and the insurer gets access to the additional capital provided by the investor. The effective result is a "disposable reinsurer," which is only associated with one set of risks (Willis).

Figure 8
Sidecar schematic (Wu and Soanes)



Typically, the lifespan of the special purpose vehicles (SPVs) that legally represent the reinsurance is generally only one to three years, and the risks associated with a sidecar investment are very similar to a CAT bond investment (Modu).

Obviously sidecars, just like CAT bonds, will never account for a high percentage of the reinsurance market (Michael J. Moody). What is clear is that both of these capital market products should have a permanent place in the catastrophic property insurance coverage arena.

Sidecars can provide additional capacity, which is sorely needed in today's property market. The capital markets have been trying for years to beat down the door to enter the insurance arena. It is now painfully obvious that there will never be sufficient capacity within the insurance industry to survive the "big one." And even a catastrophe that approached the losses possible from a big one could so cripple the industry; it would endanger its continued existence.

Industry Loss Warranties (ILWs)

ILWs are contracts that cover losses from events that affect industry-wide losses above an agreed-upon threshold (Ali Ishaq). There are typically two levels of triggers required for a payout from an ILW contract: industry losses above a particular level and company-specific losses above another specific level (Wu and Soanes).

Because the contracts are explicitly linked to widely available public data (industry-level loss expectations), the information asymmetry typically introduced in a reinsurance scenario is quickly neutralized and, in some cases, reversed (Ali Ishaq). Furthermore, the larger sample size represented by the entire industry allows reinsurers or investors to

form a more accurate understanding of the likely loss distribution and develop a more precise pricing structure. However, issuers can face the same basis risk problems that CAT bonds pose if the issuer's portfolio does not exactly match up with the broader industry's exposure.

ILWs are seen as an alternative to excess of loss reinsurance coverage and generally work best for large sponsors with portfolios that are similar to that of the overall industry (Modu).

Summary

Securitization	Strengths + Opportunities	Risks + Challenges	Sub-Sector
XXX and AXXX	• Legally required growth • Well-understood market • Small-tail risk	• Sourcing cheap collateral	Life
Embedded Value	• Capital structure changes • Balance sheet acceleration	• Lowered profits	Life, P&C
CAT Bonds	• Diversification • High-dollar investments • High yields	• Modeling risk • Unregistered investments • Counterparty credit • Liquidity risk • Pricing risk • Basis risk	Mostly P&C, especially concentrated portfolios
Sidecars	• Equal participation • Access to underwriting experts	• CAT bond risks	Mostly P&C
Industry Loss Warranties	• Low transaction costs • Low risk charge	• CAT bond risks	Mostly P&C

In spite of the growing relevance of insurance-linked securities, reinsurers will continue to be the biggest players in the aggregation and diversification of risk (Connolly).

What Comes Next?

Experts at the former investment bank Lehman Brothers did not anticipate sidecar or CAT bonds to dominate the reinsurance industry, and they estimated 2007 sidecar deals to be valued around $4.5 billion (Michael J. Moody). It appears that this trend will continue: although the insurance securitization market will play an increasingly important part in the allocation of insurance, catastrophe, and underwriting risks, the reinsurance market will continue to maintain the majority of market share for the foreseeable future.

From the outset, the goal was to develop an understanding of the different incentives that resulted in the dramatic difference between the asset-backed securitization world and insurance-backed securitizations. The uncorrelated nature of the financial returns of insurance-linked portfolios is very appealing to the capital markets, but for that very same reason, the high transaction costs associated with properly securing and executing an insurance securitization can often make the market move more slowly.

Another important dynamic to notice is that the insurance company is ultimately responsible for the credit risk of the securitization; when a customer approaches a particular underwriter; there is an expectation that once a policy is agreed upon, the underwriter's full financial strength will be placed behind the agreement. While this barrier is not impossible to overcome, it provides a restrictive incentive for the mass securitization of standard insurance claims in the same fashion as mortgages or credit card receivables were securitized.

Encouragingly, there are several flourishing niche markets within insurance securitization that are poised to continue to grow: XXX securitizations are almost certain to expand with the growing reach of the regulation, embedded value securitizations will allow insurers to quickly realize existing profit expectations for more timely reinvestment, and CAT bonds will continue to play a role in reinsuring against major weather-related events.

In order for the securitization markets to flourish to the extent that the asset-backed markets have, several developments need to occur: increased transparency, better standardization of modeling techniques, and an improved secondary market. Unfortunately, there is not a clear path to arrive at this ideal set of market attributes; the insurance securitization market remains very opaque and fragmented—within insurance securitization, this paper identified five main types, each with its own idiosyncrasies.

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CPCU eJournal, Vol. 65 No. 10
November 2012
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