



International Association for the  
Study of Insurance Economics

# Études et Dossiers

---

Extract from

## Études et Dossiers No. 323

**2nd Chief Risk Officer Assembly**

20 - 22 November 2006  
Munich

March 2007

## Working Paper Series of The Geneva Association

© Association Internationale pour l'Etude de l'Economie de l'Assurance

The Geneva Association Working Paper Series “Études et Dossiers” appear at irregular intervals about 10 - 12 times per year. Distribution is limited.

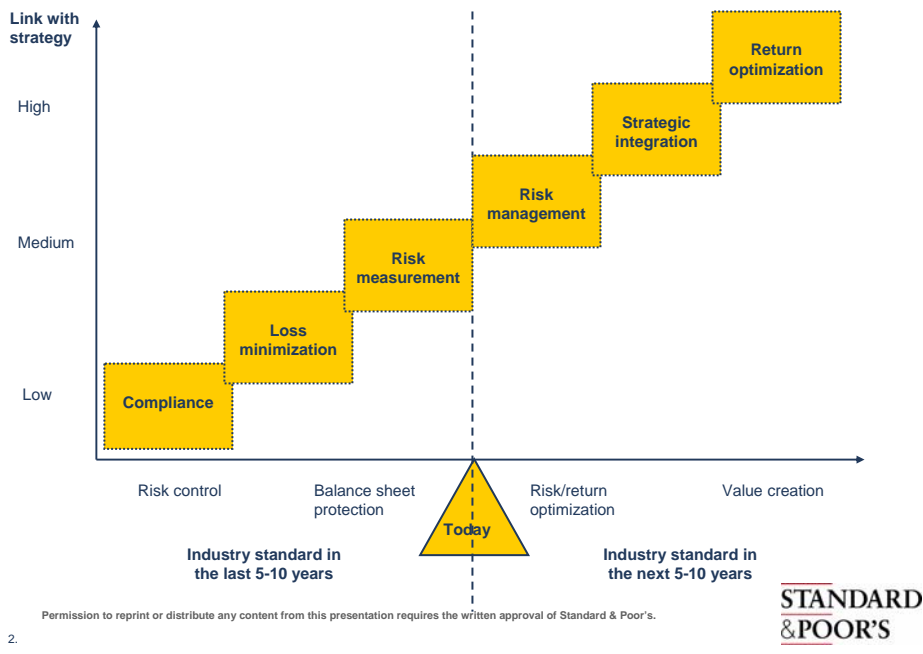
The “Études et Dossiers” are the working paper series of The Geneva Association. These documents present intermediary or final results of conference proceedings, special reports and research done by The Geneva Association. As they contain work in progress or summaries of conference presentations, the material must not be cited without the express consent of the author in question.

Layout & Distribution: Valéria Kozakova

# Evaluating the Effectiveness of Enterprise Risk Management

Mark Puccia

## Evolution of Enterprise Risk Management



### Standard & Poor's Objective

**Risk management is at the heart of what Standard & Poor's does. Standard & Poor's assesses insurers' risks and how risks are managed.**

***Objective: Enhance ratings process by increasing our analytical focus on insurers' risk management practices***

- Previously, only qualitative credit given to risk management practices and models
- Ultimately, may give some quantitative recognition to risk models, but only where models are robust and underlying risk management framework is sound

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

3.

### ERM Evaluation Components



Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

4.

### Summary Of Recent Enhancements To Insurer ERM Criteria

<b>Risk Management Culture</b>	<ul style="list-style-type: none"> <li>▪ Additional detail regarding risk tolerance and risk preferences</li> <li>▪ risk limits tied to risk tolerances</li> </ul>
<b>Risk Control Processes</b>	<ul style="list-style-type: none"> <li>▪ A more detailed review of various sound practices for risk control processes</li> <li>▪ The review process will be tailored to individual companies</li> <li>▪ Specific, detailed examples requested for key risks</li> </ul>
<b>Emerging Risks Management</b>	<ul style="list-style-type: none"> <li>▪ Renamed to clarify our focus on <b>new risks</b> that could emerge</li> </ul>
<b>Risk and Economic Capital Models</b>	<ul style="list-style-type: none"> <li>▪ detailed ERM review of models</li> <li>▪ This review will not include validation of the specific output from an Economic Capital model</li> </ul>
<b>Strategic Risk Management</b>	<ul style="list-style-type: none"> <li>▪ Further distinction among common practices that are viewed as weak, adequate, strong or excellent</li> </ul>
<b>Strong/Excellent ERM</b>	<ul style="list-style-type: none"> <li>▪ Clarified/Strengthened Definitions</li> </ul>

