

# Catastrophes 2005 – Challenges and Opportunities: the International View

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## Main topics

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1. Global Reinsurance Industry - how it looked pre-hurricanes
2. 2005 hurricane season - the story of the three sisters
3. Andrew and WTC and Katrina compared
4. Consequences of 2005 catastrophes
  - Capital in, capital out
  - Credit rating agency reactions

## Global Reinsurance Industry Outlook

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### Moody's Investors Services, September 2005

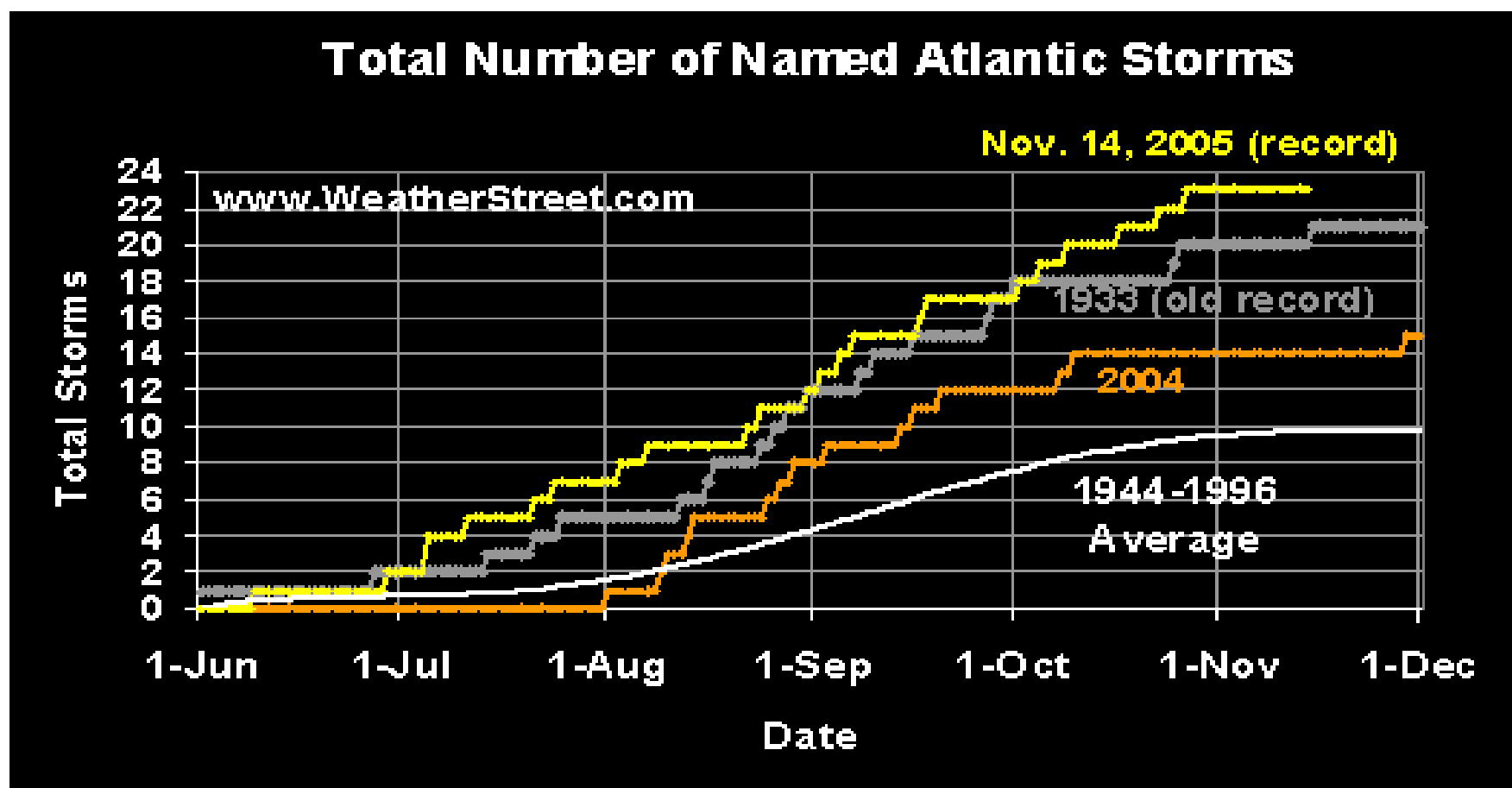
- Stable outlook reflects strong earnings as reinsurers reap benefit of cyclical peak
  - Opportunities & Strengths
    - Recent hard market conditions
    - Renewed focus on reinsurance security
    - Good diversification
  - Risks & Weaknesses
    - Current softening market conditions
    - Potential adverse loss development on US casualty business 1997-2001
- Low barriers to entry

## Global Reinsurance Industry Outlook, cont.

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- Key markets
  - United States
    - Profitability improves, although earnings drag continues from soft-market years
  - Bermuda
    - Insurance domicile built on flexibility & responsiveness solidifies its position
    - Class of 2001/2002 well diversified from inception
  - Europe
    - Leading reinsurer focus on capital management
    - Weakening rate environment
    - Increased regulatory involvement

## 2005 North Atlantic hurricane season – a record year



Source: [www.weatherstreet.com](http://www.weatherstreet.com)

