



# Weather Risk Management Association

**Growth through related markets -  
Insurance Linked Securities and  
Weather Events**

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Head of Americas Environmental  
and Commodity Markets**



# Discussion Agenda

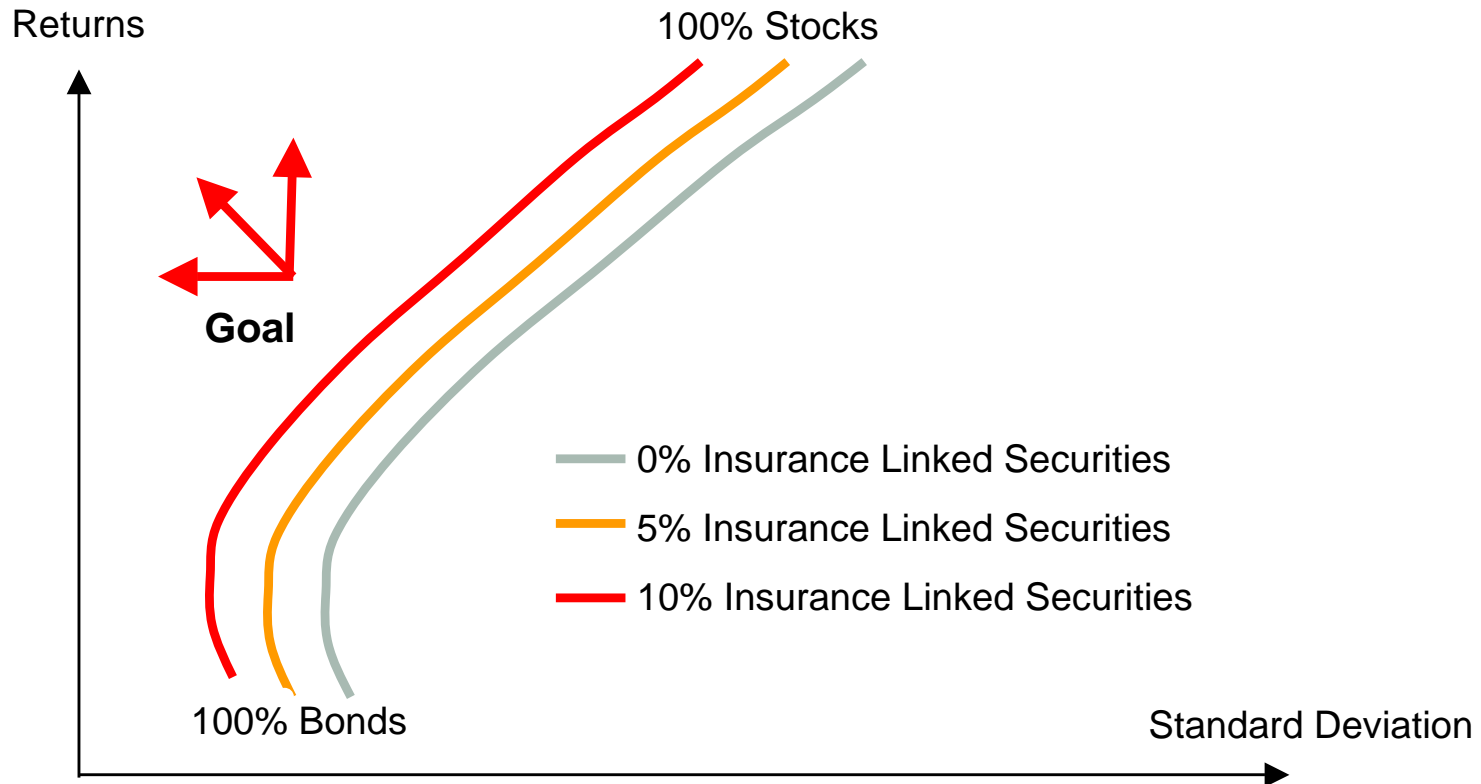
- Introduction
- ILS Market Highlights
- Trading Natural Catastrophe Risk
- Swiss Re Capital Markets



# Insurance – Linked Securities

- Insurance-linked securities (“ILS”) offer an attractive risk return profile as a diversifying component within a broader fixed income portfolio
- By bridging the insurance and capital markets, ILS are creating a range of attractive investment opportunities previously unavailable to those outside the insurance industry
- Since 1997, approximately \$35 billion in worldwide insurance and reinsurance capacity has been created through the issuance of ILS, with much of the issuance linked to both natural catastrophe perils as well as life risks
- A broad universe of investors have committed capital and resources to the sector

# Investor Diversification Benefits



- Different points on a curve represent efficient risk/return profiles of different investment portfolios
- Goal: Maximise the ratio of Return/Risk subject to risk constraints