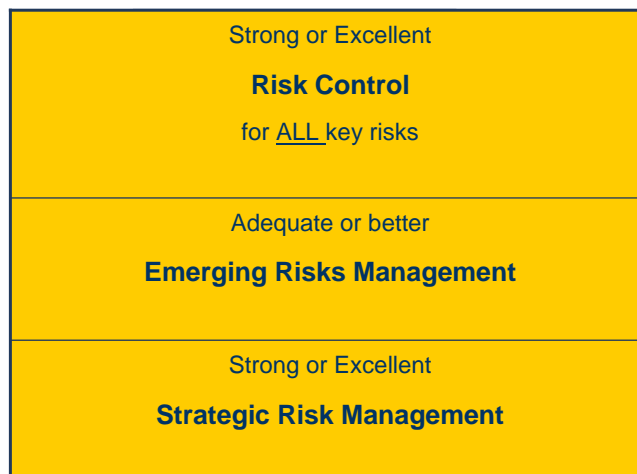
Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.



5.

### Clarified Definition of Strong ERM

Must have ALL of:



Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.



6.

## Risk Control – Investments

### Standard & Poor's Ratings Criteria:

#### Credit Risk

- Traditional Underwriting standard and concentration limits
  - Sell discipline tied to spread monitoring
  - Portfolio Credit Approach supported by Credit VaR Model
  - Credit Derivative use to refine exposures
- << Look for multiple programs >>

#### Interest Rate Risk

- Monitoring Metrics:
  - Duration, DV01, Convexity
  - Key Rate Durations, Partial Duration
- Look for:
  - Multiple measures,
  - Clear tolerances,
  - Frequent measurement and
  - Frequent rebalancing with
  - Clear practices for violations
  - Attention to minimum guarantees

#### Equity Risk

- Clear idea of the amount of total equity risk from equity holdings, products, pension, etc:
- Look for program for maintaining that total equity risk at a predetermined level
- If hedging risks, look for disciplined program with a sophisticated control structure

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

7.

## Risk Controls - Investments

### Strong usually requires triangulation

- Of views of Risk Positions
- Of methods for Managing Risks

### Excellent usually requires experience

- Have exited implementation phase and are well into refinements phase

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

8.

## Strategic Risk Management

### S&P Ratings Criteria:

- View of risk across all risks to make decisions about optimizing risk adjusted returns!
- Capability to assess trade-offs between different risk types
- Assessment of risk adjusted returns
- Capital budgeting
- Strategic investment allocation

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

9.

STANDARD  
& POOR'S

## Strategic Risk Management

### *Why are we making SRM so important?*

- **There are some companies with Superior Risk Management that we will then be judging to be Adequate?!?**
  - Companies with Superior Risk Management (Controls) will have volatility of earnings and incidence of losses within their tolerances
  - Companies with Strong/Excellent ERM will have low volatility of earnings, low incidence of losses **AND will maximize their risk/return relationship!**
- **Strategic Risk Management is the UPSIDE of Risk Management**

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

10.

STANDARD  
& POOR'S

## Strategic Risk Management

---

### **For Life Insurers:**

Strategic trade-offs between products with:

- Credit Risk
- Interest Rate Risk
- Equity Risk
- Insurance Risks
  - Based on long term view of risk adjusted returns of products
  - Choosing which to write, how much to retain and which to offset

Strategic trade-offs in Investment Selection

- based on risks embedded in products
- plus long term view of risk adjusted returns of investment choices

11.

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

## Strategic Risk Management

---

### **For Non-Life (P&C) Insurers:**

- **Strategic Trade-offs among insurance coverages AND investments**
  - based on long term view of risk adjusted return
  - Recognizing significance of investment risk to total risk profile
  - Recognizing ceded reinsurance credit risk
  - Selecting which risks to write and which to retain over the long term
- **Some Insurers have 40% or more of their total capital tied to Investment risks**
  - An Insurer with Strategic Risk Management will be able to say why they chose to take that much Investment risk
    - Including discussing relative risk reward of Insurance choices and Investments
      - Average risk reward vs. marginal risk reward
    - With consideration of diversification impact of Insurance vs. Investments
- **For Multi-line insurers/reinsurers**
  - Trade-offs between all investment & Insurance risks

12.

