



SOCIETY OF ACTUARIES

**Investment Symposium
March 2008**

**A5: Insurance Linked Securities – Investing,
Managing, and Trading**

**Benjamin Rockmuller
Jose Siberon**

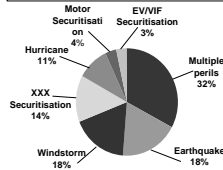
**Moderator
Jie Dong**

ILS Issuance to Date and Market Size

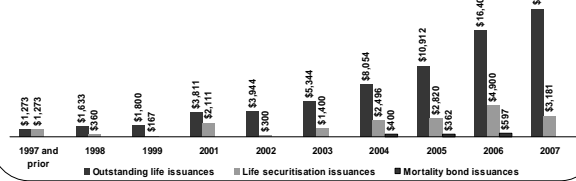
Both the life and non-life markets have used ILS over recent years although it has been in the non-life sector, and more specifically the catastrophe space, where true risk transfer has been a focus

We have illustrated here the growth in both primary issuance and secondary market of both life and catastrophe ILS

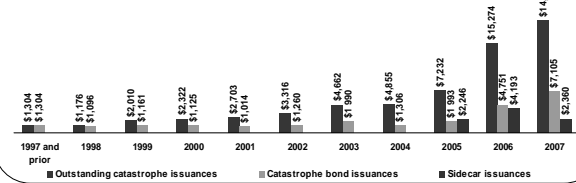
Breakdown of ILS market, 2007



Total life transactions (\$m)



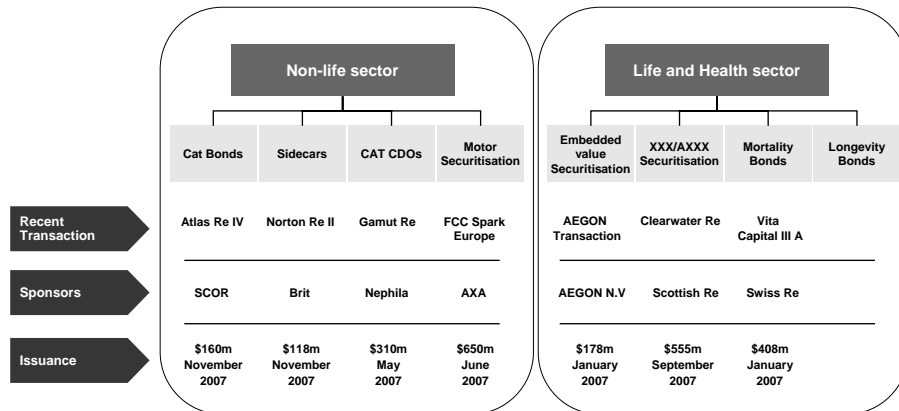
Total non-life transactions (\$m)



Source: Lane Financial; HSBC research

Recent Transactions in the ILS Space

There has been a proliferation in both the structures and the rationale for issuance



Investor Segmentation

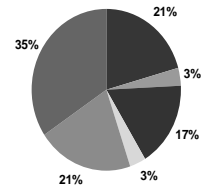
Capital market investors now dominate the ILS investor base, including large institutional money managers and insurance linked securities funds dedicated to the sector

Since 1999, hedge fund and dedicated fund participation in cat bond issuance has grown from 10% to circa 60% of the market

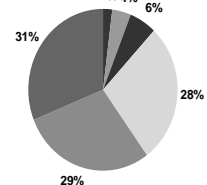
Given the rapid evolution of the ILS market, it is difficult to predict the composition of the investor base in the future

We consider different key themes which are likely to shape the future of the ILS investor base

1999*



2007 YTD*



□ Insurer □ Bank □ Reinsure □ Dedicated Cat fund □ Money manager □ Hedge Fund

* Source: Swiss Re Capital Markets research, as at 1 Aug 2007

The Future

- Mainstream asset managers increasingly look to ILS for its non correlation properties
- Increase in specialist funds as secondary market grows and portfolio approach developed
- More active risk trading within the (re)insurance marketplace
- Investment grade (multi-peril / multi-event) product development increases credit fund interest
- High Net Worth and Sovereign Wealth Fund interest driven by increased capital flow and search for yield