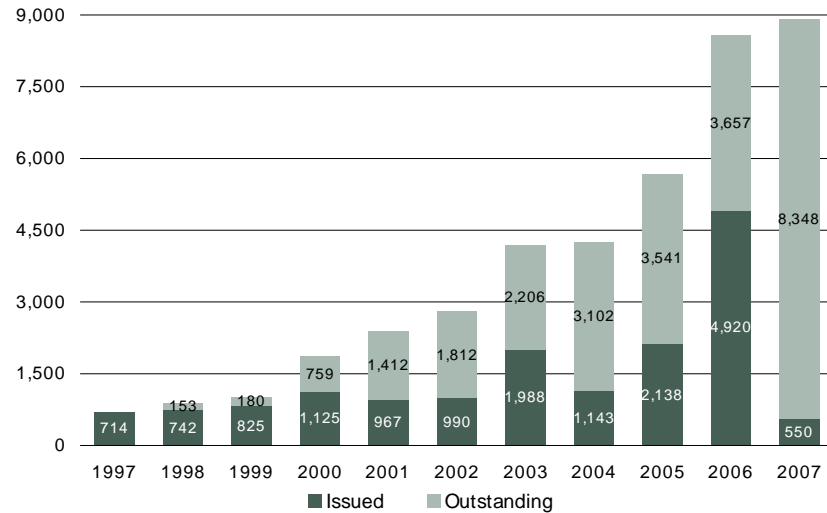
# Market Highlights



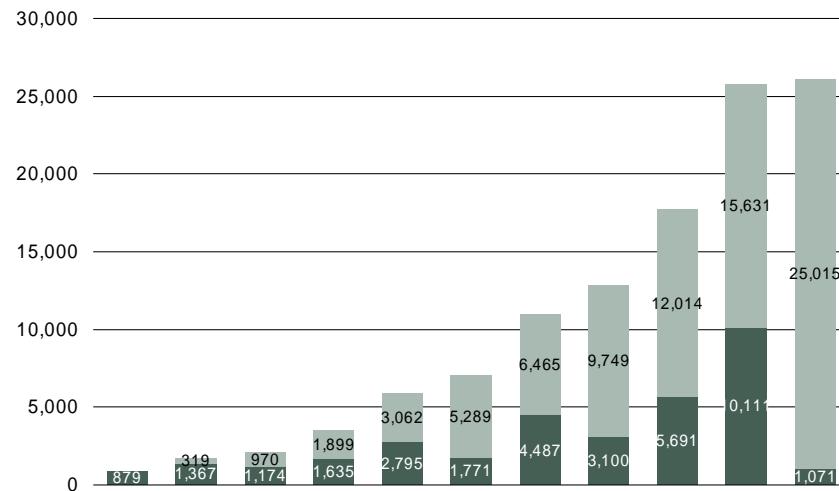
# ILS Market Capacity

- New issuance in 2006 YTD more than doubled the previous high in 2005 bringing total bonds outstanding at year-end to USD 8.6 billion
- One noticeable ILS trend in recent years is the increased activity in the life sector. 4<sup>th</sup> quarter 2006 also saw over USD 600 million in extreme mortality cover placed. Total bonds outstanding at year-end reached a record USD 25 billion