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

## Risk Selection vs. Strategic Risk Management

### **Reacting to short term market conditions to choose which risks to take and which to retain in the short term**

- May use Risk Reward analysis or just combined ratio targets
- Cycle Management
  - Insurance Cycles
  - Credit Cycles
  - Interest Rate Cycles/Equity Market Cycles
  - *Choosing in and out of risks for a season as spreads fatten or thin*
- Choices to vary from long term strategic choices
  - Usually within a range
  - Range of variation authority limits

### **Risk Selection is part of Insurance Risk Control**

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

13.

**STANDARD  
& POOR'S**

## Capacity / Capital Management vs. Strategic Risk Mgt.

- **Many Insurers & Reinsurers practice Capacity / Capital Mgt**
  - Make plans for writing all of the profitable business they can write
  - Then Assess whether they have exceeded their Capacity
    - Based on S&P, AM Best or RBC Capital Target
  - Use Reinsurance to bring retained risk back into line with Capacity

**This is not Strategic Risk Management!**

•S&P, other rating agency/regulatory RBC Capital formulas are not measures of company specific risks

•Strategic Risk Management uses company specific risk measure  
–May be Economic Capital or Earnings at Risk or other risk measure

**We are not saying that Capacity / Capital Mgt is bad  
- It is just not Strategic Risk Management**

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

14.

**STANDARD  
& POOR'S**

### What Can Go Wrong With Using External Risk Capital Models?

#### When new products or investments become major activities

...before the regulators, S&P or others add something to their capital formula...

#### ➤ Two Bad things can happen:

- The company can hit a bad spell and experience losses far above their risk tolerances
- The Regulators / Ratings agencies can decide to set a reasonable level of expected capital requirement or reserves

#### ➤ Two Good Things could happen:

- ✓ Nobody gets wise
- ✓ No loss event happens

• **Planning for Luck - IS NOT RISK MANAGEMENT!!!**

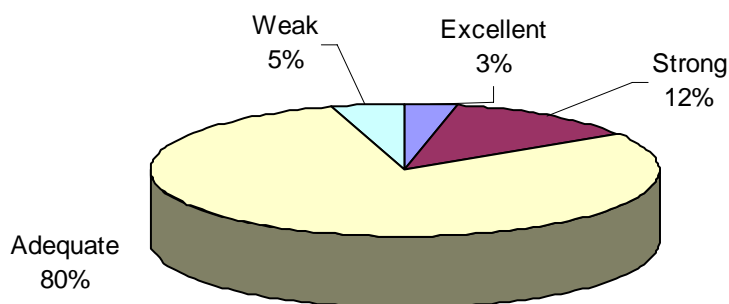
Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

15.

### Global Findings to October 2006

#### Overall ERM Evaluation (207 Insurers - All Sectors)



Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD  
& POOR'S**

16.

## ERM Evaluation Process

---

### General ERM Evaluation

- Part of Management Meeting (1 – 2 hours)
- Preparation of ERM Summary Chart (*Slides following*)
- ERM committee  Rating Committee  
or Direct to Rating Committee
- Written part of Ratings Report
- Verbal feedback to Company from ERM Summary Report

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.


17.

**STANDARD  
& POOR'S**

## ERM Evaluation Process

---

### Detailed ERM Evaluation

- Part of Management Meeting (1 – 2 hours)
- ERM Specific Meeting (1/2 to 1 Day)
- Preparation of ERM Summary Chart (*Slides following*)
- ERM committee  Rating Committee  
or Direct to Rating Committee
- Written part of Ratings Report
- Verbal feedback to Company from ERM Summary Report

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

18.

**STANDARD  
& POOR'S**

### Detailed ERM Evaluation

**What does ERM specific meeting cover?**

**A. Making sure of general picture is complete**

- Culture
- Emerging Risks Management
- Risk Models
- Strategic Risk Management

**B. Detailed Review of Risk Control**

- Investment
- Insurance
- ALM
- Operational

**Selection based upon perceived weaknesses/strengths/highest risks**

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD & POOR'S**

19.