## 2005 Atlantic hurricanes / tropical storms

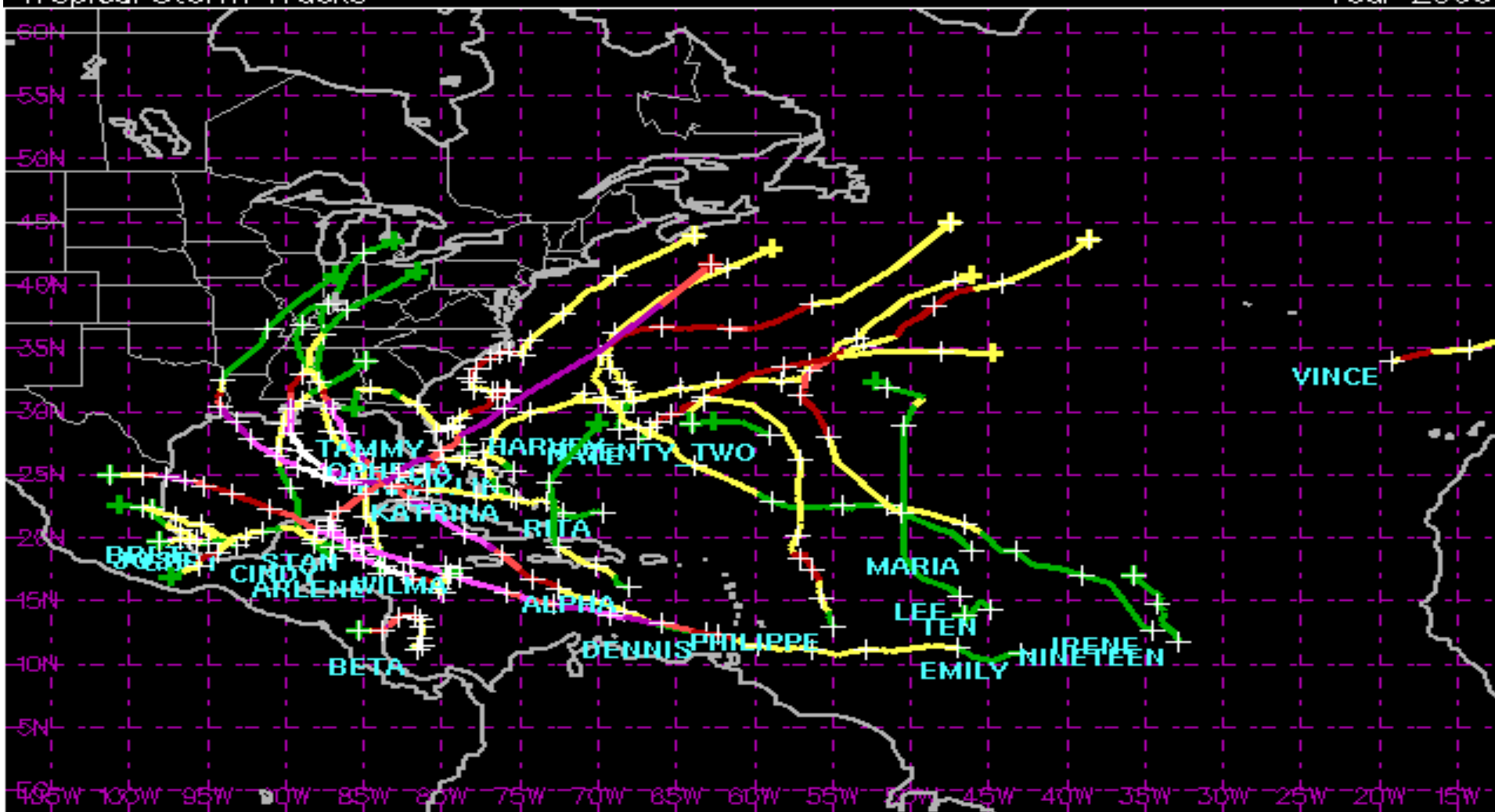
Arlene	June	Harvey	August	<b>Ophelia</b>	<b>Sept</b>	Alpha	Oct
Bret	June	<b>Irene</b>	<b>August</b>	<b>Philippe</b>	<b>Sept</b>	<b>Beta</b>	<b>Oct</b>
Cindy	July	Jose	August	<b>Rita</b>	<b>Sept</b>	Gamma	
<b>Dennis</b>	<b>July</b>	<b>Katrina</b>	<b>August</b>	<b>Stan</b>	<b>Oct</b>	Delta	
<b>Emily</b>	<b>July</b>	Lee	August	Tammy	Oct	Epsilon	
Franklin	July	<b>Maria</b>	<b>Sept</b>	<b>Vince</b>	<b>Oct</b>		
Gert	July	<b>Nate</b>	<b>Sept</b>	<b>Wilma</b>	<b>Oct</b>		

- **Bold** = hurricane / non bold = tropical storm
- Alpha formed as a tropical storm October 22<sup>nd</sup> – first time the National Hurricane Center has run out of names from English alphabet; followed swiftly by Hurricane Beta (October 26<sup>th</sup>)