**Total non-life bonds outstanding, by year\***

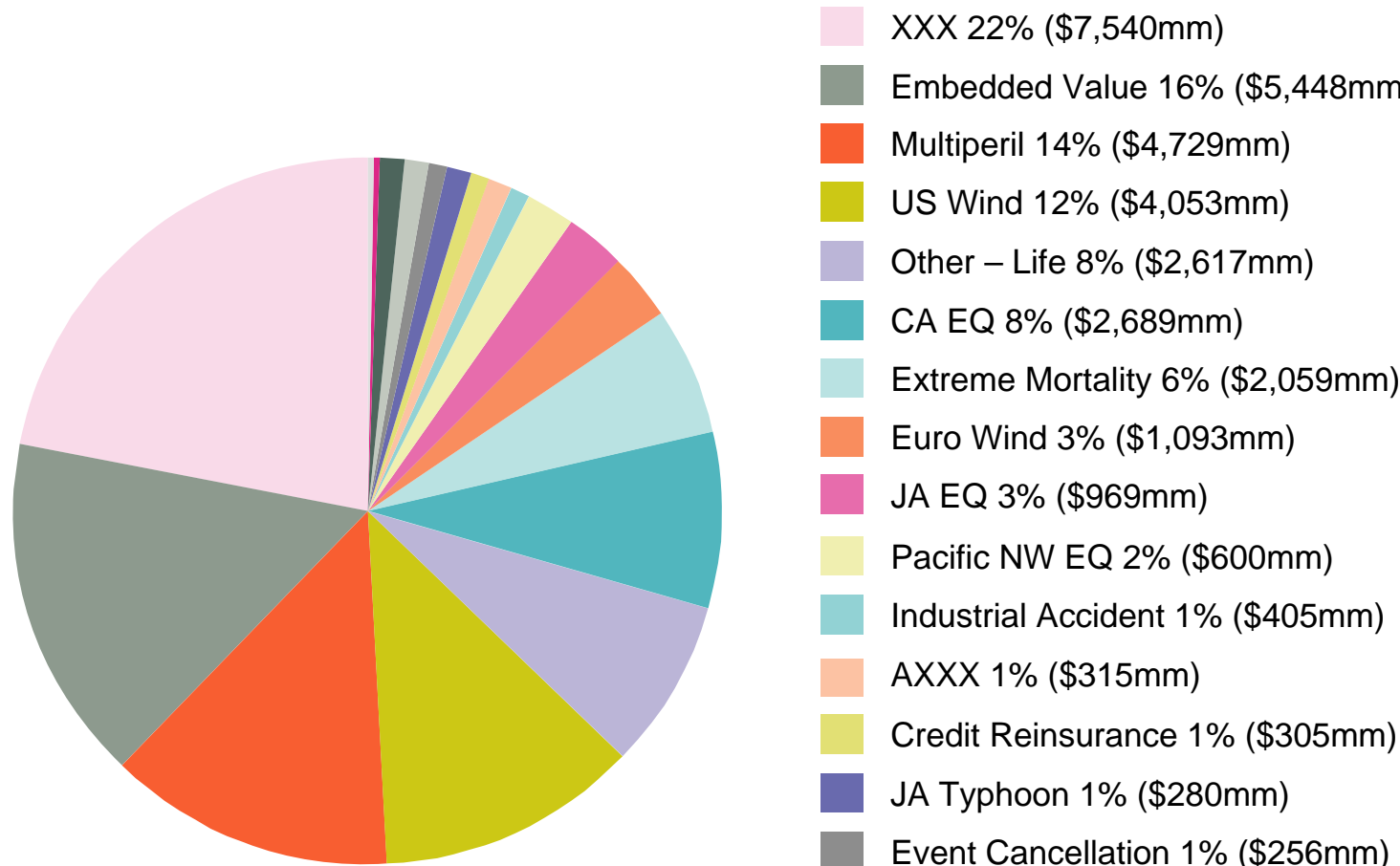


**Total ILS outstanding, by year\***





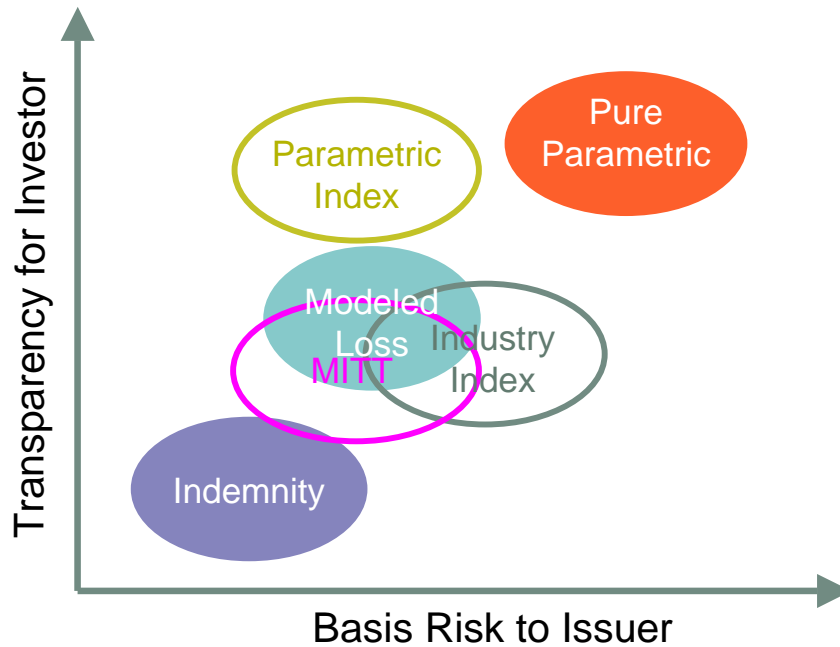
# Risks Securitized Since 1997



As of April 25, 2007

Source: Swiss Re Capital Markets

# Cat Bond Trigger Types



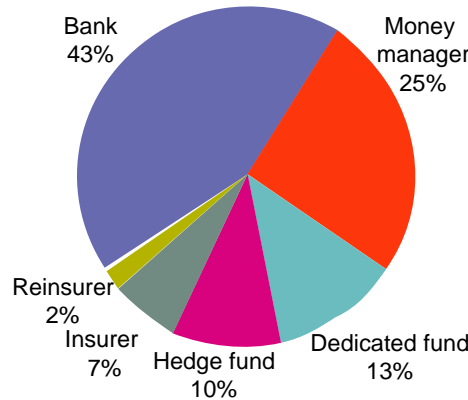
- An **indemnity** transaction is based on actual losses of the sponsor
- An **industry index** transaction is based on an industry-wide index of losses (e.g. Property Claim Services or “PCS” in the United States)
- A **pure parametric** trigger is based on the actual reported physical event (i.e. magnitude of earthquake or wind speed of hurricane)
- A **parametric index** is a more refined version of the pure parametric trigger using more complicated formulas and more detailed measuring locations
- In a **modeled loss** transaction, losses are determined by inputting actual physical parameters into an escrow model which then calculates the loss
- In a **Modeled Industry Trigger Transaction (“MITT”)\***, industry index weights are set post-event using modeled loss techniques

# Investor Segmentation

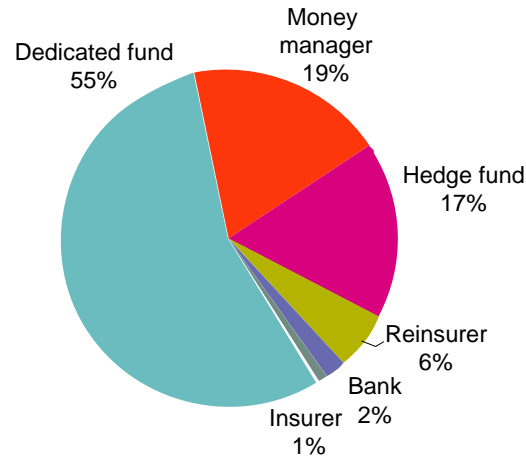
Capital market investors now dominate the ILS investor base, including large institutional money managers and many funds dedicated to the sector.

