

### Message from the Chair

by Ann E. Lyon, CPCU, CRM, CIC, ARP, AMIM

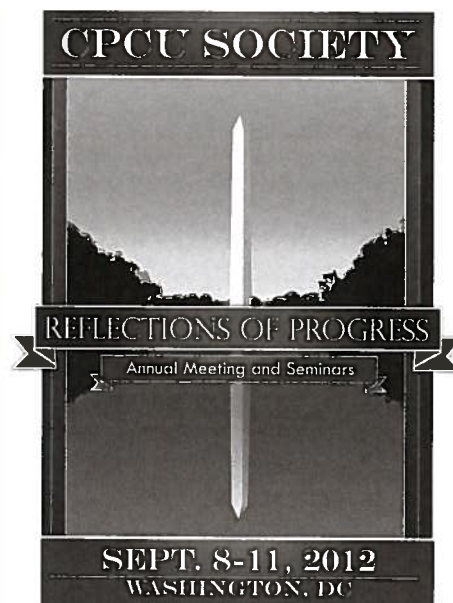


**Ann E. Lyon, CPCU, CRM, CIC, ARP, AMIM**, is senior vice president and chief underwriting officer for Builders Insurance Services, part of Insko Dico Group, located in Lake Oswego, Ore. She earned her CPCU designation in 1985 and subsequently earned the CRM, CIC, ARP, and AMIM designations. With forty-two years experience in the insurance industry, Lyon has held various underwriting and marketing positions with several national carriers. She is a member of the CPCU Society's Underwriting Interest Group and is also active in the Oregon Chapter.

The Underwriting Interest Group was chaired very capably for the last three years by **Nancy S. Cahill, CPCU, AU**, of Liberty Mutual Agency Corporation, a long-time member of the group. The Underwriting Interest Group was able to achieve many good things under her leadership, and we are very fortunate that she will remain on the committee. We all want to thank her for her tremendous contributions of guiding the committee and ensuring our success.

Last April, under Nancy's leadership, the Underwriting Interest Group met at the mid-year CPCU Society Leadership Summit at The Doral in Miami, Florida, to put the finishing touches on the plans for the 2012 CPCU Society Annual Meeting and Seminars, which was held in Washington, D.C., in September. The interest group was also updated on the progress of the recent affiliation with The Institutes and all of the process changes, procedures, and people that accompany that massive undertaking.

The Annual Meeting and Seminars were a big success for the Underwriting Interest



Group. We participated in developing and presenting three seminars. "Winds of Change—Underwriting the Wind Peril in the United States," co-developed with the Excess/Surplus/Specialty Lines Interest Group and the Loss Control Interest Group, was presented on Sunday, September 9. On the following day, we presented "Current and Emerging

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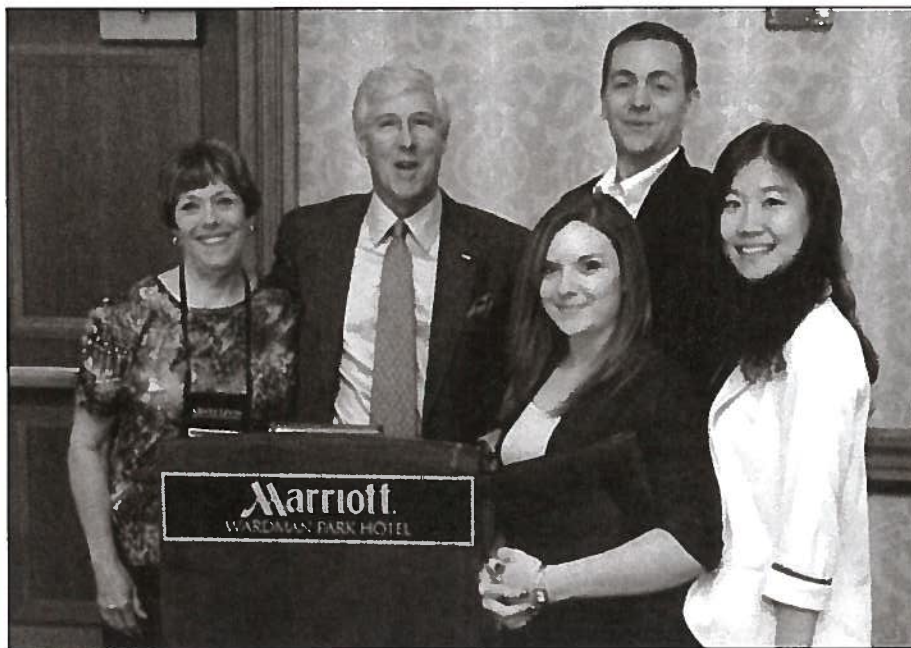
# Message from the Chair

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Regulatory Trends Impacting the Insurance Industry," co-developed with the Agent & Broker Interest Group and the Regulatory & Legislative Interest Group. We also worked with the International Insurance Interest Group to present "Cultural Norms and Their Impact on Business Insurance." You can read more about these seminars in this issue of *Underwriting Trends*.

In addition to the seminars and as we do every year, we sponsored an Underwriting Interest Group luncheon with featured speaker **James L. Britt, CPCU**, of Scarborough & Britt, LLC, a former CPCU Society president and author of *Building Leaders One on One: The Heritage and Horizons of Teachers, Coaches, Mentors and Role Models*. Britt was introduced by committee member **Greg Massey, CPCU, CIC, CRM**, and presented "Achieving Your Personal Best," which was very encouraging, motivating, and well received. It was especially nice that we had several students from different colleges there as our guests to hear the presentation and mingle with other lunch attendees.

Committee member, **Steve White, CPCU**, put together our submission again for the Circle of Excellence Award, and we once again achieved Gold at the recognition luncheon. This award is based on the work the interest group has done in several different categories over the course of the last year.



Underwriting Interest Group luncheon with Nancy S. Cahill, CPCU, AU (chair) and speaker, James L. Britt, CPCU. Included in picture are three students who attended the luncheon.

