

ERM: Aligning Proper Incentives with "Risk/Reward"
Decision-Making

Robert Wolf, FCAS, MAAA, CERA, ASA
Staff Partner- SOA/CAS/CIA Joint Risk Management
Section

Lessons Learned From
Financial Crises

FROM JOINT RISK MANAGEMENT SECTION E-BOOK

RISK MANAGEMENT: THE CURRENT FINANCIAL CRISIS, LESSONS LEARNED AND
FUTURE IMPLICATIONS

Recap of 5 Necessary Elements of
Prudent ERM Culture

1. **Incentive compensation** requires appropriate alignment with **desired performance**
2. Nobody should have the **authority** to make decisions without **accountability**.
3. **Do Not Assume we Can Get Rid of the Risk Tomorrow for the same Price as Today**
4. **Modeling and Management Must consider the Behavioral Decisions of people.**
5. Risk Managers Must **Question the Answers**

Main Premise

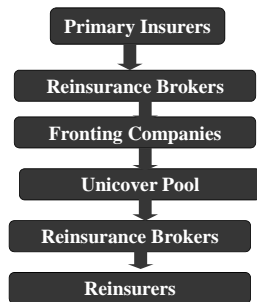
Most risk does not manifest itself from some exogenous contingent event but from the behaviors and decisions of people

Can Something Like the Subprime Event Happen in the Property Casualty Insurance Industry?

Remember Unicover?

- Pools that reinsured workers compensation
- Underpriced by 30 – 40%
- “Carved out” med/health
- Lowered Prices to Attract Retrocessionaires
- Spiral
- Ultimate Cost at \$2 billion
- Life reinsurers stuck with much of it

Passing the Trash



Why Did Unicover Happen? Same Reasons the Sub-Prime Crises Happened

- **Greed**
 - Strong incentive to accept premium, ceding fees
 - Accusations that risks were misrepresented
- **Complexity/Ignorance**
 - Didn't understand "carve-out" business (life reinsurers took on medical portion of risk)
 - Higher-ups thought it was ordinary A&H
 - Regulators asleep at the switch
- **Economic/Human Incentives**
 - Weak premium growth in WC, competition,
 - Rate on line falling; preserve revenue stream
 - Robert Hartwig, Chief Economist, Insurance Information Institute, NYC

Systemic Risk Assessment

- Unicover Caused Some Pain
 - but it did not bring the industry/economy to a crashing halt.
 - Neither did
 - Natural and man-Made Catastrophes
 - Terrorism,
 - Latent Disease, etc.
- Dare I say that the Insurance Regulation Works?
- Dare I say that Insurance Industry Manages Systemic Risk Pretty Well?

What's the Deal With Property Casualty Insurance?

My life Insurance Friends tell me It's short duration exposure.
Why worry?

- Because :
- We Have Risky Promises.
 - We Have Long-Duration Play-Outs
 - Many prior short duration exposures that are still playing out.
 - Hence a Mis-match between current decision- making (next 12 months) and play out of old decisions/sins
 - Challenge for incentive Compensation Plans

Considerations- Incentive Compensation

C-Suite

- Overall Performance
- Overall Capital Pool
- Overall Risk and Reward
- Overall Investment Strategy

How do you reward/punish an integrated result?

Line Managers/Strategic Business Units

- Underwriting Divisions own their portfolio of policies but..
 - Share Investment Portfolio
 - Share Capital Pool
- Claim Managers Incentives
- Actuaries Incentives
- Risk Manager's Incentives

Supplied Funds

Let K = Policyholder Supplied Funds = Premiums Less Loss Payments

Let S = Shareholder Supplied Funds = Capital to Support Insurance Operations

Assets	Liabilities
K+S	K
	Capital
	S

Marginal Balance Sheet Impact

Let R_A = Return on Assets which supplied by both policyholders and shareholders.

R_L = Cost of Float. Investing policyholder Supplied funds until needed.

R_E = Cost of Capital. Shareholders Return on their investment

Returns R_A	Costs R_L
K+S	K
	Capital
	S

A Levered Trust

Levered Trust
 $(K+S)R_A = KR_L + SR_E$

Re-Arranging
 $S(R_E - R_A) = K(R_A - R_L)$

$R_L = R_A - (S/K) S(R_E - R_A)$

Underwriting managers in essence manage the float in the levered trust

13

Typical Performance Measurements

- **Calendar Year Growth & Statutory Profit**
 - Premium Growth, 1- Combined Ratio
- **Disadvantages**
 - Timing of Profit
 - Does not Reflect Risk
 - Includes Past Decisions
- **Accident Year Growth & Statutory Profit**
 - Better, but still a lot to play out.