Correlation between ILS and Credit Markets

• ILS Spreads have not to date reflected changes in general credit market credit spreads. This may prove a catalyst for traditional investors & HNW that previously sat on the sidelines

ILS Distribution Channels

ILS is appealing to a broad set of investors with varying motivations

HSBC's focus is on helping to expand the ILS investor universe

Reinsurers

- Increasingly managing insurance risks on a portfolio basis; seek to trade risks as part of the optimisation process

Banks

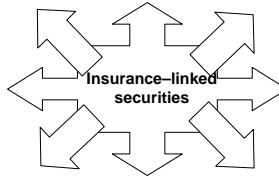
- Appetite to invest in life insurance/ risk financing trades (i.e. EV, AXXX)

Structuring agents

- Typically have appetite to partially underwrite trades; provide some degree of liquidity

ILS funds

- Typically divide ILS investments into peak and non-peak exposures; have ability to take risks in a variety of structures.



Hedge funds

- Strong presence in sidecar and ILW market; less scope to invest than ILS funds

Real money accounts

- Increasing interest from accounts for yield, non-correlated assets; find cat bonds inherently attractive

Bank prop desks

- Similar investment profile to hedge funds; opportunistic approach to ILS

HNW/Private banks

- Only a select few private banks in the ILS space; historically low involvement from HNW individuals

Possible Avenues to Investing in ILS

	Benefits	Disadvantages
Invest in a property cat reinsurance company	Easy access, low transaction costs, high liquidity	Exposure to non-cat risks and correlation to equity market
Invest in an ILS mutual fund	Immediate access to diversified portfolio, liquidity	High management fees, unproven track record
Invest in a catastrophe risk fund specialist	Sophisticated investment management techniques	High management fees, liquidity issues, difficult to evaluate performance
Build up internal portfolio via primary market	Develops in-house expertise, access to broad set of ILS	Long lead-time to building portfolio
Build up internal portfolio via secondary market	Develops in-house expertise, allows faster build-up of portfolio	Illiquidity, large bid/ask spreads, limited access to ILS issues
Build bespoke portfolio on bilateral/reverse enquiry basis	Immediate diversification; meets unique investment parameters	Structuring costs; concentration in single issuer

Outlook for ILS: Buyer & Seller Perspectives

The ILS market has robust growth fundamentals as a consequence of natural increase in demand from both potential issuers and investors

We consider here some of the potential catalysts and constraints for future market development

Buyer Perspective

- Investor's demand for uncorrelated, absolute return type investments is increasing
 - Globalization leads to higher correlation of traditional investments
 - ILS offer true diversification benefits
 - Investors assume an attractive compensation for assumed risks

Seller Perspective

- Demographic, regulatory and economic reasons drive ILS issuance
 - Accumulation and concentration of economic values
 - More sophisticated approach to risk management
 - Increased risk capital required by rating agencies
 - Heightened shareholder scrutiny of capital management

Outlook....