- Dedicated cat funds, money managers and hedge funds have increased their participation in the sector in recent years

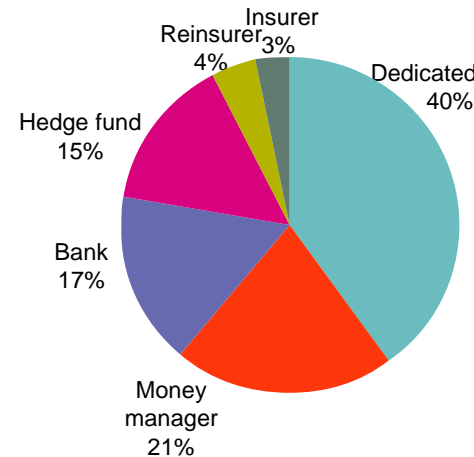
**Life by Type**



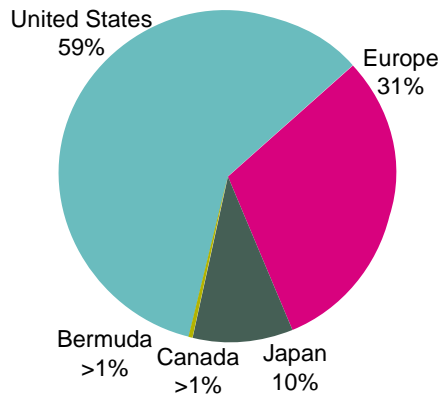
**Nonlife by Type**



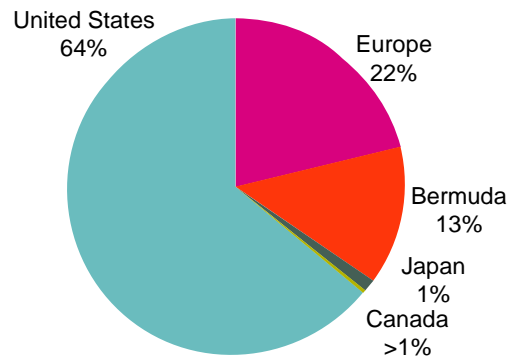
**All by Type**



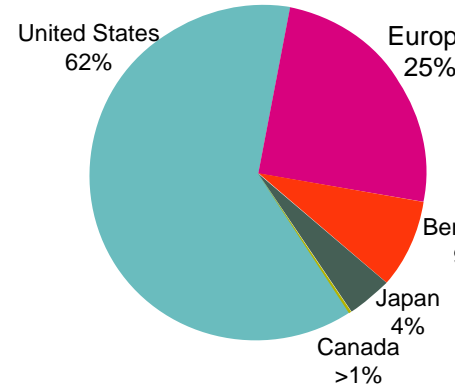
**Life by Region**



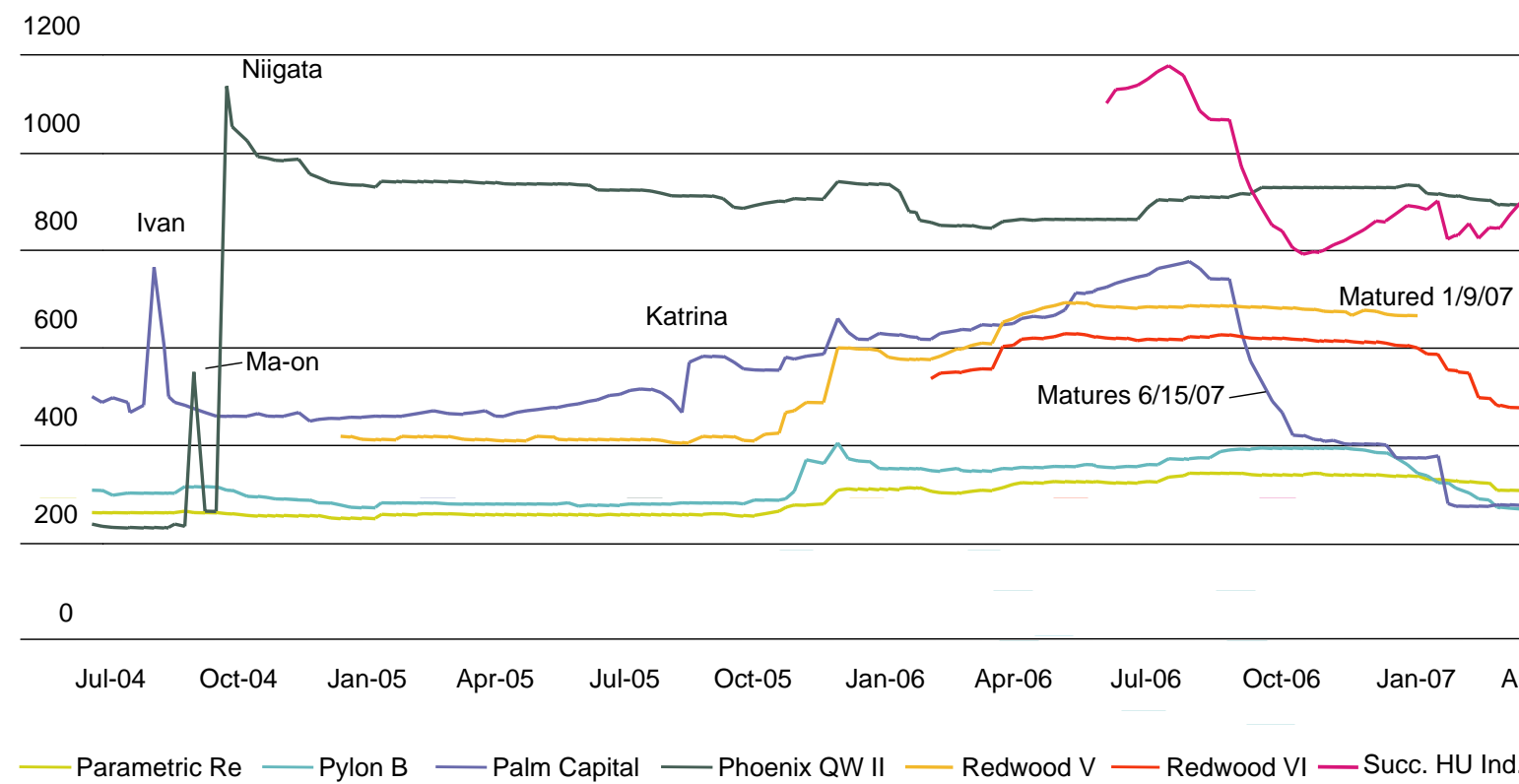
**Nonlife by Region**



**All by Region**



# Historical market spreads



For the period July 2004 – March 31, 2007

Source: Swiss Re Capital Markets



# Trading Natural Catastrophe Risk



# Trading Natural Catastrophe Risk

- Natural catastrophe risk is becoming increasingly tradable
- As liquidity increases in these markets, investors will have significant opportunities to trade and hedge their exposures
- The growth of these markets will attract investors to the segment, thus reducing the cost of natural catastrophe capacity
- The industry loss warranty (ILW) market has experienced strong growth since 2005
- In March 2007 New York Mercantile Exchange and the Chicago Mercantile Exchange both launched

# Comparison between NYMEX and CME

*While similar initiatives have failed in the past (e.g., at CBOT), this initiative has a reasonable chance to succeed.*

- No trading taken place to date. Expected to increase before and during US Hurricane season

	<b>NYMEX</b>	<b>CME</b>
<b>Index</b>	RE-EX (Gallagher Re)	CHI (Carvill)
<b>Underlying Parameters</b>	\$10PCS Loss/10M	\$1,000 * Index Value
<b>Perils</b>	All excl. EQ and Terrorism	Hurricane making landfall
<b>Regions</b>	Nationwide, FL, TX to ME ex-FL	Eastern US, North Atlantic, Southern Atlantic, Florida, Gulf Coast
<b>Expiration and Settlement</b>	Expires at end of year. Settlement is March 30 of following year	Expires at end of year. Settlement is 2 days after landfall

