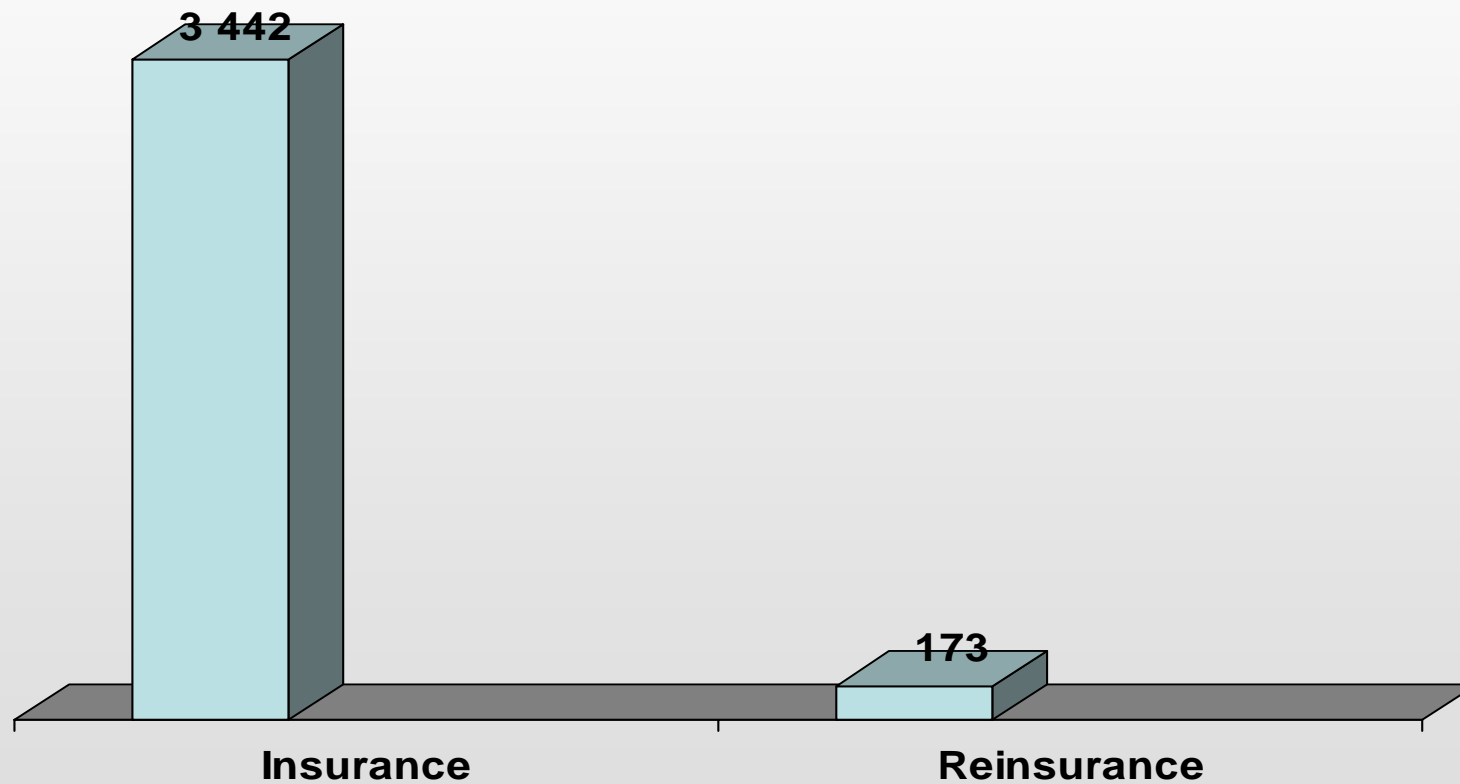


# 2006 Worldwide Overview

The international reinsurance  
market

# 2005 Premium volumes

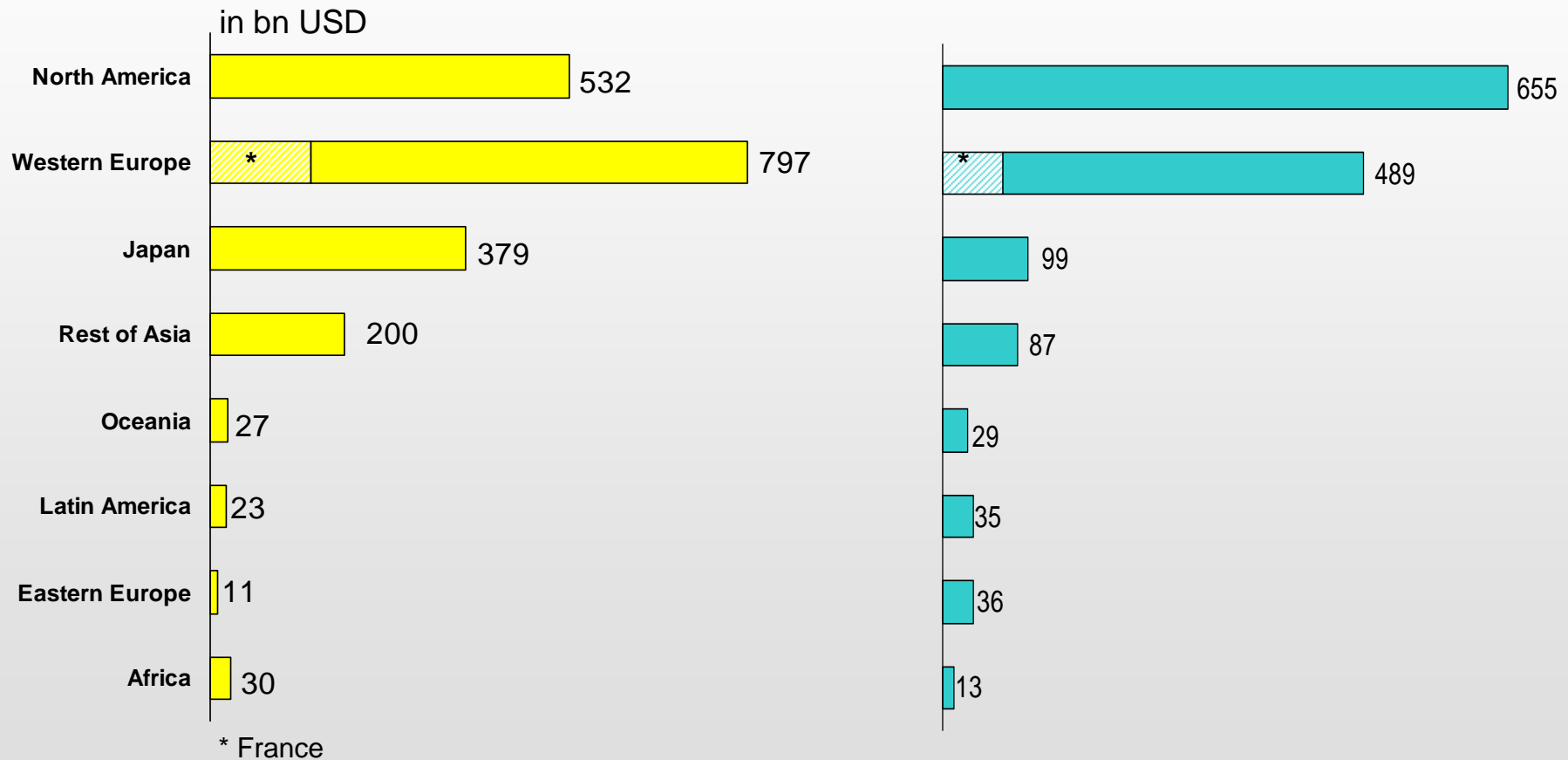
Premium in bn USD



# Geographical insurance premium split 2005

Life : 1 999 bn USD

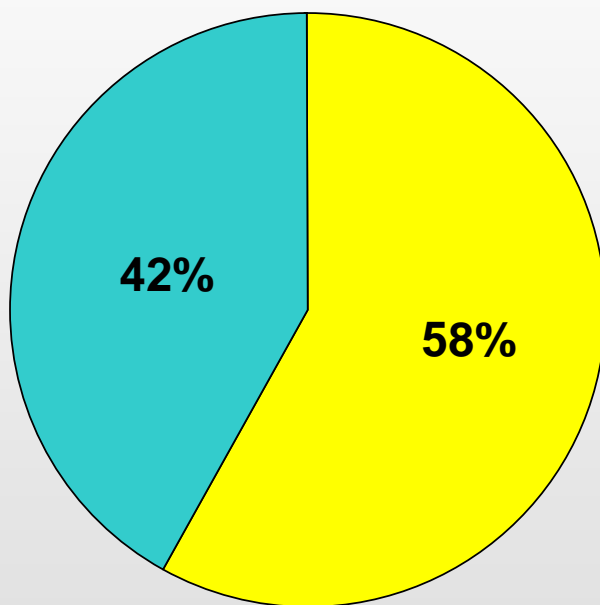
Non Life : 1 444 bn USD



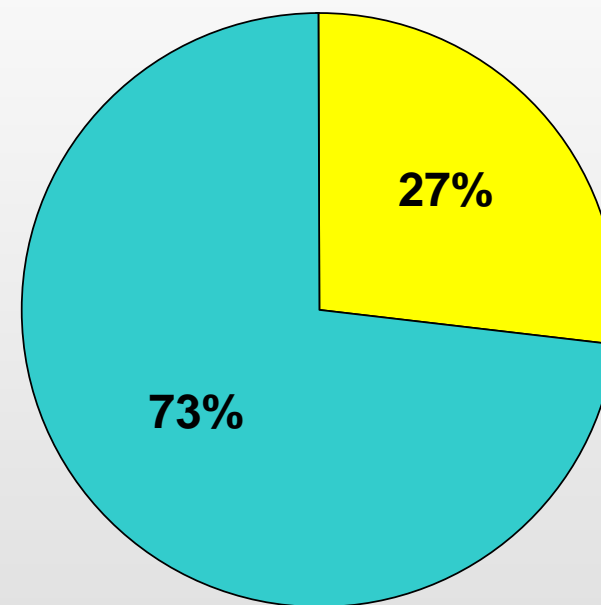
Source: Sigma 5/2006 update December 2006

# Premium volumes 2005

Insurance  
USD 3 443 bn



Reinsurance  
USD 173 bn



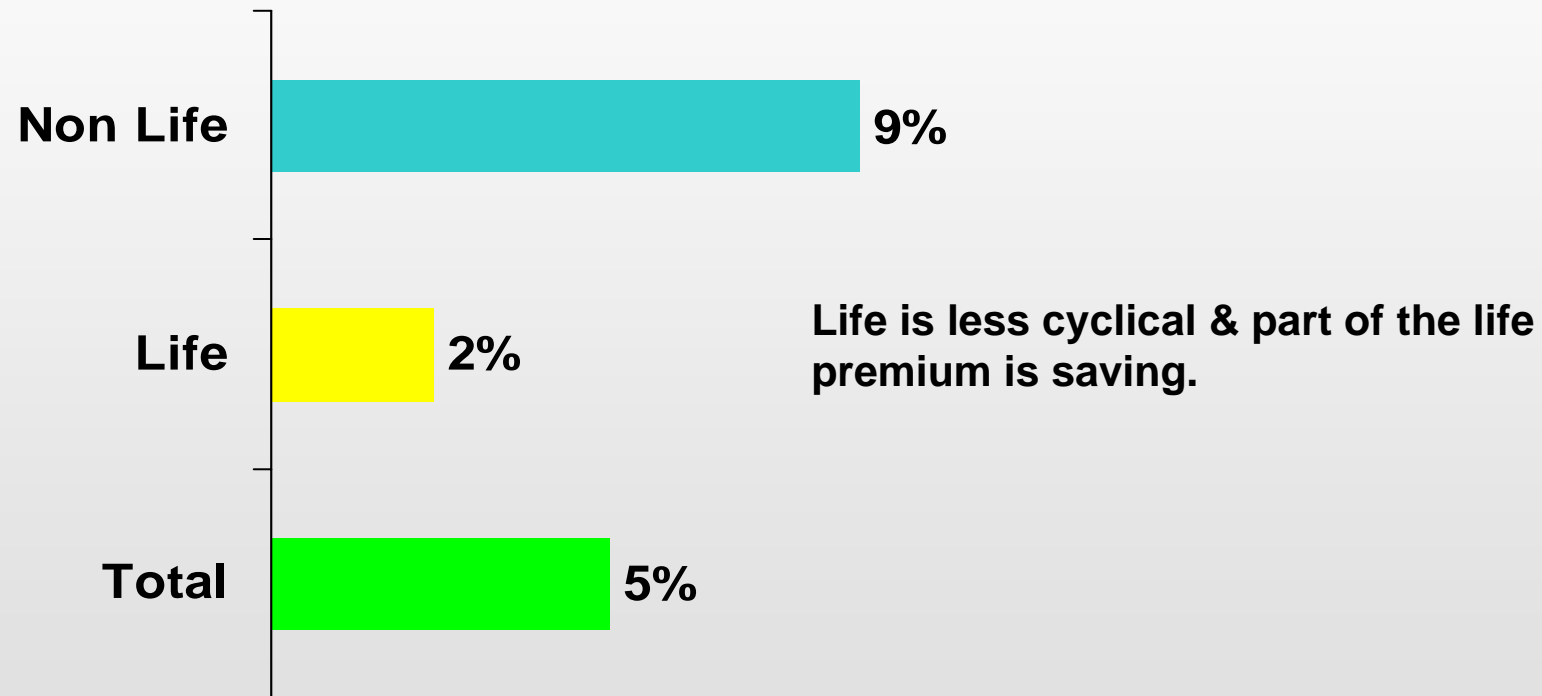
■ Life    ■ Non-Life

Source: Sigma 5/2006 update December 2006

Reinsurance: IAIS Global Reinsurance Market Report 2005, November 2006

# Cession rates

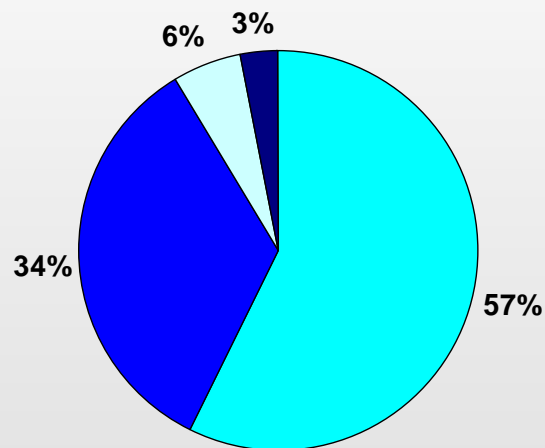
*% of ceded premium / total premium*



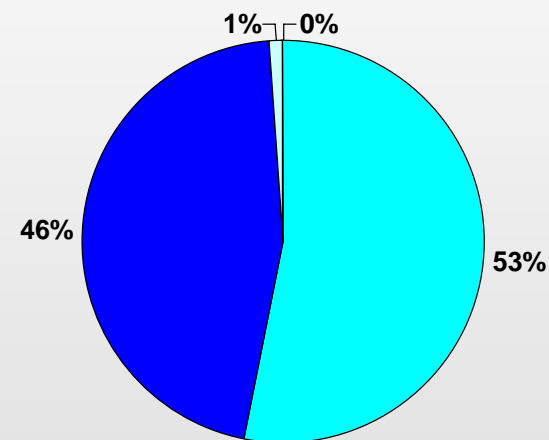
Source: IAIS Global Reinsurance Market Report 2005, November 2006

