



SOCIETY OF ACTUARIES

**SOA 09 Annual Meeting & Exhibit
October 25-28, 2009**

Session 6, Investment Section Hot Breakfast

Moderator:

Gary A. Hatfield, FSA

Presenter:

[James Lam](#)



SOA 2009 Annual Meeting Investment Section

October 26, 2009

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Biographical Sketch

Professional

- President, James Lam & Associates (JLA)
- Board member, Covarity Inc.
- Founder and President, ERisk
- Partner, Oliver, Wyman & Company
- CRO, Fidelity Investments
- CRO, Capital Markets Services Inc., a GE Capital company

Industry Activities

- Author, *Enterprise Risk Management*
- Named "100 Most Influential People in Finance" (T&RM 2005, 2006, 2008)
- Named one of the world's top risk consultants (Euromoney 2007)
- PRMIA Blue Ribbon Panel Member
- GARP Inaugural Financial Risk Manager of the Year (1997)

Academic

- Senior Research Fellow, Beijing University
- Adjunct Professor, Babson College
- Lectured at Harvard University as the subject of a HBS case study
- MBA, UCLA School of Business
- BBA, Baruch College

Client Solutions

- Consulting – ERM, strategic risk, financial risk, and operational risk
- Advisory – ongoing implementation support
- Training – board and management workshops
- Research and development



Forrester ranked JLA among the top-tier of consulting firms with “*extensive capabilities*” in ERM across industries*

Risk Practices

- Enterprise risk strategy
- ERM organizational & process design
- Financial/treasury risk management
- Operational risk management

Industry Sectors

- Financial services
- Energy, chemicals, & resources
- Healthcare
- Technology & communications
- Transportation & logistics

* Forrester Research report “Identifying And Selecting The Right Risk Consultant,” February 2007



Discussion outline

- **Lessons Learned from the Crisis**

- **ERM Requirements**

- **Investment Management Issues**



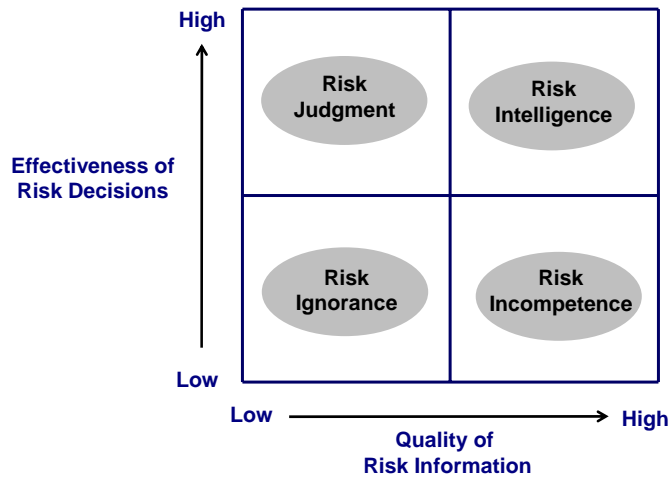
Lessons learned from the financial crisis

- **Beware of the “black swan.”** Major crises are rare but extremely consequential events, but are difficult to predict. They also result from interrelated risks (e.g., housing crisis, banking crisis, economic crisis)
- **Leverage and liquidity impacts.** Subprime mortgages, funded by MBSs and CDOs, funded by CPs via SIVs created leverage on leverage. Collateral and downgrade provisions of financial contracts created significant liquidity calls
- **Weaknesses of silo-based risk management.** Highly interrelated risks cannot be isolated and managed independently. Recent examples include:
 - “Confessions of a Risk Manager,” The Economist, August 9, 2008
 - “Behind AIG’s Fall, Risk Models Failed to Pass Real-World Test,” Wall Street Journal, October 31, 2008
- **Limitations of risk models.** Credit models used by banks and rating agencies were based on 7 years of benign credit default data. Value-at-risk models didn’t quantify “fat tail” risks. Most investment and risk models assumed diversification benefits (but correlations converge to one during market crises)
- **Importance of “soft” issues.** It is difficult for risk management to be effective in an organization with adverse culture, values, and incentives