Regulatory recognition

Shareholder value

Liquid secondary market

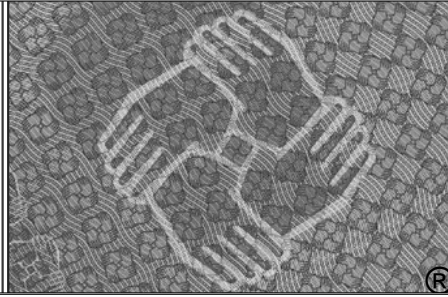
Efficient risk tranching

Basis risk

Reinsurance comparison

OppenheimerFunds

**Investor Perspectives on
Insurance-Linked
Securities**



Ben Rockmuller, CFA
Quantitative Analyst

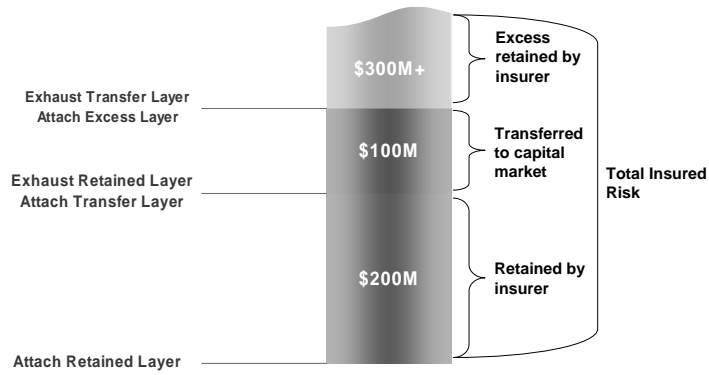


Agenda

- Structure of Insurance Linked Securities (ILS)
- Properties of ILS: Low correlation
- Properties of ILS: Attractive returns
- Portfolio implications of ILS

Structure of ILS

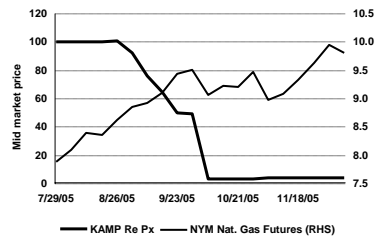
Excess of Loss – Risk Layers



Properties of ILS: Low correlation

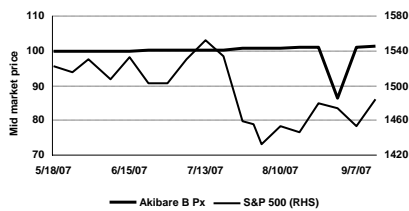
ILS may exhibit correlation with certain markets: for example, a hurricane may impact commodity prices...

KAMP Re Performance Around Katrina

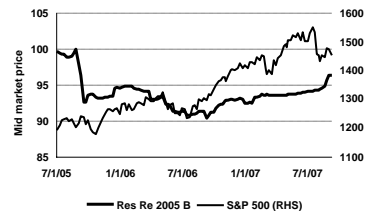


...yet financial volatility does not impact ILS

Akibare B Performance Around Typhoon Fitow

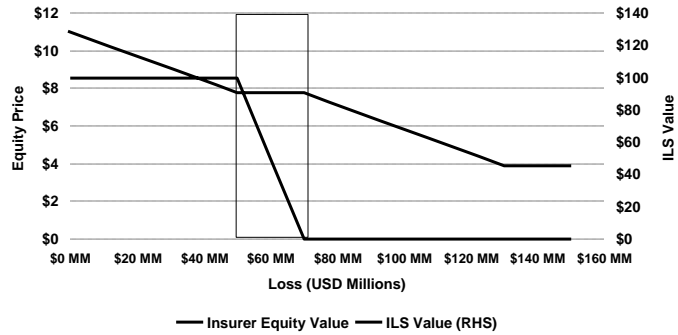


Res Re 2005 B Performance Post Katrina



Properties of ILS: Attractive returns

	Insurance Linked Securities	Speculative Grade Corporate Credit
Breakeven Time (Yrs)	9	11
Return Period (Yrs)	77	62

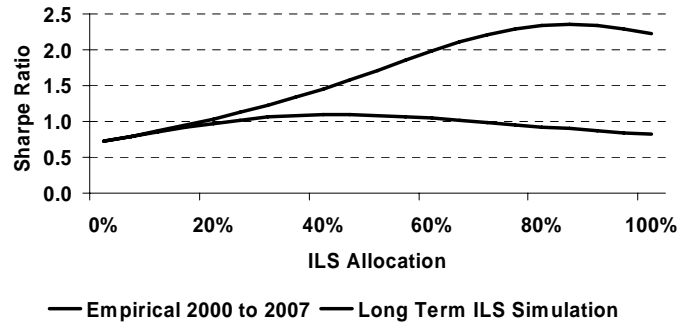


Page 5
For Institutional
Use Only

Sources: Swiss Re, Moody's, Bloomberg

Portfolio Implication of ILS

Portfolio Efficiency Implications of ILS Allocation



Page 6
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Chart Source: Bloomberg

Conclusion

Insurance-linked securities are attractive to investors because they offer high returns relative to their contribution to portfolio risk



SOA Investment Symposium

Regarding
Insurance-Linked Securities

March 25, 2008

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Global Markets & Investment Banking Group

Insurance-linked Securities

Why Issuers Engage in Securitization?