# Geographical split of reinsurance premiums

## Gross Premiums ceded



## Gross reinsurance premiums accepted

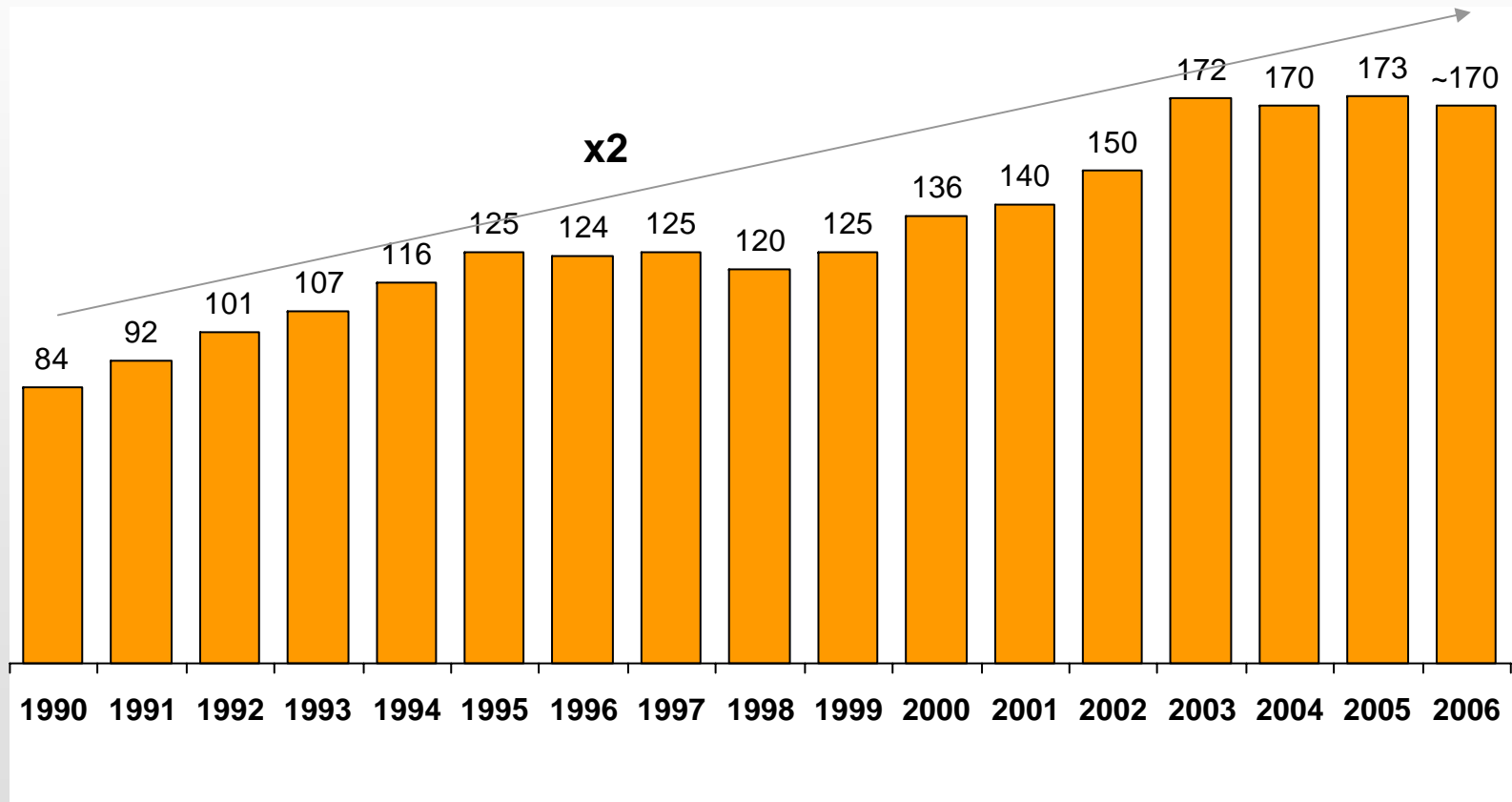


■ North America   ■ Europe   ■ Asia   ■ Rest of the world

Source: International Association of Insurance Supervisors, Global Reinsurance Market Report 2005, November 2006

# Global Reinsurance Market 1990-2006 (Estimates in bn USD)

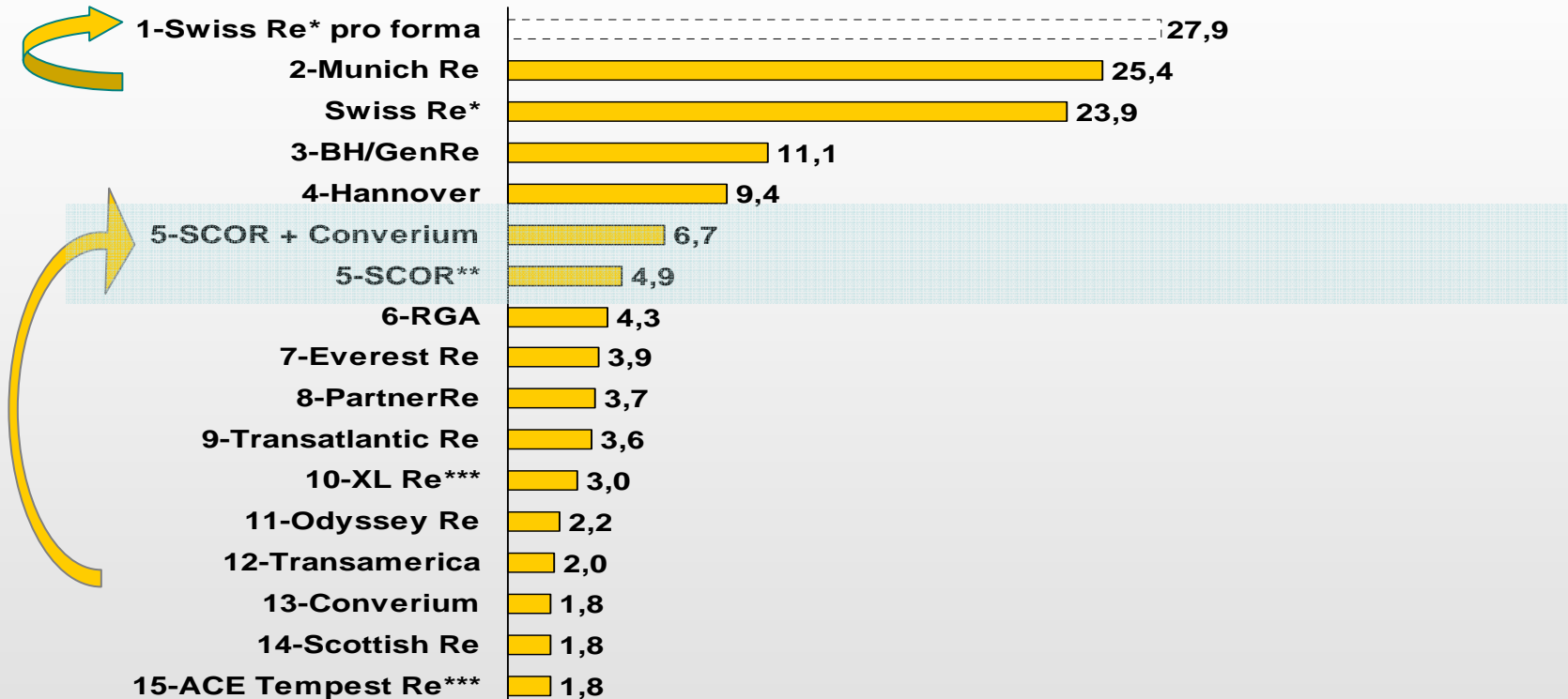
The premium volume doubled since 1990



Source: Figures are estimates of SCOR Strategic Marketing based on S&P Global Reinsurance Highlights, Annual Reports of the Reinsurers, and IAIS data

# Top 15 Reinsurers 2006 (based on NPW 2006)

NPW in bn USD



Does not include Reinsurers with closing date after December 31st (eg Korean Re and Japanese reinsurers)

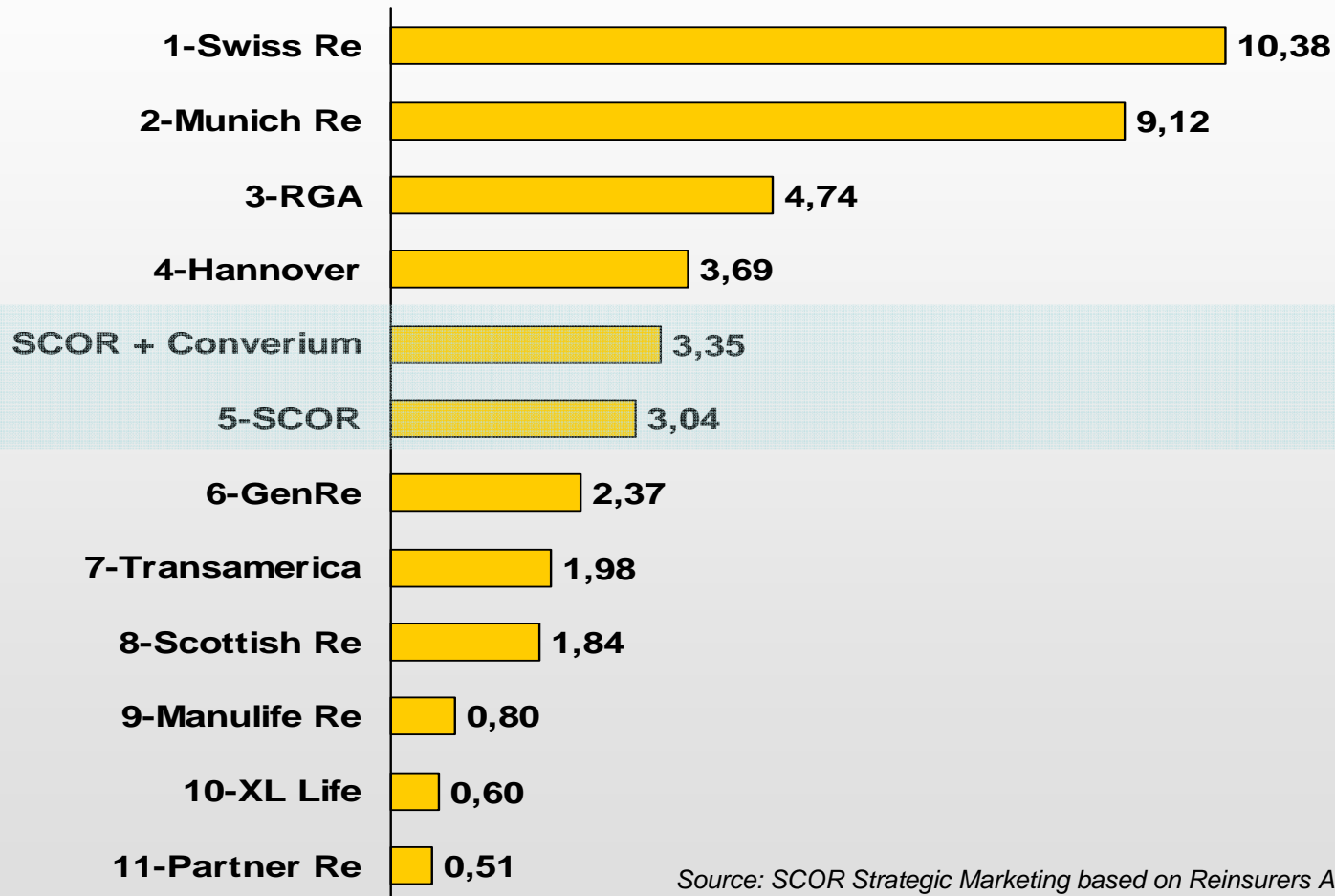
\* Swiss Re 2006 realized incl. GE as of June 2006, pro forma (ie incl GE on full 12 months basis) is 2005 data shown by Swiss Re in Monte Carlo 2006

\*\* SCOR pro forma, ie incl. Revios on full 12 months basis

\*\*\* Premium is the one shown in Group accounts under Reinsurance + Life

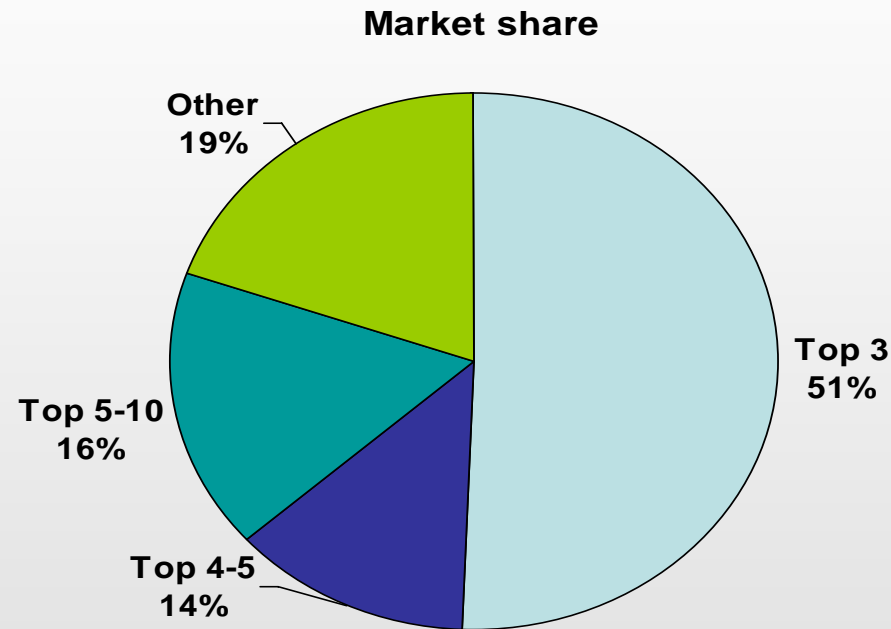
# Life Reinsurers 2006 with GPW > \$ 0.5 bn (based on GPW 2006)

GPW in bn USD



Source: SCOR Strategic Marketing based on Reinsurers Annual reports,

# Life Market Concentration 2006

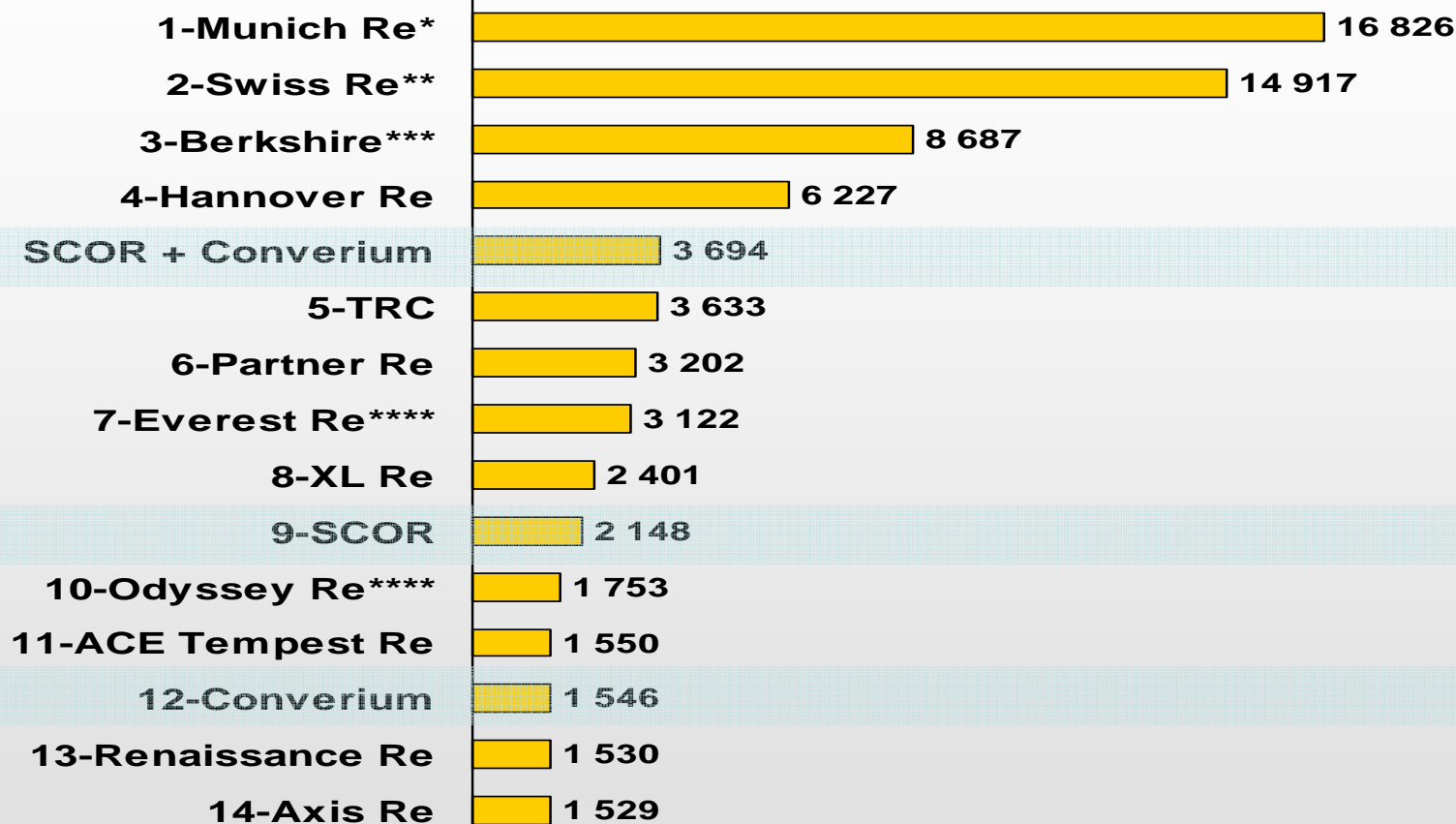


The life reinsurance market is a very concentrated market, with the Top 3 reinsurers representing half of the market.