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The Risk Matrix



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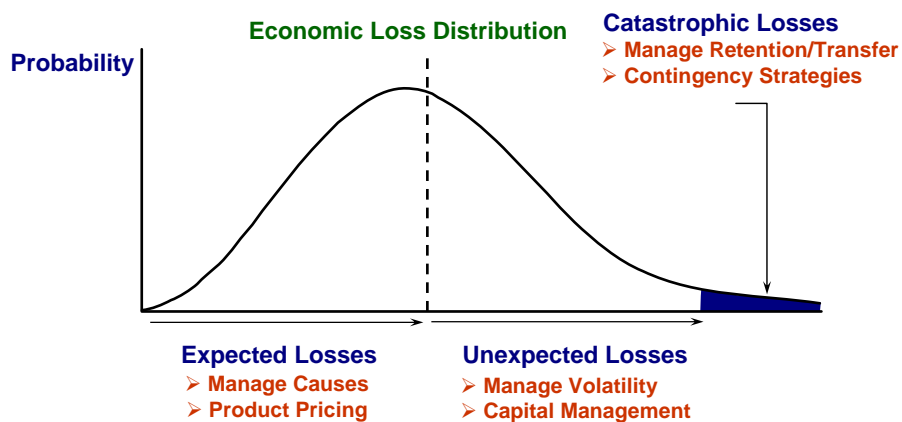
Emerging risk analysis and early warning indicators

- **Emerging risk analysis**
 - Executive workshops to identify “black swans” or improbable/consequential events
 - Development of business and financial contingency strategies
 - Implementation of “early warning indicators”
- **2008 was ground zero for the global financial crisis**
 - Global economies fall into severe recessions, stock markets hit multi-year lows
 - Wall street firms collapsed or sold in distressed sales: Bear Stearns (March), Lehman (September), Merrill Lynch (September)
- **In retrospect, there were a number of qualitative and quantitative warning signs**
 - Dow hits record high of 14,164 (October 2007)
 - TED spread began spike (July 2007)
 - Home prices, based on the Case-Shiller Index, began to fall (June 2007)
 - Subprime lender, New Century Financial, files bankruptcy (April 2007)
 - The “fear index” hit an all-time low of 10 (January 2007) and spiked to an all-time high of 60 (October 2008)
 - Nouriel Roubini predicts 2007 recession in IMF speech (September 2006)
 - Robert Shiller warns of real estate bubble in “Irrational Exuberance” (April 2005)

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Thinking outside the bell-curve

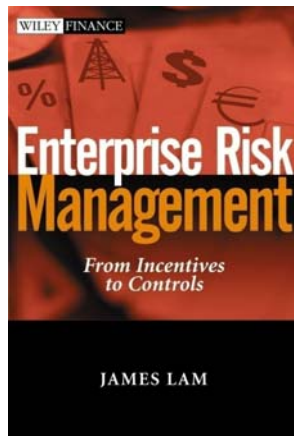


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Discussion outline

- Lessons Learned from the Crisis
- ERM Requirements
- Investment Management Issues

ERM should be defined as a value-added function



Definition of ERM:

“An integrated framework for managing credit risk, market risk, operational risk, economic capital, and risk transfer in order to maximize firm value.”



The level of interest in enterprise risk management has never been greater

- Recent surveys indicate that risk management has replaced accounting issues as the top concern for corporate boards
- A McKinsey survey of 1,000 directors indicated that 76% want to spend more time on risk management
- A survey of 271 large companies by The Conference Board indicated that 91% are building, or planning to build, ERM. Only 11% have completely implemented ERM
- A survey of 137 global firms by the Economist Intelligence Unit (EIU) found that 45% have already appointed a CRO or equivalent, and 24% planned to appoint a CRO in the next two years
- The rating agencies, led by S&P, have established ERM criteria for financial institutions and non-financial corporations that will be applied in their corporate rating processes

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Early adopters of ERM have reported significant and tangible benefits

<u>Benefit</u>	<u>Company</u>	<u>Actual Results</u>
Market value improvement	Top money center bank	Outperformed S&P 500 banks by 58%
Early warning of risks	Large investment bank	Global risk limits cut by 1/3 prior to Russian crisis
Loss reduction	Top asset management company	Loss-to-revenue ratio declined by 30%
Regulatory capital relief	Large commercial bank	\$1 billion regulatory capital relief
Insurance cost reduction	Large manufacturing company	20-25% reduction in insurance premium