### ERM Summary Chart – Life


	Opinion	Comments
Overall	Excellent, Strong, Adequate, Weak	Key reason(s) for conclusion
Risks	Credit, Market, Insurance, Operational (or sub risks of those broad categories)	A Summary of the Risk Profile of the company. Discussion of changes to the risk profile over the past several years and how management expects it to change over the next several years. Description of the products or investments that give rise to the major risks.
Earnings Vol / Loss Experience	High, Medium, Low Volatility	Summarize 5 year history of earnings volatility and/or loss experience
Importance of ERM to Rating	Very high, high, moderate, low, very low	Indicate whether this ERM opinion should have high impact on rating. Will be high if company has complex risks and/or tight surplus position. Most Health Insurers have low to moderate risks, but some have low surplus positions which could make ERM of high importance.
Review		
Risk Management Culture	Excellent, Strong, Adequate, Weak	<ul style="list-style-type: none"> <li>▪ The degree to which risk and risk management are important considerations in the every day aspects of corporate decision-making.</li> <li>▪ The staffing and organizational structure of the people who are charged with executing the risk-management function in the insurer.</li> <li>▪ The risk management governance structure that is indicative of a high degree of influence on decision-making by risk-management staff.</li> <li>▪ Communication of risk and risk management—both inside and outside of the insurer — An insurer with a strong risk-management culture will have a very transparent risk-management process within the company and with other interested parties through their public communications.</li> </ul>

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

**STANDARD & POOR'S**

20.

ERM Summary Chart – Life		
Risk Controls – Credit	Excellent, Strong, Adequate, Weak	Types of Credit Risk Management Programs: a) Traditional Underwriting standards and concentrations limits b) Sell discipline tied to spread monitoring c) Portfolio Credit Approach supported by Credit VaR model d) Credit Derivative use to refine exposures Best companies have multiple programs. Standard & Poor's will look at quality of program and effectiveness of execution.
Risk Controls – Interest	Excellent, Strong, Adequate, Weak	Types of Interest Risk Monitoring Metrics: a) Duration, DV01 b) Convexity c) Key Rate Duration, Partial Duration Best companies will use multiple measures, clear tolerances, frequent measurement and frequent rebalancing with clear practices for violations. Standard & Poor's will also look for attention to minimum guarantees.
Risk Controls – Equity	Excellent, Strong, Adequate, Weak	Looking for company to have a clear idea of the amount of risk that they are taking as a result of their equity market exposures and a program for maintaining that risk at a predetermined level. If they are hedging risks, Standard & Poor's will look for disciplined program with a sophisticated control structure.
Risk Controls – Insurance	Excellent, Strong, Adequate, Weak	Standard & Poor's is looking for robust underwriting and monitoring processes that are tied to pre-planned actions for significant deviation from expectations.
Risk Controls – New Product	Excellent, Strong, Adequate, Weak	Formal process of identifying and planning for the changes to the insurer's risk profile due to the introduction of a new product, coverage or investment program. Standard & Poor's will especially look for a product development process that allows meaningful impact of risk analysis on the product.
<p>Permission to reprint or distribute any content from this presentation requires the written approval of Standard &amp; Poor's.</p>		
21.		

ERM Summary Chart – Life		
Risk Controls – Operational	Excellent, Strong, Adequate, Weak	Concentration will vary by insurer. Review may focus on Internal Audit, Regulatory & Compliance Risks, IT, Distribution Risk, Outsourcing, Business Continuity and/or risks from major new projects and acquisitions.
Extreme Events & Emerging Risk Mgt	Excellent, Strong, Adequate, Weak	Insurers quality of processes to imagine, assess, prepare for and monitor future risks that are not currently a part of the everyday risk control processes. Might include, but is definitely not limited to Cat reinsurance.
Risk Models	Excellent, Strong, Adequate, Weak	Standard & Poor's will look for an insurer to have capabilities to assess their risk positions with measurement systems that provide timely and actionable information.
Strategic Risk Management	Excellent, Strong, Adequate, Weak	The ability and practice to look across the insurers diverse risks to make decisions about optimizing their risk adjusted returns. This requires both the capability to assess trade-offs between different risk types and an assessment of risk adjusted returns. Would include capital budgeting and strategic investment allocation.
Outlook	Positive, negative, neutral	Many companies will have positive outlook for ERM due to developing nature of ERM
<p>Permission to reprint or distribute any content from this presentation requires the written approval of Standard &amp; Poor's.</p>		
22.		