*Source: SCOR Strategic Marketing based on Reinsurers Annual reports*

# Non-Life Reinsurers 2006 with NPW > \$ 1.5 bn

GPW in bn USD



Based on data available as of April 17th 2007, ie excl.companies with closing date after December 31st

\*After elimination of IntraGroup transactions across segments, reinsurance only

\*\*GE included as of June 2006

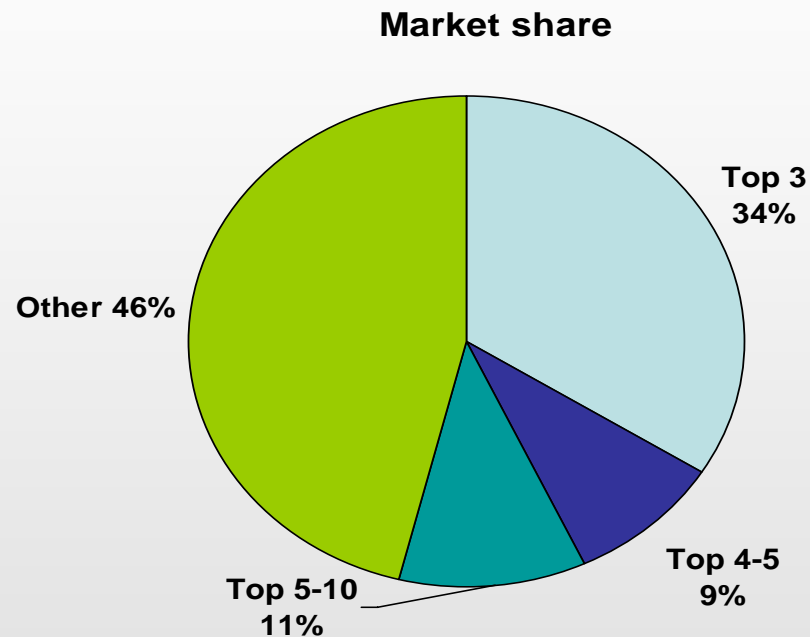
\*\*\*GenRe NPW, BHRG NPE

\*\*\*\* excl.US Insurance



Source: SCOR Strategic Marketing based on Reinsurers Annual reports

# Non-Life Market Concentration 2006

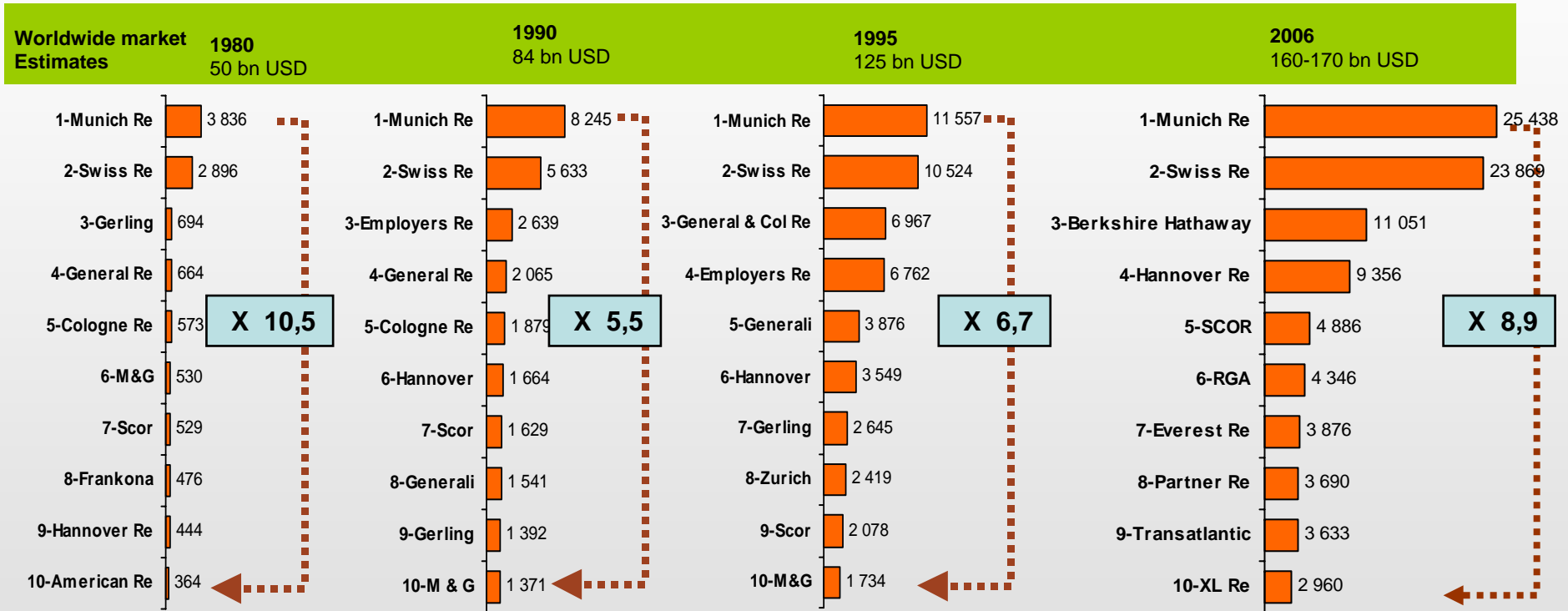


The Non-Life market is less concentrated than the life reinsurance market.  
Nonetheless the Top 3 reinsurers represent one third of the market.

*Source: SCOR Strategic Marketing based on Reinsurers Annual reports*

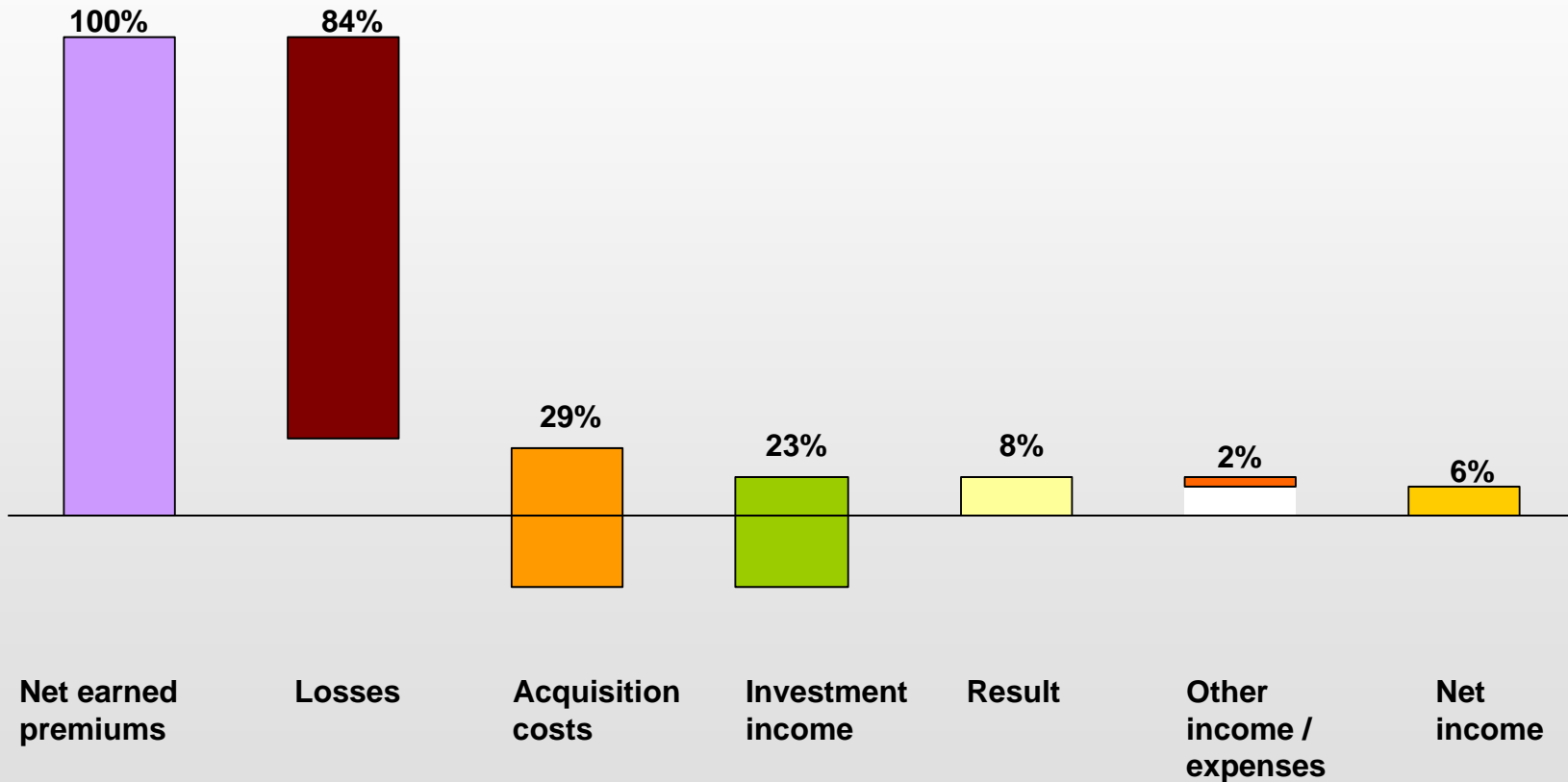
# Top 10 reinsurers 1980 and 2006

NPW in bn USD



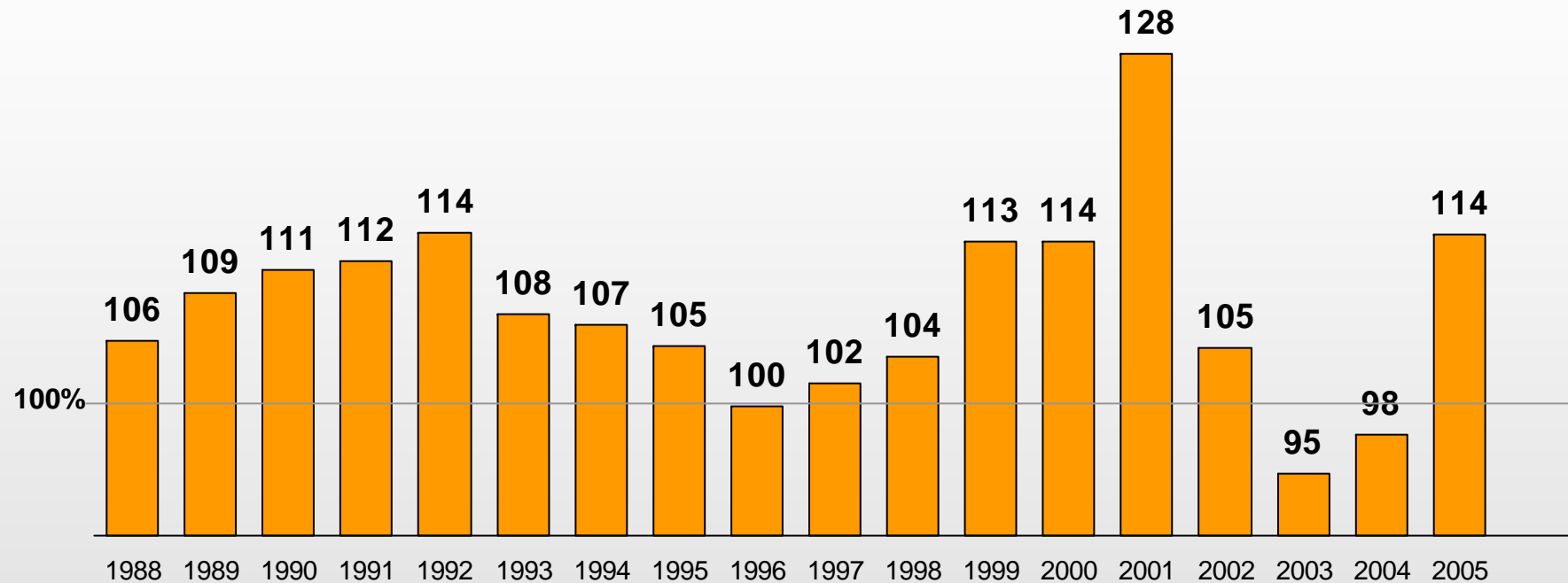
# Reinsurers results

In % of premiums



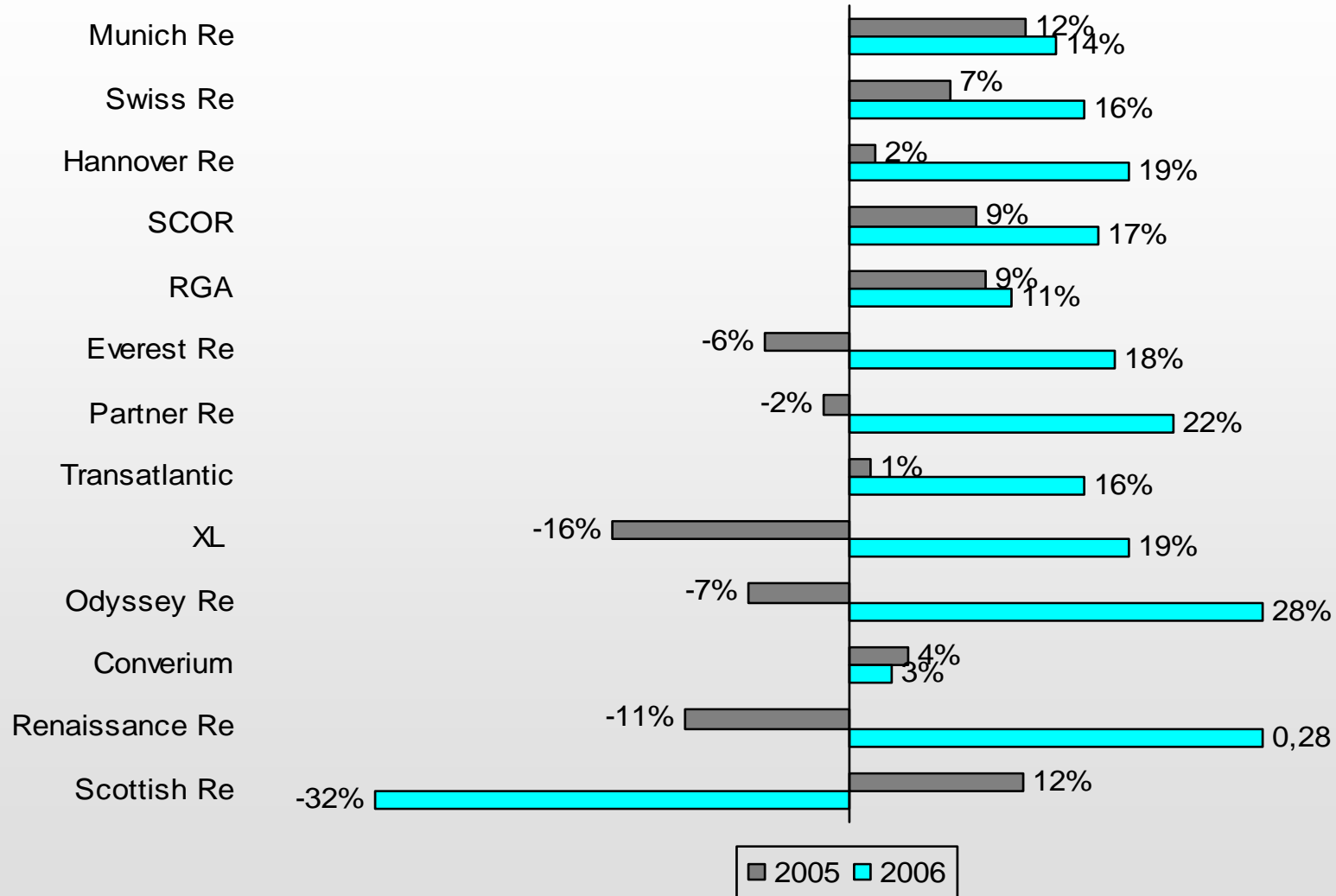
Source: IAIS, Global Reinsurance Market Report 2005, November 2006