- Risk Management (Alternative Risk Transfer Tool)
- Alternatives to Reinsurance
 - Multi-year
 - Reduce counterparty credit risk
 - Quicker payment of claims
- Capital Management
 - Improve the Risk Based Capital
 - Regulatory Relief
- Enhance ROE
- Improve Claims Recovery Mechanism
- Unlock Value of a Run-Off Block

Insurance-linked Securitization

Types of Insurance-Linked Transactions

- i. Catastrophe Bonds and Swaps (natural, mortality)
- ii. Embedded Value Monetization
- iii. Leveraged Acquisition
- iv. Fund New Business Strain
- v. Fund Redundant Reserves (Reg. XXX, AXXX)
 - vi. Capital Relief Transactions
 - vii. Side Cars
- viii. Life Settlement & Premium Finance Trusts

Examples of Risks Being Securitized

1. Mortality/ Longevity
2. Morbidity
3. Auto Insurance
4. Hurricane/ Typhoons
5. Quake
6. Flood
7. Fire
8. Variable Annuity M&E fees
9. Tornados
10. Terrorism

and...many others!

2

Insurance-linked Securities

Issuer's Considerations

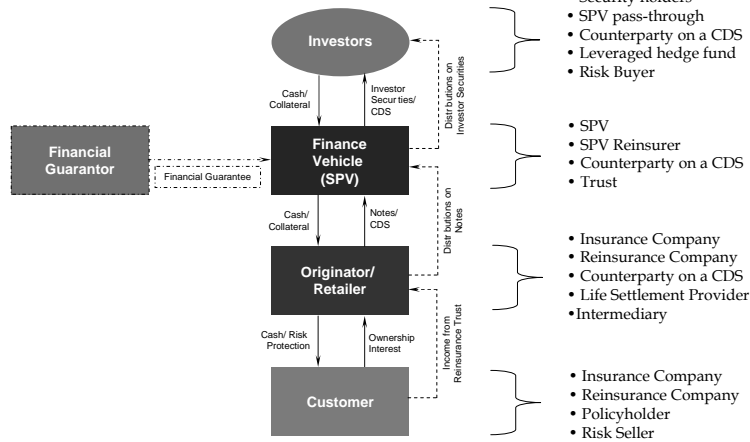
- ✓ Actuarial Analysis
- ✓ IT (Data, Systems and Models)
- ✓ Financial Analysis
- ✓ Rating's Impact
- ✓ Tax/ Regulatory/ Accounting
- ✓ Road Show/ Investor's Relationship
- ✓ Treasury
- ✓ Hire a strong Investment Bank Advisor(s)
- ✓ Structuring and Execution
- ✓ Outsourcing Cost (Legal, Actuarial, Accounting, Banking, etc.)
- ✓ On-going reporting and resources

Very important to have a strong quarterback (i. e project manager)!

3

Insurance-linked Capital Market Structure

Traditional Asset-Backed Securities

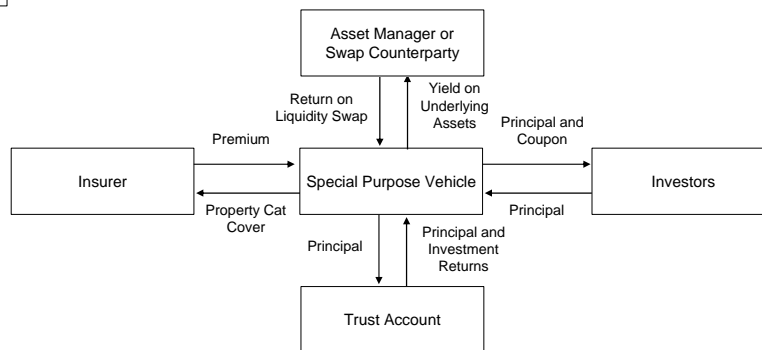


* Equity may be purchased by Insurer Parent or another entity within the organization

5

Overview of Catastrophe Bonds

How Does a Cat Bond Works?