Work is already well under way in the development of seminars for the 2013 CPCU Society Annual Meeting and Seminars, being held next October in New Orleans, and we encourage everyone to look ahead and plan to attend.

The Underwriting Interest Group newsletter editors are always looking for articles related to underwriting topics. If you want to submit an article for possible publication, please

e-mail [greg.massey@zurichna.com](mailto:greg.massey@zurichna.com) or [steve.white.bnb@statefarm.com](mailto:steve.white.bnb@statefarm.com). We encourage interest group members who are not on the committee to become involved by sharing their ideas. Also, we are always looking to add to our committee, so if you are interested, please contact me at [ann.lyon@insurancebis.com](mailto:ann.lyon@insurancebis.com) for further information. ■

## The Underwriting Interest Group Committee

We put the YOU in underwriting.

The importance of this slogan is that insurance is still a people and relationship business. People make the difference.

Make sure to put the YOU in the underwriting process.



# Current and Emerging Regulatory Trends Impacting the Insurance Industry

by Ann E. Lyon, CPCU, CRM, CIC, ARP, AMIM

On September 10, 2012, the “Current and Emerging Regulatory Trends Impacting the Insurance Industry” seminar, developed by the Underwriting, Agent & Broker, and Regulatory and Legislative Interest Groups, was presented to attendees of the CPCU Society Annual Meeting and Seminars.

Chris O'Donnell, CPCU, MBA, ARM, of M&T Bank moderated the panel discussion. The members of the panel, who represented several perspectives on the property-casualty insurance industry, included John Fielding, of Steptoe & Johnson, LLP; J. Stephen Zielezienski, of American Insurance Association; Tracey Laws, of Reinsurance Association of America; and Eric C. Nordman, CPCU, CIE, of the National Association of Insurance Commissioners (NAIC).

Regulation comes at several different levels, and each affects and influences the others. Internationally, regulation is overseen by the International Association of Insurance Supervisors (IAIS), which was established in 1994 and represents insurance regulators and supervisors in approximately 190 different jurisdictions around the world. IAIS issues global insurance principles as well as standard and guidance papers, and holds an annual conference at which industry representatives discuss insurance regulatory issues.

In the United States, the NAIC provides the states with reporting requirements that are much more robust than those in the rest of the world. The NAIC, with 56 U.S. jurisdictions, is also a member of the IAIS. Various regulatory organizations in each of the U.S. states and territories constitute another level of regulation to monitor solvency issues.

Currently, an issue is brewing that will become more important in the next year or two. Solvency II, a program developed by the European Union to codify and



harmonize EU insurance regulation, is set to become effective in 2014. Its primary concern is the amount of capital the European insurance companies must hold to reduce the risk of insolvency. The issue is that the EU wants U.S. companies to report to them on business written in Europe. While the EU wants it to be a one-way street, the NAIC wants the reporting information to flow both ways. Different philosophies are at play. The EU tries to anticipate solvency problems and to prevent them. In the U.S., we have a capitalistic marketplace and let the market drive the results.

However, regulation is about protecting policyholders, so all parties are working to try to establish a common framework. The NAIC prefers a plan that is mutually acceptable without having a common standard.

At the state level, the Solvency Modernization Initiative (SMI) began in June 2008. Per the NAIC, the SMI is a critical self-examination of the U.S. insurance solvency regulation framework and includes a review of international developments regarding insurance

supervision, banking supervision, and international accounting standards and their potential use in U.S. insurance regulation. While U.S. insurance solvency regulation is updated continuously, the SMI will focus on five key solvency areas: capital requirements, international accounting, insurance valuation, reinsurance, and group regulatory issues.

The topic of regulation is extremely complex. Many aspects are being examined on all levels, and new standards will be developed. ■

# Cultural Norms and Their Impact on Business Insurance

by Andy Rader, CPCU

**Andy Rader, CPCU**, State Farm. Andy is an Underwriting Interest Group member.

In partnership with the International Insurance Interest Group, the Underwriting Interest Group hosted a very informative and practical seminar at the 2012 Annual Meeting and Seminars in Washington, D.C. “Cultural Norms and Their Impact on Business Insurance” proved to have a unique format and provide insightful agent/broker, underwriter, and business-owner perspectives. These were some of the panelists:

- **Mercedes Ortiz**, claims manager at State Farm Insurance
- **Angela Franco**, president and CEO of the Greater Washington Hispanic Chamber of Commerce
- **Lana Nguyen**, founder and president of Lana Furniture
- **Jorge E. Cacho-Sousa, CPCU, ARM**, founder, chairman, and CEO of MexiPass International Insurance Services

Focusing on the emerging Hispanic and Asian markets in the United States, the panel effectively described the importance of meeting the business insurance needs of these customer segments, their projected growth as business owners, and their norms and expectations. Mercedes Ortiz shared that demographic shifts demand change from commercial insurers, including agents and brokers. According to Ortiz, by 2050, the Hispanic population in the U.S. is projected to be nearly 133 million (30 percent of the total population compared to 16 percent today), and the Asian population is projected to be nearly 41 million (8 percent of the total population compared to 5 percent today). Ortiz also shared that when working with and meeting the needs of these markets, it is important to remember that

individuals within these ethnic groups are from varied cultural backgrounds.

According to Ortiz, Hispanic business owners increased by nearly 44 percent between 2002 and 2007, easily surpassing the number of total U.S. business-owner growth at 18 percent. Ortiz also shared that between 2010 and 2015, Hispanic buying power is projected to increase from \$1 trillion to \$1.5 trillion. Asian business owners in the U.S. have shown similar trends. Ortiz stated that they grew in number nearly 41 percent between 2002 and 2007, and that between 2010 and 2015, Asian buying power is projected to increase from \$544 billion to \$755 billion.

The statistics shared clearly make the case for a changing marketplace and a need for insurers to understand what is important to Hispanic and Asian business owners. Angela Franco and Lana Nguyen provided the business-owner perspective, detailing tips for insurers to consider when working with Hispanic and Asian customers. Franco shared that trust is critical to Hispanic business owners. Understandably, they often want to do business in their native language. It is important that those interested in serving this demographic invest their time in Hispanic communities and causes.