# 2005 North Atlantic storm tracks

Tropical Storm Tracks

Year 2005



## 2005 West Pacific typhoons

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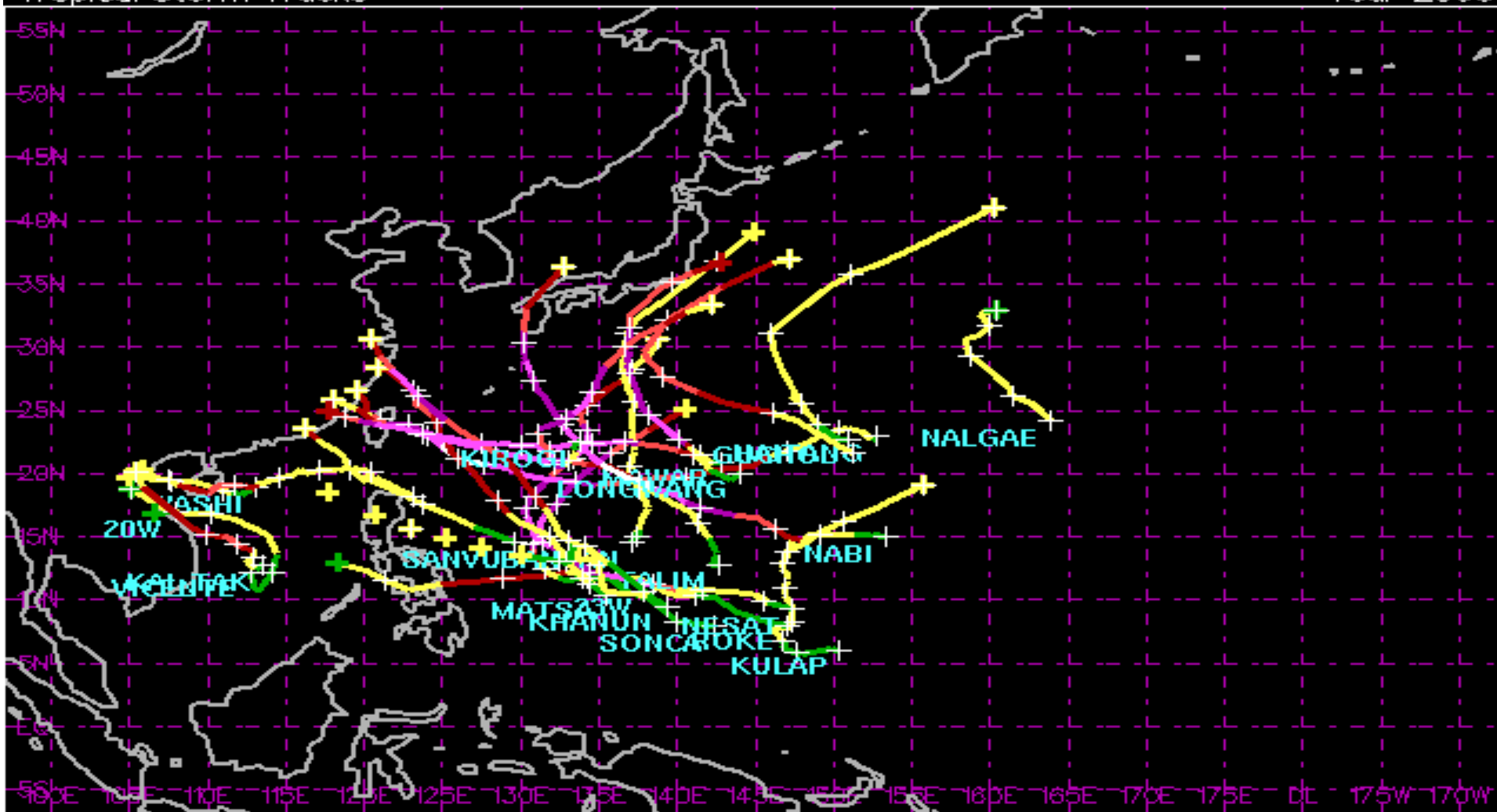
Kulap	Jan	Washi	July	<b>Khanun</b>	<b>Sept</b>	<b>Kai-Tak</b>	<b>Oct</b>
<b>Roke</b>	<b>Mar</b>	<b>Matsa</b>	<b>August</b>	Vicente	Sept	23W	Nov
<b>Sonca</b>	<b>Apr</b>	<b>Sanvu</b>	<b>August</b>	<b>Saola</b>	<b>Sept</b>		
<b>Nesat</b>	<b>June</b>	<b>Mawar</b>	<b>August</b>	<b>Damrey</b>	<b>Sept</b>		
<b>Haitang</b>	<b>July</b>	Guchol	August	<b>Longwang</b>	<b>Sept</b>		
Nalgae	July	<b>Talim</b>	<b>August</b>	Otis	Oct		
Banyan	July	<b>Nabi</b>	<b>August</b>	<b>Kirogi</b>	<b>Oct</b>		

- **bold blue** = super typhoon (hurricane force winds)

# 2005 West Pacific storm tracks

Tropical Storm Tracks

Year 2005



## Hurricanes Katrina, Rita & Wilma

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- **Katrina**

- forecast to be most costly property insurance event ever
- third most powerful hurricane to make landfall in the USA ever
- very early in very active hurricane season (August)

- **Rita**

- direct path missed Galveston & Houston

- **Wilma**

- most intense hurricane ever recorded in the Atlantic basin

- 2005 now confirmed as:

- most active hurricane year ever
- most active storm year ever
- surpasses previous most costly nat cat loss year on record: 2004

## And not forgetting hurricane Eliot!

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- Just ask
  - Jeff Greenberg and others at Marsh
  - Aon, Willis and other large brokers
  - Hank Greenberg and others at AIG
  - Jim Stanard at Renaissance Re
  - Ron Ferguson and others at Gen Re
  - ...