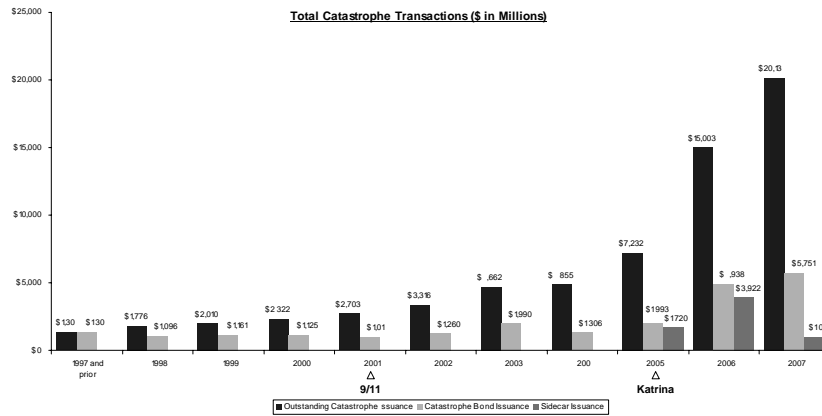
- Investors provide cash to the special purpose vehicle which in turn passes cash to the trust account which is invested in assets
- The assets in the trust account provide fully collateralized catastrophe cover to the ceding insurer
- The insurer pays to the SPV the different between the yield on the assets delivered to the trust account from asset swap versus the yield on the underlying bond, i.e. the negative carry

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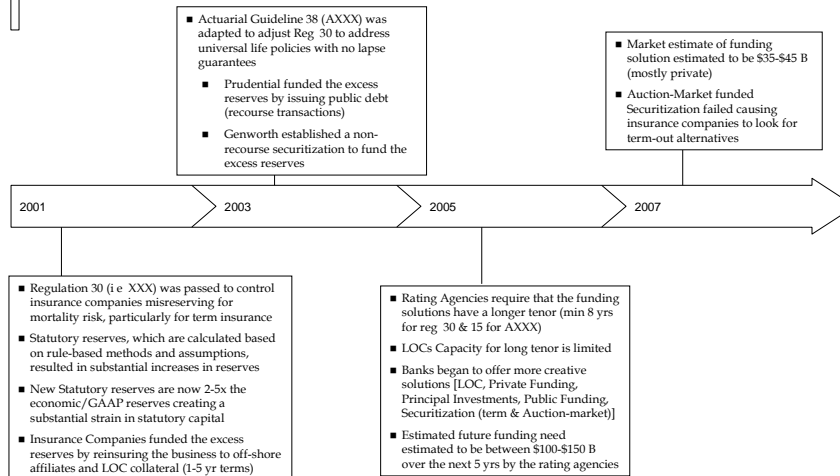
ILS Market Update Catastrophe-Linked Security Market Continues to Grow

Sidecar and Catastrophe Bond Market Size

The Catastrophe-linked security market has grown substantially over the past 15 years, including a doubling of securities outstanding last year.



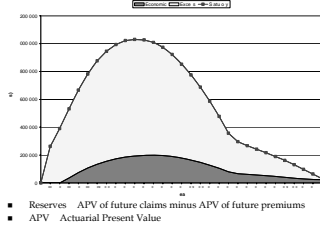
Reg. XXX/AXXX Overview What is Reg. XXX/AXXX



Reg. XXX/XXXX Overview

What Does the Reserve Pattern Look Like?

Diagram of Excess Reserves (Statutory Reserves vs. Economic Reserves)



Assumptions

	Statutory (set by Regulators)	GAAP
Mortality:	Based on old mortality tables, not reflecting today's mortality underwriting classes and improvements in the last 2 decades	Based on current mortality experience and future mortality improvements
Lapses:	Assumes 100% lapse at the end of term period	Assume a small persistency