Nguyen provided important context for insurers and agents/brokers as they seek customers within the Asian demographic. Nguyen shared that it is important to understand that many first-generation Asian immigrants do not believe in banking and insurance. Often, Asian business owners rely on family members to meet these needs. There is an opportunity to educate Asian business owners about the value of banking and insurance in the U.S. by simplifying contract terms and providing explanations of practical use and protection. Trust is critical. These business owners may want to do business with individuals within their own ethnic background. While this is less of an issue

for second generation immigrants, it should not be ignored.

Lastly, Jorge Cacho-Sousa shared the perspective of an insurer and that of an agent/broker. He spoke of the critical need for insurers and producers to understand the intricacies of each demographic segment and the cultural norms associated with them. In particular, awareness of coverage needs and an understanding of how policy forms, limits, conditions, and exclusions may affect Hispanic and Asian business owners are imperative. Among many examples shared, Cacho-Sousa cited that many Hispanic business owners in the United States don't see a need for high liability limits. They have immigrated from cultures and societies that are much less litigious, and they need someone to explain their new operating environment so that they can see the value of extra protection.

It is clear there is ample opportunity for insurers and producers to meet customer needs within these demographic segments. Insurers and producers must invest in them through learning, education, recruiting, relationships, and tailoring of products to be effective in growing with these markets. ■

# Catastrophe Modeling—Any Room Left for Underwriting?

## One Underwriting Professional's Perspective

by Robert Medeiros, CPCU, ARe, ASLI

**Robert Medeiros, CPCU, ARe, ASLI**, is an independent property underwriting consultant serving the domestic and offshore (re)insurance market. He founded Lighthouse Consulting, LLC, in 2007, after thirty years of experience in property underwriting and brokerage. Medeiros has held positions in property product line management at Arch Insurance Group and Royal and SunAlliance Insurance Company. He is also a licensed property-casualty insurance agent in North Carolina.

“Catastrophe models are just tools to help underwriters.” This comment has found its way into nearly every article or conversation about catastrophe modeling in the past year. It is likely a reaction to “model misses” (where the actual losses from a catastrophe event differ from the modeled loss) or to the significant changes in modeled loss from new versions. The comment is a warning and a disclaimer of sorts, but also a good reminder for underwriters at all levels. And, as an attorney once said of my testimony, it has the added virtue of being true. The problem comes when a catastrophe model moves from being just a tool to being the only tool used to underwrite an individual account.

An insurer's senior management team is responsible for setting corporate targets for catastrophe exposures. Typically, multiple metrics, and now multiple models, are used to evaluate the price adequacy, probable maximum loss (PML), gross limits by landfall area, and so forth. The models are important tools at this level, as they organize and analyze large amounts of information. Management then distills this analysis into one or two target metrics that are easily obtainable at the account level, such as premium to average annual loss (AAL) or PML to premium. These metrics should align

with the corporate targets to produce an adequately priced portfolio within the PML targets. It is in this transition to the account level where the model transitions from a tool to the tool. When the rapid pace of the business is considered, especially in the Excess and Surplus lines market, the model can easily become the only tool.

My involvement with catastrophe management predates modeling, going back to a time when companies used landfall areas and set PMLs based on construction and occupancy (some have suggested that a return to this type of deterministic approach may be better than the current probabilistic methodology). In a previous corporate role, I set PML and pricing metrics and developed underwriting workstations to process modeling analysis. In my current role as an independent property underwriting auditor, I review files from many different companies in most market segments, which gives me a unique opportunity to see how the target metrics affect account selection and pricing. Too often, I see comments such as “models well” to justify a quote. I'm concerned that catastrophe underwriting at the account level has largely become a matter of hitting the numbers, and I'll suggest some alternatives that take into consideration underwriting factors.

In a perfect world, underwriters would carefully review all available information about a risk, including modeled results, and set a PML and premium based on sound underwriting judgment. The account PML could then roll up to the corporate PML for accumulation management. However, it is not possible to make a manual adjustment or override a modeled PML and have it carry through to the portfolio level, so the focus of this article will be on pricing. The question to be answered is, what risk and coverage conditions are likely to result in an actual

loss that is higher than the model and, therefore, require a higher price than the target pricing metric?

First, it is important to recognize some limitations in catastrophe models. For example, the type of insurance policy is not a consideration in the model. Thus, the modeled loss on an account written on a narrow ISO form would be the same if that account were written on a broad broker manuscript form. In addition, the model cannot account for terms and conditions that would affect the attachment point in a layered property program. Finally, modelers have stressed the importance of good data quality by reducing the amount of “unknown” entries, but good data elements aren't necessarily accurate data, especially with regard to secondary modifiers.

With these limitations in mind, these factors should be considered when evaluating the adequacy of the targeted pricing metrics:

- **Type of policy assumed by the model**—Large companies with multiple underwriting units may use several different policies. Some companies allow their underwriters to write “follow form” over another company's policy or write broad broker policies. The insurer's management should define which type of policy is assumed to be used in the model. The targeted price metric is based on that policy. Use of a broader policy than that assumed by the model should result in a surcharge to the modeled price.
- **Coverage extensions and limits assumed by the model**—Similarly, the insurer's management should define which coverage extensions, limits, and sublimits in its policy are assumed by the model. Extra Expense, for example, is a nonmodeled coverage, but it can

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# Catastrophe Modeling—Any Room Left for Underwriting?

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play a significant role in an actual loss. If, say, a sublimit of \$250,000 is built into the policy, surcharges for higher limits would apply if the risk conditions warranted them. Other coverages, such as Contingent Business Income, Civil Authority, and Off Premises Power, frequently come into play in a catastrophe loss but are not modeled. By defining which coverages and limits are assumed by the model, the underwriter can surcharge for higher limits.