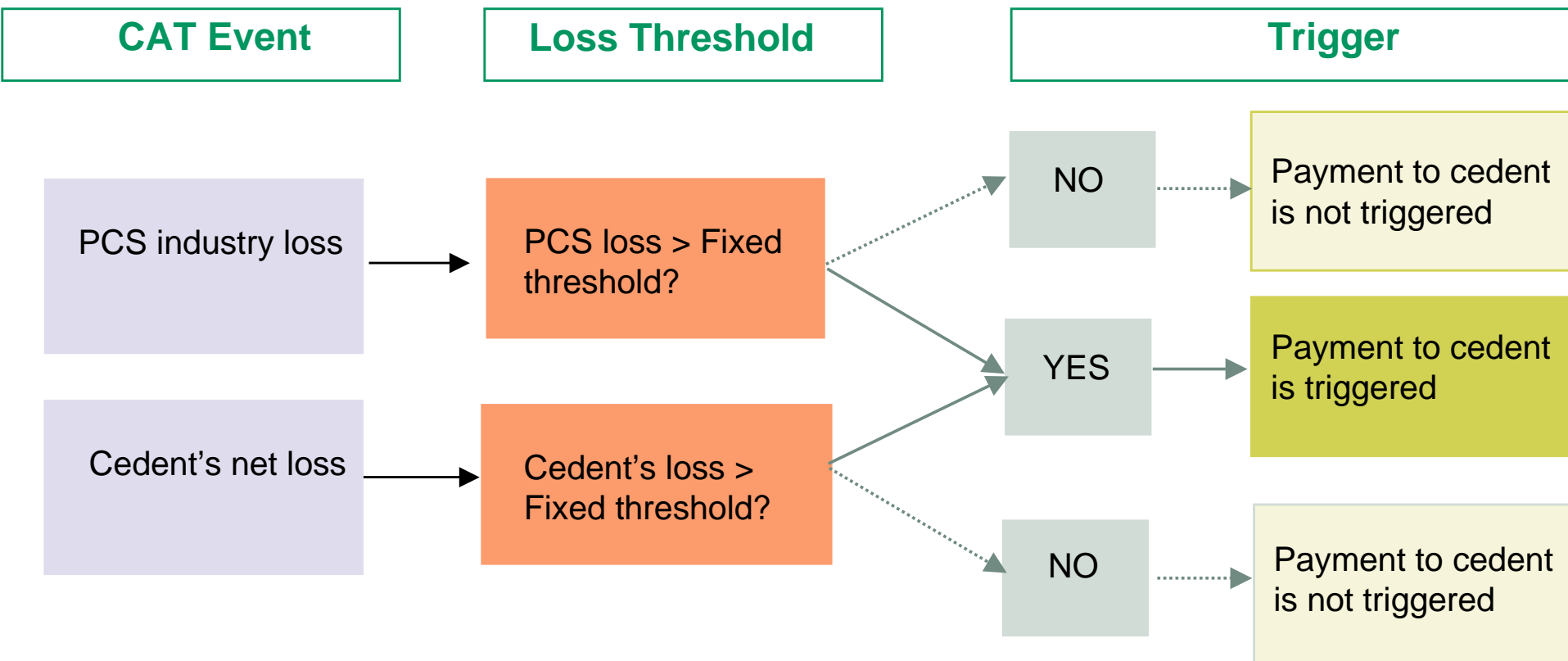


# Industry Loss Warranties

- ILW's are financial instruments designed as hedging instruments for reinsurers and insurers
- The loss is triggered off of an Industry Loss estimate as well as actual losses. This dual trigger allows for both derivative and reinsurance treatment.
- Indexes used:
  - US – PCS (Property Claims Service), Parametric triggers