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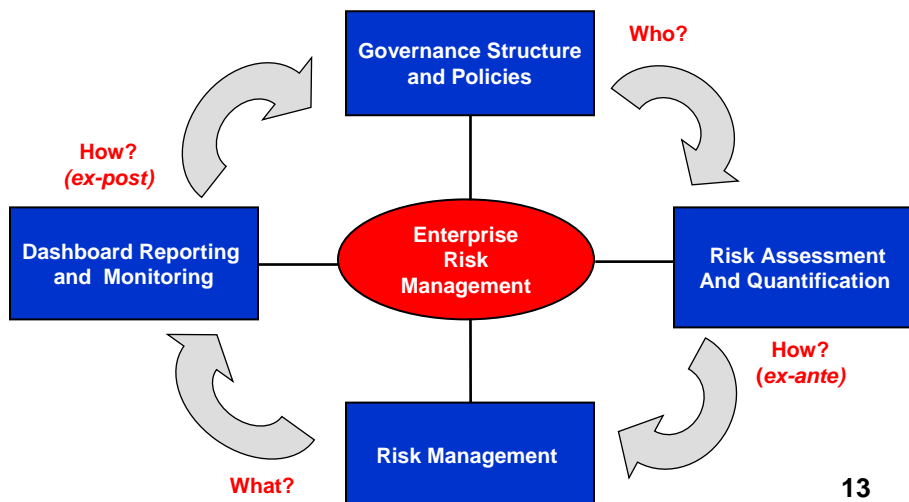
Benefits of Effective Governance and ERM

- **McKinsey and Company (2002).** Institutional investors in North America willing to pay a premium of 12-14% for effective corporate governance
- **Gompers, Ishii, and Metrick (2003).** Investment strategy of buying firms with strong shareholder rights and shorting firms with weak shareholder rights produced excess return of 8.5%
- **Cremers and Nair (2003).** Firms with strong governance mechanisms produced excess annualized returns of 8%
- **Brown and Caylor (2004).** Firms with effective governance produce higher ROE, higher profit margin, and greater dividend payout
- **Cheng and Wu (2005).** Top decile companies in the ISS Corporate Governance Quotient ratings produced higher ROAs, higher ROEs, and higher P/E ratios
- **Hoyt and Liebenberg (2009).** ERM use among public-traded US insurers was associated with an equity price premium of 16.5%

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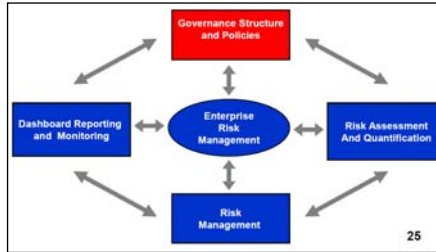
ERM Framework and Processes



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Key Governance and Policy Issues

Who?

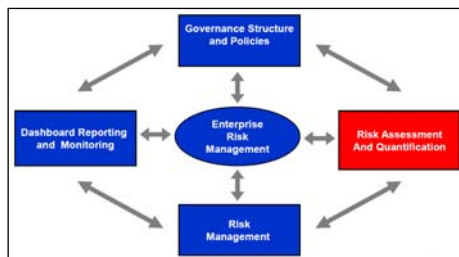


- Board governance structure
- Strategy and risk management
- Risk policy & tolerance levels
- Incentive compensation

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Key Risk Assessment and Quantification Issues

How? (*ex-ante*)

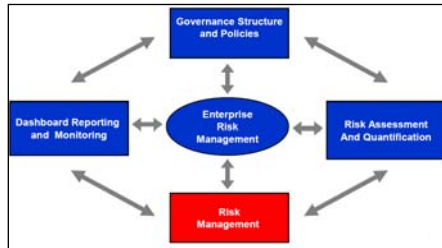


- Integrated risk analyses
- The three Ls (liquidity, leverage, linkages)
- Pitfalls of VaR and economic capital models
- Stress-testing and scenario analyses
- Model risks

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Key Risk Management Issues

What?

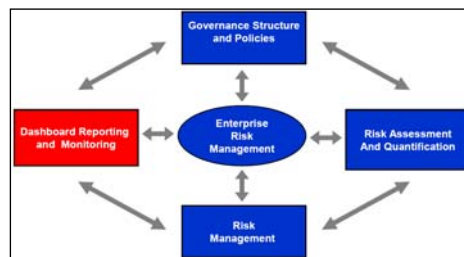


- Risk management independence
- Impact on business decisions
- Emerging risks or “black swans”
- Change management requirements

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Key Reporting and Monitoring Issues

How? (ex-post)



- Board reporting
- Management reporting
- Dashboard technologies
- Risk escalation processes
- Feedback loops