- **Unique occupancies**—I audited a zoo account, and the underwriter wrote, “Models well.” Compared with what? Zoos are a unique occupancy and, by virtue of fewer numbers, will have less actual loss experience on which to base damageability ratios. In addition, the model groups specific occupancies into larger, more general categories for analysis. A sports stadium is different from a zoo, but they are in the same category for modeling. The insurer’s management should identify those occupancies that are unique. The underwriters should spend some time understanding the actual exposure and price it accordingly.
- **Erosion of underlying limits from nonmodeled perils**—As discussed, the model cannot account for the erosion of the underlying limit on a layered program from losses by nonmodeled perils in the primary or underlying layers. The peril of flood on a wind exposed account is the best example. An account with potential for underlying erosion can be priced by re-running the wind model at different attachment points. Insurance to Value (ITV): Adequate ITV is foundational to property underwriting. Normally a schedule of locations is modeled “as is,” without any correction for low ITV’s. Policy restrictions such as coinsurance and margin clauses provide protection in a large loss but don’t help with price adequacy. Low ITV’s on a schedule should be grossed up to adequate levels.

- **Calculate the rates**—The modeled output includes AALs by location, and it is a simple matter to convert these to traditional rates. Minimum rates can be set to avoid underpricing risks that could result from modeling aberrations and to ensure a reasonable premium for smaller accounts.
- **International exposures**—Modelers offer a wide variety of country, regional, and peril models. Some insurers license all available models, while others do not. To ensure that international exposures are properly priced, the insurer should identify the unmodeled catastrophe territories and perils and provide guideline rates. The additional premium needs to be included in the quote.
- **Catastrophe data quality metrics**—Typically, an insurer has a corporate data quality standard that measures geocoding levels and the amount of unknowns in primary characteristics. Insurers should evaluate an individual account using the same standards. Accounts with poor data quality can be surcharged, recognizing that the model also makes assumptions for unknown data that can affect results.
- **Catastrophe data validation**—The data may be complete, but are they accurate? An underwriting submission can include loss control reports at key locations, and insurers use third-party software to validate some key features. An insurer should set a guideline regarding how much exposed Total Insured Value needs to be validated at the time of the submission. Unfortunately, secondary modifiers are normally used without validation, and their impact on the modeled loss can make a significant difference. To minimize the effect of secondary modifiers that have not been validated, the model can be run both with and without the modifiers and the results compared. Management can limit the amount of premium credit they give for unvalidated

modifiers. Validation should always be done if the account is bound.

- **Optimization lists**—Nearly every company produces a list of accounts with the poorest metrics in their portfolio, and the corresponding underwriter is usually required to take some action at renewal to improve the risk pricing. Reviewing accounts against the factors listed above may rearrange the order of the list and present options for improvements in terms and conditions that modify the need for large rate increases.

In conclusion, I believe there is room for underwriting in a model-driven environment if insurers define the types of risks and coverages assumed to be in the model and increase the pricing for those conditions that would lead to larger losses. Model misses will still occur, but careful and deliberate underwriting, we should be able to better price for the uncertainty associated with models. ■

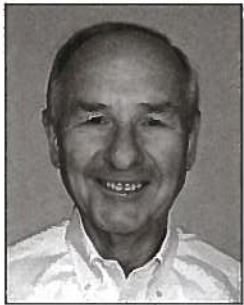
# American Fire Marks—A Good Story, Part 2 of 2

by Robert M. Shea, CPCU and William L. Pope, CIC, CRM



**Robert M. Shea, CPCU**, is retired from General Accident Fire and Life Assurance Corporation, Philadelphia, where he served as an underwriter. He is a former instructor for the Insurance Society of Philadelphia, where he prepared candidates for CPCU and other insurance-related certifications.

Bob is a director and an officer of Fire Mark Circle of the Americas, an association of collectors of fire insurance marks and firefighting memorabilia.



**William L. Pope, CIC, CRM** retired in 2006 from John Burnham Insurance Services after 38 years in the insurance business (35 with Burnham). He was executive vice president and principal owner of Burnham, a commercial insurance agency with 130 employees. Bill negotiated the sale of Burnham to Union Bank of California in 2002. He is currently a volunteer business counselor with SCORE. Bill is also Vice President of Fire Mark Circle of the Americas, an association of collectors of fire marks and fire-fighting memorabilia.

**Editor's note:** In Part I—Some early United States insurers borrowed a practice from England's insurers, issuing a fire mark with their fire policies. Insureds were obliged to affix the fire mark to their buildings as a way of telling a fire company the building was insured. Early insurers in England had their own fire brigades and only fought fires on buildings they insured. In the U.S., few early insurers issued fire marks, and some offered rewards to volunteer firefighters if they fought fires on buildings they insured. However, the public-spirited volunteer firefighters in the U.S. were driven more by a sense of honor and, in some cases, rivalry with other firefighting companies; consequently, they fought building fires when no fire mark was present.

## Fire Marks In 18th Century Philadelphia

If fire marks were not used by the volunteer firefighters to tell which properties were insured, what was the purpose of fire marks in America? The answer differs by insurance company and insured.

The first American insurance company to issue a fire mark was The Philadelphia Contributionship for the Insurance of Houses from Loss by Fire, founded in 1752. The Contributionship adopted the practice of using fire marks for a good reason—half of the Contributionship's directors were members of the Union Fire Company, founded by Benjamin Franklin in 1736 as America's first volunteer fire company.<sup>1</sup> As both contributors and volunteer firefighters, they would suffer a financial loss for each fire they insured. Therefore, the fire mark identified a property that all contributors would be encouraged to save from destruction.

Fire marks also served to inform a vengeful arsonist that the owner of the property would not suffer a financial loss from a fire—the insurance company

would pay. This fact may have deterred some would-be arsonists.

The second Philadelphia insurer, The Mutual Assurance Company, was formed in 1784 by a group of dissident Contributionship policyholders. In 1781, the Contributionship voted to refuse policies to houses with trees in front of them. The Mutual Assurance Company, meanwhile, covered houses that had trees in front of them and made a fire mark a requirement of coverage.