# Net Combined Ratio of Global Non Life Reinsurance (%)



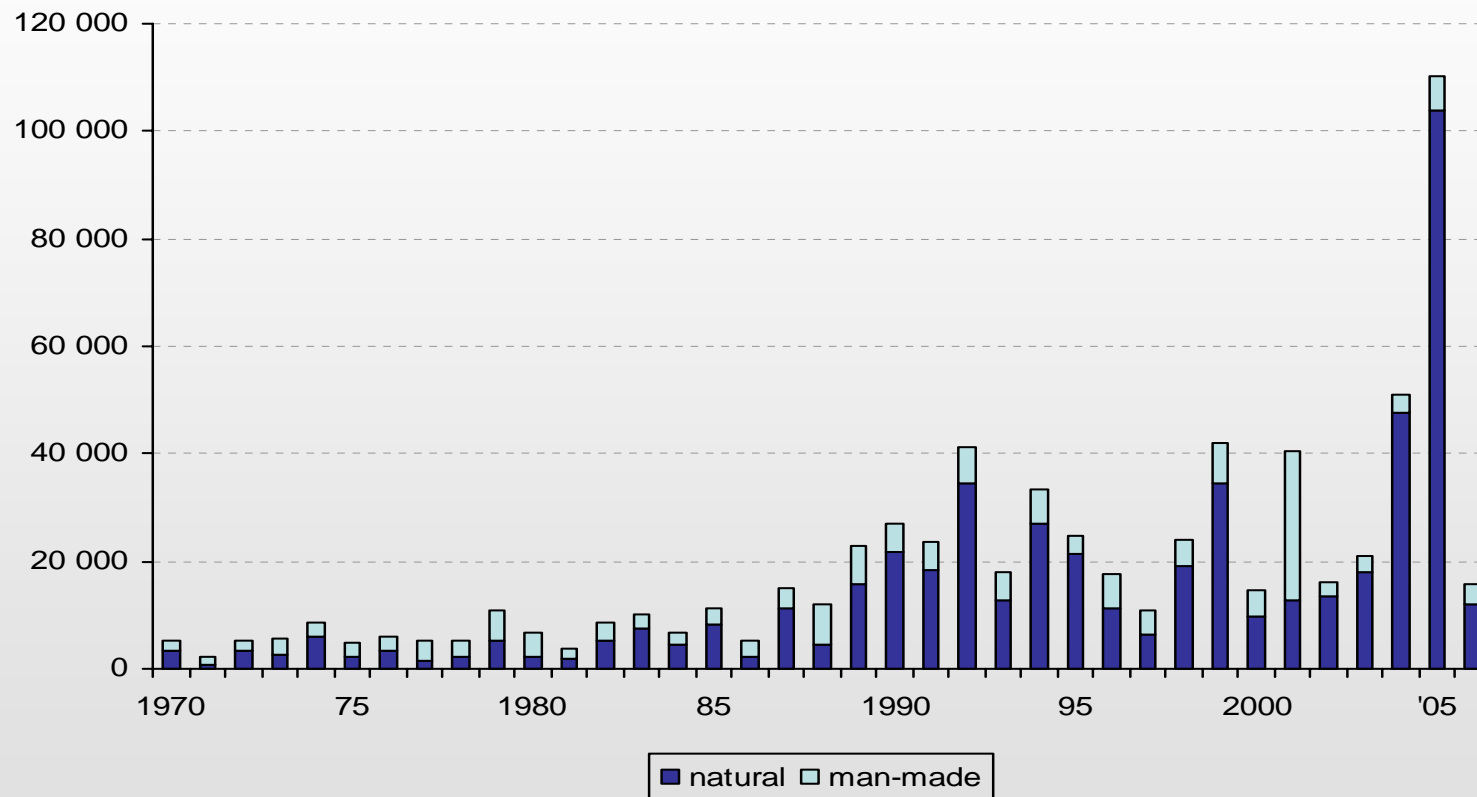
Source: S&P Global Reinsurance Highlights

# ROE selected reinsurers



# Catastrophe losses 1970 - 2006

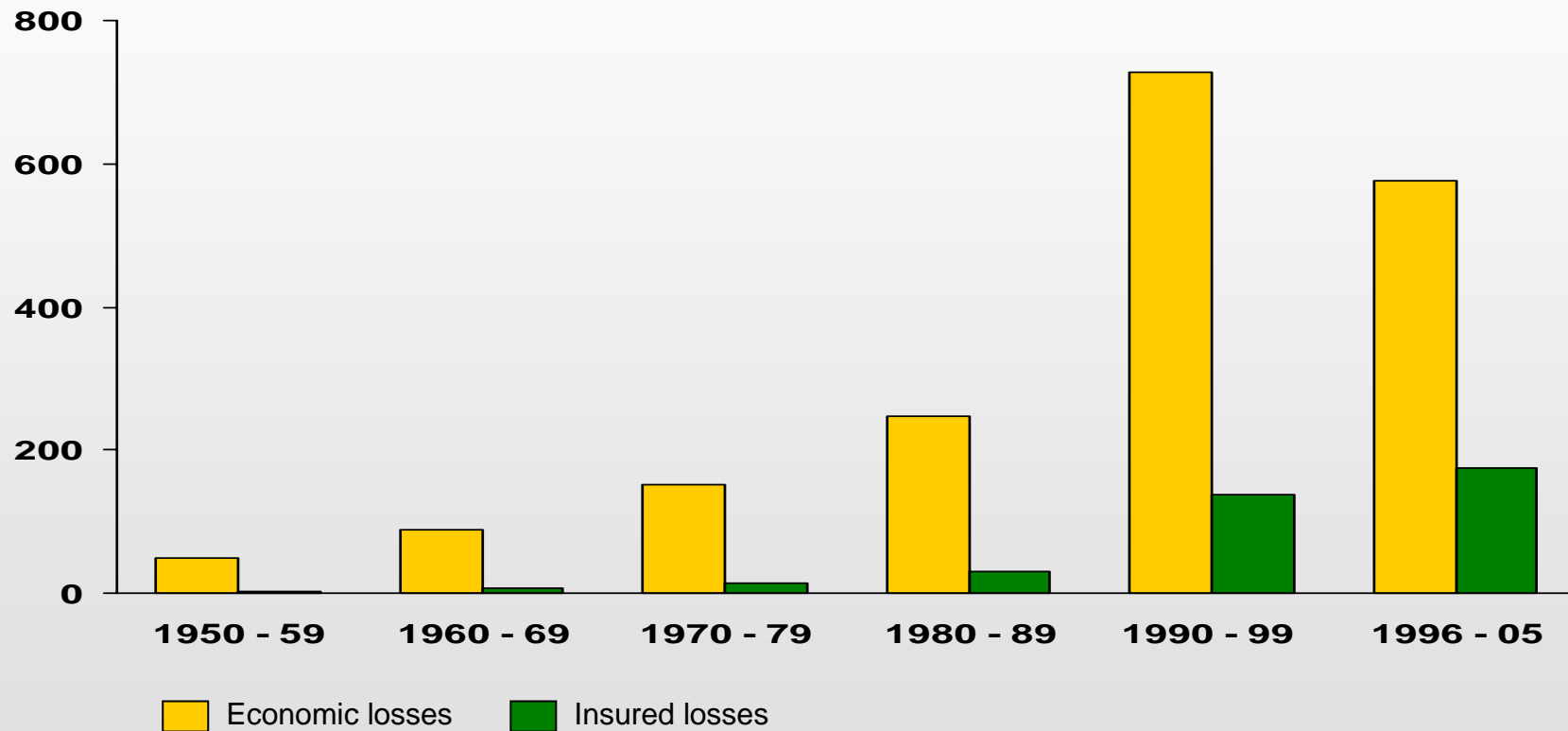
• Insured loss in bn USD (indexed to 2006)



Source: Sigma 2/2007

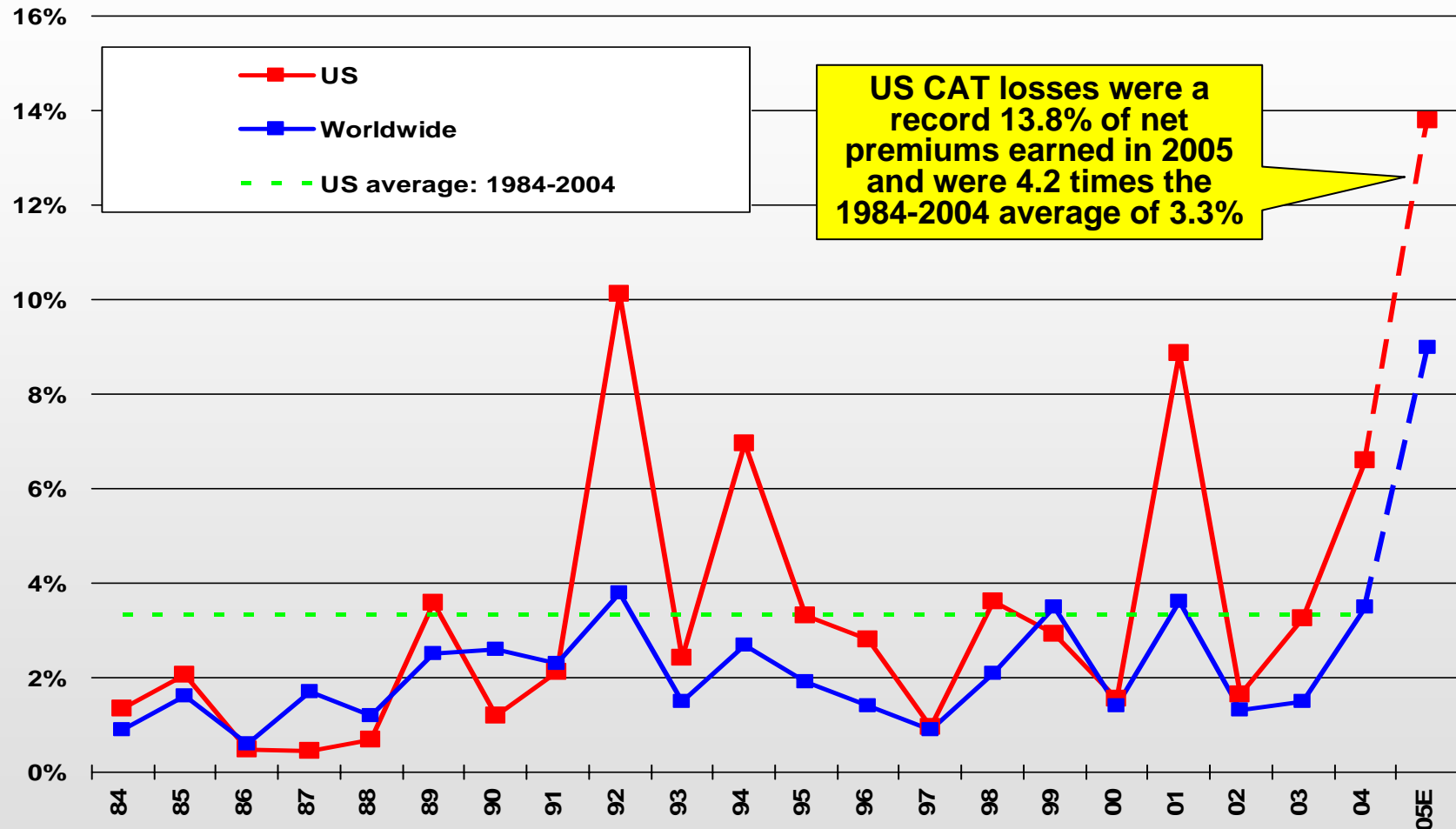
# Evolution insured cat losses

*Evolution insured loss by decade since 1950  
in bn USD*



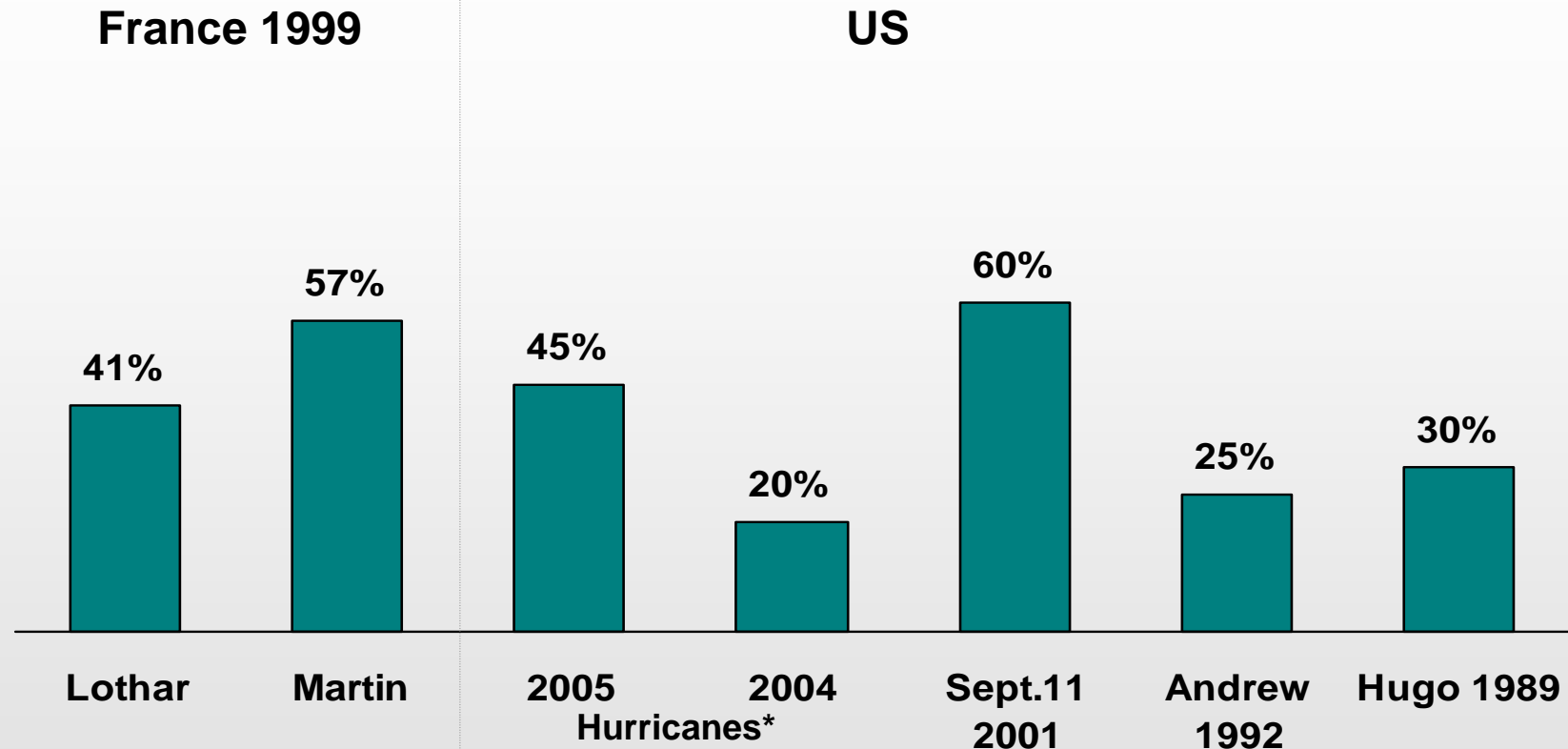
Source: Munich Re TOPICSgeo 2005

# Insured Property Catastrophe Losses as % Net Premiums Earned, 1983–2005E



\*Insurance Information Institute figure of 13.8% for 2005 based estimated 2005 DPE of \$417.7B and insured CAT losses of \$57.7B.  
 Source: Insurance Information Institute

# Reinsurers share in cat losses



\* Excluding losses paid by Florida Hurricane Cat Fund \$ 3.9bn in 2004 and \$ 4.5bn in 2005

Reinsurers' participation in Martin higher than in Lothar as many insurers had to carry a second retention as losses exceeded amount of reinsurance bought.