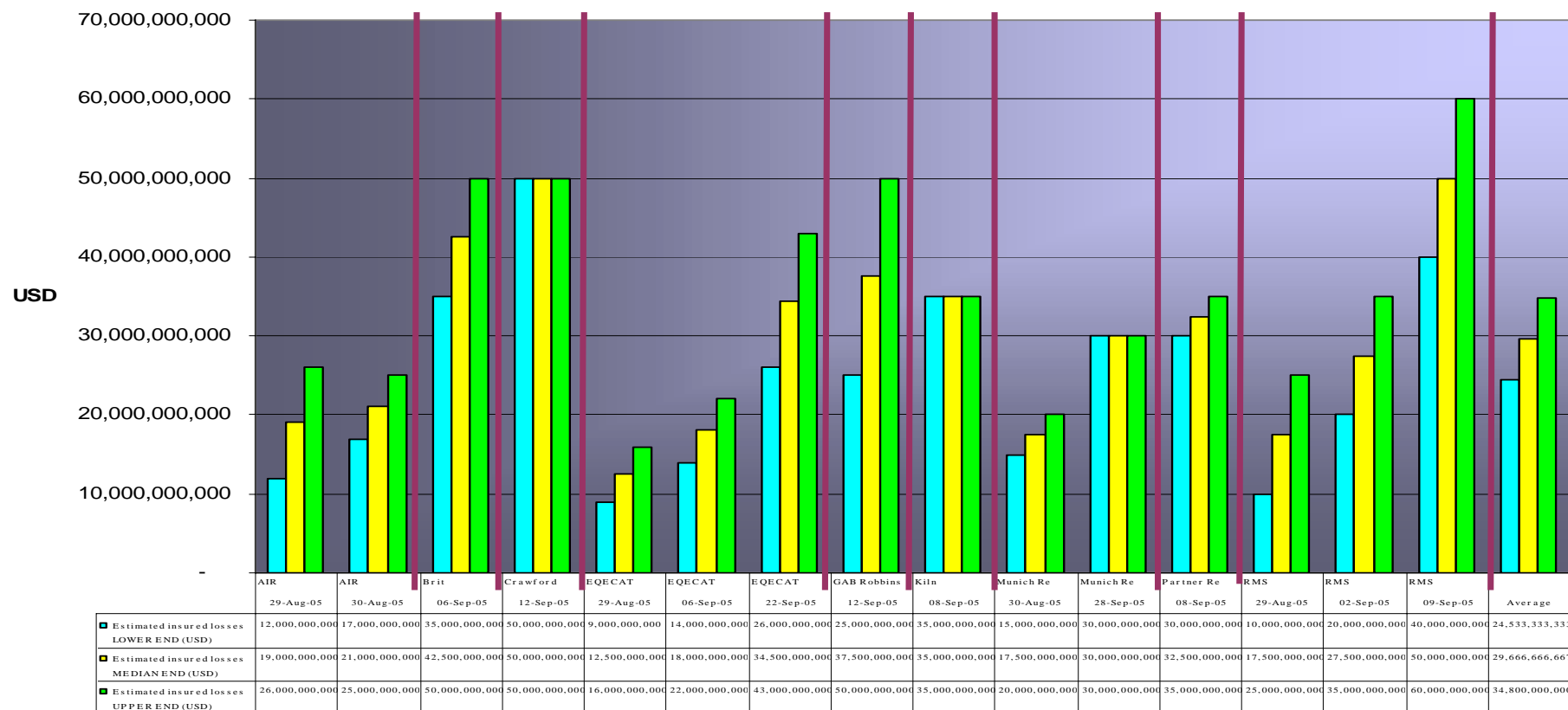
## World's 10 most expensive insured losses

	<u>Loss</u>	<u>Insured loss</u>	<u>Location</u>	<u>Date</u>
1	<b>Hurricane Katrina</b>	<b>\$50 billion</b>	<b>US</b>	<b>2005</b>
2	9/11	\$20 billion	US	2001
3	Hurricane Andrew	\$21.5 billion	US, Bahamas	1992
4	Northridge earthquake	\$17.8 billion	US	1994
5	<b>Hurricane Ivan</b>	<b>\$11 billion</b>	<b>US, Caribbean</b>	<b>2004</b>
6	<b>Hurricane Wilma</b>	<b>\$8-12 billion</b>	<b>US</b>	<b>2005</b>
7	<b>Hurricane Charley</b>	<b>\$8 billion</b>	<b>US, Caribbean</b>	<b>2004</b>
8	Typhoon Mireille	\$7.8 billion	Japan	1991
9	<b>Hurricane Rita</b>	<b>\$4-7 billion</b>	<b>US</b>	<b>2005</b>
10	Windstorm Daria	\$6.6 billion	France, UK	1990