The third Philadelphia insurer, the Insurance Company of North America (INA), organized in 1792, made the purchase of a fire mark optional. While almost all policyholders paid extra for a "badge," or fire mark, not all did. INA may have made fire marks optional because there were already 24 active volunteer fire companies in Philadelphia and they were a stock insurer, not a mutual. Therefore, fire marks were not necessary for firefighting and insurance became more of an organized business.

## Firemen's Insurance Companies

Whereas the English insurers organized their own private firefighting brigades, associations of volunteers in many large American cities organized their own insurance companies. Not all these insurance companies issued fire marks, but of those that did, most issued a large cast iron mark. Many depicted a fire engine or fire plug, which doubled as a recognizable advertisement for the insurance company.

In a 1937 history of the Firemen's Insurance Company of Washington and Georgetown, in the District of Columbia, John Clagett Proctor wrote that before and since 1837, volunteer fire companies controlled the insurance companies, and, therefore, would give preferential attention to properties with their marks.<sup>2</sup> The statement of control

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# American Fire Marks—A Good Story Part 2 of 2

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is difficult to substantiate. If “control” means own, then it should be noted that prior to 1840 there were only nine known insurance companies organized by volunteer companies. It is more likely that Fireman’s issued a fire mark to gain a competitive advantage by using the mark to advertise their company.

This triangle of fire mark, fire insurance company, and volunteer fire company may have led modern writers to an erroneous association of fire marks and volunteers that exists to this day. That is, unless a fire mark was on a property, the volunteers would not fight the fire or would receive a reward.

## The Demise of Fire Marks

Since fire marks were not required for a volunteer fire company to fight a fire, and a fire mark did not guarantee a reward to the volunteer fire company, what was the purpose of a fire mark? While the fire marks served many purposes, the main reason remained that it was a sign that the property was insured.

After the elimination of the volunteer fire companies, the commonly accepted idea has been that fire marks became more of an advertising emblem rather than a “fire mark.” This idea is even found in Alvin Bulau’s *Footprints of Assurance*.<sup>3</sup>

The fact that fire marks gradually disappeared at the same time as the paid fire departments spread is merely a coincidence. Through technology, the fire mark was replaced by more colorful and less expensive advertising, such as printed material using chromolithography. At the same time, technology led to the development of the steam engine, and new firefighting equipment created the need for a full time, professional, fire service—especially in the larger cities.

## Historic Reminders

For over 150 years American insurance companies issued fire marks. The Philadelphia Contributionship and

The Baltimore Equitable Society keep the tradition alive. The marks of Philadelphia’s Fire Association; Mutual Assurance Company; and United Firemen’s, the Firemen’s of Washington, D.C., and the Firemen’s of Baltimore are still reproduced and may be found on houses throughout America. Shorn of all the ad man’s hype, fire marks tell an interesting story—that of an industry and the companies that left their mark.

The late Dick Doyle, a former Vice President of the Home Insurance Company, who worked with Alwin Bulau on *Footprints of Assurance*, said it best, “[Fire marks] are an expression of the insurance industry’s history, tradition, and longevity. In an industry with little, if any, tangible evidence of its existence other than contracts and pieces of paper, they were a visual sign for people to see and remember.”<sup>4</sup> ■

## Endnotes

1. Nicholas B. Wainwright, *A Philadelphia Story: The Philadelphia Contributionship for the Insurance of Houses from Loss by Fire* (Philadelphia: William F. Fell Company, 1952), p. 21.
2. John Clagett Proctor, *Into Another Century, 1937-2037, The 100th Anniversary of the Founding of the Firemen’s Insurance Company of Washington and Georgetown, in the District of Columbia, SIGNED By President of Firemen’s Insurance Company (The American Historical Society, Inc., 1937), p. 12.*
3. Alwin E. Bulau, *Footprints of Assurance* (The Macmillan Company, 1953), p. 9.
4. Insurance Institute of America, “Fire Marks: Symbols of a Proud Tradition”, *Insurance Review*, March/April 1985, p. 16.

Fire Mark Circle of the Americas is an association of collectors of fire marks and firefighting memorabilia dedicated to preserving the historical aspects of insurance and firefighting. For additional information and membership, go to [www.firemarkcircle.org](http://www.firemarkcircle.org).



Fig. 1



Fig. 2



Fig. 3

Fig. 1 The Philadelphia Contributionship for the Insurance of Houses from Loss by Fire

Fig. 2 The Mutual Assurance Company (“The Green Tree Company”)

Fig. 3 The United Firemen’s of Philadelphia

# Insurance Securitization—A Ripe Market?

by Harvey Powers

**Harvey Powers** graduated from the University of Texas at Austin in 2012 with Plan II Honors and Business Honors degrees. While a student at the university, he co-founded the University Securities Investment Team, an educational organization that offers its 100-plus members an opportunity to develop market knowledge through firsthand market investment analysis for an internal portfolio. Powers is now an investment analyst with Goldman Sachs within the Americas Special Situations Group. He remains interested in insurance securitization, which he views as an accelerating convergence of finance and insurance.

## Abstract

**T**he 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.

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# Insurance Securitization—A Ripe Market?

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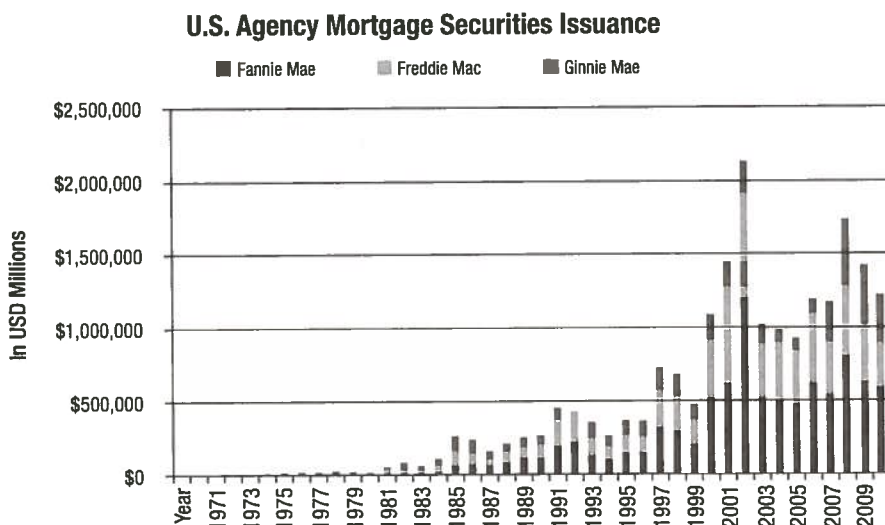
## Securitization History and Trends

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.