Source: Lothar & Martin: Benfield étude tempête 2003;  
Katrina: Insurance Information Institute, April 2007

# Natural events losses

## > 400 \$ Mio insured in the world in 2006

Date	Event	Estimated cost \$ million	
		Economic	Insured
March	Tornadoes (Midwest-USA)		920
March	Tropical hurricane (Australia)	730	430
April	Tornadoes, hail (USA)		500
April	Tornadoes (USA)		1,100
April	Tornadoes, Storms (USA)		720
December	Storms (USA)		500
		-----	-----
<b>Total Nat Cat (estimation Munich Re)(\$ million)</b>			<b>4,170</b>
2001:	<i>Source SCOR</i>	41,455	15,398
2002:		65,145	13,621
2003:		62,776	15,635
2004:		120,222	41,455
2005:		201,356	89,426
2006:			4,170

## Large man made insured losses 2006

- January Brazil steelworks (fire) \$ 350 m
- February Launch failure Arabsat (Space) \$ 180 m
- February UK: Ramsburg Manor Art Theft (Burglary) ~ \$ 150 m
- March Yemen: Hyundai Fire on container ship(Marine) \$ 370 m
- April US: Texas Explosion at chemical plant (fire) \$ 420 m
- April Italy: Fire at oil refinery \$ 157 m
- May In orbit failure Astra 1KR (space) \$ 220 m
- June Germany: Fire at steel plant ~ \$ 350 m
- June Germany: Fire at meat processing plant ~ \$ 170 m
- August Lexington: Aviation (Comair) \$ 216 m

Source: SCOR research

# 2006 Losses

« grands risques » > 150 Mio \$

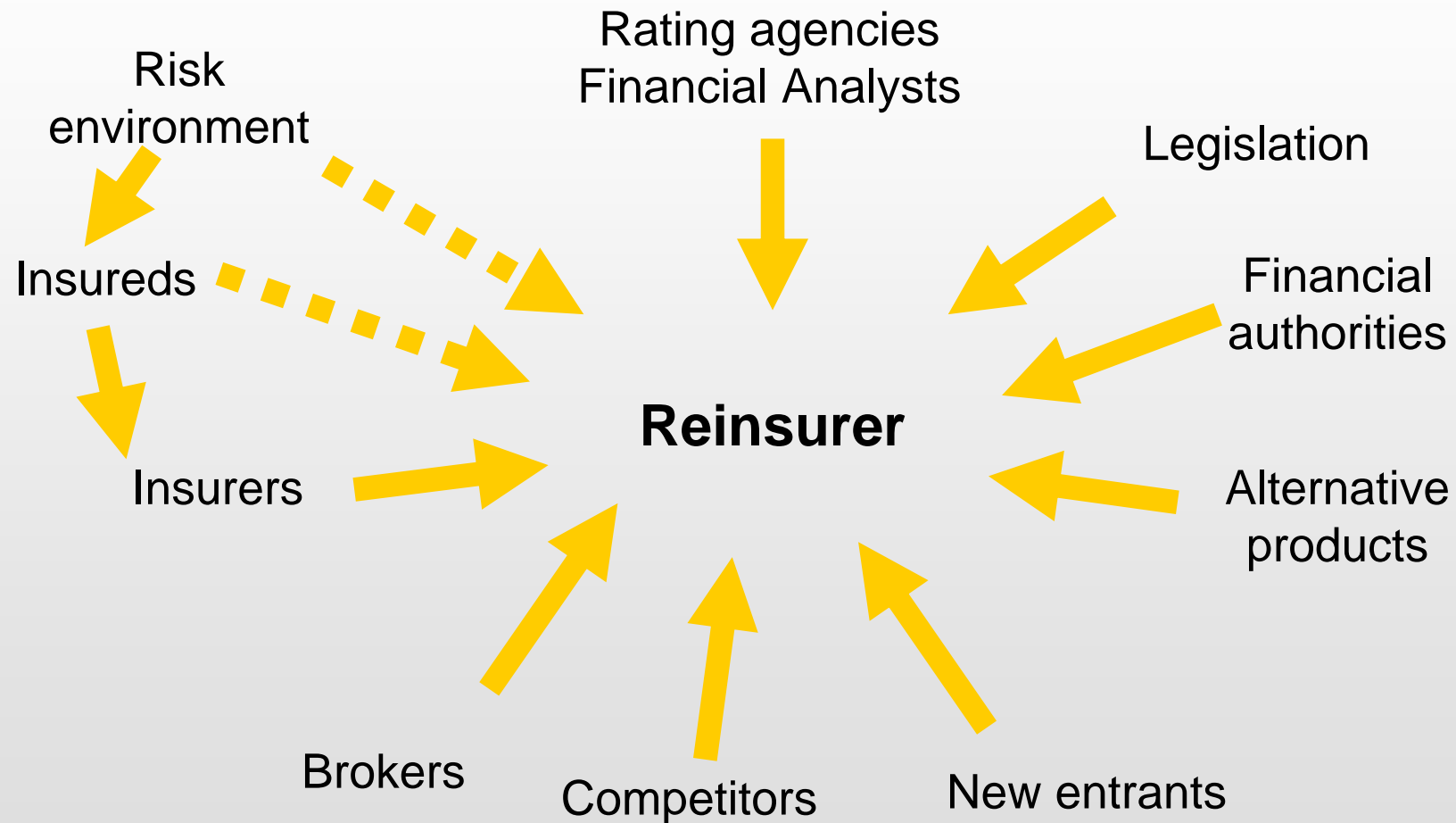
Losses estimated in \$ Mio

As a reminder :

**Total estimated 2000**  
**Total estimated 2001**  
**Total estimated 2002**  
**Total estimated 2003**  
**Total estimated 2004**

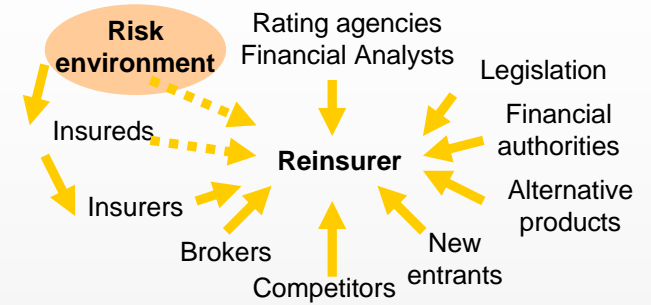
**3,162**  
**48,752**  
**2,167**  
**1,563**  
**1,421**

# Reinsurance environment



Source: SCOR Strategic Marketing

# Reinsurance environment



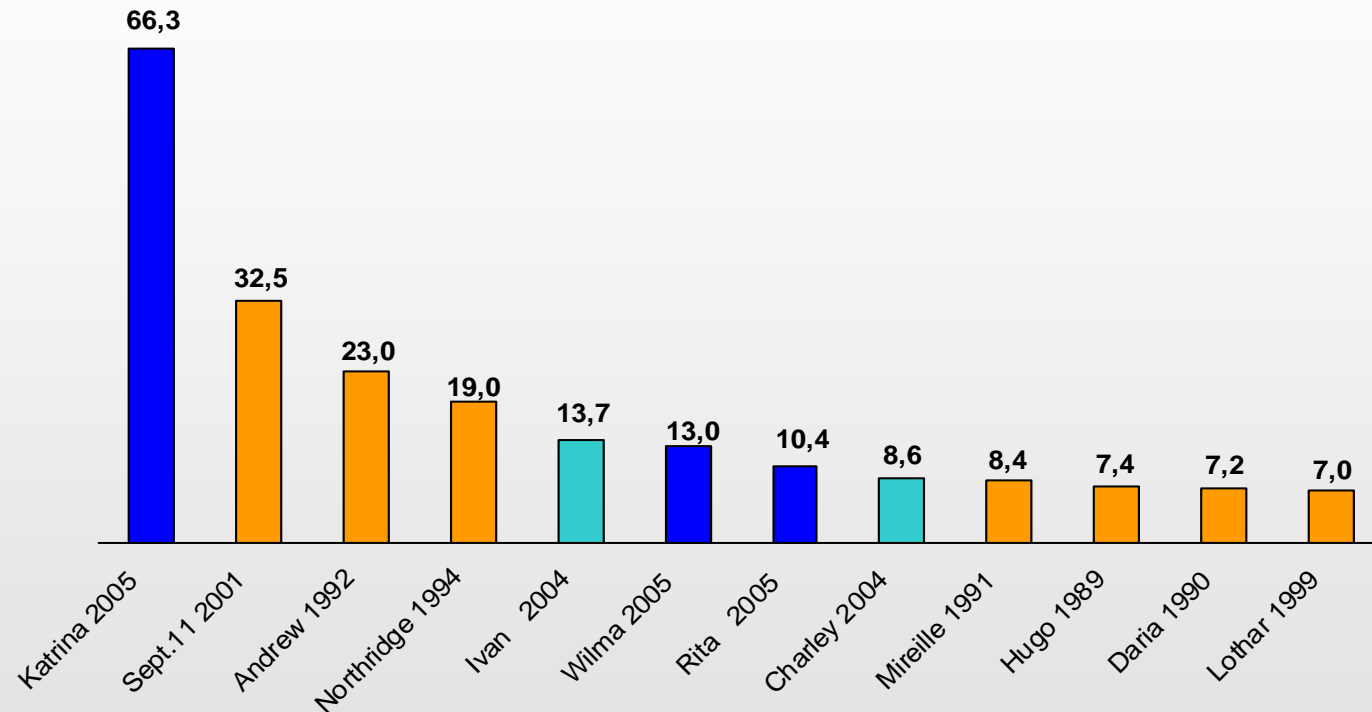
## Risk environment

- Increased hurricane activity
- New risks (terrorism, toxic mold, software attacks)
- Changes in jurisdiction and increased legal costs

# Reinsurance environment

## Risk environment: increased hurricane activity

12 largest insured losses\*



**=> 5 of the 12 largest insured losses incurred in 2004 and 2005**

**=> 9 of the 12 largest Cat losses affected the US**

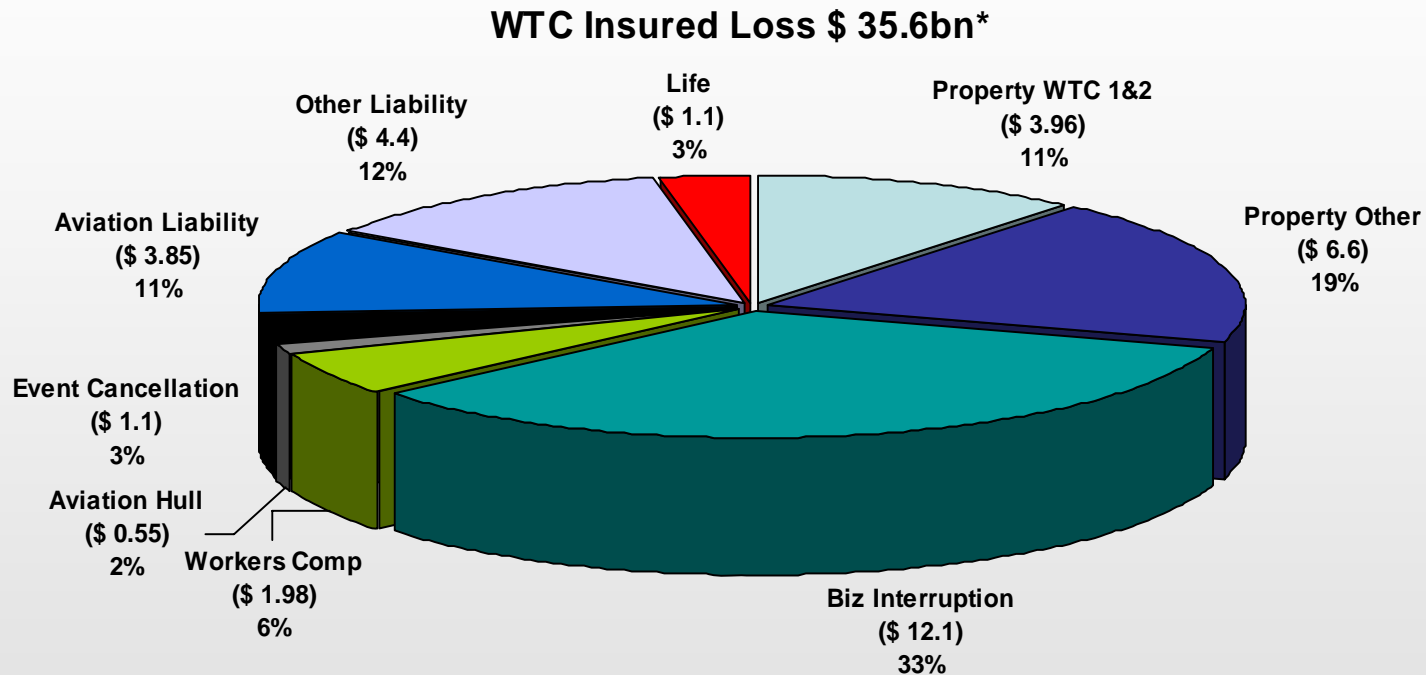
**=> Only 1 of the 12 largest cat events is a man made loss**

\* indexed to 2006 costs

Source: III, Swiss Re,

# Reinsurance environment

## Risk environment: terrorism



**Approximately 60% of the insured losses were paid by reinsurers.**

\*indexed to 2005 price level; estimated September 11 industry loss at 2001 price level is \$ 32.5bn

# Reinsurance environment

## Risk environment: terrorism

Large CNBR Terrorist Attack  
Insured Loss Estimates (in bn USD)

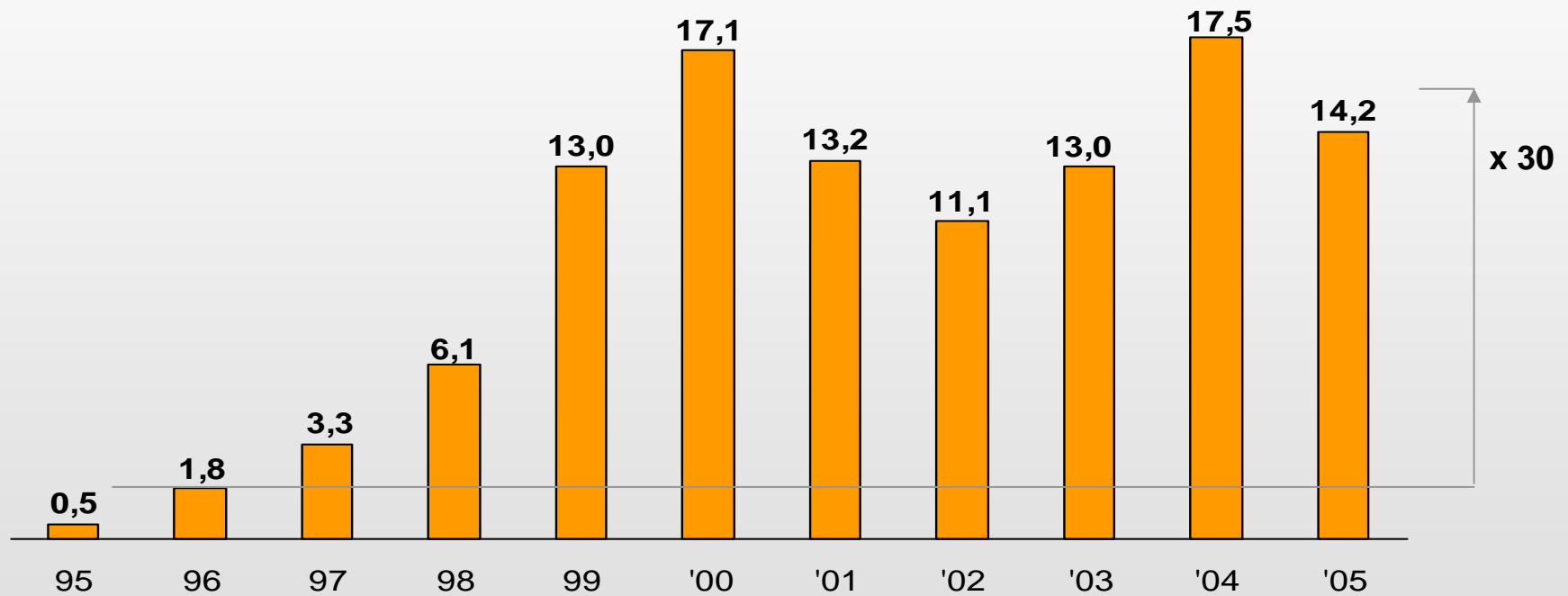


**Insured Loss Scenarios by far exceed previous largest losses.**

# Reinsurance environment

## Risk environment: malicious software attacks (1995 - 2005)

Worldwide Financial Impact (bn USD)