  - Outside US – Sigma, Munich Re indices
- All natural perils are actively traded with the peak perils having the most volume. Tradable market is worth in excess of \$4.0 Billion annually
- Live cat and “dead” cat trading have also become popular with hedge funds



# How Does a Basic ILW\* Trigger Work?

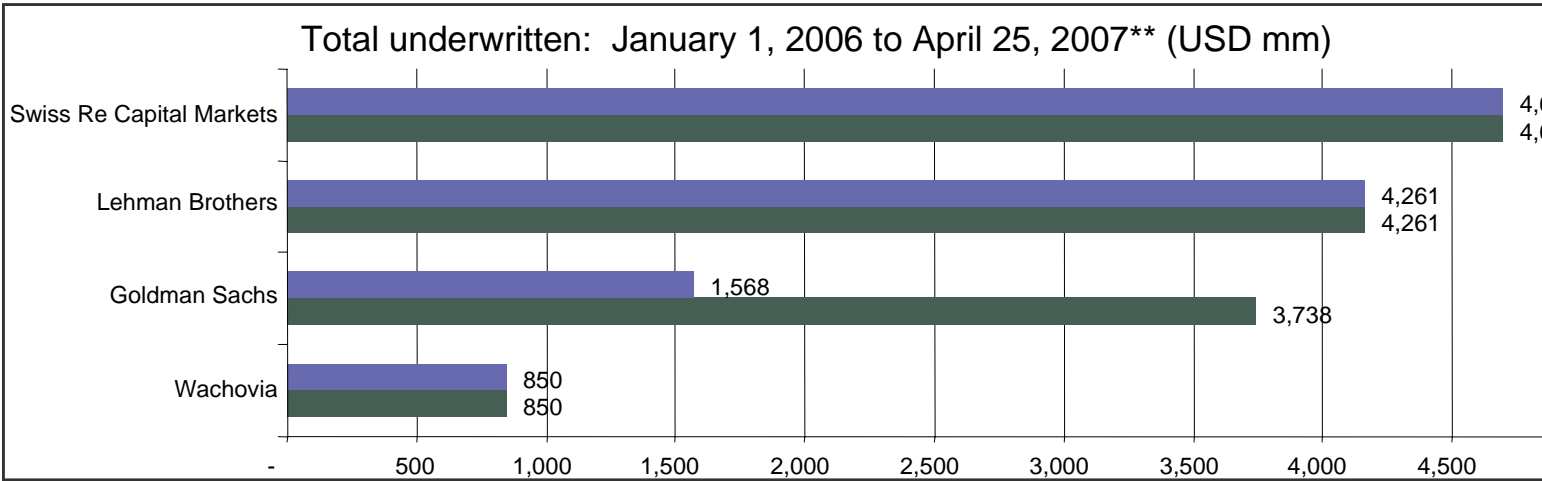
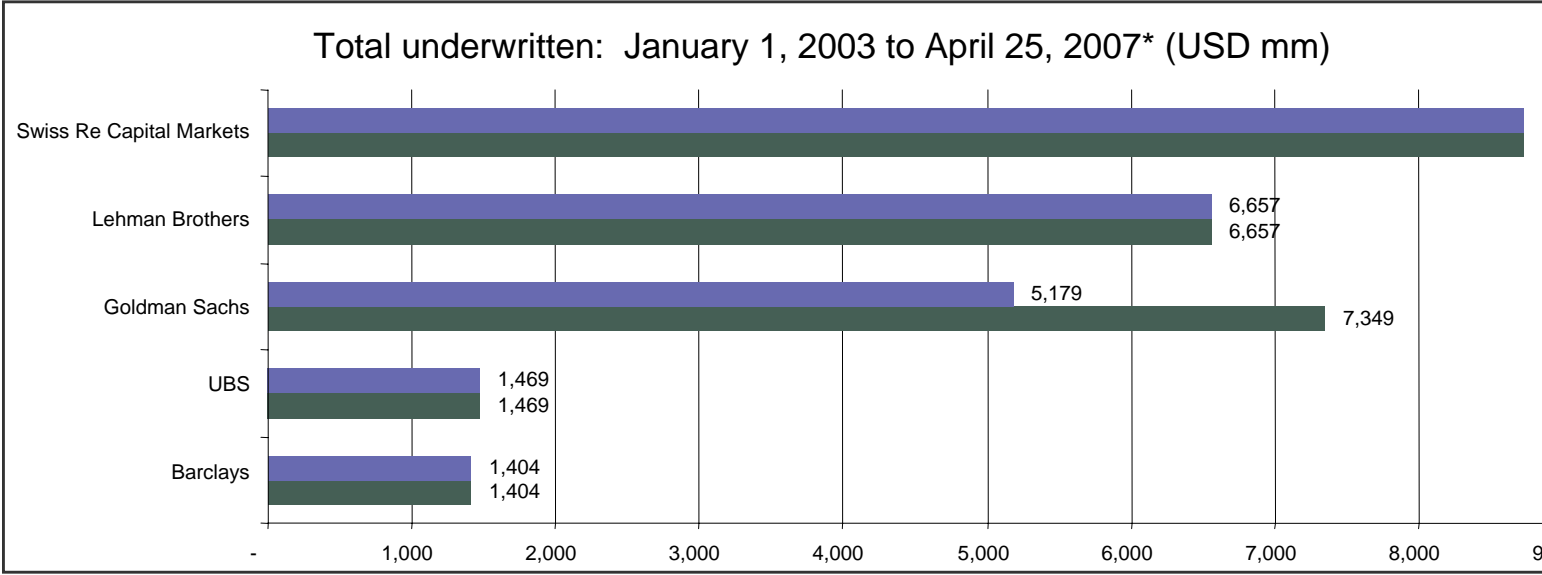