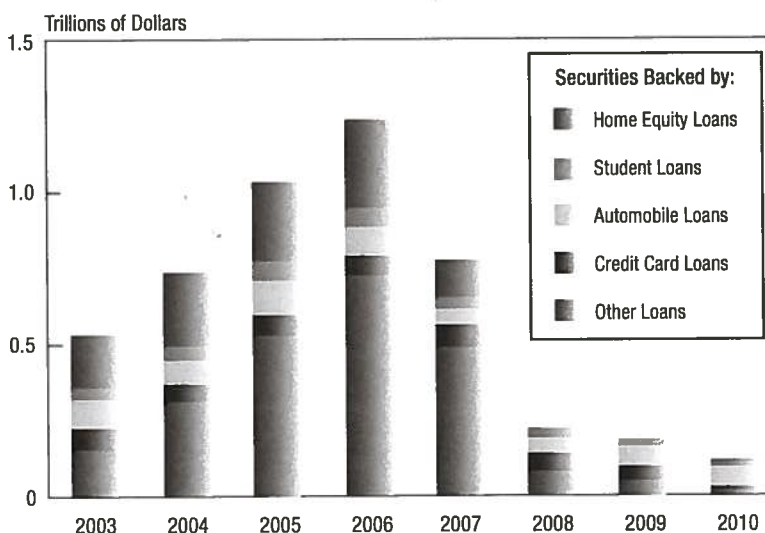
Mass-scale securitization of assets was initially implemented during the 1970s through government agencies Fannie Mae and Freddie Mac, which converted an economic interest on a pool of mortgage loans into a tradable financial security (Federal Reserve). From here, financiers moved quickly to securitize 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 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

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



**Chart 2**  
**Issuance of Non-MBS Asset-Backed Securities (CBO)**



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

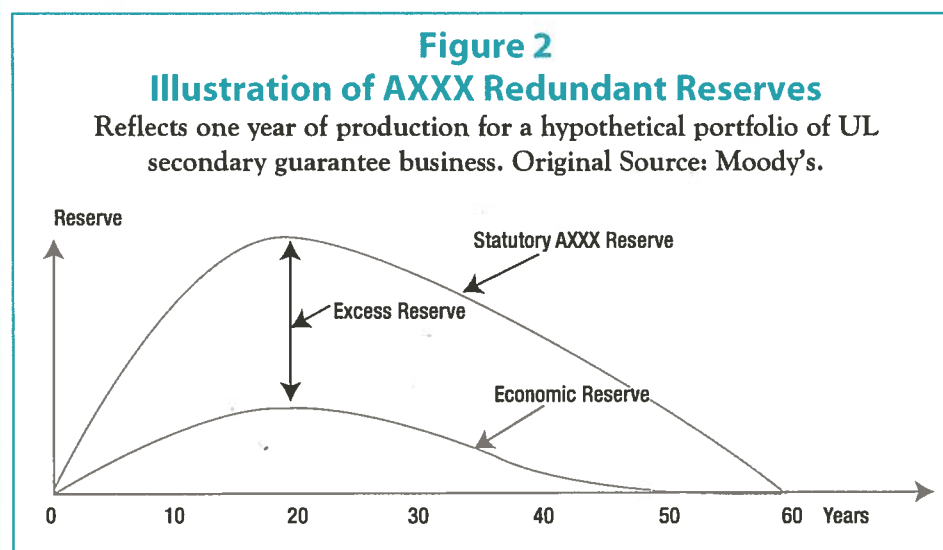
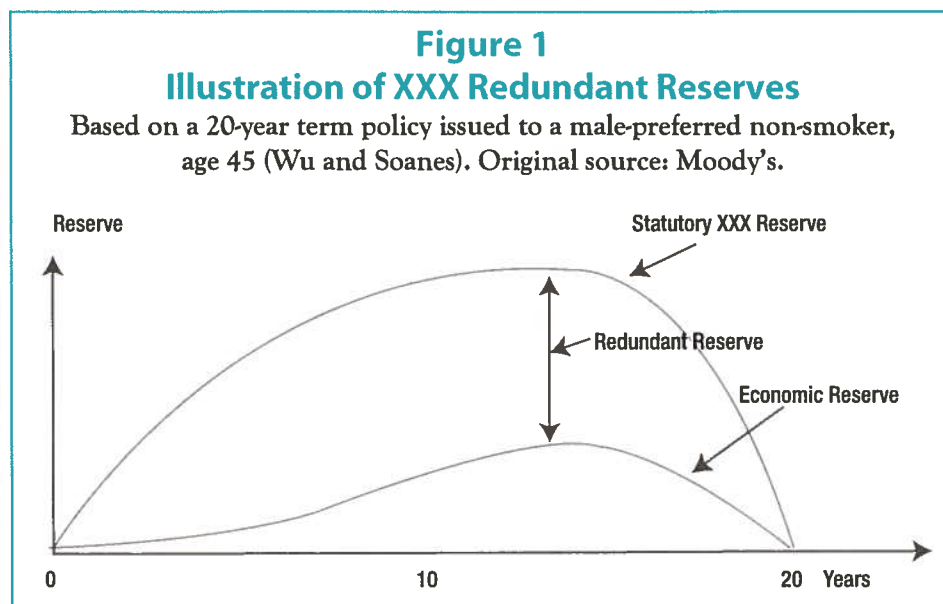
Insurance must be divided into several sub industries that each requires special attention in a discussion on securitization: life insurance, catastrophe insurance, and other property-casualty insurance. Life insurance in the United States since 2000 has been forced to provide what some consider overly 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).