Source: sigma, RMS, S&P estimates

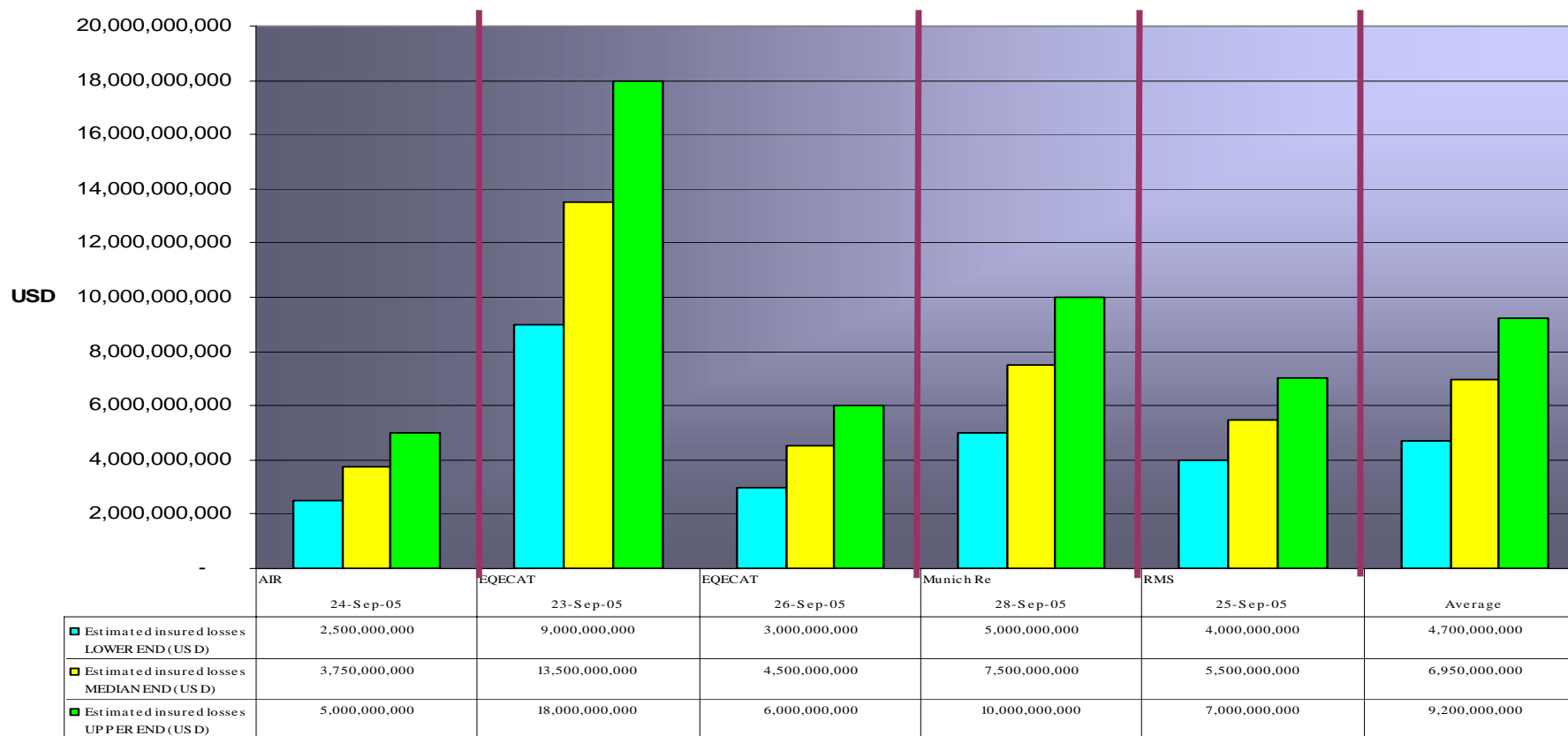
# Katrina estimates at 29<sup>th</sup> September 2005

**Hurricane Katrina, August / September 2005**  
**Total Market Insured loss estimates by date**



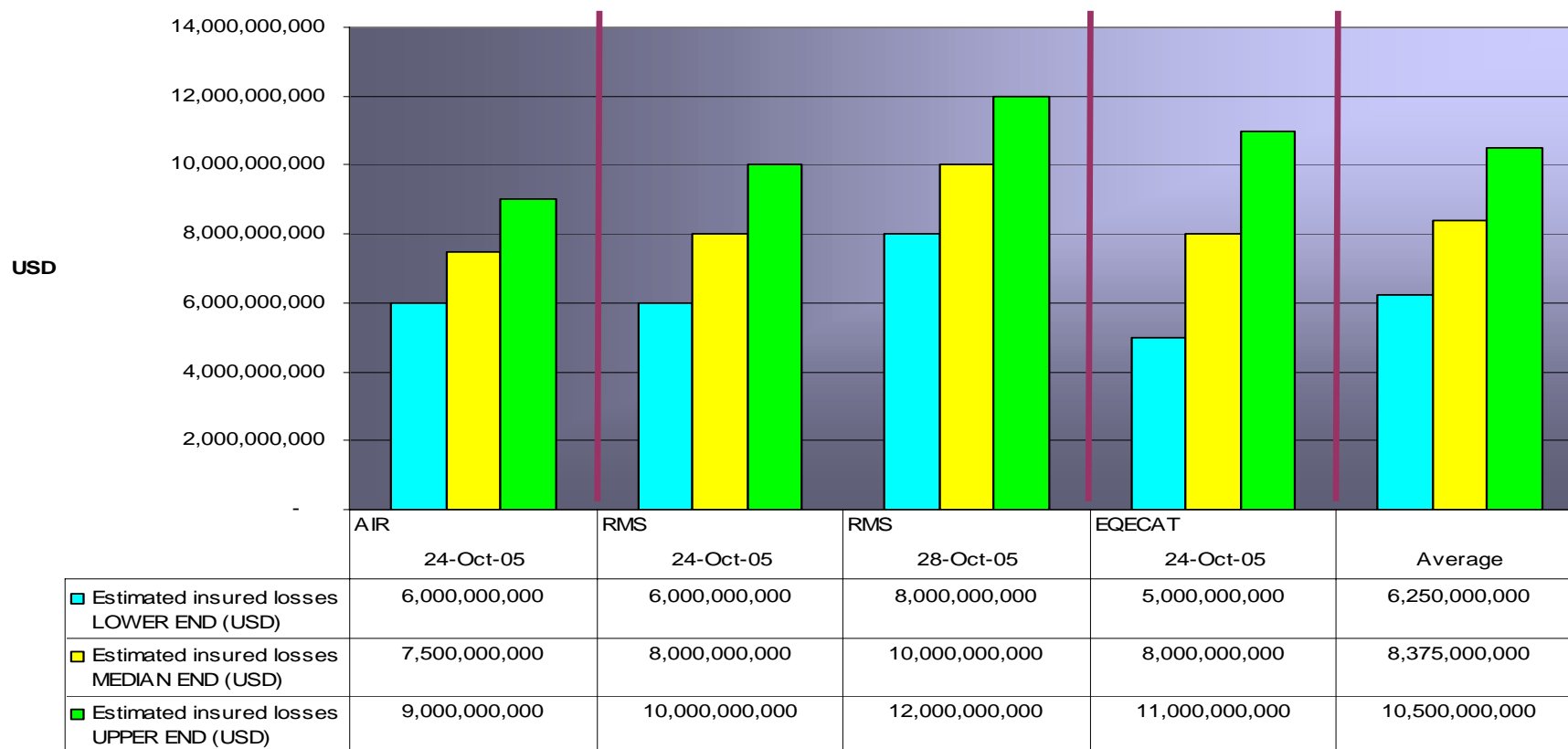
# Rita estimates at 29<sup>th</sup> September 2005