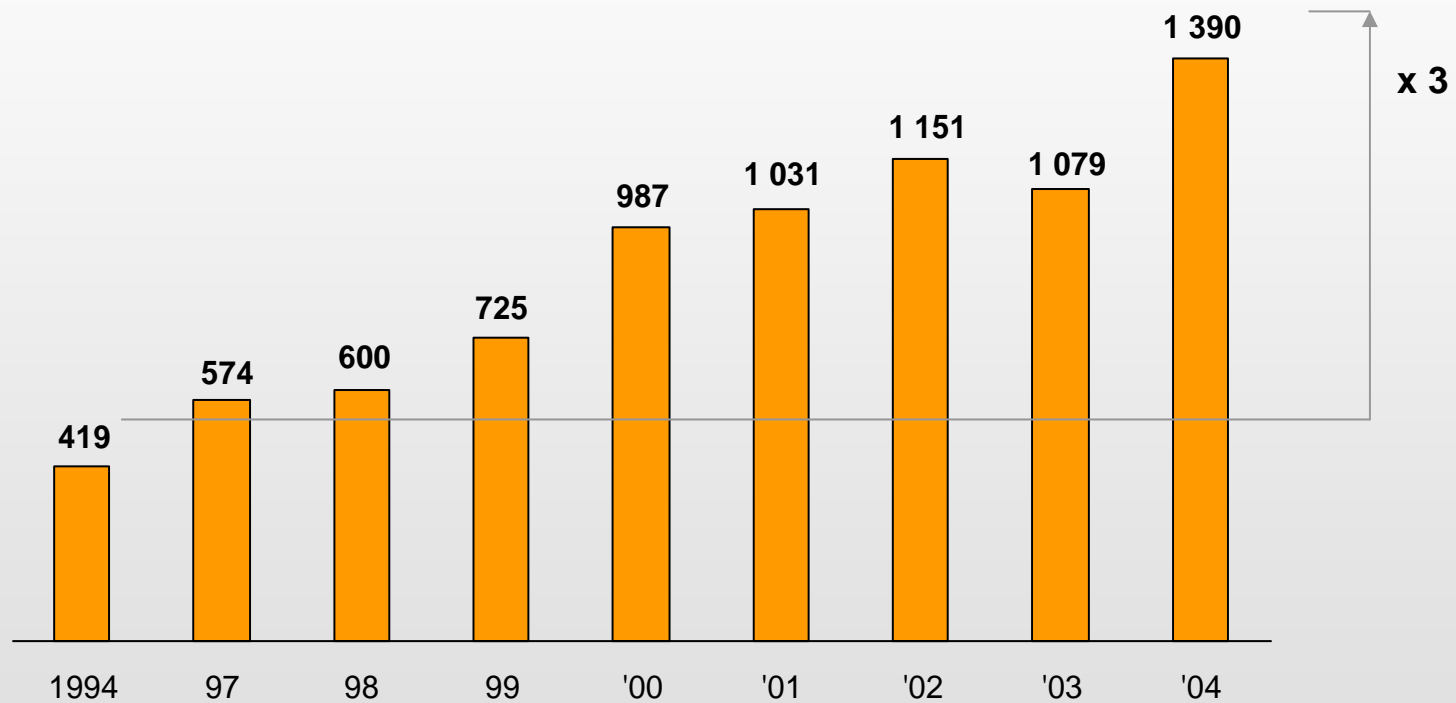


Source: Insurance Information Institute, Malware Report, Computer Economics

# Reinsurance environment

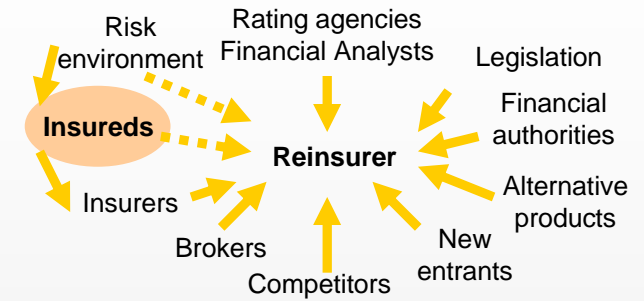
## Risk environment: changes in jurisdiction, ex. US jury awards

Average Jury award ('000 USD)



Source: Insurance Information Institute April 2007, Current Award Trends, Jury Verdict Research

# Reinsurance environment

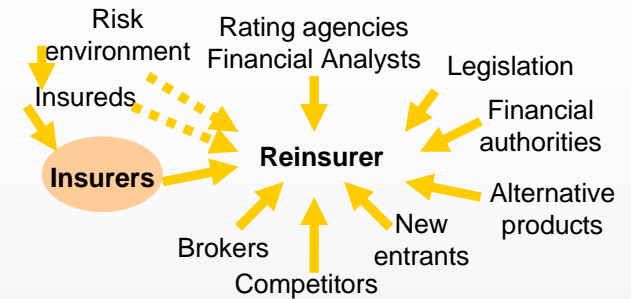


## Insureds

- Mergers of large companies to ever bigger conglomerates
- Auto-insurance via captives
- Large entities try to develop their own solutions to avoid rate increases
- New needs: less material loss covers, more contingency loss covers

# Reinsurance environment

## Insurers



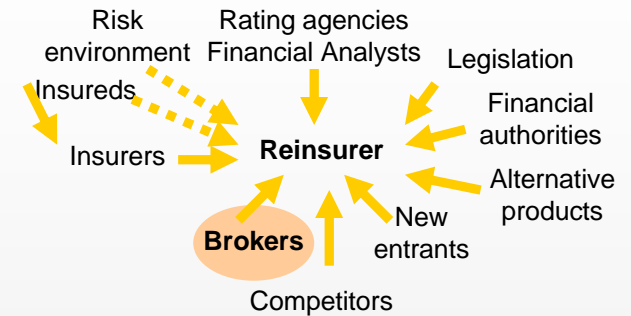
### ► Concentration

- 5-6 large insurers can absorb and manage a large insurance program
- Achieve less volatile portfolio => reduce cessions to reinsurers
- Increase retentions
- Centralisation of reinsurance purchase

### ► Shareholder and financial markets pressure

- Select reinsurers depending on financial security / rating

# Reinsurance environment



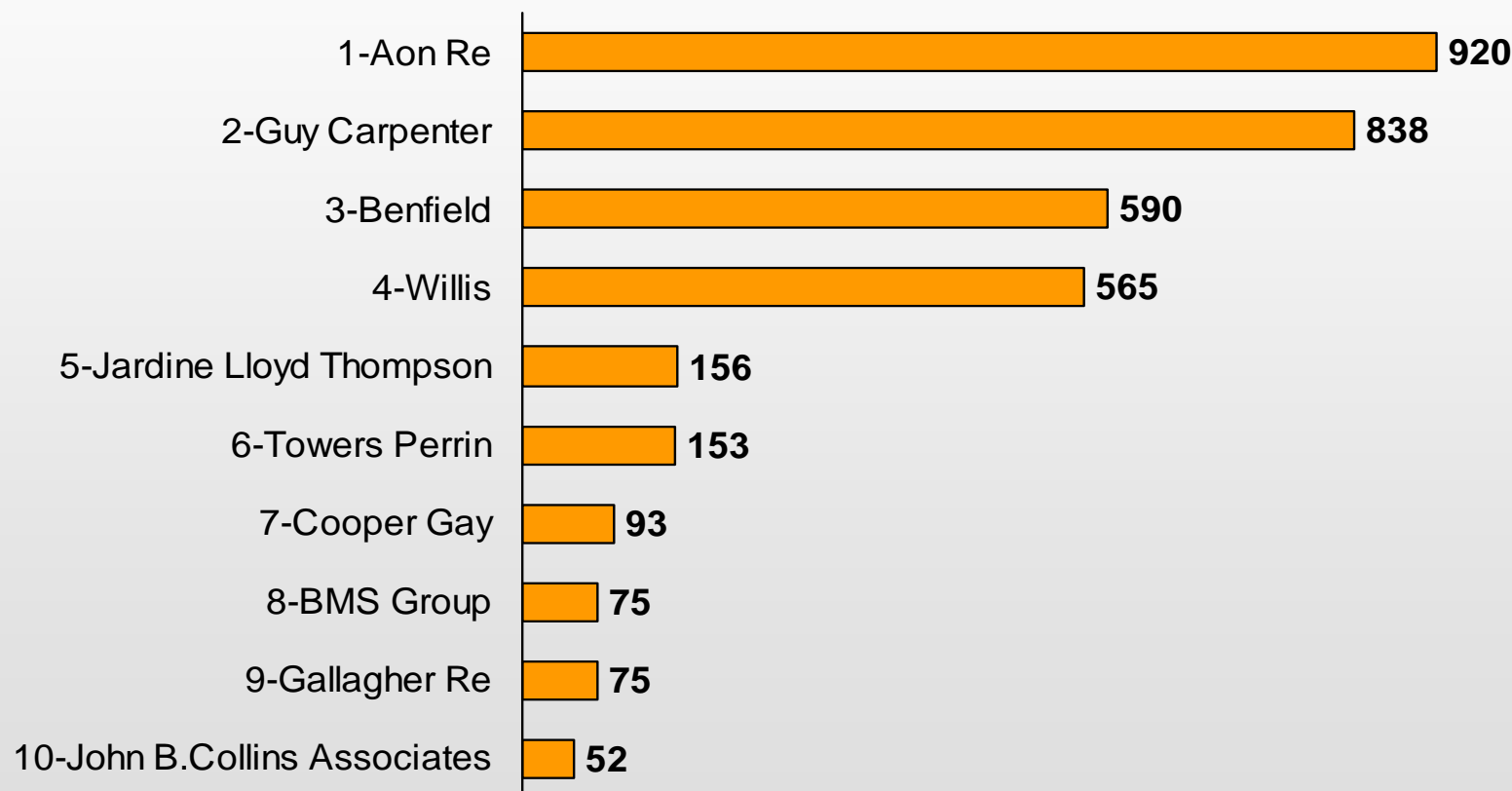
## Brokers

- Increased concentration
- Two largest Marsh and Aon
- Necessary for certain type of risks
- Provide technical expertise

# Reinsurance environment

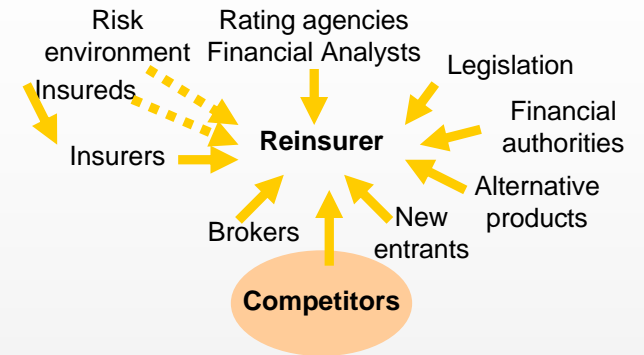
## Brokers: Top 10 Reinsurance Brokers 2005

Top 10 Reinsurance brokers ranked by reinsurance gross revenues  
in m \$



Source: Business Insurance, October 2006

# Reinsurance environment



## Competitors

- Mergers and Acquisition => change of competitors size and influence
- Influence terms, conditions and rate (=> reinsurance cycle)
- Capacity

# Reinsurance environment

## Competitors: Mergers and acquisitions

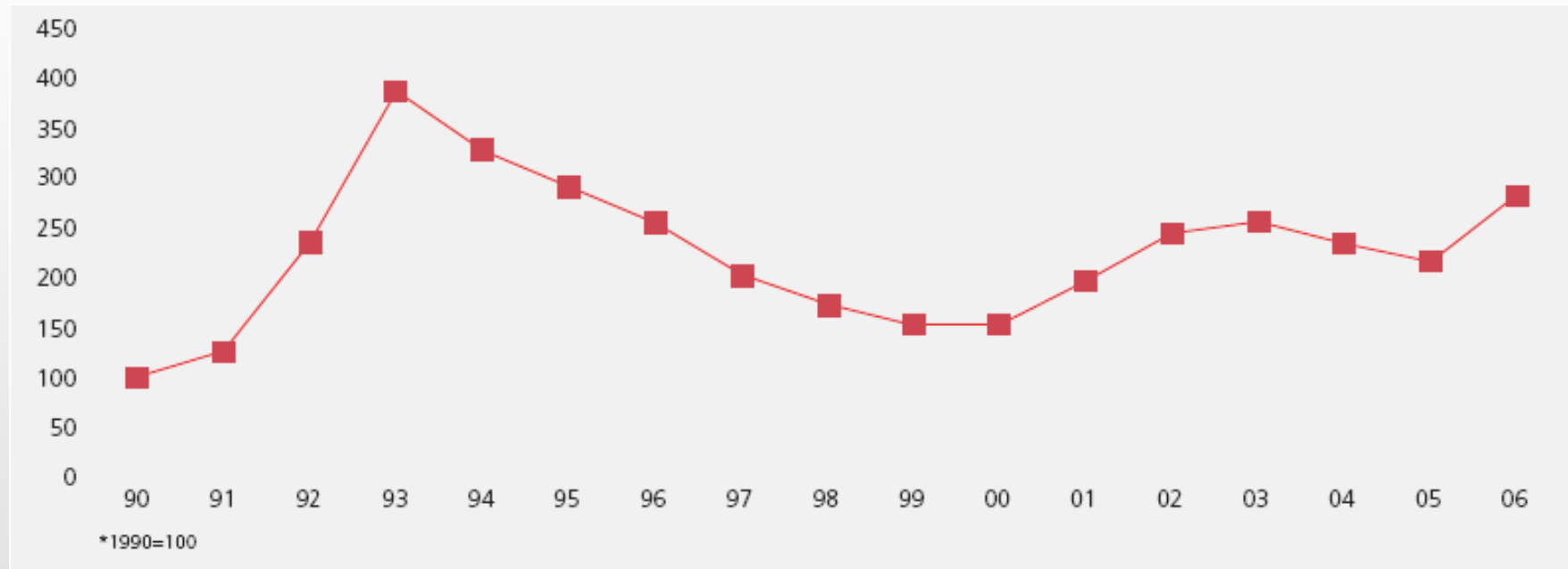
1994 /1995	1996 /1997	1998 /1999	2000 /2001	2002 /2003	2004 /2005	2006	2007
<u>General Re</u> Cologne Re	<u>Munich Re</u> American Re	<u>Berkshire</u> Gen Re	<u>Folksamerica</u> Re Risk Capital Re	<u>XL Capital</u> Le Mans Re	<i>No mergers in 2004 and 2005 but portfolio acquisitions, ex.: Scottish Re / ING US life business, Endurance / XL America Surety business</i>	<u>Swiss Re</u> GE Insurance Solutions	<u>Argonaut</u> Group PX Re
<u>Employers Re</u> Frankona Re Aachener Re	<u>Swiss Re</u> M&G Re	<u>PartnerRe</u> Winterthur Re	<u>Scor</u> PartnerRe Life	<u>Globale</u> <u>Management</u> <u>GmbH</u> Gerling Global Re		<u>Paris Re</u> AXA Re	<u>SCOR</u> Converium
	<u>Scor</u> Allstate Re	<u>Swiss Re</u> Life Re	<u>Swiss Re</u> Underwriters Re	<u>VHV</u> Gerling Life Re		<u>SCOR</u> Revios	
	<u>PartnerRe</u> SAFR	<u>Gerling</u> Constitution Re	<u>Swiss Re</u> Lincoln Re	<u>White</u> <u>Mountains</u> Sirius			
		<u>Hannover Re</u> Skandia Re	<u>Trenwick</u> LaSalle Re				
		<u>Fairfax</u> CTR	<u>Scor</u> Sorema				
		<u>XL</u> Nac Re					
		<u>Hannover Re</u> Clarendon					
		<u>GE Frankona</u> Eagle Star Re					<b>Legend</b> <u>Buyer</u> Target

Source : SCOR Strategic Marketing

# Reinsurance environment

## Competitors: Terms and conditions

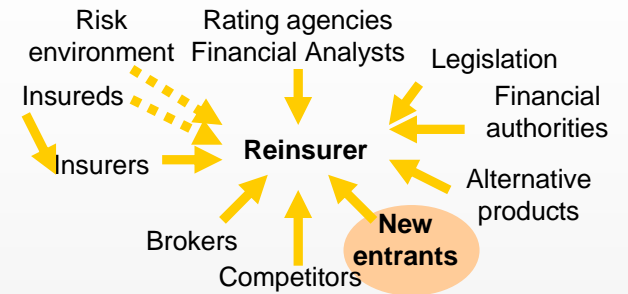
World ROL Index



ROL = Rate on Line

Source: Guy Carpenter: *The World Cat Reinsurance Market 2006*

# Reinsurance environment



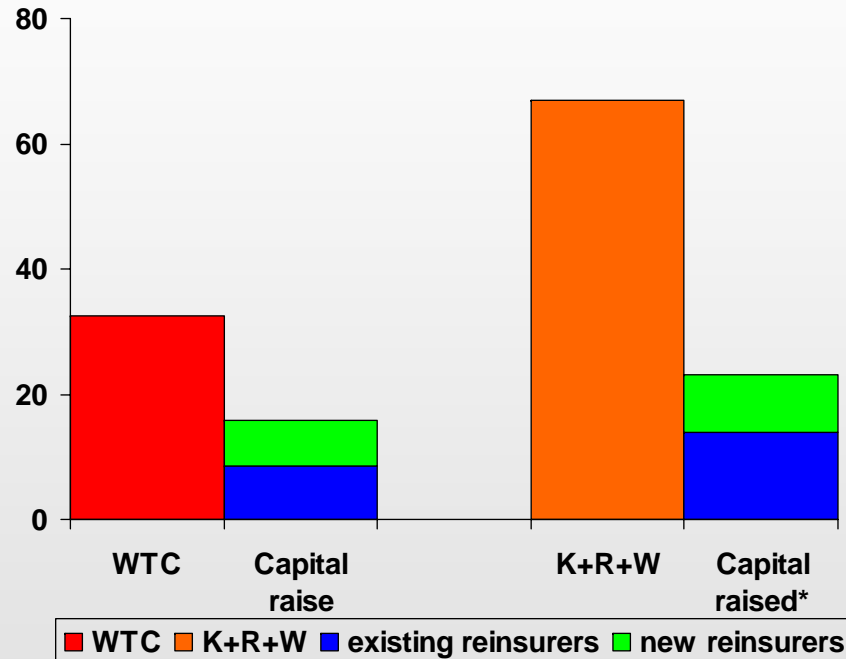
## New entrants

- ▶ 1986: ACE, XL
- ▶ 1993: Partner Re
- ▶ 2001: Arch, Axis, Endurance, Montpelier
- ▶ 2005: Ariel Re, Harbor Point, Flagstone Re, Lancashire, Validus