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.

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

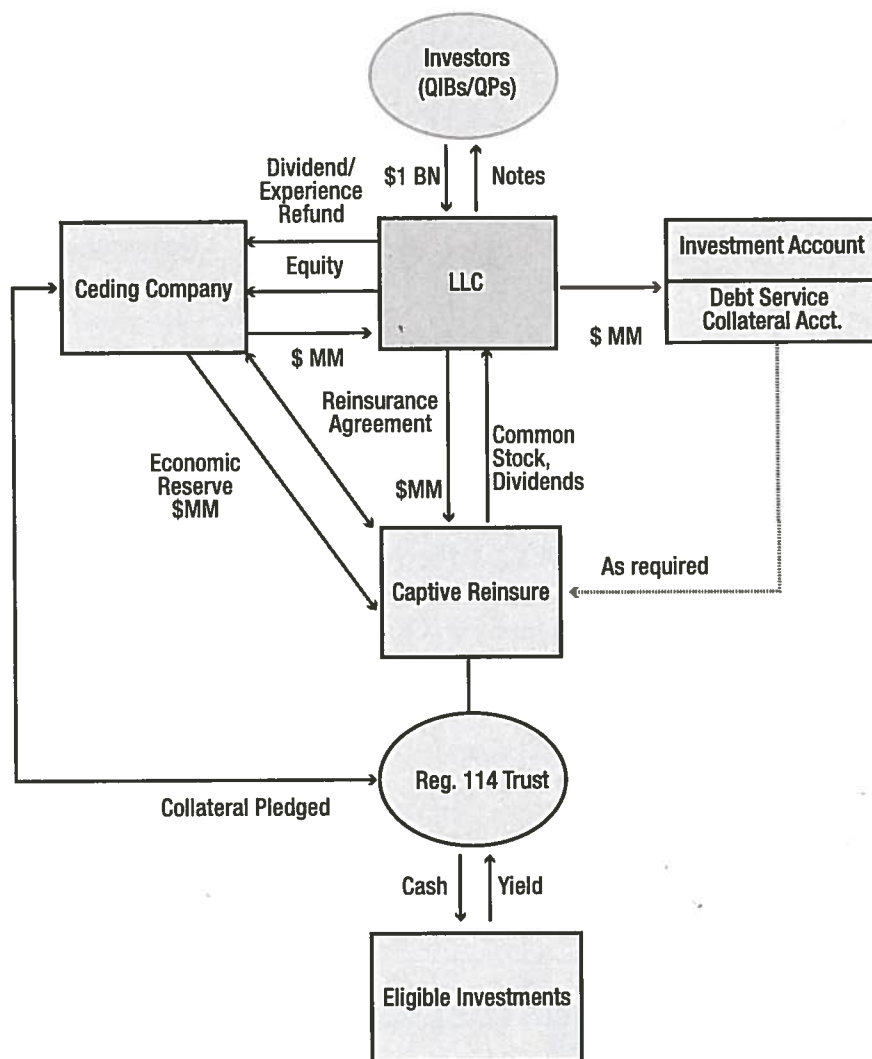
Part of the difficulty in managing an insurance company's balance sheet is that it can be difficult to realize the full value

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**Figure 3**  
**Example of XXX Securitization Process and Structure (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 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

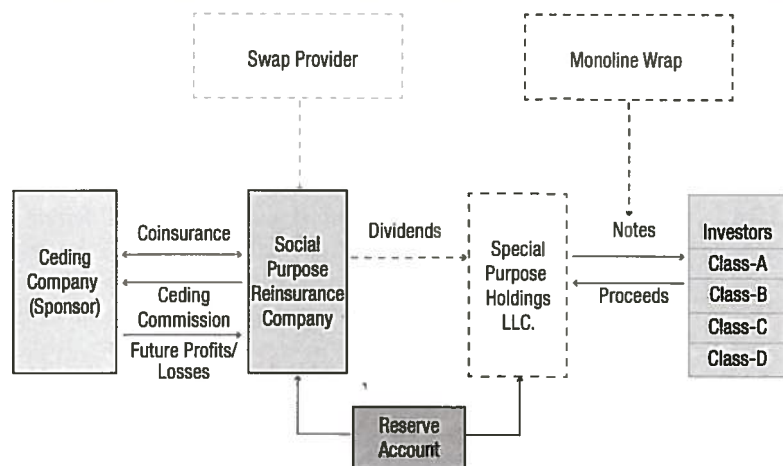
of the expected profits that are locked into current policies. A particularly interesting outlet is the release of capital through embedded value securitization, which can provide financing for new business activities, product-specific applications, while mitigating mortality and longevity risk on profitable 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)**



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).

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 sidcar 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.

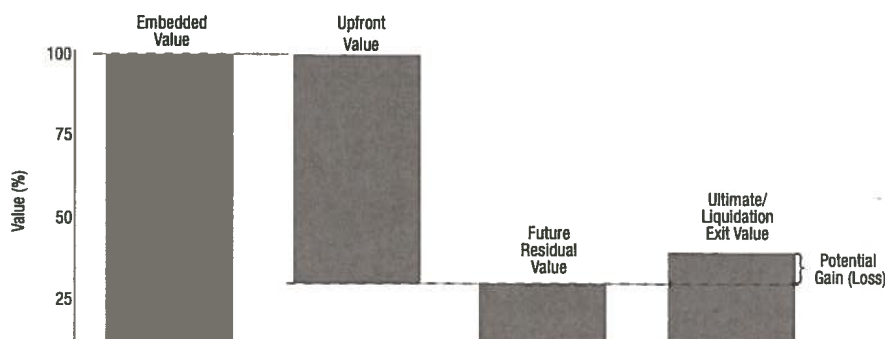
### Industry Loss Warranties (ILWs)

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).