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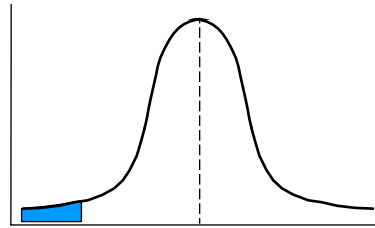


Establishing a feedback loop on ERM

Earnings-at-Risk Analysis



Earnings Attribution Analysis



Worst Case
EPS = (\$1.00)

Expected
EPS = \$3.00

1. Business Plan:	\$2.00
2. Interest Rates:	\$1.00
3. Oil Price:	\$0.50
4. Regulatory Issue:	\$0.30
5. Other:	<u>\$0.20</u>
	\$4.00

Expected EPS :	\$3.00
Actual EPS:	<u>\$1.00</u>
Difference:	\$2.00

Business Plan:	\$1.00
Interest Rates:	\$0.50
Unforeseen Factors:	\$0.40
Other:	<u>\$0.10</u>
	\$2.00

Key Questions:

1. Did we identify the key risk factors?
2. Were our EPS sensitivity analyses accurate?
3. Did risk management impact our risk/return positively?

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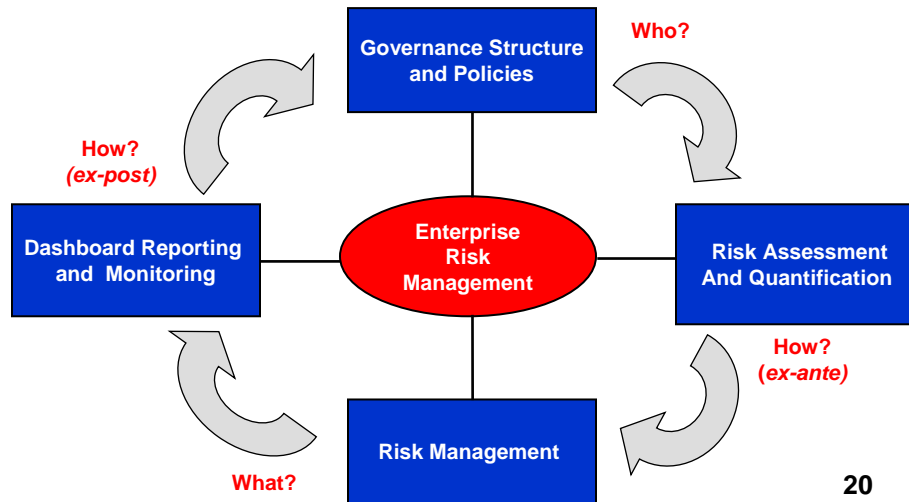


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ERM Framework and Processes



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Investment Governance and Policy

- The role of the **investment committees** at both the board and management levels
- **Roles and responsibilities** of investment and oversight functions (CIO, CFO, CRO, risk management, audit, investment and regulatory compliance)
- Reviews of **investment objectives and incentives** (e.g., alpha targets, benchmark definitions, tracking errors, manager compensation and incentives)
- Definition of **risk tolerance** levels (e.g., risk budgets, liquidity and capital requirements, leverage constraints)
- **Investment policies** with respect to derivative products, illiquid or mark-to-model investments

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Investment and Risk Analysis

- Limitations of **VaR** (e.g., use of conditional VaR)
- Reliability of **diversification** benefits/assumptions
- Integration of **macro economic** analysis
- **Integrated risk analysis** (market, credit, liquidity risks)
- Use of **stress-testing and scenario models**, including leverage and liquidity impacts
- Development of “**black swan**” analysis and **early-warning systems**

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Investment and Risk Management

- Re-definition of portfolio **diversification strategies** (e.g., asset allocation strategies, investment strategies, market views, economic scenarios)
- Investment **action triggers** and exit strategies
- Contingent **credit lines and capital strategies**
- Active management of **liquidity positions** and requirements (e.g., redemption constraints)
- Active management of **counterparty risks** and collateral positions

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Monitoring and Reporting

- Initiatives to improve **risk transparency**
 - Management dashboards
 - Board dashboards
 - Investor reporting and disclosures
- Development of **feedback loops** (minimize unexpected investment returns)
- Automated monitoring of **key documents** (e.g., master agreements, trade confirms, etc.)
- Use of **data-warehouse, data-marts, and business intelligence** technologies