*\* ILW stands for Industry Loss Warranty (assumes ILW is not implemented as a derivative)*



# Swiss Re Capital Markets

# Market Position - overall



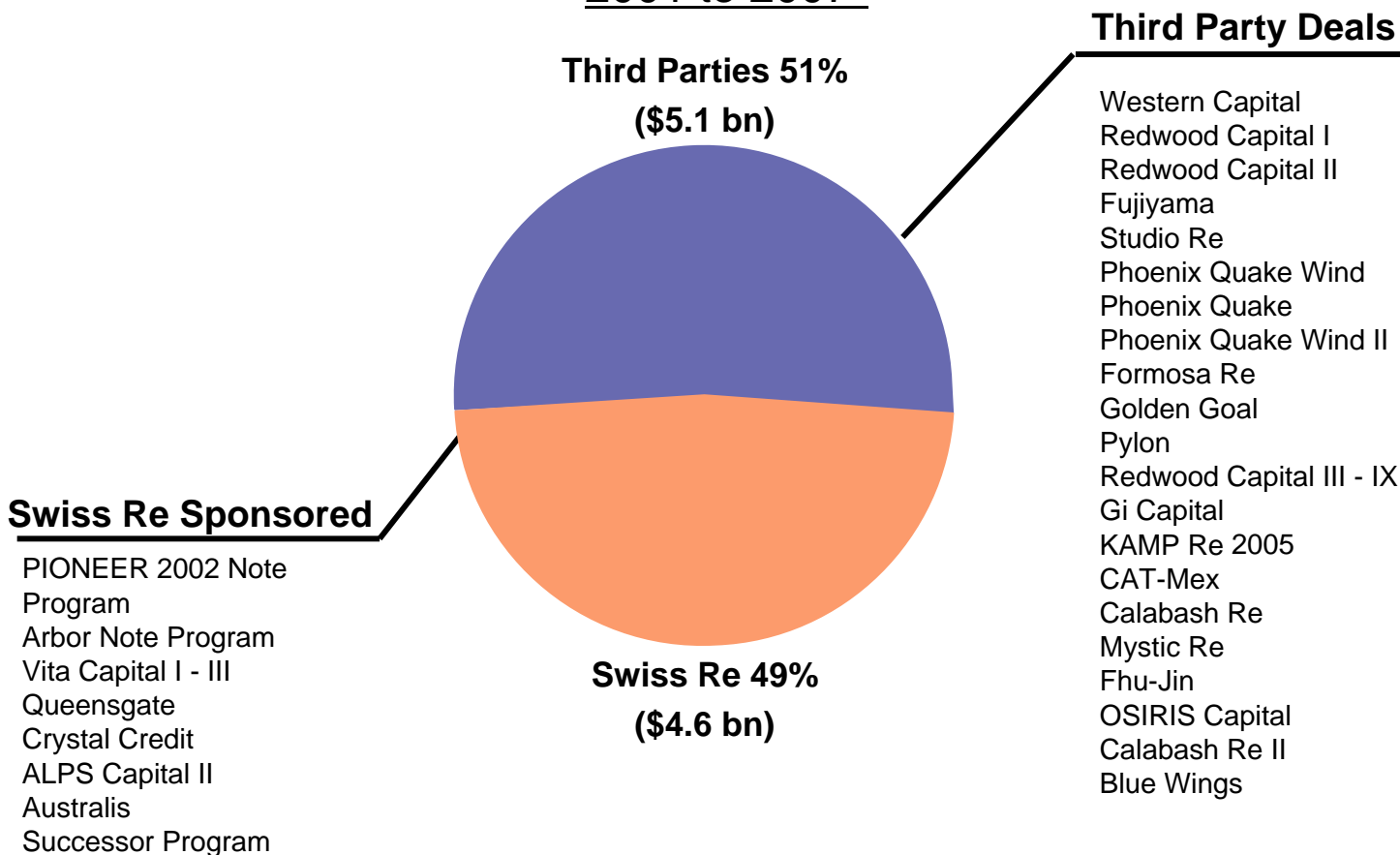
■ Lead manager      ■ Total underwritten

\* Lead underwriters of less than USD 1000 mm not shown

# Who Are Our Clients?







RCM has taken a leading role in the arranging of third party transactions the last 5 years.