Risk Adjusted Return on Capital (RAROC)

Like Bob Mark, I endorse a RAROC framework

RAROC

How much am I earning on the capital that I have committed to the business to satisfy the shareholder (policyholder)?

↕

CAPITAL PRODUCTIVITY

Compare RAROC with Hurdle Rate

=

Risk-Adjusted Return

Economic Capital

↕

CAPITAL ADEQUACY

How much capital is needed to ensure that policyholders are paid in the event of a stress scenario?

Compare Economic Capital with Available Financial Resources (AFR)

15

RAROC

Return

- GAAP Net Income
- Statutory Net Income
- IASB Fair Value Net Income
- Economic Profit
 - Includes Change in Franchise Value

Capital

- Actual Committed Capital
- Market Value of Equity
- Regulatory Capital
- Rating Agency Capital
- Economic Capital
 - Solvency Objective
 - “Going-Concern” Objective

Need to Consider the Paradox of Capital Allocation

But.....

- Capital Allocation is necessary
- The best way to make risk-based portfolio composition decisions
- Critical element of financial product pricing
- Standard language of management
- Incentive Compensation

- All of the company’s capital is available to support each policy
- No capital is transferred at policy inception
- Capital is transferred via reserve strengthening

Can Capital Be Meaningfully broken down?

“Every Dollar of Capital Stands Behind Each and Every Risk”

*Chuck McClenahan, FCAS, MAAA
Mercer Oliver Wyman
Testimony at Proposition 103 Hearings*

Capital Allocation: Do We Want More or Less?

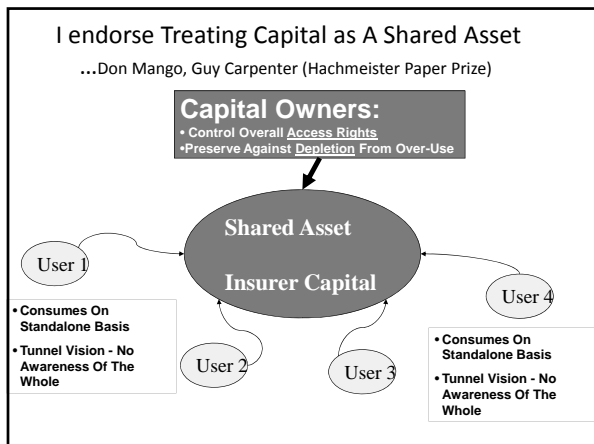
- The Home Office allocates capital to my underwriting division
 - Do I want **MORE** or **LESS**?
- For Underwriting capacity → Yes I want **MORE**
- For Return burden → No. I want **LESS**

Property Casualty Insurance Industry is a “Receive-then-Spend” Industry

- **MORE** or **LESS** capital ?? --
We want **MORE**
- Take Revenues now → hope Costs aren’t too high/soon
- How to resolve paradox?
- Focus on Firm-wide capital
How much “additional” capital is needed to support an additional risk

Modern Approaches

Procedures	Description
1. Proportional Allocation Based on a Risk Measure	1. Allocate Aggregate Capital to Individual Risk Sources based on standalone risk measure
2. Incremental Allocation	2. Determine Impact Each Risk Source Has on Aggregate Risk Measure and then allocate Aggregate Capital in proportion to incremental amounts
3. Marginal Allocation (Myers-Read Method)	3. Determine impact of small change in risk exposure for each risk source and allocate based on these marginal amounts.
4. Co-Measures Approach (Kreps, Ruhm-Mango)	4. Determine contribution each risk source has to the aggregate risk measure



An Approach

	Premium	Discounted Combined Ratio	Economic Profit	Stand-Alone	Cost of Risk
SBU 1	xxx	xxx	xxx	Who Cares?	Based on put option to access overall capital
SBU 2	xxx	xxx	xxx		
SBU 3	xxx	xxx	xxx		
Total	xxx	xxx	xxx	xxx	

REQ. CAPITAL

23

- ### Recommendations- Incentive Compensation
- Treat Economic Capital as Shared Asset
 - Apply RAROC Philosophy in Incentive Comp
 - Consider the Managers' Put Option on the entire firm's capital
 - Short-Term/Long-Term Targets
 - Change it up to Minimize Gaming the System
 - Also consider the cost of contingent Capital (e.g. Cost of Reinsurance)