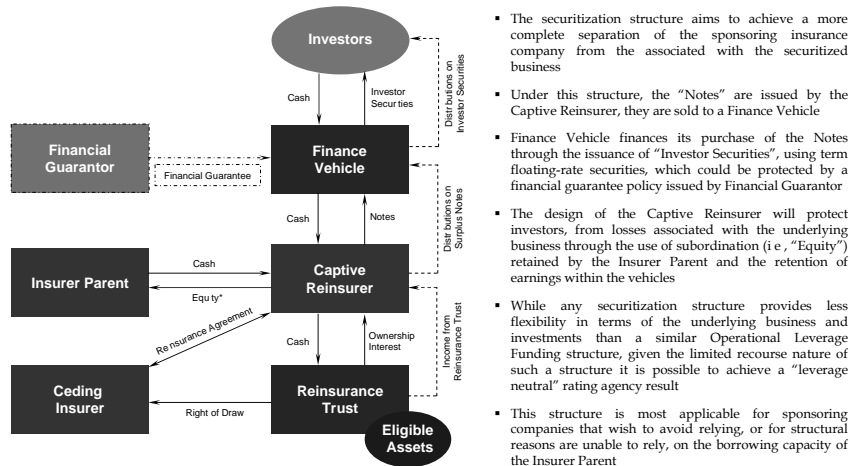
A typical Transaction

Average Size:	\$250 MM (Range \$200 MM – \$3B)
Legal Maturity:	20 – 30 yrs
Average Life:	12 to 23 yrs
Callability:	Limited in year 5 or 10
Ratings:	Shadow – A+ → AA+ Wrap AA – AAA
Wrapper:	MBIA, AMBAC or FGIC
Risks:	Mainly mortality and to a smaller extent, interest rate, asset, credit and policy holder withdrawal
Coupon:	Floating or Fixed
Prepayment:	Could occur if lapse rates increase substantially but historical rates remain small and stable

9

Insurance-linked Securitization

Full Securitization Solution

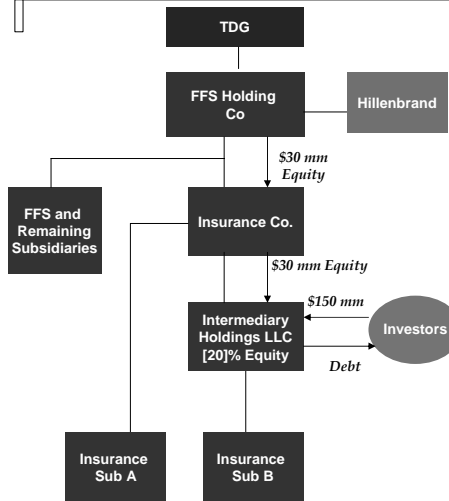


- The securitization structure aims to achieve a more complete separation of the sponsoring insurance company from the associated with the securitized business
- Under this structure, the "Notes" are issued by the Captive Reinsurer, they are sold to a Finance Vehicle
- Finance Vehicle finances its purchase of the Notes through the issuance of "Investor Securities", using term floating-rate securities, which could be protected by a financial guarantee policy issued by Financial Guarantor
- The design of the Captive Reinsurer will protect investors, from losses associated with the underlying business through the use of subordination (i.e., "Equity") retained by the Insurer Parent and the retention of earnings within the vehicles
- While any securitization structure provides less flexibility in terms of the underlying business and investments than a similar Operational Leverage Funding structure, given the limited recourse nature of such a structure it is possible to achieve a "leverage neutral" rating agency result
- This structure is most applicable for sponsoring companies that wish to avoid relying, or for structural reasons are unable to rely, on the borrowing capacity of the Insurer Parent

* Equity may be purchased by Insurer Parent or another entity within the organization

10

Insurance-linked Securitization FLAC Holdings Acquisition-Based Securitization



The Devlin Group (TDG) purchases FFS Holding Co from Hillenbrand as follows:

- 1 Intermediary Holdings LLC purchases Sub B
- 2 Insurance Co purchases Sub A and (its subsidiaries)
- 3 HoldCo purchases FFS
- 4 Sub A (and its subsidiary) transfer capital to Sub B
- 5 Sub B indemnity reinsures all existing business of Sub A (and its subsidiaries)
- 6 Sub B holds the in-force business as a defined block

Note: Sub A (and its subsidiaries) continue to be the new business writing entities

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