**Hurricane Rita, September 2005**  
**Total Market Insured loss estimates by date**



# Wilma estimates at 28<sup>th</sup> October 2005

**Hurricane Wilma, October 2005**  
**Total Market Insured loss estimates by date**



## Hurricanes impact on combined ratios

<b><u>Group</u></b>	<b><u>9m 2005</u></b>	<b><u>9m 2004</u></b>
IPC Re	258%	68%
PXRE	232%	110%
Montpelier Re	213%	84%
Renaissance Re	125%	120%
Endurance	124%	87%
XL	122%	96%
Aspen	121%	87%
Partner Re	115%	94%
Everest Re	114%	97%
Odyssey Re	114%	99%
Transatlantic Re	113%	102%
AXIS	112%	86%
Platinum	109%	100%
Munich Re	108%	99%
SCOR	106%	103%
Arch	99%	94%

*Source: Standard & Poor's*

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## Hurricane Katrina - coverage issues

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- One event or two?
- Wind versus flood
  - Mississippi Attorney General
- Business interruption
- Mould
- Ex gratia payments
  - Sarbanes/Oxley
  - Class actions
  - Government pressure

## Hurricane Katrina - Comparison with Andrew

	<b>Andrew</b>	<b>Katrina</b>
<u>Duration as tropical storm/hurricane</u>		Aug 17-28, 1992
<u>24-31, 2005</u>		Aug
<b>At major landfall:</b>		
<u>Saffir-Simpson</u>	Category 4 (later 5)	Category 4
<u>Wind speed</u>	165 mph	145 mph
<u>Width of hurricane-force winds</u>	Approx 120 miles	Approx 250 miles
<u>Central pressure</u>	922 mbar	918 mbar
<u>Storm surge</u>	17 feet	15 to 29 feet
<u>Fatalities</u>	26 direct, 39 indirect	1,110 plus (not final)
<u>Areas affected</u>	South Florida, Louisiana	South Florida,
		Mississippi, Alabama,

## Hurricane Katrina - Comparison with WTC

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- Reinsurance companies not in same position in September 2001 as September 2005
- Fitch analysis of selected 33 global reinsurers

(US\$ millions)	<u>2004</u>	<u>2003</u>	<u>2002</u>
Net Premium Written	91,380	93,196	82,631
Combined Ratio	101.4	97.6	108.0
Retention Ratio	88.0	85.1	85.9
Equity	260,857	222,495	172,976

## Hurricane Katrina - Comparison with WTC

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- Fitch reinsurance rating activity

	<b>2005 to date</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>
Downgrades (%)	11	18	29	53
Upgrades (%)	6	14	0	0
Affirmations (%)	83	68	71	47
Sector Average Financial strength	A	A	A+	AA-

## Distribution of Katrina losses by market

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<b>Market</b>	<b>Amount (\$ bn)</b>	<b>Percentage</b>
<u>Insurers</u>	<u>\$18.8 - \$28.9</u>	<u>47% - 53%</u>
<u>Reinsurers</u>	<u>\$20.7 - \$24.0</u>	<u>52% - 44%</u>
<u>Capital markets</u>	<u>\$0.4 - \$1.6</u>	<u>1% - 3%</u>
<b><u>Total</u></b>	<b><u>\$39.9 - \$54.6</u></b>	<b><u>100%</u></b>

*Source: Tillinghast, 6 October 2005*

## Distribution of Katrina & Rita losses by market

<b>Market</b>	<b>Amount (\$ bn)</b>	<b>Percentage</b>
US Insurance	\$15.8	41%
US Reinsurance	\$3.5	9%
Bermuda	\$10.3	27%
Europe	\$5.8	15%
Lloyd's	\$2.9	8%
Other	\$0.3	1%
<b>Total</b>	<b>\$38.7</b>	<b>100%</b>

*Source: Dowling IBNR Report, 28 November 2005*

## Hurricane Katrina - consequences

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- Modelling
  - Climate change?
    - Major reinsurers have noted increased frequency of severe losses
    - Will change from using historic averages to short-term future trends
  - Losses not completely modelled
    - Need to develop flood models
    - Business interruption
    - Regulatory/political inflation?