ERM Summary Chart – P&C		
	Opinion	Comments
Overall	Excellent, Strong, Adequate, Weak	Key reason(s) for conclusion
Risks	Credit, Market, Insurance, Operational (or sub risks of those broad categories)	A Summary of the Risk Profile of the company. Discussion of changes to the risk profile over the past several years and how management expects it to change over the next several years. Description of the products or investments that give rise to the major risks.
Earnings Vol / Loss Experience	High, Medium, Low Volatility	Summarize 5 year history of earnings volatility and/or loss experience
Importance of ERM to Rating	Very high, high, moderate, low, very low	Indicate whether this ERM opinion should have high impact on rating. Will be high if company has complex risks and/or tight surplus position. Most Health Insurers have low to moderate risks, but some have low surplus positions which could make ERM of high importance.
Review		
Risk Management Culture	Excellent, Strong, Adequate, Weak	<ul style="list-style-type: none"> <li>▪ The degree to which risk and risk management are important considerations in the every day aspects of corporate decision-making.</li> <li>▪ The staffing and organizational structure of the people who are charged with executing the risk-management function in the insurer.</li> <li>▪ The risk management governance structure that is indicative of a high degree of influence on decision-making by risk-management staff.</li> <li>▪ Communication of risk and risk management—both inside and outside of the insurer—An insurer with a strong risk-management culture will have a very transparent risk-management process within the company and with other interested parties through their public communications.</li> </ul>

STANDARD & POOR'S

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

23.

ERM Summary Chart – P&C		
Risk Controls – Investment	Excellent, Strong, Adequate, Weak	<p>Clear Credit Risk Standards that are monitored and enforced.</p> <p>Target for matching Asset and Liability Durations with monitoring and enforcement.</p> <p>Clear standards for asset allocation, with set limits diversification and investment style with tracking and enforcement procedures when limits are breached</p> <p>Measurement of risk from investments that reflects the company's actual investment activities with management and board awareness of the level of and changes in investment risk.</p> <p>Counterparty credit risk on reinsurers: acceptance criteria, limits, assignment by line of business.</p>
Risk Controls – Insurance Underwriting	Excellent, Strong, Adequate, Weak	<p>Underwriting Process – Set, monitor and enforce standards</p> <p>Underwriting guidelines – clear documented and enforced standards, which should define delegation of authority, treatment of special lines, escalation and referral procedures.</p> <ul style="list-style-type: none"> <li>* Risk review – Process to ensure risks are reviewed by (experienced and qualified) personnel from relevant practices</li> <li>* Pricing – Process to develop appropriate theoretical price and monitor, limit and enforce deviations.</li> <li>* Process for recording and sharing of pricing information</li> <li>* Cycle Management – Process to identify weak cycle. Planned response and execution in soft market</li> <li>* Claims – process for assessing claims experience and comparing to pricing expectations</li> <li>* Monitoring and feedback mechanism – Underwriting, Pricing and Claims</li> </ul>

STANDARD & POOR'S


Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

24.

ERM Summary Chart – P&C		
Risk Controls – Catastrophe Risk	Excellent, Strong, Adequate, Weak	<ul style="list-style-type: none"> <li>* Exposure concentration limits, monitoring and enforcement process</li> <li>* Model to advise setting concentration limits and to price</li> <li>* Process to set and update model assumptions</li> <li>* Process to feedback strengths, weaknesses and assumptions underlying models</li> </ul>
Risk Controls – Reinsurance	Excellent, Strong, Adequate, Weak	<ul style="list-style-type: none"> <li>* Process to assess reinsurance needs: Is it price/capacity based or does it have economic capital considerations?</li> <li>* Process to monitor and enforce compliance with policy</li> <li>* Process to update reinsurance program as conditions change</li> <li>* Process for optimizing risk-return trade-off</li> </ul>
Risk Control – Reserve Risk	Excellent, Strong, Adequate, Weak	<ul style="list-style-type: none"> <li>* Processes for dealing with:                             <ul style="list-style-type: none"> <li>* Uncertainty</li> <li>* Data quality and volume</li> <li>* Emerging changes in development</li> <li>* Changes in legal environment</li> <li>* Changes in claims environment</li> <li>* Changes in underwriting and claims management processes</li> <li>* Reserving across the cycle(s)</li> <li>* Large and disputed claims</li> </ul> </li> <li>* Process for giving feedback to Pricing &amp; Underwriting processes</li> </ul>
Risk Controls – New Product	Excellent, Strong, Adequate, Weak	Formal process of identifying and planning for the changes to the insurer's risk profile due to the introduction of a new product, coverage or investment program. Standard & Poor's will especially look for a product development process that allows meaningful impact of risk analysis on the product. Assessment of group wide accumulation before product approval