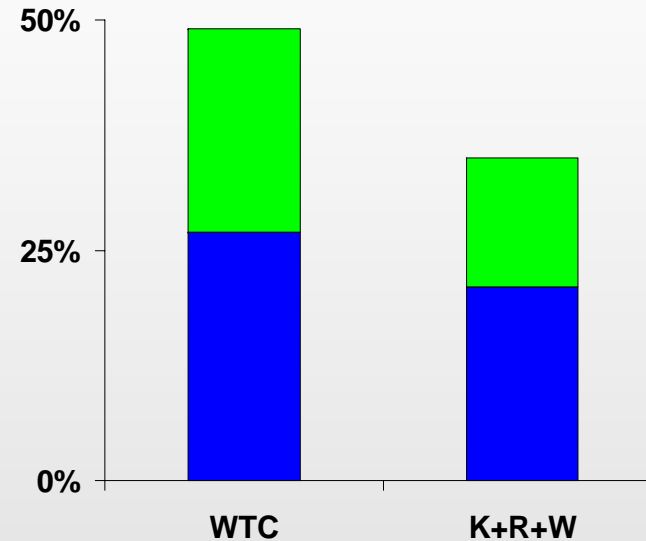
# Reinsurance environment

New entrants: capital raising activity following major disasters  
(loss date until year end)

in bn USD



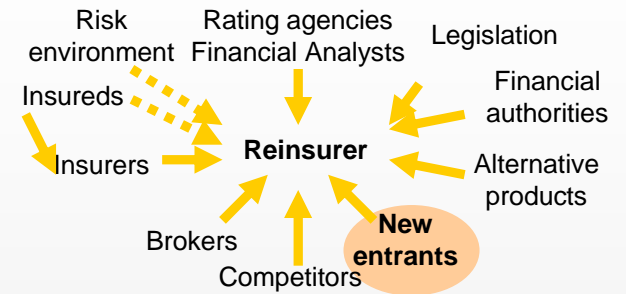
Capital raise in % of loss



⇒ Capital raises do not replace funds lost due to the cat events.

\* Excluding loan agreements and capital injections by holding companies

# Reinsurance environment New entrants



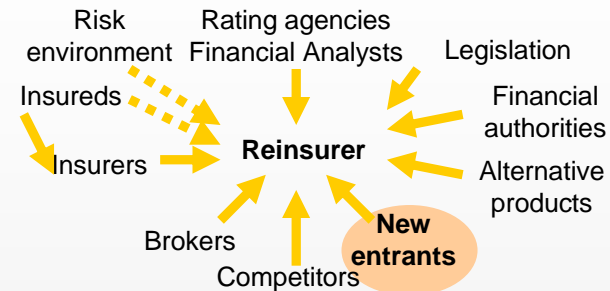
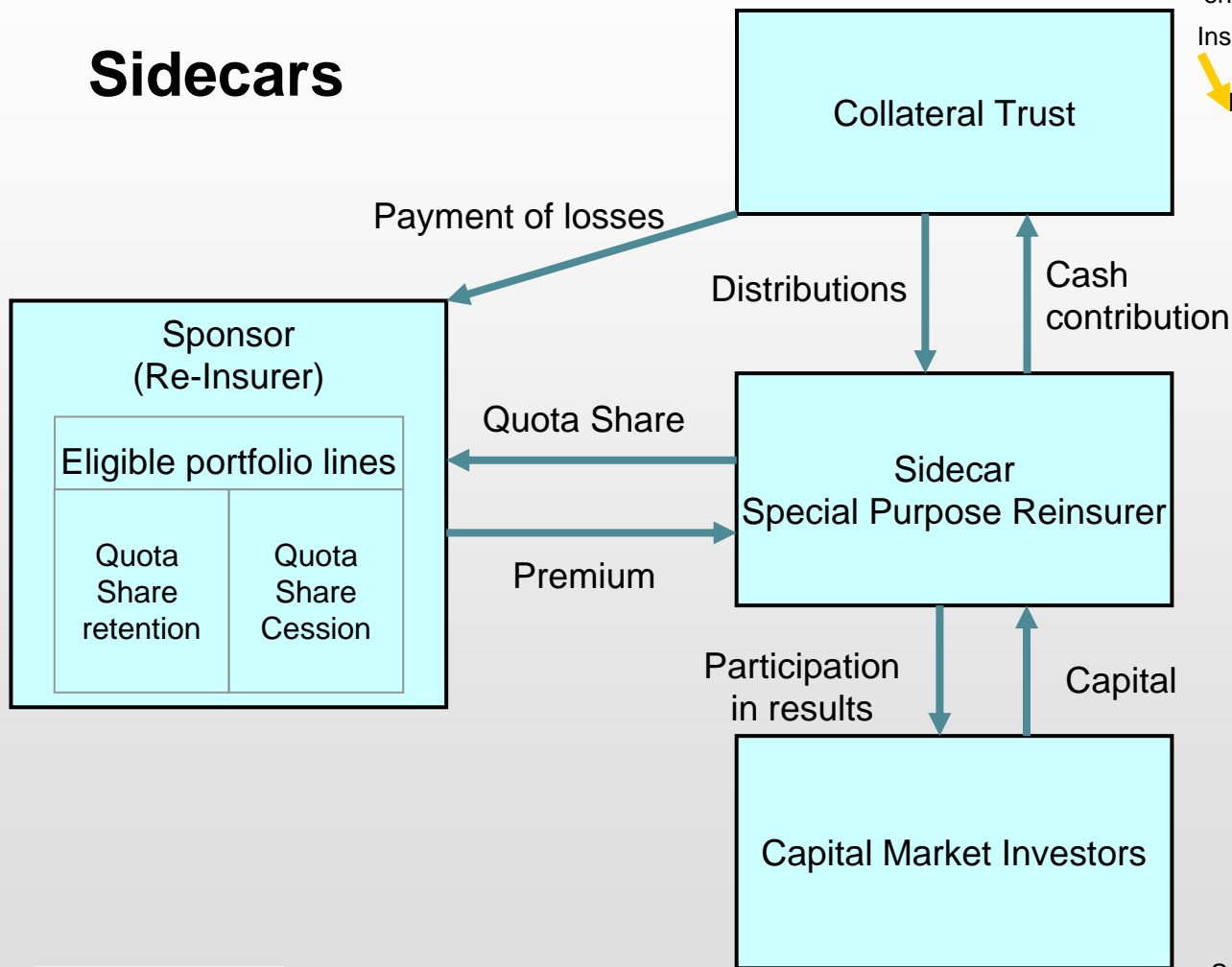
## Sidecars

- ▶ Special purpose vehicles
  - funded by institutional investors and hedge funds
  - assume underwriting risks from a ceding (re)insurer
- ▶ Approx. \$ 6.4bn raised within 15 months of KRW

*\*Source: III, May 9th 2007*

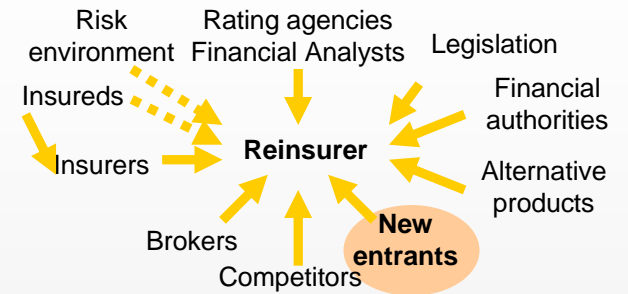
# Reinsurance environment New entrants

## Sidecars



# Reinsurance environment

## New entrants

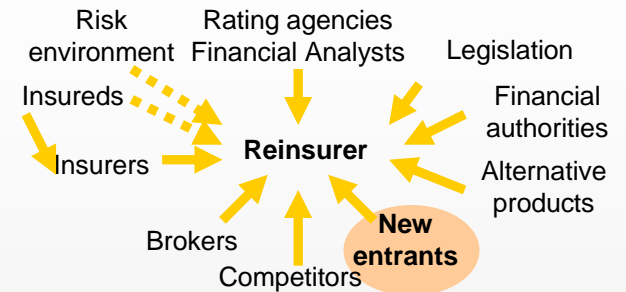


## Sidecars

### ► Advantages:

- Sponsor: capital management
- Investor: easy access to reinsurance market

# Reinsurance environment New entrants

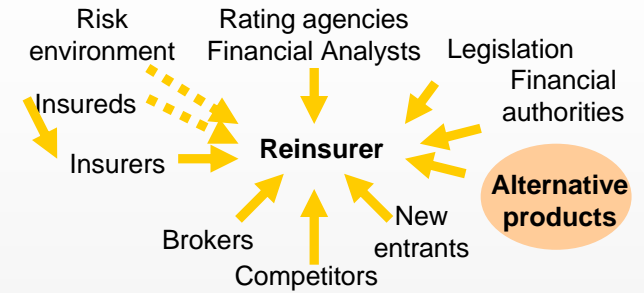


## Sidecars

### ► Examples:

- White Mountains Re / Olympus
- Arch Re / Flatiron : 45% QS of certain property and marine lines
- Harbor Point Re / Bay Point Re : 30% QS of certain shorttail lines
- Validus / Petrel Re : 75% QS of marine and energy risks
- XL / Cyrus : QS of certain property cat and retrocessional lines

# Reinsurance environment

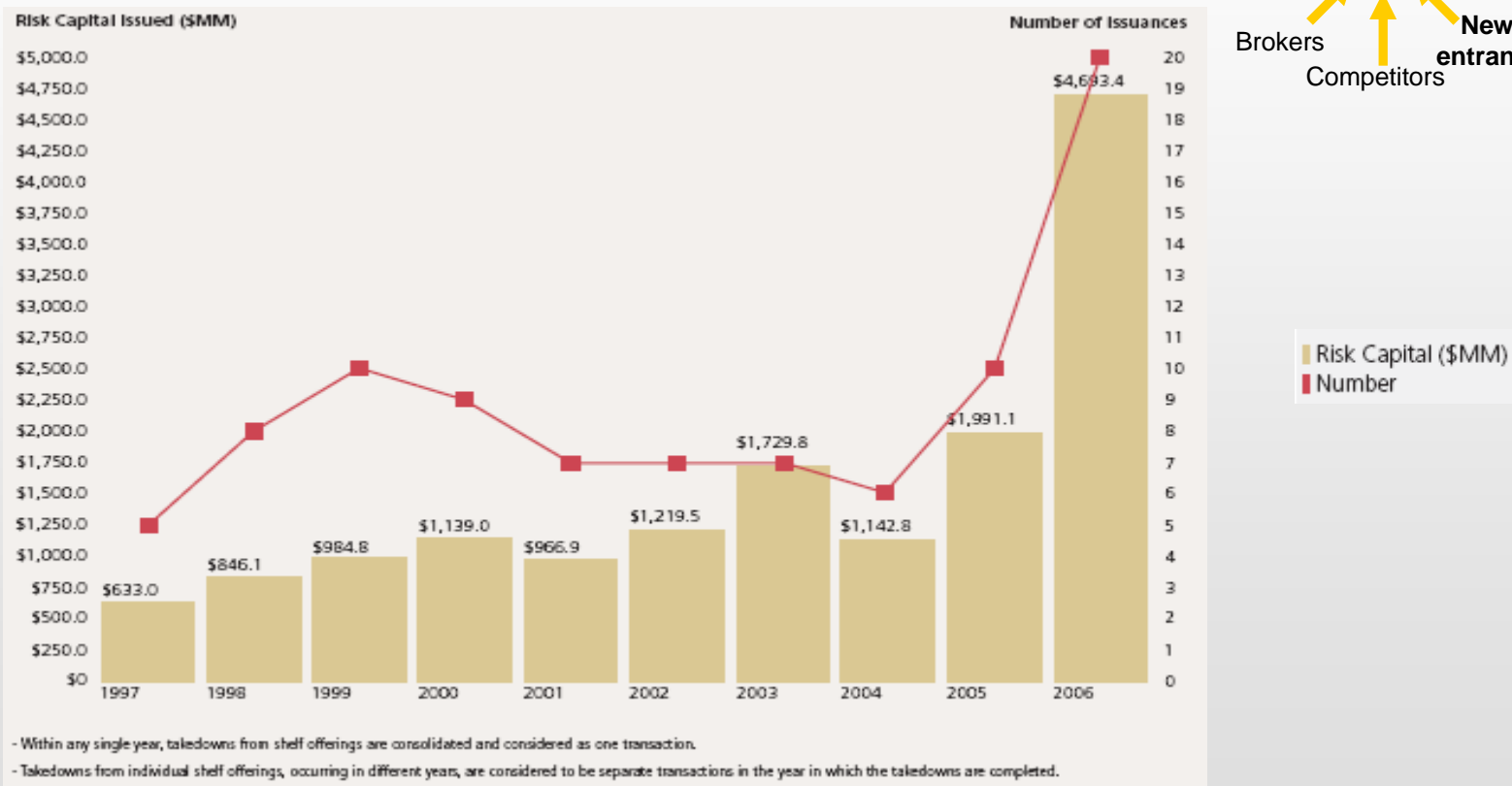
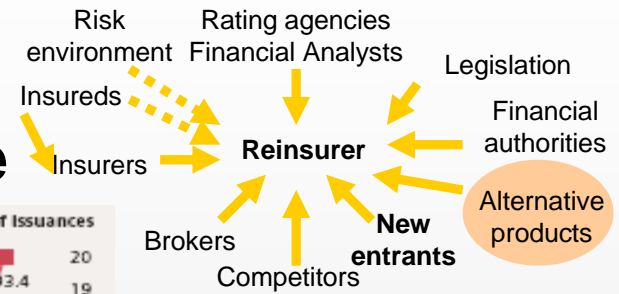