## Post Katrina capital raising - “replacement”

	“Reload”	Katrina losses
ACE	\$1,250 m	\$700 m
Aspen	\$400 m	\$460 m
Axis	\$625 m	\$804 m
Endurance	\$600 m	\$665 m
Everest Re	\$475 m	\$922 m
Fairfax	\$300 m	\$438 m
Glacier Re	\$100 m	\$120 m
IPC Re	\$635 m	\$750 m
Kiln	\$130 m	\$97 m
Max Re	\$265 m	\$110 m
Platinum	\$497 m	\$405 m
PXRE	\$475 m	\$430 m
Montpelier Re	\$600 m	\$972 m
<b>Sub-total</b>	<b>\$6,352 m</b>	<b>\$6,873 m</b>

## Post Katrina capital raising - new start-ups

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<u>Amlin, Bermuda</u>	<u>\$1,000 m</u>
<u>Ariel Re, Bermuda</u>	<u>\$750 m</u>
<u>Flagstone Re, Bermuda</u>	<u>\$1,000 m</u>
<u>Greenlight Capital Re, Cayman</u>	<u>\$220 m</u>
<u>Harbour Point, Bermuda</u>	<u>\$1,500 m</u>
<u>Hiscox, Bermuda</u>	<u>\$500 m</u>
<u>Lancashire, Bermuda</u>	<u>\$1,000 m</u>
<u>New Castle Re, Bermuda</u>	<u>\$500 m</u>
<u>Omega Speciality, Bermuda</u>	<u>\$100 m</u>
<u>Validus Re, Bermuda</u>	<u>\$1,000 m</u>
<b>Sub-total</b>	<b>\$7,570 m</b>

## The Bermuda start-ups

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- 1985/86
  - ACE, XL
- 1992/93
  - Centre Cat, Global Capital Re, IPC Re, LaSalle Re, Mid Ocean Re, Partner Re, Renaissance Re, Tempest Re
- 2001/02
  - Allied World, Arch Re, Aspen, Axis Specialty, DaVinci, Endurance Specialty, Goshawk, Montpelier Re, Olympus Re, Platinum

## Rating agencies – rating actions to date

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- S&P
  - 2 downgrades
  - 6 on negative CreditWatch
  - Sector outlook: revised from stable to negative on 28 September 2005
- AM Best
  - 10 downgrades
  - 8 under review/negative
- Not all solely because of 2005 hurricane season

## Rating agencies

### – capital model revisions going forward

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- S&P
  - Will use the 1 in 250 PML for direct writers (from 2006) and diversified reinsurers (from 2005) rather than 1 in 100 PML
  - Calculating PMLs on a combined perils basis rather than separately for each peril
  - Will use the AEP rather than the OEP (Annual rather than Occurrence Exceedance Probability)
- AM Best
  - Actual net Katrina losses, if exceed previously reported net PML, will become net PML
  - Will stress test a second PML event
- Fitch
  - Developing a Tail-VaR approach instead of 1 in 100 PML

## Market impact - Monte Carlo Rendezvous

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- Week of 12<sup>th</sup> September 2005
  - Post Katrina, before Rita
- Rates:
  - reductions slowing? (buyers)
  - static? (rating agencies)
  - increasing? (underwriters)
- Pressure on year end renewals
- Cat rates
- Wait & see: Baden Baden
- Expect very late treaty renewal season (January?!)

## Market impact - Baden Baden

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- Week of 24<sup>th</sup> October 2005
  - Just as Wilma struck Florida and Alpha & Beta formed
- Quotes:
  - *“There isn’t a uniform view among reinsurers about what they are going to do”*
  - *“Reluctant acceptance that reinsurance rates will increase, but the details remain a little unclear”*
  - *“Some reinsurers speak about a 10% to 15% increase in rates, some say 5% might be enough, others may hold the line on price increases”*
  - *“Uncertainty in the market ... some reinsurers have neither a clear strategy nor a firm idea of the amount of capacity they may have”*


## Market conditions and outlook

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- Significant events
  - but need to put in global context
  - Impacts will largely be local
- Reinsurance
  - Renewals will be (very) late
  - Offshore energy rates will go up
  - Other US wind exposures not clear yet
  - International rates stable/softening
- Insurance
  - US accounts, rates increasing
  - Non-US accounts, rates softening

## Global re/insurance capital: end-2000 to end-2002

<u>Global market</u> (US\$ bn)	<u>Primary</u>		<u>Reinsurance</u>	
<b>Estimated capital end-2000</b>	<b>570.0</b>	100.0%	<b>120.0</b>	100.0%
Catastrophe losses	32.9	5.8%	34.5	28.8%
Credit defaults	13.5	2.4%	2.0	1.7%
Investment losses	138.5	24.3%	11.2	9.3%
<b>Total capital destroyed</b>	<b>184.9</b>	32.4%	<b>47.7</b>	39.8%
<b>Net capital contributed</b>	<b>23.8</b>	4.2%	<b>30.2</b>	25.2%
<b>Estimated capital end-2002</b>	<b>408.9</b>	71.7%	<b>102.5</b>	85.4%