25.


Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.



ERM Summary Chart – P&C		
Risk Controls – Operational	Excellent, Strong, Adequate, Weak	Concentration will vary by insurer. Review may focus on Internal Audit, Regulatory & Compliance Risks, IT, Distribution Risk, Outsourcing, Business Continuity and/or risks from major new projects and acquisitions.
Extreme Events & Emerging Risk Mgt	Excellent, Strong, Adequate, Weak	Insurers quality of processes to imagine, assess, prepare for and monitor future risks that are not currently a part of the everyday risk control processes. Contingent planning in relation to these events.
Risk Models	Excellent, Strong, Adequate, Weak	Standard & Poor's will look for an insurer to have capabilities to assess their risk positions with measurement systems that provide timely and actionable information.
Strategic Risk Management	Excellent, Strong, Adequate, Weak	The ability and practice to look across the insurers diverse risks to make decisions about optimizing their risk adjusted returns. This requires both the capability to assess trade-offs between different risk types and an assessment of risk adjusted returns. Would include capital budgeting, strategic asset allocation, pricing, management remuneration.

26.

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.



## Tale of 2 Companies

### RenaissanceRe Holdings Ltd., Units Ratings Lowered, Removed From CreditWatch; Outlook Stable

Publication date: 02-Nov-2005

On Nov. 2, 2005, Standard & Poor's Ratings Services lowered its counterparty credit and financial strength ratings on Renaissance Reinsurance Ltd. to 'A+' from 'AA-'.

The outlook on all these ratings is stable.

These ratings actions reflect that the catastrophes in 2005 will create sizeable losses for RNR, measuring a consolidated net loss, which Standard & Poor's expected to be between \$200 million-\$300 million at year-end 2005--the first net loss for the company. Furthermore, the ratings actions reflect the view that 2005 followed 2004's lower earnings and this has raised questions regarding the volatility inherent within property catastrophe risks and RNR's concentrated exposures in certain zones. In addition, the company has announced the departure of the Chairman and CEO, and the ratings actions reflect the uncertainty with regards to potential changes to the company's risk profile following this management change.

### PXRE Corp. Ratings Lowered, Kept On CreditWatch Negative

Publication date: 29-Sep-2005

Credit Rating: BBB-/Watch Neg/--

#### Rationale

On Sept. 29, 2005, Standard & Poor's Rating Services lowered its counterparty credit and financial strength ratings on Bermuda-based PXRE Reinsurance Ltd. (PXRE Bermuda) and U.S.-based PXRE Reinsurance Co. (PXRE Reinsurance) to 'A-' from 'A'.

Standard & Poor's also said that the ratings remain on CreditWatch with negative implications, where they were placed on Sept. 9, 2005. This reflects the material impact that Katrina losses, estimated by PXRE to be \$235 million-\$300 million, represents to its equity capital base measuring \$763 million as of June 30, 2005.

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

27.

**STANDARD  
& POOR'S**

**STANDARD  
& POOR'S**

## Enterprise Risk Management: Insurance Ratings

Insurance ERM Evaluation Criteria on the web at  
[www.erm.standardandpoors.com](http://www.erm.standardandpoors.com)

For further Information Contact:

Laura Santori  
+33 1 44207320  
David Ingram  
+1 212 438 7104

Permission to reprint or distribute any content from this presentation requires the written approval of Standard & Poor's.

Copyright (c) 2006 Standard & Poor's, a subsidiary of The McGraw-Hill Companies, Inc. All rights reserved.

The McGraw-Hill Companies