

The Actuarial Profession

making financial sense of the future

SECURITISATION OF NON-LIFE INSURANCE

GIRO 2008 WORKING PARTY

GRAHAM FULCHER (CHAIR)

**FINANCE, INVESTMENT & RISK MANAGEMENT**

**CONFERENCE**

15-17 JUNE 2008

HILTON DEANS GATE, MANCHESTER

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Agenda

▪ Basic concept

▪ Supply and demand arguments and their development

▪ Issuance to date and possible future trends

▪ A magnifier or a mitigant?

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Catastrophe Bond – Basic Concept

Insurer

Special Purpose Vehicle Reinsurer

Investor

Premium

Interest Capital at maturity

Claims

Initial investment

Traditional Reinsurance w/o credit risk

Traditional Bond Claim = Default

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## Supply and Demand Arguments

$$E(R_i) = R_f + \beta_{im}(E(R_m) - R_f).$$

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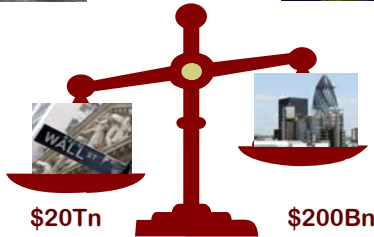
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## Original Supply Side Argument



\$50-100Bn



\$20Tn

\$200Bn

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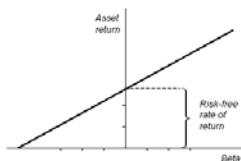
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## Original Demand Side Argument

$$E(R_i) = R_f + \beta_{im}(E(R_m) - R_f).$$



$$\beta_{im} = \frac{\text{Cov}(R_i, R_m)}{\text{Var}(R_m)}$$

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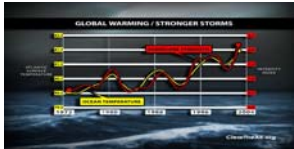
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## Supply side Argument - Developments

- Socio/Demographic trends
- Catastrophe model recalibration
- Rating downgrades
- Increasing concentration
- Climate Change



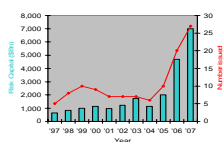
Source: ClearTheAir.org following Emanuel (2005)

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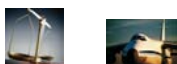
## Demand side Argument - Developments

- Initial investment community dominated by reinsurers
- Now returning to original concept
- Sub-Prime bought zero-beta firmly into focus  
e.g. spreads tightened slightly during credit crunch
- Two years of very low catastrophe activity helped
- Reaction of investors to a loss has not been tested
- Sub-prime raises questions about some aspects of non-life insurance linked securitisation
  - use of black-box models
  - role of rating agencies/catastrophe modellers
  - transfer of risk to those least able to understand it rather than those best able to bear it

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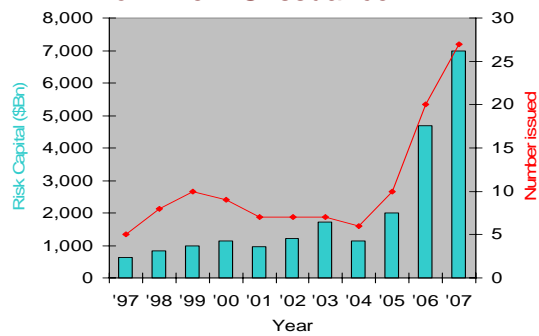


## Issuance to date Future Trends



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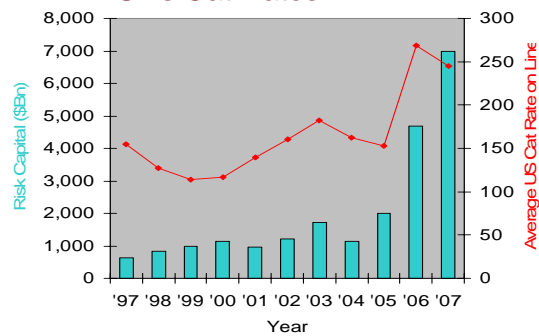
## Non-Life ILS Issuance



Source: Guy Carpenter; Publicly traded deals only

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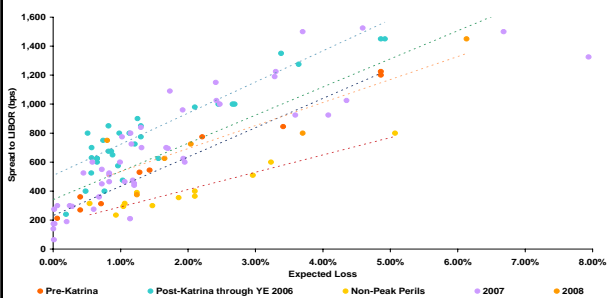
## ILS vs Cat Rates



Source: Guy Carpenter

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## Non-Life ILS Pricing - 2005 to Present



Source: Goldman Sachs

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## Past, Present and Future

- ORIGINAL CONCEPT:  
 Issuers: Insurers/reinsurers  
 Perils: Peak natural catastrophes
- DEVELOPMENTS TO DATE  
 Issuers: Governmental pools, Theme Parks  
 Railway, Energy, Power  
 Perils: Non-Peak catastrophic perils  
 Extensions: Motor, Reinsurance recoverables, Liability
- FUTURE DEVELOPMENTS  
 Issuers: Charities, Airlines, International Group  
 Extensions: Personal Lines, Reserve Run-Off, Goodwill  
 Regulatory: Solvency II



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## Markets – Magnifiers or Mitigators



Enables insurance  
industry to spread  
internally undiversifiable risk



LMX Spiral Mk II?



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