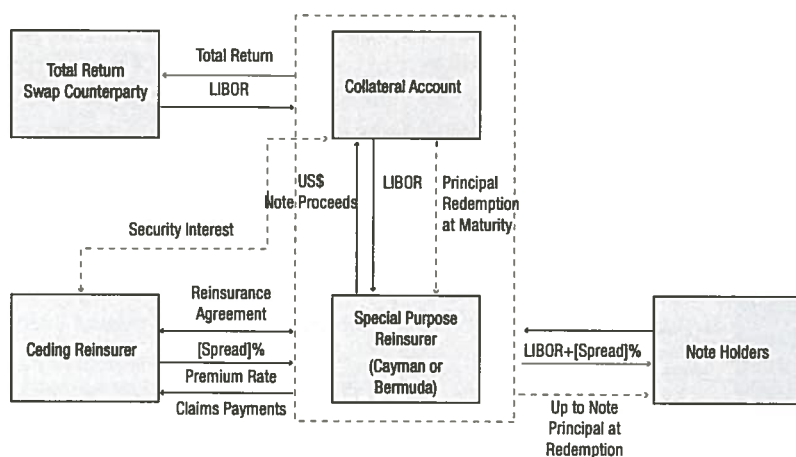
Because the contracts are explicitly linked to widely available public data (industry-level loss expectations), the information asymmetry typically introduced in a reinsurance scenario is quickly neutralized and, in some cases, reversed (Ali Ishaq).

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



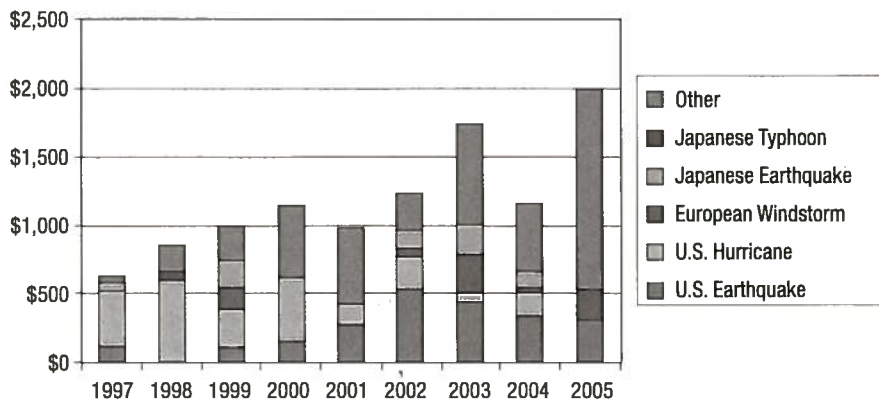
**Figure 6**  
**CAT Bond Schematic (Wu and Soanes)**



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**Figure 7**  
**CAT Bond Issuance (Wu and Soanes)**



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).

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?

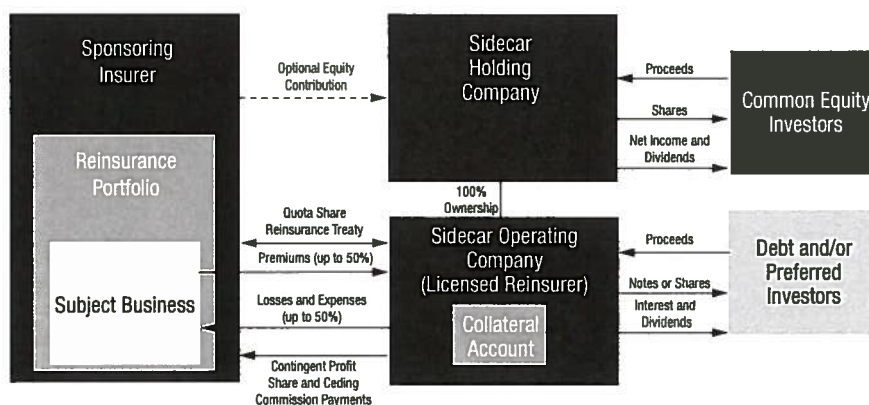
Experts at the former investment bank Lehman Brothers did not anticipate sidecar or CAT bonds to dominate the reinsurance industry, and they estimated 2007 sidecar deals to be valued around \$4.5 billion (Michael-J. Moody). It appears that this trend will continue:

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.

**Figure 8**  
**Sidecar schematic (Wu and Soanes)**



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

## Summary

Securitization	Strengths + Opportunities	Risks + Challenges	Sub-Sector
<b>XXX and AXXX</b>	<ul style="list-style-type: none"> <li>• Legally required growth</li> <li>• Well-understood market</li> <li>• Small-tail risk</li> </ul>	<ul style="list-style-type: none"> <li>• Sourcing cheap collateral</li> </ul>	Life
<b>Embedded Value</b>	<ul style="list-style-type: none"> <li>• Capital structure changes</li> <li>• Balance sheet acceleration</li> </ul>	<ul style="list-style-type: none"> <li>• Lowered profits</li> </ul>	Life, P&C
<b>CAT Bonds</b>	<ul style="list-style-type: none"> <li>• Diversification</li> <li>• High-dollar investments</li> <li>• High yields</li> </ul>	<ul style="list-style-type: none"> <li>• Modeling risk</li> <li>• Unregistered investments</li> <li>• Counterparty credit</li> <li>• Liquidity risk</li> <li>• Pricing risk</li> <li>• Basis risk</li> </ul>	Mostly P&C, especially concentrated portfolios
<b>Sidecars</b>	<ul style="list-style-type: none"> <li>• Equal participation</li> <li>• Access to underwriting experts</li> </ul>	<ul style="list-style-type: none"> <li>• CAT bond risks</li> </ul>	Mostly P&C
<b>Industry Loss Warranties</b>	<ul style="list-style-type: none"> <li>• Low transaction costs</li> <li>• Low risk charge</li> </ul>	<ul style="list-style-type: none"> <li>• CAT bond risks</li> </ul>	Mostly P&C

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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