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- Primary carriers lost nearly 1/3rd of their capital during 2001 & 2002
    - Mostly due to investment losses
  - Reinsurers lost nearly 40% of their capital base

Source: HSBC Global Insurance report Q4 2003

## What buyers should be doing

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- Allow adequate lead-in time to renewals
- Quality submission
  - Information, information, information
  - Differentiation of your own risk against peers: benchmarking
- Market access
  - Existing relationships and additional markets
  - Global markets vs domestic markets – geographic variances
- Audit current coverage vs actual needs
  - Don't be exposed to marketplace on ultimate cat limit purchasing goals: buy what you need
- Talk to markets to ascertain and address underwriters' key areas of concern
- Monitor market movements and identify your security requirements

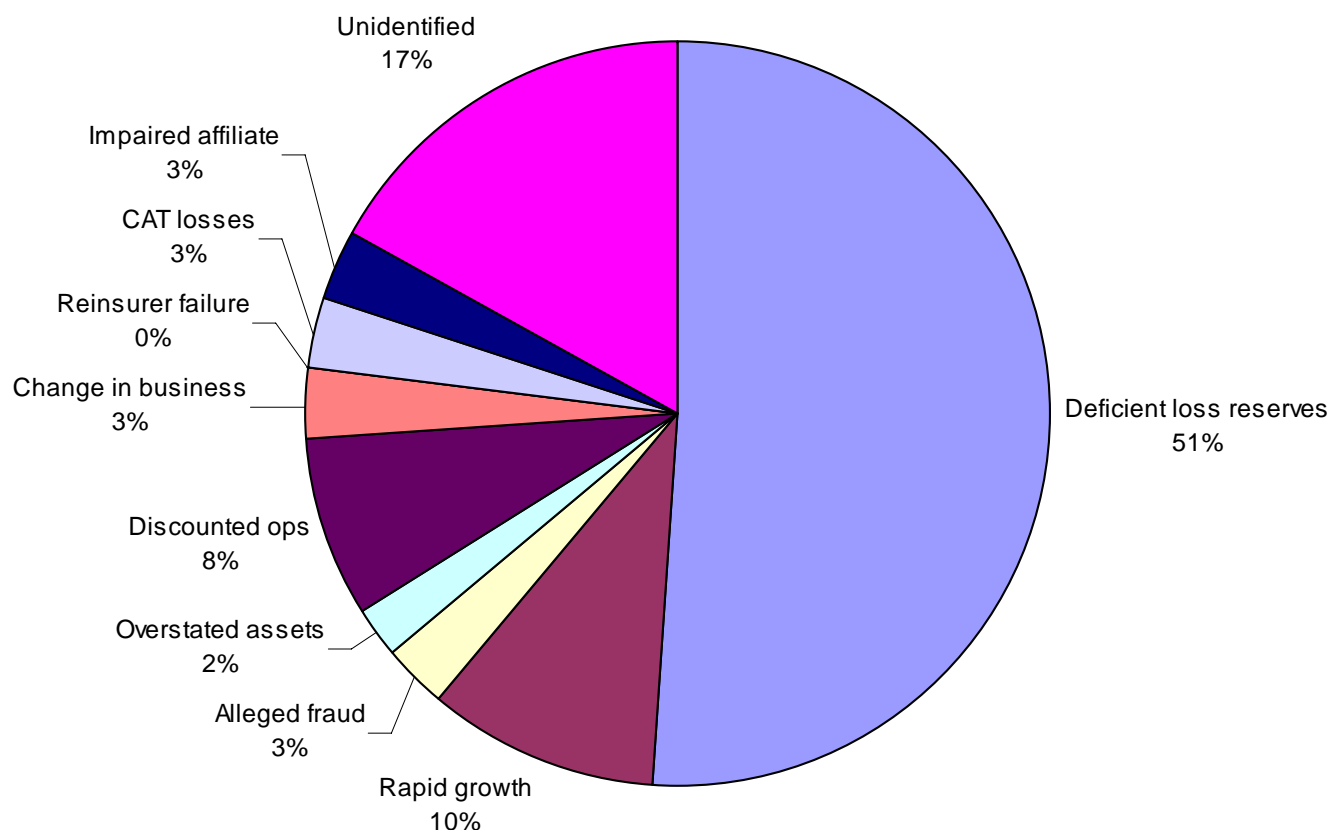
## Challenges - value proposition of re/insurance under pressure from all sides!

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- Shareholders
  - Are they getting a fair return for risk?
- Rating agencies
  - Strategy
  - Reserve (in)adequacy
- Cedants
  - Willingness to pay
  - Self-(re)insurance
- Regulators
  - Compliance
  - Transparency
- Equity analysts, accountants & actuaries
  - Quarterly vs. long-term results
  - Reinsurance is a long-term game
- Media
  - Poor industry image, Spitzer etc.

## Finally, remember it is not usually cat losses that cause insurance company failures ...

### Reasons for US P/C insolvencies



Based on 218 insolvencies, 1993-2002

Source: AM Best

## Any questions?

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