## Alternative products

- To complete existing products
- Capital markets
- Reinsurers offer them too

# Reinsurance environment Alternative Products

## Annual Cat Bond Transaction Volume

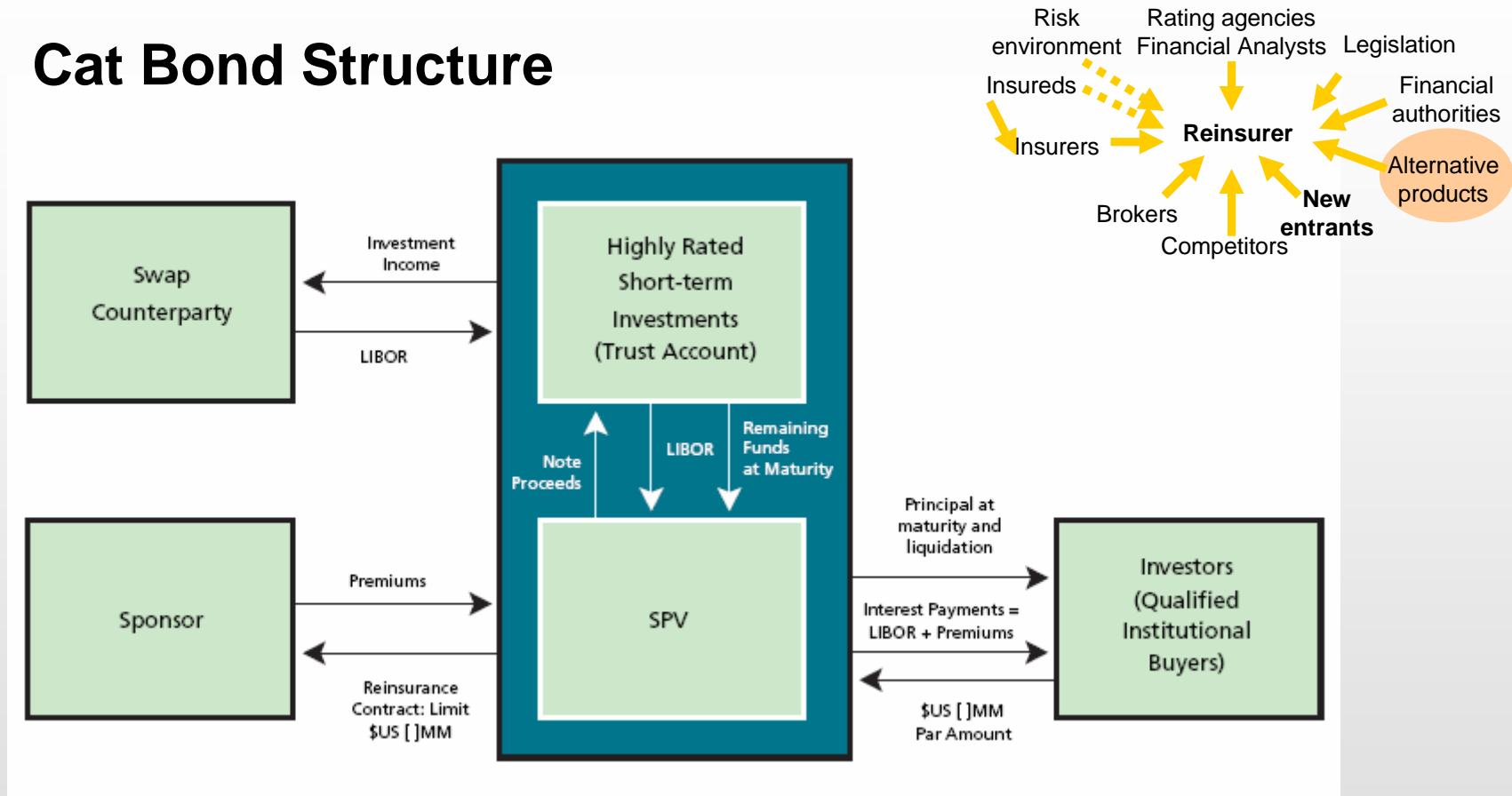


Source: Guy Carpenter: The Catastrophe Bond Market at Year-End 2006

# Reinsurance environment

## Alternative Products – Cat Bonds

### Cat Bond Structure



Source: Guy Carpenter: The Cat Bond Market at Year End 2004

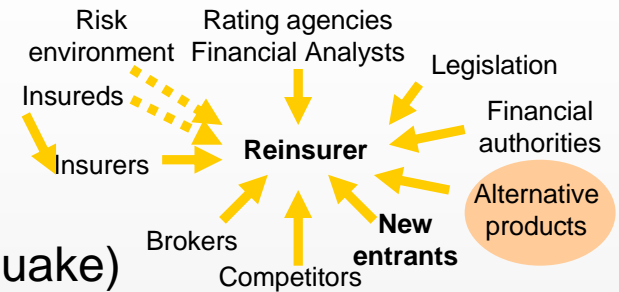
# Reinsurance environment

## Alternative Products – Cat Bonds

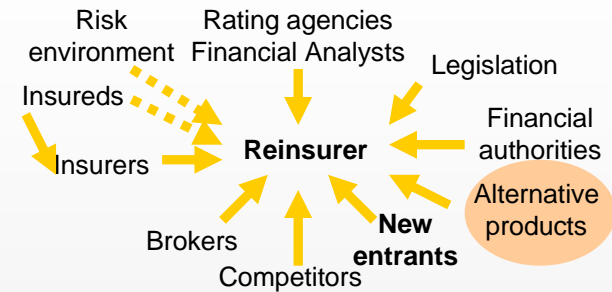
### Major Cat Bonds 2006

(risks covered)

- Swiss Re \$ 950 m (North Atlantic hurricanes, European windstorm, Japan and California earthquake)
- Endurance \$ 235m (US hurricanes and earthquakes)
- Swiss Re \$ 160 m (Earthquake in Mexico)
- Hannover Re \$ 150 m (European windstorm)
- Swiss Re \$ 100 m (Australian hurricanes and earthquakes)
- Munich Re \$ 85 m (US hurricanes)
- Scottish Re \$ 155 m (mortality)
- SCOR \$ 157m (European storm and Japanese earthquake)



# Reinsurance environment Alternative Products - ILW

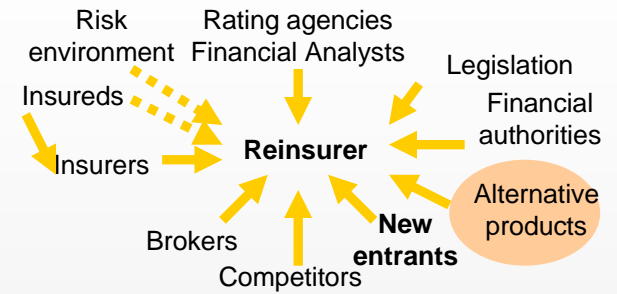


## ILW – Industry Loss Warranty

- ▶ Reinsurance contract in which payout depends on 2 triggers
  - Insured loss to buyer
  - Original insured industry loss
- ▶ Demand increased by 35% since Katrina

Source : John B.Collins in Best's Review April 2006

# Reinsurance environment Alternative Products - ILW



## Advantages

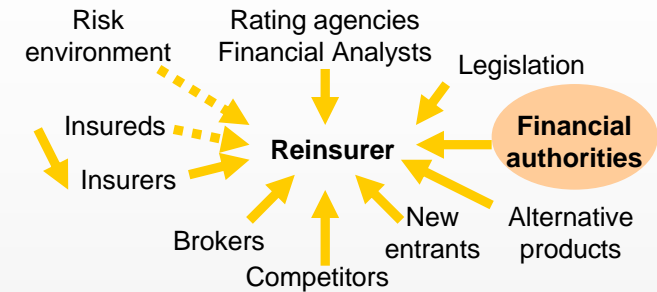
- Easy to understand and to administer
- No underwriting information needed

Source : John B. Collins in Best's Review April 2006

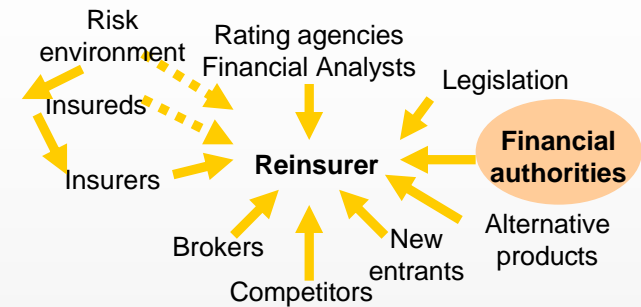
# Reinsurance environment

## Financial authorities

- ▶ Analyze alternative products
- ▶ No longer hesitate to launch investigations
- ▶ Created a movement causing the departure of some well-known insurance personalities: (Hank Greenberg, AIG; James Stanard, Renaissance Re)
- ▶ Demand greater transparency
- ▶ Instaure new rules
  - SOX
  - IFRS
  - Solvency II



# Reinsurance environment

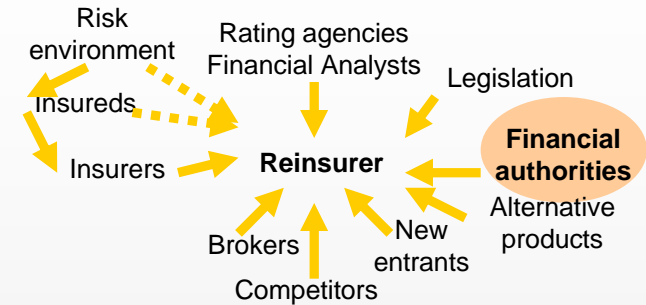


## Financial authorities : new regulation

### ► SOX

- Raises standards for auditing, internal controls transparency and board oversight
- Applies to all companies listed on US exchanges
- In 2005 European parliament passed the 8th Company Law Directive, similar to SOX but less stringent
- Solvency II

# Reinsurance environment

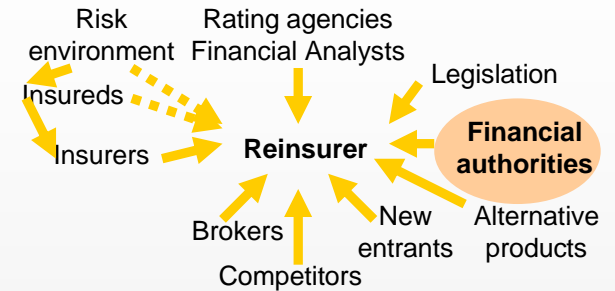


## Financial authorities : new regulation

### ► IFRS

- EU standard to harmonize national accounting standards
- Applies to consolidated financial statements of listed companies
- Phase I implemented
- Phase II : 2007 project of directive, 2010 adoption ?

# Reinsurance environment

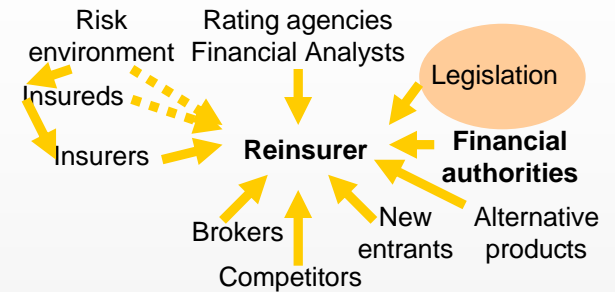


## Financial authorities : new regulation

### ► Solvency II

- Improve calculation of capital requirements as set out in Solvency I (based on volume only) to include
  - Assessment of technical liabilities
  - Risk management

# Reinsurance environment

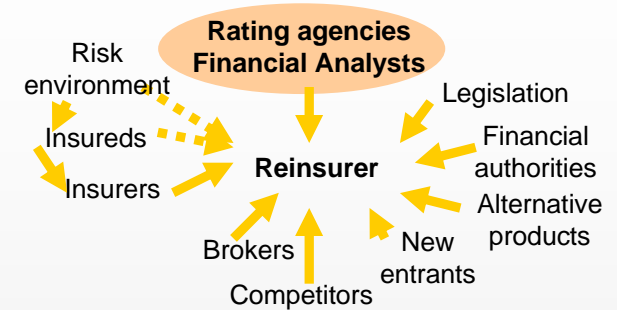


## Legislation

- Liberalization of markets (example: China, Brazil)
- Introduction or increase of state backed reinsurance (Florida)

# Reinsurance environment

## Rating agencies



- ▶ Increasing importance for selection of reinsurers
  - 2006 renewals: security/rating ranked second after cost in importance as element of choice for reinsurer
  - Many reinsurers downgraded since WTC
- ▶ Reinsurers without ratings specializing in collateralized reinsurance products (ex. Aeolus Re launched in July 2006 specializing in collateralized property cat coverage).
- ▶ Revised capital models affect exposure reinsurers can accept.

# Reinsurance environment

## Reinsurer downgrades since WTC

	S&P			AM Best		
	2001	May 2007	evolution in notches	2001	May 2007	evolution in notches
Munich Re	AAA	AA-	- 3	A++	A+	- 1
Swiss Re	AAA	AA-	- 3	A++	A+	- 1
BH/GCRe	AAA	AAA	0	A++	A++	0
Hannover Re	AA	AA-	- 1	A+	A	- 1
SCOR	AA-	A-	- 3	A+	A-	- 2
RGA	AA	AA-	- 1	A+	A+	0
Everest Re	AA-	AA-	0	A	A+	0
Partner Re	AA	AA-	- 1	A+	A+	0
Transatlantic Re	AA	AA-	- 1	A++	A+	- 1
XL Re	AA	AA-	- 2	A+	A+	0
Converium	A+	A-	- 2	A	B++	- 2

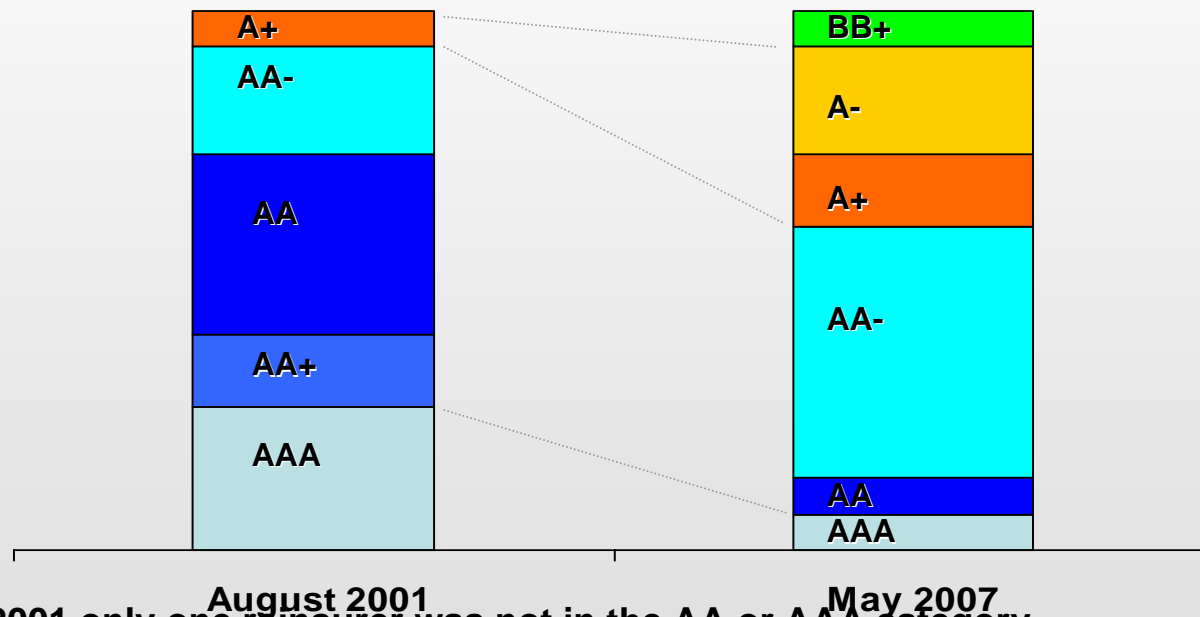
Source : Company press releases et websites

# Reinsurance environment

## Rating evolution since September 2001: ex.S&P

As at May 15th 2007

Top 15 reinsurers



**=> In 2001 only one reinsurer was not in the AA or AAA category .  
In 2007 just a bit more than half of the reinsurers are rated AA- or better.**

# Reinsurance environment

## Financial Strength of the Major Reinsurers

As at May 15th 2007

	<b>AM Best</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>
<b>Swiss Re</b>	A+	AA-	Aa2	AA-
<b>Munich Re</b>	A+	AA-	Aa3	AA-
<b>Berkshire Hathaway</b>	A++	AAA	Aaa	AAA
<b>Hannover Re</b>	A	AA-	A3*	A+
<b>Lloyd's</b>	A	A+	n.a.	A+
<b>SCOR</b>	A-	A-	A3	A-
<b>RGA</b>	A+	AA-	A1	AA-
<b>Everest Re</b>	A+	AA-	Aa3	AA-
<b>Partner Re</b>	A+	AA-	Aa3	AA
<b>Transatlantic Re</b>	A+	AA-	Aa3	n.a.
<b>XL Re</b>	A+	A+	Aa3	AA-
<b>Odyssey Re</b>	A	A-	A3*	BBB+
<b>Transamerica</b>	A+	AA	Aa3	AA+
<b>Converium</b>	B++	A-	A3	BBB+
<b>Scottish Re</b>	B+	BB+	Baa3	BB+
<b>ACE Tempest (Life) Re</b>	A+	A+	Aa3	AA-
<b>Arch Re</b>	A	A	A2*	A*
<b>White Mountains Re<sup>†</sup></b>	A-	A-	A3	A-*
<b>Axis Re</b>	A	A	A2	n.a.
<b>Renaissance Re</b>	A	A+	A2	A

All Ratings are Insurer Financial Strength Ratings

\* White Mountains Re does not have its own ratings as such. Ratings are those of Folksam and Sirius, the 2 major companies of the group. AM Best maintains Sirius Int. rating at A stable

Source: Ratings agencies and reinsurers websites

# Reinsurance environment

## Rating agencies: rating scales

	Secure Financial Strength Ratings						Vulnerable Financial Strength Ratings														
<b>A.M.BEST</b>	A++	A+	A	A-	B++	B+	B	B-	C++	C+	C	C-	D								
	Superior		Excellent		Very Good		Fair		Marginal		Weak		Poor								
<b>S&amp;P</b>	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	
	Extremely Strong	Very strong		Strong		Good		Marginal		Weak		Very weak			Extremely weak						
<b>Fitch</b>	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C
	Exceptionally strong	Very strong		Strong		Good		Questionable		Poor		Very poor			Extremely poor	Lowest					
<b>Moody's</b>	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C
	Exceptional	Excellent		Good		Adequate		Moderately weak		Weak		Very weak									

Source: Ratings agencies websites