## SRCM Arranged Transactions 2001 to 2007\*



\*As of April 25, 2007

# A Leading Underwriter of ILS

<p>Lehman Re</p> <p>Redwood Capital I Ltd.</p> <p>\$165mm Principal At-Risk Variable Rate Notes and Preference Shares</p> <p>Co Bookrunner 2001</p>	<p>Swiss Re  </p> <p>(On behalf of Third Party)            Redwood Capital II Ltd.</p> <p>\$200mm Principal At-Risk Variable Rate Notes and Preference Shares</p> <p>Co Bookrunner 2002</p>	<p></p> <p>Fujiyama Ltd.</p> <p>\$70mm Principal At-Risk Variable Rate Notes and Preference Shares</p> <p>Sole Bookrunner 2002</p>	<p>Swiss Re  </p> <p>PIONEER 2002 Ltd.</p> <p>\$512mm Principal At-Risk Variable Rate Notes  <i>(six takedowns of a \$2 billion shelf program)</i></p> <p>Sole Bookrunner 2002</p>	<p></p> <p>Gulfstream            Studio Re Ltd.</p> <p>\$175mm Principal At-Risk Variable Rate Notes and Preference Shares</p> <p>Co Bookrunner 2002</p>	<p></p> <p>Zenkyoren            Phoenix</p> <p>\$470mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2003</p>	<p>Swiss Re  </p> <p>Arbor</p> <p>\$498mm Principal At-Risk Variable Rate Notes  <i>(eight takedowns of a \$6 billion shelf program)</i></p> <p>Sole Bookrunner 2003</p>
<p></p> <p>Formosa Re Ltd.</p> <p>\$100mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2003</p>	<p></p> <p>Golden Goal Finance Ltd.</p> <p>\$265mm Cancellation Bond Issuance for the 2006 FIFA World Cup™</p> <p>Co Bookrunner 2003</p>	<p>Swiss Re  </p> <p>Vita Capital Ltd.</p> <p>\$400mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2003</p>	<p></p> <p>Pylon Ltd.</p> <p>€190mm Principal At-Risk Variable Rate Notes</p> <p>Co Bookrunner 2003</p>	<p>Swiss Re  </p> <p>(On behalf of Third Party)</p> <p>Redwood Capital III-IV Ltd.</p> <p>\$350mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2003</p>	<p>Swiss Re  </p> <p>(On behalf of Third Party)</p> <p>Gi Capital Ltd.</p> <p>\$125mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2004</p>	<p>Swiss Re  </p> <p>(On behalf of Third Party)</p> <p>Redwood Capital V-VI Ltd.</p> <p>\$300mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2004</p>
<p>Swiss Re  </p> <p>Queensgate Special Purpose Ltd.</p> <p>\$245mm Principal At-Risk Fixed Rate Notes</p> <p>Sole Bookrunner 2005</p>	<p>Swiss Re  </p> <p>Vita Capital II Ltd.</p> <p>\$362mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2005</p>	<p></p> <p>KAMP Re 2005 Ltd.</p> <p>\$190mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2005</p>	<p>Swiss Re  </p> <p>ALPS Capital II plc</p> <p>\$370mm Principal At-Risk Floating and Fixed Rate Notes</p> <p>Sole Bookrunner 2005</p>	<p>Swiss Re  </p> <p>Crystal Credit Ltd.</p> <p>€252mm Principal At-Risk Floating Rate Notes</p> <p>Sole Bookrunner 2006</p>	<p>Swiss Re  </p> <p>Australis Ltd.</p> <p>\$150mm Principal At-Risk Floating Rate Notes</p> <p>Sole Bookrunner 2006</p>	<p>Swiss Re  </p> <p>(On behalf of Third Party)            Redwood Capital VII-VIII Ltd.</p> <p>\$225mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2006</p>
<p></p> <p>United Mexican States            CAT-Mex Ltd.</p> <p>\$160mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2006</p>	<p></p> <p>Calabash Re Ltd.</p> <p>\$100mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2006</p>	<p>Swiss Re  </p> <p>Successor</p> <p>\$1.3 bn Principal At-Risk Variable Rate Notes  <i>(29 takedowns of a \$16.5 billion shelf program)</i></p> <p>Sole Bookrunner 2006</p>	<p></p> <p>Mystic Re Ltd.</p> <p>\$525mm Principal At-Risk Variable Rate Notes</p> <p>Co Bookrunner 2006</p>	<p></p> <p>Fhu-Jin Ltd.</p> <p>\$200mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2006</p>	<p></p> <p>OSIRIS Capital plc</p> <p>\$441.7 mm Principal At-Risk Variable Rate Notes</p> <p>Global Coordinator 2006</p>	<p></p> <p>Calabash Re II Ltd.</p> <p>\$250mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2007</p>
<p>Swiss Re  </p> <p>Vita Capital III Ltd.</p> <p>\$700mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2007</p>	<p></p> <p>Blue Wings Ltd.</p> <p>\$150mm Principal At-Risk Variable Rate Notes</p> <p>Sole Bookrunner 2007</p>					



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